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THESIS

FOURTH GENERATION WAR: PARADIGM FOR CHANGE

by

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June 2005

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13. ABSTRACT *(maximum 200 words)*

This thesis argues that a shift in the doctrine, organization, equipment and training of armies is required due to a shift in the nature of war. This thesis refers to the "new way of war" as Fourth Generation War (4GW) and this analysis is restricted to the army component of the defense forces. Armies at present are geared to fight the earlier generation of attrition and maneuver wars. In 4GW, an army structured for earlier generations of warfare is militarily dysfunctional. The thesis statement is: Infantry based armies practicing unconventional warfare (UW) are essential for the 4GW battlefield. The thesis argues for the conventionalization of UW. Hypothesis One states that heavy armor/artillery based armies should give way to infantry based armies. Hypothesis Two states that the military doctrine of these infantry based armies should be based on UW. The thesis explains 4GW and examines the relationship between terrorism and 4GW. It studies the impact of 4GW on the Principles of War. It examines whether Special Forces (SF) are the panacea for 4GW and whether increasing the size of SF is the solution. Lastly, the thesis discusses the changes required in the army to fight in a 4GW environment and provides recommendations.

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FOURTH GENERATION WAR: PARADIGM FOR CHANGE

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iii

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ABSTRACT

This thesis argues that the doctrine, organization, equipment and training of armies must shift to the conduct of Unconventional War (UW). This shift is required because a change has taken place in the nature of war. Different theories attempting to understand and find ways to cope with this change have reached the same conclusion: armies have become inefficient in the conduct of a "new way of war." Of the various theories that have evolved to explain this shift, this thesis adopts the Generational Change Theory, which appeared in an article in the *Marine Corps Gazette* in 1989. This Theory refers to the "new way of war" as Fourth Generation War (4GW). While all branches of the military, including the Air Force and the Navy, are affected by 4GW, this thesis restricts itself to examining the impact of 4GW on the Army. In this examination, it is inevitable that references are made to the political and social aspects of war. That is natural because the military does not operate in a vacuum or void where it is the only entity affected and involved in the conduct of war.

Armies at present are geared to fight the earlier generation of attrition and maneuver wars and hence find success evading them on the 4GW battlefield. However, fighting in the 4GW environment with an army structured for earlier generations of warfare results in military dysfunction. The thesis statement is: Infantry based armies practicing UW are essential for the 4GW battlefield. In effect, this thesis argues for the conventionalization of Unconventional Warfare (UW).

The thesis has two hypotheses. Hypothesis One states that heavy armor/artillery based armies should give way to infantry based armies. Hypothesis Two states that the military doctrine of these infantry based armies should be based on UW.

Chapter II explains and amplifies 4GW. Chapter III examines the relationship between terrorism and 4GW, and the moral and ethical issues of 4GW that are at cross-purposes to conventional war. Chapter IV studies the impact of 4GW on the Principles of War and suggests how these principles should evolve to be effectively utilized in 4GW.

Chapter V examines whether Special Forces (SF) are the panacea for 4GW. Chapter VI details the organizational aspects of SF, including their limitations. Chapter

VII looks at the changes required in the Army to fight in a 4GW environment, including changes in doctrine, organization, equipment and training. Chapter VIII provides recommendations for successfully charting a course for the future.

TABLE OF CONTENTS

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LIST OF FIGURES

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LIST OF TABLES

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ACKNOWLEDGMENTS

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I.   A PARADIGM FOR CHANGE

God grant me the serenity to accept the things I cannot change, the courage to change the things I can, and the wisdom to know the difference.

Reinhold Niebuhr (1892-1971)

War and society have a timeless relation. By its very nature, society precedes war because society is essential before war can take place. Individual human beings coalesce to create a society. The word "individual" implies having a distinct character. When living beings exist in proximity with each other, at some stage they come into conflict because of the imperative of survival. Survival demands that one living being procure the essentials of survival rather than the other. The best of food and shelter are required to become the fittest and to survive. They are also required to beget the best and strongest of offspring who will continue to get the best of food and shelter, to perpetuate the race (Bates, p. 24). If there is a paucity of resources for comfortably surviving, conflict arises in the competition to get the best (Keegan, 1993, pp. 25-26). In line with Darwin's theory of survival of the fittest, this conflict started when the first life forms evolved, carried on to primeval humans, and continues to this day.

Conflict between two individual human beings can be defined in many ways: "match," "joust," "duel," "competition," "brawl," "scrap" and so on. When winning is a matter of life or death, there is an imperative to increase strength. The strength of an individual is limited but can always be overcome by superior numbers. When individuals are joined by their kith and kin, neighbors, or supporters, in other words by other constituents of their society, the conflict widens in scope and involves a large number of people. A large number of people in conflict arrayed in two opposing and separate camps *is* "War." War is therefore inevitable as long as humans exist. All societies that desire sovereignty and progress must be prepared for war. The social structures that constitute society evolve and change depending upon the ability to generate wealth, the evolution of technology, the increase of knowledge and a number of other factors, which are beyond

1

the scope of this thesis. Evolution is a ceaseless process and throughout the history of time, society has undergone and undergoes gradual changes (Bates, p. 22).

Armies are established by societies for the furtherance of two basic interests: to protect what they value and to gain what is required for the furtherance of their interests. A society assigns a mission to its army and the mission is directed by the interests of the society. The army, through its own experience and the learned experience of others, creates a way (doctrine) to fulfill that mission. The army then asks society to provide the material means (manpower, weapons, equipment) to operate per this doctrine. Once these requirements are met, armies evolve the organizations, strategy, operational art and tactics needed to fulfill their mission. This evolution impacts the way war takes place. As society evolves, for better or worse, so does war. There are a number of theories that attempt to classify and understand the nature of this change (see Table 1).

Proponent	1st Stage	2nd Stage	3rd Stage	4th Stage	5th Stage
Lind, Night-engale, Schmitt, Sutton, Wilson (1989)	War prior to evolution of nation states	**1st Generation War** Classical nation state war (1648 onwards)	**2nd Generation War** Industrial wars of attrition (American Civil War onwards)	**3rd Generation War** Maneuver war (1918 onwards)	**4th Generation War (4GW)** Unconventional war, non-state, mix of guerrilla and terrorist tactics. No civil- military distinction (1948 onwards)
Martin Van Creveld (1991)		Trinitarian War			Non-Trinitarian War
Martin Van Creveld (1989)	The Age of Tools	The Age of Machines		The Age of Systems	The Age of Automation
D.J. Hanle (1989)	**Medieval Era** Primary factor: Physical skills	**Neo-Classical Era** Primary factor: Organizational skills	**Early Modern Era** Primary factor: Technical skills	**Late Modern Era** Primary factor: Administrative skills	**Nuclear Era** Primary factor: Social skills
Tofflers (1993)	1st Wave Agrarian	2nd Wave Industrial		3rd Wave Informational	
Arquilla & Rondfeldt (2000)	Melee	Massing		Maneuver	Swarming
Bunker (1994)	First Epoch War (human energy)	Second Epoch War (animal energy)	Third Epoch War (mechanical energy)		Fourth Epoch War (post mechanical energy)

Table 1.   Some Theories of the Evolution of Warfare

Regardless of individual proponents and theories, the ultimate hypothesis is that the nature of warfare has changed to the extent that traditional military theories and the

organizations built to implement them are dysfunctional in dealing with this change. The theorists reason that there are dramatic changes sweeping through the world, the foremost of which is globalization. These changes have been brought about by technology as well as increases in population. Technology makes the world a smaller place by making worldwide travel and communication easier, cheaper and faster. Increases in population also make the world a smaller place. This is illustrated by the simple analogy that three people inside a restricted space will be closer to each other than two people in the same space. Changes such as globalization and urbanization are leading to changes in society, which directly impact the causes of war as well as the "way of war." The new ways of war are at variance with the conventional concepts of war upon which armies have historically waged and regulated battle.

This has resulted in a state where conventional armies appear to be out of synchronization with reality. This thesis begins with the premise that this departure from reality is a fact, and goes on to suggest how this state could be rectified by defining the paradigm upon which the effectiveness of the Army within this environment could be based and improved.

This thesis is not an exposition of any specific theory. Each theory has something of consequence to contribute and their ultimate conclusion is common. However, the thesis requires one base theory to define the nature of the "new way of war." For this purpose, the thesis is centered on the theory of "generational" shifts in warfare as explained by William Lind and his co-authors in their seminal article on Fourth Generation War which came out in 1989, titled, *The Changing Face of War: into the Fourth Generation*. This theory was used because it best lends itself to discussion of the changing face of war from the strategic to the tactical level. Wherever Lind's theory falls short, relevant points from other theories have been incorporated to amplify 4GW.

A generational shift alludes to the change that takes place in line with the changes in the environment and technology and which makes hitherto followed practices outmoded. Generational changes happen over time, through the efforts of "practical people solv[ing] specific problems related to their fights against much more powerful enemies" (Hammes, 2004, p. 3). While practical people usher in a new generation, others

4

stick to the older generation for reasons that are covered later in the thesis. Their persistence with the old initiates a downward spiral in their ability to wage war efficiently. This is because their doctrine, organization, equipment, strategy, operational art and tactics belong to a previous generation of opponents and are inappropriate to the present generation.

This thesis begins with the premise that 4GW is here. An indicator of this change is the fact that conventional armies in the present age, which are organized and trained to fight in environments of previous generations of war, are often frustrated in achieving their goals in 4GW. They find it difficult to effectively win wars utilizing the methods and determinants of a state's military power which were used successfully in the past.

A.   PURPOSE AND METHODOLOGY

This thesis fulfills its purpose in the following manner: first, a case is made explaining why the traditional and conventional means of warfighting based upon firepower are loosing their effectiveness on the 4GW battlefield. Second, the thesis identifies what is required to make armies more effective against enemies who adopt 4GW methods.

In Chapter II, the thesis explains 4GW to the reader because it is an amorphous concept, which has lent itself to subtle changes in interpretation since it was first elucidated in 1989. The changes come about as new forms of 4GW methods evolve, other thinkers ponder the emerging trends in war and events unfold in ongoing 4GW conflicts, especially in context of the terrorism content of 4GW. This is examined in Chapter III, which also covers moral and ethical issues related to 4GW.

4GW requires that we re-examine all the things that impact how we have traditionally made war. Of prime importance in this context are the Principles of War. Chapter IV studies the impact of 4GW on the Principles of War. It suggests how the Principles of War should be interpreted and developed to enable the Army to utilize them to effect in 4GW.

Special Forces (SF) are best structured to fight on the 4GW battlefield. Their performance in the First Gulf War and in Afghanistan indicates their importance in unconventional applications. Chapter V studies the attributes of SF that make them the

ideal fighting forces against 4GW enemies. Chapter VI examines the limitations of trying to combat 4GW using only SF. Chapter VII looks at the changes required in doctrine, organization, equipment and training for configuring the army to fight effectively in 4GW. Chapter VIII concludes the thesis and provides recommendations for successfully charting a course for the future. In line with the second hypothesis, I will explain that we need to evolve our concept of war so that what has previously been labeled "UW" becomes the normal way of war. In other words, the unconventional must become the conventional.

This thesis is based primarily on an analysis of secondary sources. These include works by military analysts in books, professional journals and other publications, including websites concerned with this subject. The primary sources used include interaction with instructors and students at the Naval Postgraduate School, an interview with Colonel Anthony Wood, USMC (Ret.), Director of Applied Research, Collaborative Agent Design Research Center, California Polytechnic State University, and my personal experience in counter-insurgency in India.

B.   THESIS STATEMENT

Infantry-based armies practicing unconventional warfare are essential for the 4GW battlefield.

1.   Hypothesis One

The 4GW battlefield imposes conditions for which infantry-based armies using UW are the most suitable fighting force.

The nature of sensors, air power, precision weapons and weapons of mass destruction negate large-scale conventional wars between nation states. In this milieu, heavy armor, artillery or other firepower-based armies are not the more efficient means of fighting. Armies need to be centered on infantry using the tenets of UW.

2.   Hypothesis Two

We must structure conventional armies to fight unconventionally in the 4GW environment.

The key aspect of Hypothesis One is that light infantry utilizing UW is best suited for 4GW. Special Forces are the best light infantry trained in UW. Hence, the obvious

optimum solution is to increase the size of SF. However, there is a limit to which SF can be increased because specialized organizations can lose the qualities that make them truly special after they attain a particular size or if overused. Therefore, the answer lies in making the conventional army more "SF-like." In other words, in the Fourth Generation, what has hitherto been UW must become the conventional.

C.   FRAMING THE PROBLEM

The nature of 4GW has similarities with how war has been fought at varying times in history. For the past 350 years or so, war has progressed in a particular manner, which is erroneously understood as the only form of "war." As society progressed, so did armies, utilizing the spin-offs of the industrial and technological ages. Armies learn from the hard experience of war. They arm themselves with the instruments of war after having convinced their political masters of the need for particular instruments or when adverse performance drives home the imperative of change.

Progressive change, therefore, is slow and may entail temporary periods of inactivity. Either periods of relative peace make governments complacent or realities of governance dictate that scarce resources be diverted into other sectors of human endeavor or necessity. As a result, long lead times are required to field appropriate military organizations, weapons and equipment. When the head of the state was an absolute monarch, involved both in war and governance, he could usher in changes in the military with short lead times. The same can happen in modern times if the head is a dictator, or the regime is totalitarian (witness the swift German rearmament between the world wars). Prior to the industrial age, major changes in weapons and equipment did not require long lead times, as the weapons and equipment were relatively inexpensive and did not involve such large investments that a change was financially impossible, if not impractical. However, at present, any change becomes extremely expensive because it means making huge investments redundant. For example, if billions of dollars were invested in a new aircraft, it is imperative that the aircraft be used for its complete life span. If its use is no longer appropriate, this large investment will still need to be utilized rather than wasted.

Not only will it be utilized, but also, the complete gamut of things which support its employment, such as doctrine, strategy and tactics, will continue to be followed. This is akin to the difficulty that a factory would face if it had to switch over to the production of a totally different product. It would need new assembly lines and machines, new workers, new managers, new doctrine and a new culture. Such straightjackets of contemporary bureaucratic reality ensure situations where the armed forces find themselves incapable of operating optimally whenever a change takes place in war. This is the situation at present with respect to the transformation of war in the shape of 4GW. Armies are bureaucracies mired in inertia, both physical and mental, which makes it difficult for them to usher in change.

This means that armies at present are organized and trained to fight wars in a manner that is becoming obsolete. The way today's armies fight wars in an environment where they are dysfunctional results in a wasteful use of resources and prolonged wars. If victory is achieved, it is at a disproportionate cost and more a result of wearing out the enemy. This is not an efficient way to wage war against 4GW opponents, whose nature, described in the next chapter, is such that they have greater lasting capacity. Weaker opponents have learned the imperative of perseverance through trial and error. It has been stated that copies of the article "The Changing Face of War: Into the Fourth Generation," by Lind, et al., have been found inside the caves at Tora Bora in Afghanistan. If this is true, it shows that 4GW fighters have paid attention to their own as well as their enemy's weaknesses. They have figured out that the methods of war that necessity has forced upon them are successful, and this motivates them to hedge all their bets on 4GW.

Conventional armies fighting enemies who utilize 4GW are perplexed to see that their opponents spend proportionately a far lesser amount of money to wage war. If a state cannot fight 4GW enemies with economies of scale, eventually the chance is great that it will not be able to bear the human and economic cost of war.

The Navy and the Air Force have always been instruments to support land forces and help ensure success. Regardless of the theories of Giulio Douhet or Alfred Thayer Mahan, the final determinant of victory is "boots on the ground." This is all the more true when the scope of technology is reduced on the battlefield. 4GW opponents attempt to

reduce the technological and quantitative superiority of a foe by a change of strategy and tactics in which they use unconventional and asymmetric means to wage war. In waging this war, they use the one renewable source of strength that most of the world, and especially weaker enemies, have in plenty: manpower. It is inevitable that in these circumstances, land forces in the shape of the Army assume greater importance in the prosecution of 4GW.

D.   OUTLINE OF THE INDIVIDUAL CHAPTERS

1.   Chapter II: 4GW - The Shape of Transformed War

This chapter examines the generations of warfare as defined by Lind and his co-authors and elaborated upon by Hammes (2004). The explanations by these two proponents of the generational change in war are amplified in order to lay the basis for the balance of the thesis. This is essential as 4GW is an abstract war. It involves the interplay of those elements and determinants of power, which are not associated with the traditional ideas of war.

2.   Chapter III: 4GW, Terrorism and Ethics

4GW presents a number of issues. The primary and most obvious is the relationship between terrorism and 4GW. Are they the same or different? A second issue is the ethical dilemma confronting conventional armies when they encounter situations that are ethically at cross-purposes to their ethos and training. This chapter attempts to clarify these issues.

3.   Chapter IV: 4GW and the Principles of War

4GW requires that all armies analyze all the things that impact how they have traditionally made war. Of prime importance in this context are the Principles of War. This chapter examines the impact of 4GW on the Principles of War. It determines whether the Principles of War need any additions, subtractions or modifications in view of the changing scenario consequent to the onset of 4GW.

4.   Chapter V: Special Forces (SF) as the Panacea for 4GW

SF are the best structured to fight on the 4GW battlefield. Their performance in the First Gulf War and in Afghanistan indicated their importance in unconventional applications. This chapter looks at the changes required in the Army to fight in a 4GW

environment, including changes in doctrine, organization, equipment and training. The chapter concludes that if we increase the size of the SF, we will achieve our objective to fight on the 4GW battlefield.

5.   Chapter VI: When Special is No Longer Special

The very definition of "special" implies that it refers to something unique. When something unique becomes commonplace it is no longer "special." Whenever there is a move to expand special or elite forces, there is a corresponding dilution of the qualities which made the force special or elite. This chapter delves into organizational theory and history to explore this issue and determine whether increasing the size of the SF is the panacea to combat 4GW.

6.   Chapter VII: Doctrine, Organization, Equipment and Training for 4GW

This chapter is a heuristic attempt to specify the manner in which war should be conducted by the army on the 4GW battlefield. This involves framing a doctrine and identifying the requirements as far as organization, equipment and training are concerned.

7.   Chapter VIII: Conclusions and Recommendations

This chapter concludes the thesis and provides recommendations for successfully charting a course for the future. This chapter concludes that our concept of war needs to evolve so that what has previously been labeled "unconventional war" becomes the normal or rather *the* conventional way of war. In other words, the unconventional must become the conventional.

E.   DEFINITIONS

Definitions relevant to the thesis are given below.

1.   War

There are a number of definitions of war. Some relevant definitions are given below.

a.   Actual, intentional and widespread conflict between armed communities (Orend, The Stanford Encyclopedia of Philosophy).

b.   The continuation of policy by other means (Clausewitz, 1832, p. 87).

c.   Armed conflict between two or more governments or states (Microsoft Encarta).

d.   State of conflict, generally armed, between two or more entities. Characterized by intentional violence on the part of large bodies of individuals organized and trained for that purpose (Britannica Concise Encyclopedia).

e.   Armed conflict between states or nations (international war), or between factions within a state (civil war), prosecuted by force and having the purpose of compelling the defeated side to do the will of the victor (The Columbia Encyclopedia).

f.   A widespread armed conflict between two entities that are either sovereign or seek sovereignty and which have differences over political interests or ideology (author's definition).

2.   **Types of War**

a.   *Conventional War*

Direct military combat or the threat of such combat between the organized professional establishments of states. It normally involves large scale sustained combat operations to achieve national interests, objectives, or to protect national interests (Adams, 2001, xviii).

b.   *Unconventional War*

Warfare not following traditional theory and conventions of war. Traditional theory is based upon war between uniformed armies of nation states. Traditional conventions of war are those which are ratified by international treaties, humanitarian laws and ethical military tradition (author's definition).

c.   *Guerrilla War*

An unconventional warfare activity involving military and paramilitary operations conducted by irregular, predominantly indigenous forces in enemy held or hostile territory. The primary tactics of guerrilla forces are raids and ambushes (Adams, 2001, p. xix).

d.   *Small Wars*

All campaigns other than those where both the opposing sides consist of regular troops [it] has no connection with the scale on which a campaign may be carried

out; it denote[s] in default of a better [term] operations of a regular army against irregular, or comparatively speaking irregular forces (Callwell, 1996, p. 21).

e. *Asymmetric War*

War that embodies action concepts that leverage unpredictability, indirectness and unorthodoxy and recognizes possible victory of the weak over the strong (Lambakis, 2004).

f. *Proxy war*

A war conducted between nations utilizing non-state players to fight on their behalf. At least one of them employs a third party to fight on its behalf. The extent and type of support provided by the states involved in proxy war will vary, but financial and logistic support is normally always provided (Indian Army Doctrine, 2004).

g. *Insurgency*

An organized movement aimed at the overthrow of a constituted government through the use of subversion and armed conflict (Adams, 2001, p. xx).

h. *Cyberwar*

Refers to conducting information related military operations. It means destroying or disrupting information and communication systems while protecting your own. It includes aspects of C3I, intelligence, communications and Identification Friend or Foe (IFF). The aim of cyberwar is to "turn the balance of information and knowledge in ones favor" (Arquilla & Rondfeldt, 1997).

i. *Netwar*

An emerging mode of information related conflict (and crime) at a societal level, in which the protagonists use network forms of organization, doctrine, strategy and communication. These protagonists generally consist of dispersed, often quite small groups communicating, coordinating and acting in an internetted manner without precise leadership or headquarters. At the grand level, netwar aims to disrupt damage or modify what a target audience knows of itself or the world around it (Arquilla & Rondfeldt, 1997).

3. **Non State Warriors**

    a. ***Terrorist***

    A person disguised as a civilian who uses actual or threatened spectacular violence to create an atmosphere of intimidation for achieving political objectives (author's definition).

    b. ***Militant***

    [A person] engaged in aggressive and combative activities for the service of a cause (freedictionary.com).

    c. ***Insurgent***

    A person who is the member of an irregular armed force that is in an armed rebellion against the constituted authority (Hanle, 1987, p. 115).

    d. ***Guerrilla***

    (1)   A member of an irregular military force fighting small-scale, limited actions, in concert with an overall political-military strategy against conventional military forces (Encyclopedia Britannica).

    (2)   One who carries, on or assists in carrying on, irregular warfare; especially a member of an independent band engaged in predatory excursions in wartime (Hanle, 1987, p. 115).

4. **State Warriors**

    a. ***Conventional Military***

    The organized armed forces of a state trained and equipped to fight a conventional war (author's definition).

    b. ***Special Operations Forces***

    Special Operations Forces (SOF) are small, elite military units with special training and equipment that can infiltrate into hostile territory through land, sea, or air to conduct a variety of operations, many of them classified (Feickert, 2004).

    c. ***Elite Forces***

    Organized military forces which have and nurture higher standards of morale, motivation, endurance and training and which have built up a reputation for bravura and success. They operate in comparatively smaller groups to carry out special or unusual high-risk missions (Cohen, 1978).

5. Operations

a. Clandestine Operation

An operation sponsored or conducted by government departments or agencies in such a way as to assure secrecy or concealment. A clandestine operation differs from a covert operation in that emphasis is placed on concealment of the operation rather than on concealment of the identity of the sponsor. In special operations, an activity may be both covert and clandestine and may focus equally on operational considerations and intelligence-related activities (Adams, 2001, p. xvii).

b. Covert Operation

An operation that is so planned and executed as to conceal the identity of or permit plausible denial by the sponsor. A covert operation differs from a clandestine operation in that emphasis is placed on concealment of the identity of the sponsor rather than on concealment of the operation (Adams, 2001, p. xviii).

c. Special Operation

Operations conducted by specially organized, trained and equipped military and paramilitary forces to achieve military, political, economic and psychological objectives by unconventional military means (Adams, 2001, p. xxv).

II. GENERATIONS OF WARFARE

War is more than a true chameleon that slightly adapts its characteristics to the given case.

--Carl Von Clausewitz (1832, p. 89)

A. UNDERSTANDING WAR

To understand 4GW, there is a need to have a detailed look at war. This is required to understand what causes war, what is its nature, what it involves and the dynamics of its evolution.

1. The Social Causes of War

Conflict is as old as the existence of man. Whereas the aim of conflict in primordial times was part of the struggle for survival of the fittest, later it became a fight to keep within one's possession a piece of real estate from which resources required for human existence could be extracted. As Johnson (1982) says, "[It is] the universal fact of life that all men want more out of their environment than they can possibly get" (p.17). Initially, the resources were food and then shelter. As man evolved beyond the hunter–gatherer phase and started constructing permanent shelters and practicing agriculture, the retention and protection of land acquired new meaning. This became more important as land became the source of mineral wealth which led to the development of industrial and social infrastructures, both of which are important in making man's material life comfortable. As the size of groups expanded, so did their requirement for space and resources. This led to the formation of groups, leading to clashes with rival groups and evolution towards what would be called war. War needs direction and the dominant warriors became leaders. This was in line with other needs of society because "society is a form of order imposed by some men, on others, and maintained by coercion" (Johnson, 1982, p. 17). Leaders need an organization to follow their directions, which leads to the formation of political communities. This leads to one of the definitions of war given in Chapter I: war is "an actual, intentional and widespread armed conflict between political communities."

2.   The Nature of War

Wars normally take place between two opposing sides. Three sides simultaneously fighting with each other, as happened in China in the 1930s when the Nationalists, Communists and Japanese fought each other, is an exception. Even if three enemies are fighting with each other they will always coalesce into two groups for short periods of time until one side is bested. If two victorious allies came together only to defeat the third, the two victors may subsequently have differences and become antagonists. The Second World War is an example where the communist Soviet Union siding with the capitalist Allies was only a marriage of convenience against the common fascist enemy. As soon as the Germans were defeated, the communists and the capitalists were back at each other's throats.

The nature of war is therefore a state of conflict between two or more political systems or entities, arising and prosecuted to fulfill the vital interests of the entities. A war may be fought internally between rival political factions (intra state) or against an external enemy (inter state). In all cases, war involves actual or threatened violence against the other person or entity. The violence needs to be extreme to impose the kind of deterrence required to break the will to continue to fight. The most extreme violence is death. The prosecution of war therefore means taking measures to cause or threaten to cause the physical destruction or near physical destruction of opponents. This has resulted in the development of weapons designed to make killing more efficient. Starting with teeth, sticks and stones, man has evolved to thermonuclear weapons, attaining greater efficiency at each stage.

3.   The Evolution of War

Progressively throughout history, efforts have been made to build and improve the weapons to wage war. The development of weapons has led to the creation of organizations to best utilize the weapons. For example, the pike, musket, lance, grenade, artillery gun and tank have at various times impacted organizations, changing their shapes so that the new weapon could be used to effect. Organizations have in turn depended on technology to produce better weapons. Whenever weapons and organizations reached a peak, especially between evenly matched antagonists, one side has sought to best the other by coming up with better ideas to synergize weapons,

equipment and organizations. If two sides have similar weapons, then the side with the better ideas for using them wins. This has led to the search for and the evolution of various doctrines and strategies for war. War is constantly evolving and the technology, doctrine, tactics and training are constantly upgraded by the entities engaged in waging war. Since the peace of Westphalia in 1648, these entities have been nation-states.

B.   THE GENERATIONS

If we delve too far back into history to understand war, we are apt to lose track of our aim, which is to find a paradigm to best conduct war in the present age. There has to be a logical and appropriate point from which we can takeoff in the search for an effective and economic means to wage war. The "generations" theory of war is suitable for achieving this purpose as it starts from the peace of Westphalia, a point of time when the trinity of sovereign government, politically empowered people and armed forces dependent on them for direction came into being. We can then see how war reached the stage of 4GW, a stage where in comparison to earlier generations, there is the greatest dispersion, decreased logistics, no mass, more maneuver, no distinct war or peace, no frontline, no civil-military distinction and a battlefield which is extremely non-linear.

This was how 4GW was initially defined. The start point is therefore from the benchmark on the subject of generations from the Peace of Westphalia and the formation of the State, which in spite of the widespread extent of globalization is still the dominant form of organization of political communities in the world. This thesis considers the evolution of war in terms of "generations" as explained by Lind, et al., (1989). They defined the generations as given below.

1.   First Generation (Classical Nation-State War)

First Generation warfare emerged from the mid 17th century onwards; it was classical nation state war, which culminated in the Napoleonic Wars. It stressed on reliance on manpower and was based on the use of firearms, conscript armies and rigid drills to achieve massed firepower, which at that time had restricted ranges. It was linear in nature because linearity enabled maximum volume of fire to be brought to bear on the enemy in an essentially disciplined and linear battlefield. The naval "broadside" was an extension of this concept to warfare at sea. Since the offense was linear, so was the

defense. In defense, there was a concept of holding a linear "front line." The front line and its fortified linear defenses were also corollaries of the "nation-state," which had sanctified borders, and to the detriment of maneuver, an obsession with protecting every inch of those borders. This generation created a culture of "order" in the military to an extent that was last seen in the Roman legions. While its strategy was based upon mass, its tactics were centered on deployments in line and column, which maximized firepower. There was no operational art evidenced in this generation, though exceptional military leaders like Napoleon Bonaparte did practice it (Grelson, 1992; Luvaas, 1999, p. 127). The absence of operational art in the First generation is also evident from the writings of Clausewitz, an exponent of the art of war whose profound views were rooted in the First Generation. He identified a distinction only between tactics and strategy. He said that "tactics teaches *the use of armed forces in the engagement*; strategy, *the use of engagements for the object of the war"* (Clausewitz, 1832, p. 128).
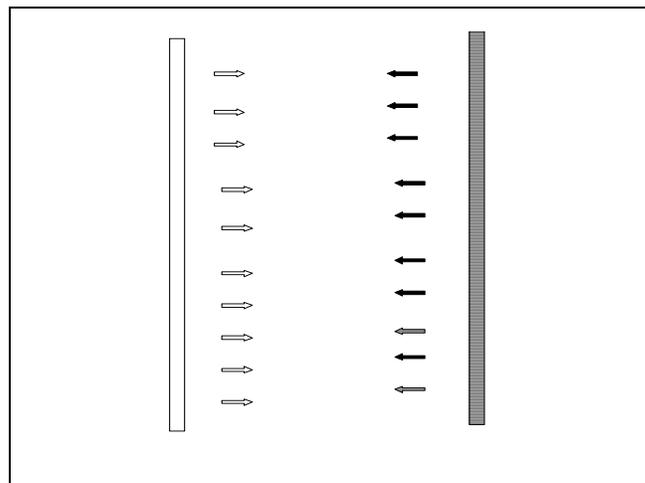
Figure 1.   Linear First Generation Battlefield

2.   Second Generation (Industrial Wars of Attrition)

Second Generation warfare arose in response to the new technologies of the 19th century. These technologies significantly increased the volume of direct fire with machineguns and efficient rifles and also introduced greatly destructive indirect fire by artillery. This technological change brought about an emphasis on firepower. It was classic attrition warfare where the aim was to wipe the enemy off a piece of ground in

order to occupy it. It was a case of the First Generation manpower-heavy armies graduating up the rung of evolution. The battlefield remained linear, though in comparison to the First Generation, the width of the zone in which war was fought increased because of increased ranges of weapons, mainly artillery, and the reach of nascent airpower. Trying to break through thick fortified zones led to extreme attrition and the classic grinding stalemates of World War I. It was the culmination of the philosophies of Clausewitz and Jomini. Strategy lay in mobilization and movement of bigger armies than that of the enemy. This generation saw the crystallization of the concept of operational art, which was identified by Jomini as Grand Tactics and which he described as "the art of making good combinations preliminary to battles, as well as during their progress" (1838, p. 178). The Second Generation of war saw attempts to move huge armies to outflank the enemy, facilitated by technologies such as railways and the telegraph. Tactics required lesser stress than in the First Generation and could be summed up by the French maxim, "the artillery conquers, the infantry occupies."
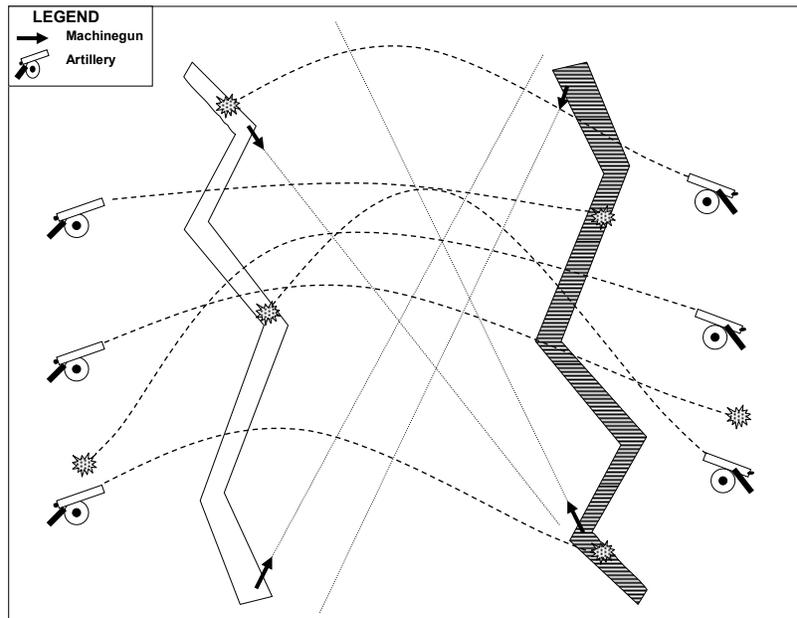
Figure 2.   Linear Second Generation Battlefield with Indirect Fires

3. Third Generation (Maneuver War)

Third Generation War evolved due to the need to find a way out of Second Generation stalemates. This evolution was a result of ideas such as the German "storm troop tactics" used late in World War I, which sought to break the stalemate on the Western Front. The obvious way was to concentrate resources at a focal point, make a breakthrough and then roll up the enemy from the rear or cut him off from support. This led to a realization of the advantage of maneuver. In this case, generational change was motivated not by technology, but by ideas. It was only two decades later that a technological innovation, the tank, gave the concept of maneuver greater impetus. The outcome was the concept of *blitzkrieg*, developed by the Germans as a form of maneuver to render the linear defenses of Second Generation armies useless. In maneuver warfare, the battlefield became non-linear, as witnessed by the German panzer spearheads breaking through across the Meuse in 1940 and later across the Bug in 1941. The same could be seen in Israeli armored columns cutting through Egyptian forces in the Sinai in 1956 and 1967, the swift Indian leapfrog to Dacca in 1971, bypassing pockets of strong Pakistani resistance, and the U.S. armored spear-thrusts across Iraq in 1991 and 2003. Though all professional armies realize the value of maneuver war, Jominian traditions have been a constant hindrance to its full employment, which requires that "[T]he enemy's army must be brought to battle and destroyed" (Jomini, 1996, p. viii).
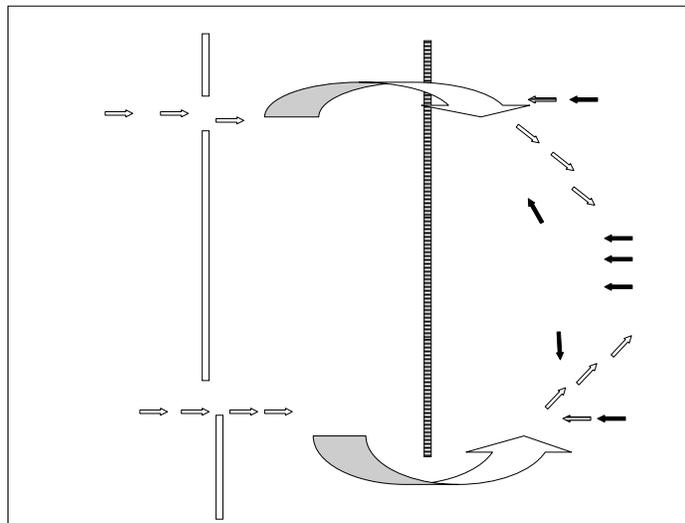
Figure 3.   Non-Linear Third Generation Battlefield of Maneuver War

4.   Fourth Generation War (4GW)

4GW is an unconventional war, which can be called an "evolved form of insurgency" (Hammes, 2004, p. 208). 4GW is the antithesis of the traditional concept of war. In 4GW, the distinction between war and peace is blurred to the vanishing point. It is non-linear to an extreme point wherein there are no definable battlefields or fronts. The distinction between "civilian" and "military" disappears. Actions occur concurrently throughout the space in which all participants' function, including in their society. It is war where cultures can be in conflict. It uses a mix of political, social, military and economic means to defeat the enemy's will to resist. It can be carried out by states and also by transnational or sub-national non-state organizations. This is a throwback to the pre-First Generation era where the monopoly of states over war had not been established. 4GW draws upon the unconventional aspects of revolutionary guerrilla wars and old-fashioned terrorism and transforms them by utilizing modernity. To its adherents, this imparts a better ability to communicate and disseminate instructions, ideas and perspectives than had they persisted with conventional approaches to military endeavors. Better means of communication enable wide dispersion and functioning in cells. In fact, of all the generations of war, 4GW exhibits the greatest dispersion, decreased dependence on centralized logistics, no mass targets and more maneuverability. The conduct of 4GW evidences no distinct period of war and peace, no frontline and no civil-military distinction. This makes it very different from the earlier generations and alien to conventional armies. There are short and small tactical engagements and no battles, though the war *per se* is prolonged. Non-linearity is so extreme that the battlefield encompasses the enemy's whole society. The growing importance and use of the electromagnetic spectrum for military operations pushes non-linearity into another dimension and greater extremity. This push requires that the word "battlefield" be redefined as "battlespace." The U.S Army defines "battlespace" as "Components of this space are determined by the maximum capabilities of friendly and enemy forces to acquire and dominate each other by fires and maneuver and in the electromagnetic spectrum" (TRADOC Pamphlet 5255). The non-linear targets include the population's support of the war and the enemy's culture. 4GW may also result in the phenomenon of trans-state organizations pursuing non-territorial ends.

As Wilcox and Wilson (2002) state, "In sum 4GW encompasses attempts to circumvent or undermine an opponent's strengths while exploiting weaknesses, using methods that differ substantially from an opponent's usual mode of operations." It is a mutation of insurgency where the nature of sanctuaries, allies and ideology are changed. These modern insurgents (4GW warriors) adopt not the traditional hierarchal structure or organization, but looser, networked structures. Their state sponsors cannot openly support them, therefore, they must take on a non-state character wherein the closest non-state allies they may find are organized transnational criminal syndicates or overzealous Non Governmental Organizations.
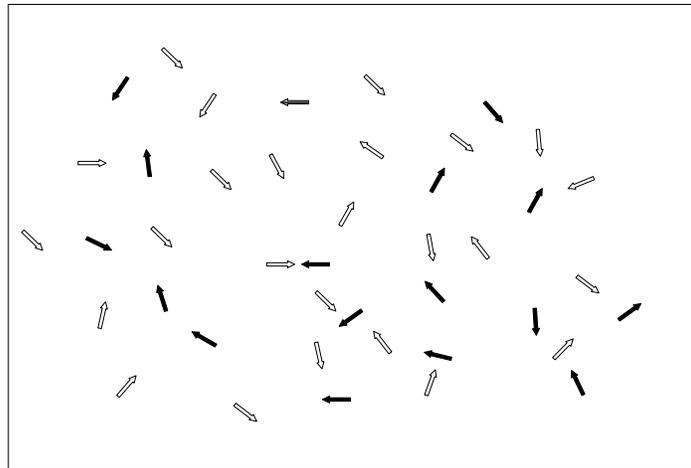
Figure 4.   **Fourth Generation Battlefield: Non-Linear to the Extreme**

C.   **AN ANALYSIS OF 4GW**

1.   **Social Characteristics of 4GW**

• A return to a world of cultures, not merely states, in conflict, manifested in the decline of the state and the rise of alternate, often cultural, primary loyalties all over the world, including in the Western world.

• A decrease in harmony in society. Paradoxically, 4GW has greater success in open societies. The globalized world is its ideal environment. At the same time, 4GW promises to impede globalization, as societies

erect defensive barriers to protect themselves from attacks by Fourth Generation warriors.

2.   **Political Characteristics of 4GW**

•   The loss of the state's monopoly on war and on the first loyalty of its citizens gives a fillip to 4GW. At the same time, 4GW uses the responsibility that the state continues to have for its citizens to develop a strategy where, by making its citizens targets for terror, it can force the state to conform to a desired behavior.

•   The rise of non-state entities that command the primary loyalty of people based upon highlighted differences. These entities may be gangs, religions, races and ethnic groups within races, localities, tribes, business enterprises, and ideologies. The variety is almost limitless.

•   The predominant role of propaganda and psychological pressure is to change the minds of the political policy makers. Propaganda is directed at the target as well as those who can exert psychological pressure on the target.

3.   **Military Characteristics of 4GW**

•   A war waged by what appear to be irregular armies on one or both sides. The deployment of these armies can be independent of borders or political geography.

•   The primary target of military action is to defeat the will of the people and takeover control of their political system.

•   Terrorism is a favored tactic to defeat the will of the people.

•   For the weaker side, the preferred terrain for operations is the urban jungle. This complex terrain provides cover from the superior technology of one side, while also providing means of modern communication and access to media and instant audiences. It is ideally suited to 4GW.

- Military operations are small scale, preferably with higher spectacular value. The aim is to wear down the opponent rather than annihilate him or physically force his surrender.

D. VARIATION FROM PREVIOUS GENERATIONS

4GW has much in common with traditional low-intensity conflict in its classical forms of insurgency and guerrilla war. As in those small wars, the conflict is initiated by the weaker party through actions which can be termed "offensive." The difference lies in the manner in which 4GW opponents adapt those traditional concepts to present day conditions. These conditions are shaped by technology, globalization, religious fundamentalism and a shift in moral and ethical norms which brings legitimacy to certain issues previously considered restrictions on the conduct of war. This amalgamation and metamorphosis produces novel ways of war for both the entity on the offensive and that on the defensive. The variations are outlined below.

1. State and Non-State Distinction

With the loss of the state's monopoly on power and the right to make war, unlike previous generations, in 4GW, wars may be between states, or states versus non-states. The wars with the Barbary pirates waged by the U.S. from 1801 to 1816 are the closest example of a war with non-state actors in the period covered by the "generations." However, in that example, the pirates did have acknowledged and known state sponsors who could be pressured to deny sanctuary to the pirates.

2. Civil and Military Distinction

There is no distinction between civil and military personnel. Civilians may form a large part of the 4GW "army" as seen in the *Intifadas*. Civilians are not protected in the manner they have been in past wars, in theory at least if not in practice. This is inevitable as 4GW targets the mind and culture of the enemy in a manner which was not as important in earlier generations of war. In 4GW, the war takes place in inhabited areas and little effort is made to keep civilians out of the firing line. In fact, the weaker side may make a deliberate attempt to use the populace as a shield, as evidenced in the war in Kosovo in 2000 (Matsumara, et al., 2001). The weaker side may also take deliberate action against civilians to force reaction by the organized uniformed military, e.g., by

firing upon their enemies from among crowds of apparently peaceful protestors. The resultant civilian casualties are thereafter exaggerated through the media to gain moral advantages.

3. Greater Dispersion, Lesser Mass

There is the greatest dispersion in 4GW compared to the earlier generations. The 4GW opponent operates in greatly dispersed cells. In this manner, by not presenting mass as a target, the superior firepower of the stronger adversary can be avoided. The ability to operate in a much dispersed manner is aided by the growing urbanization of the world as well the information revolution, which enables command and control to be exercised from any part of the globe with nothing more than a commercially available cell or satellite phone.

4. Logistics

The 4GW opponent has a greatly decreased dependence on logistics. In this regard, 4GW warriors draw upon the unconventional aspects of revolutionary guerrilla wars where the people provide the logistics. The difference here is that 4GW warriors can infiltrate the opponent's country, live among his people, and feed off them without the people even being aware of their presence. Globalization greatly aids this ability. The interconnectedness among people and countries makes infiltrating into a target society easier and the members of the infiltrated society do not become suspicious.

5. Area of Conflict

The battlefield is not defined. It can be located within a complete country or region or anywhere on the globe. This obviously means unlimited room for maneuver. The traditional Third Generation maneuver warfare of mechanized means becomes maneuver implying the ability to appear anywhere and adopt any means unfettered by legalities. This holds true for the terrain over which 4GW is fought. Rugged terrain, whether natural or manmade (cities), is the preferred area of operations in 4GW as it negates the maneuverability of armies dependent on mechanization for mobility. In such terrain, the greatest mobility is foot mobility, which is least affected by terrain, visibility or weather.

6.   Declared War

There is no distinct period of war and peace. A country may be ostensibly at peace but otherwise at war. There is no frontline. War takes place anywhere. There are short and small battles and prolonged wars. Casualties in individual engagements are comparatively small. It is the prolonged nature of the war that makes it expensive, both in terms of human as well as financial costs. Attacks are launched from within a defended area and progress outward in ripples. Military and police actions get mixed up. This makes it prudent to hand over control to the military on the assumption that the police will not be able to stand up to military attacks, whereas the army will be able to handle police situations. The army using more force than required often results in an adverse effect on the successful prosecution of the war.

7.   Non-Linearity

4GW tends to be extremely non-linear. Linearity can be understood in two different manners. The first and objective interpretation was previously explained; in 4GW, physical linearity, as evidenced by two armies arrayed face-to-face, is much less evident than in Third Generation War. The second aspect of non-linearity relates to its subjective interpretation. This is best explained by Beyerchen (1992) who states that "'non-linear' indicates that the norm is what it negates." To further amplify, in line with other words like "asymmetrical," "unstable," "irregular," and "inconsistent," the word "non-linear" too conveys that the "truth" or the correct thing resides in the original word. The non-linearity in 4GW therefore alludes to the change it brings to the truth (accepted conventions) of war.

8.   The Determinants of Victory

In previous generations the determinant of victory was defeat of the enemy army on the battlefield or the utter destruction of his means of making war in the future. In 4GW, whoever manages to wear down the will of the other side, even if he loses militarily, is the victor. The aim is no longer to inflict maximum casualties on the enemy, but to obtain maximum psychological effect from the casualties inflicted. Since the ultimate aim is to win the allegiance of the populace, there are no material spoils of victory for the victor in the shape of booty. Rather, the degree to which one side gains an advantage over the other is demonstrated by how much it can provide to the population in

terms of security or economic handouts. Winning the allegiance of the population is as important as winning the war.

9.   **The Nature of the Enemy**

The nature of the "enemy" has blurred. Wars are launched against governments and not people. The Korean War was fought against the North Koreans even though the people were pawns in the hands of their communist rulers. The Second World War was fought against the Germans and the Japanese and not against Hitler or Tojo. In 4GW, war is fought against the rulers and not the people, even if the people support the ruler. This is because of the realization that even if the rulers are defeated, it is ultimately the will of the people that matters. For example, the war in Iraq was against Saddam Hussein, and is now against the Islamist terrorists, not the Iraqis, and the war in Afghanistan was against the al Qaeda and Taliban, not the Afghans.

10.   **The Importance of the Media**

In the earlier generations, media was always used to report on what was happening rather than to shape the course of the war. More often than not, its focus was the home population and keeping them positively informed. In 4GW, the media is used to undermine the will of the opponent. The target may be the enemy decision makers or the enemy populations. Globalization and the information age mean that getting the message to the target audience is that much easier. Media management therefore is as much a tactic in 4GW as is terrorism. It is a more information-based conflict than all other generations of war. Since the aim is to target the mind of the enemy, information becomes naturally important.

11.   **The Use of Terrorism**

Terrorism comes to the fore in 4GW as both a tactic and a sophisticated strategy. Because 4GW was born to offset the advantages of the stronger entity, it is natural that terrorism, which can paralyze the stronger entity, is a favored tactic in the doctrine of 4GW.

12.   **The Appearance of the Non-Governmental Organizations (NGO)**

Non-Governmental Organizations working across international borders have a growing impact on 4GW. By utilizing and manipulating NGOs, 4GW battles can be won. A well-known example is the use of NGOs to mobilize world public opinion during the

27

standoff between the Mexican government and the Zapatista movement at Chiapas in the period 1994-1998 (Arquilla & Ronfeldt, 2001, pp. 171-199). Another form of NGO on the 4GW battlefield are the Private Military Enterprises (PMEs), increasingly being used to aid in the fight against the Fourth Generation enemy. Though ostensibly brought in to make up for reduced manpower in the military, they often have other utility in this new generation of war. They can be used to carry out those military actions in 4GW which the military will not undertake as yet, for reasons that will be elaborated upon in Chapter IV. The NGOs, by taking on a large number of the tasks traditionally associated with the state, are accelerating the effect of the non-state enemy and globalization in reducing the sovereign power of the state.

E.   4GW: IS IT UNCONVENTIONAL WAR?

Armies at present are geared to fight the Second or Third Generations of war against armies of other states. However, the majority of conflicts in the world at present take the form of 4GW. This results in inefficient use of resources and prolonged wars. If victory is achieved, it is at a disproportionate cost and more a result of wearing out the enemy than a display of excellence in the art of war. This is no different from attrition warfare, albeit greatly extended in the dimension of time. Also, it is not a very fruitful or imaginative conduct of war by the side that is not using 4GW methods. As the U.S. Secretary of Defense Donald Rumsfeld stated, "The cost–benefit ratio is against us! Our cost is billions against the terrorists' cost of millions" (War on Terror Memo, 2003).

A comparison between the components and instruments of a conventional (presently Second or Third Generation) and Fourth Generation military force is given below to assist in comprehending how the components differ.

The unconventional aspects of those adopting 4GW in comparison to a conventional entity such as a nation-state are presented below.

1.   Leadership

The leadership of the conventional entity is provided through a visible government based on known norms such as a democracy, monarchy, dictatorship, etc. The leadership of the entity waging 4GW may be a façade for a sponsor state that denies

its involvement, an acephalous grouping of like-minded people or a single person thrust into a position of leadership through charisma.

2. The Military

The conventional military are the armed forces of the state, traditionally in the form of an army, navy and air force. They will have clear channels of command and control. These are operated using communication systems that utilize conventional technology. In fact, these are such powerful symbols of sovereignty that they are as essential as a flag, a national anthem or national holidays for a state to signal its sovereignty to the international community.

As far as 4GW is concerned, depending on the complexion of the conflict, the military will be in the shape of terrorists, insurgents, militants, guerillas, etc., as well as all who support them directly or indirectly from within the population. They may not have a conventional command and control system and may just be cells linked informally into networks. These cells may use commercial means of communication, but will not be dependent upon them. Instead, they use social networks for communication.

F. NAVIGATING THE INTERPRETATIONS

The initial explanation of 4GW has varied among those who have studied it intently and attempted to understand it in light of global events. Such events include the *Intifadas* in Palestine, the al Qaeda brand of terrorism and the wars in Afghanistan and Iraq. This is desirable because the article by Lind and his co-authors was intended to be heuristic and they did not have all the answers. They stated in their conclusion that "the purpose of this paper is to pose a question, not to answer it." In fact, events since 1989 have done more to further the understanding of 4GW than any theoretical follow-up could have done.

Writings on the subject share common ideas, but also create confusion and dichotomies. The definitions of 4GW as given by a number of people over different periods of time are provided below.

- 4GW is war that is widely dispersed and largely undefined. It has no distinct periods of war and peace. It is non-linear with no frontlines. There are no

"civilians" or "military." Actions will occur concurrently throughout the participants' depth. It is driven by technology as well as ideas (Lind, et al., 1989).

- War by national, international, transnational and sub-national actors which strategically attempts to directly change the minds of enemy policymakers through the use of political, social, economic and military networks of the information age. Tactically, it is low intensity conflict mixed with techniques of earlier generations (Hammes, Sep 1994).

- War which pits nations against non-national organizations and networks, including not only fundamentalist extremists, but ethnic groups, mafias and narco-traffickers, etc. It has roots in guerrilla warfare, Leninist insurrection and old-fashioned terrorism and is rendered more effective by modern technologies, computers and mass communication (Gould and Spinney 2001).

- Warfare in which at least one side uses non-traditional tactics and is composed of a non-governmental military force (McFedries, 2003).

- Intelligence-driven stateless, state or state-supported warfare with possible interstate spillover, intertwined with transnational crime, which takes strength from religion/ideologies. It leads to a formless kind of war (Howard).

- Warfare in which the state looses its monopoly on war. In 4GW, non-state entities and cultures are in conflict outside the bounds of international treaties and rules of war. It is akin to warfare before the rise of the nation state and hence present-day armed forces are unsuitable to fight it (Lind, 2004).

- Warfare carried out by foes that prefer low-tech warfare, avoiding decisive engagements and leveraging addiction to technology, bureaucratic processes and western thinking (Wilson, Wilcox & Richards, 2004).

- Warfare that aims to achieve a moral victory by undermining enemy strength (in opposition to direct attacks on the enemy strength), exploiting enemy weaknesses and using weapons and techniques that differ substantially from those used by the opponents (Robb).

- War in which the other side refuses to stand up and fight fair (Defense and the National Interest).

These definitions suffer from a few drawbacks. They convey the erroneous impression that 4GW methods can be applied only by weaker, low-technology antagonists against stronger and technologically advanced enemies. This impression is created because all the writers are Americans and they can only relate to U.S. experiences as a target of 4GW. All these experiences are clustered around the Global War on Terrorism, Afghanistan, Iraq, Taliban, al Qaeda and Islamic fundamentalism. This is natural as the most recent and the most violent act has had the deepest impression on the mind of the writer as well as the reader. This shortcoming in analysis finds military theorists conveying the following:

- 4GW is only practiced by non-state actors,

- 4GW is only applicable by the weak,

- 4GW is a method adopted by Islamic extremists,

- The armies of states cannot utilize 4GW methods,

- It is unethical and counterproductive and unfair to adopt 4GW methods.

The originators of the Generations Theory did not intend to create these impressions, though in later years they too have tended to talk of 4GW as something that only the villains do. This is an inherently erroneous impression. The First to Third Generations have universal applicability. They also always implied that if side A progressed to the next generation of war, then it was in the interest of side B to also advance to the next generation if it was to avoid being outclassed in the field of battle.

The Western lineage of the Generations Theory should not detract from its validity because innovations in war have been the product of the industrial/ technological age, which arose and flourished in the West. The rest of the world copied and followed the Western norms of war. 4GW, on the other hand, does not have its origin in the West as it evolved chiefly as a result of the application of minds by the weaker entity to counter the dominance of the Western armies. The roots of 4GW lay to some extent in the methods adopted by Mao to fight with Nationalist armies operating in the manner of Second Generation western armies; and by the Vietnamese operating against the French and Americans who, by extensive use of air mobility, were trying to apply Third Generation concepts to fight what were in their estimation crude Second Generation

enemies. Though the roots of 4GW are not Western, we should bear in mind examples from earlier generations indicating that a particular generation of war is better fought by the methods of its own generation or of the next generation. 4GW thus can best be countered by 4GW itself. If cultural compulsions prevent us from adapting to 4GW conditions, then it would be better to find a Fifth Generation rather than attempt to fight 4GW with Second or Third Generation methods. In sum, 4GW, whose essence goes back to Sun Tzu (use the strength of the stronger against him), should have as much applicability in the West as the earlier Western generations had in the East.

4GW is inherently an unconventional way of war. If it has aspects that make war more effective in the current world (predominantly urban) environment, then advanced armies will do well to study all its aspects. They could very well adopt those aspects to make their way of war more contemporary and efficient.

The increasing amount of literature about 4GW tends to focus more on its politico-social character. This is all very well because 4GW is steeped in aspects which frequently make it cross the divide between purely military to political/social/police operations. However, military professionals analyzing 4GW may find solutions to counter 4GW foes that are more in the realm of politico-social actions. The military would do well to be aware of the politico-social aspects of 4GW, but they should not loose sight of the fact that their endeavor should be to find military ways to counter the military actions of 4GW foes, rather than looking at solutions which are not purely their field. All generations of war require a synergy between the resources of the state. 4GW, however, requires such synergy to a much greater degree.

1.   **What is New in 4GW?**

The points made above make it appear that 4GW is the same as the term "unconventional war" and "asymmetric," which are defined in Chapter I.

a.   *The Transformation of War by the Weak*

Insurgencies and guerrilla war have much in common with 4GW. Where they differ is that the former, in planning the course they were to run, factored in progress towards successive stages in which they were to grow in strength. This growth was to finally culminate in a capability of fielding regular armies having the power to defeat their enemies. These enemies were to have been weakened by unconventional warfare

practiced against them while they themselves became stronger. 4GW avoids the requirement of transforming into a regular army and attempts to leapfrog directly to the stage where the will of the enemy is broken without defeating his military. This is the "transformation in war" brought about by the weak. Some even call such transformation the "Revolution in Counter – Insurgency Affairs." (Australian Strategic Policy Institute).

b. *The Impact of the Globalized Environment*

The globalized environment has grown significantly in strength and scope from the 1990s onwards. The networking of communications through computerization, the World Wide Web and the growth in international trade and crime across national boundaries has changed the basic environment of war. The change includes a decline in the sovereignty of the nation-state and the power it exercised over or the loyalty it demanded from its subjects. This has led to social loyalties shifting towards religions, clans and ethnicity, independent of the confines of state boundaries. Coupled with these changes are the phenomenon of urbanization and a growing lack of resources. Change in environment impacts all human endeavors, including the way we make war. In effect, 4GW is an evolved form of war in tune with the evolved environment. It is different from past insurgencies and guerrilla wars because the environment in which 4GW is waged did not exist earlier.

G. SUMMARY OF THE CHAPTER

The theory that war can be divided into generations to explain its current shape was first elucidated in 1989 by William Lind and his co-authors, Nightengale, Schmitt, Sutton and Wilson. Since that time, 4GW has become a popular term used by military writers and thinkers to describe the changing face of war. In brief, 4GW is a form of warfare whose methods enable a weaker entity to wage war with a stronger entity with a higher degree of success. The method of 4GW is to use unconventional strategies and tactics to attack the weaknesses of conventional military forces. The foremost weakness is a military culture that is not attuned to fight unconventionally.

In brief, 4GW aims to do the following to achieve victory:

- Undermine enemy strengths by the simple expedient of avoiding the enemy's strength and attacking his non-military weaknesses with the aim of targeting his will to fight.

- Use asymmetric weapons and techniques that differ substantially from those in the opponent's arsenal and doctrine.

4GW has benefited from the following, which are the result of a changing world political and social environment:

- Globalization via technological integration, trade and migration.

- The growing dilution of the nation-state's sovereignty and connected monopoly on violence.

- The rise of cultural, ethnic and religious conflict.

1. The Generational Development of Warfare

a.   First Generation War. Warfare based on mass conscript armies, firearms and tactics of the line and column.

b.   Second Generation War. Warfare made possible by the industrial revolution, which enabled utilization of massive indirect firepower to fight wars of attrition.

c.   Third Generation War. Warfare based upon maneuver and mechanized means of mobility as exemplified by the *Blitzkrieg.*

d.   Fourth Generation War. Warfare using unconventional social, political, economic and military means for targeting the will of the enemy, rather than aiming at his physical destruction.

2. Differences in 4GW from Previous Generations

Many of the methods used in 4GW appeared in earlier generations of war, albeit as exceptions rather than the rule. However, there are important differences in the present day environment, which give a new logic and impetus to these methods, edging them towards the rule. These are listed below.

- Modern technologies, communications and economic integration enable global operations.

- Nation-state warfare disturbs the economic and social equilibrium in the world. It is curbed by the interests and actions of the world community. This has forced all open conflict into the 4GW mold.

- The ability of small states or entities to procure weapons of mass destruction and pose a threat to world stability and order has increased.

- Open societies and economies present an opportunity to attack a state indirectly by targeting its society and culture.

- New technologies have dramatically increased the lethality and effectiveness of small groups of 4GW warriors, as well as their ability to survive in cellular networks. Networked organizations, made possible by improvements in technology, are much better at adapting to and surviving operations by conventional forces.

- Global media makes it possible to influence opposing and friendly audiences all over the world.

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III. 4GW AND TERRORISM

[Terrorism is] a form of surrogate warfare in an international system in which open warfare has become too dangerous.

--Chalmers Johnson (Revolutionary Change, p. 187)

A. THE RELATION BETWEEN 4GW AND TERRORISM

Lind, et al., (1989) had stated that "4GW may be visible in terrorism, but that terrorism is not necessarily 4GW." This did not draw a clear distinction between the relative relationships of terrorism to 4GW or vice versa, though the article did state that "we are not suggesting that terrorism is the fourth generation." In fact, what they said was that if one were to mix terrorism, new technology, non-state status, an ideology, hatred for a culture, and garnish the concoction with media, the result could be a cocktail called 4GW. Such generalization was not a surprise because when the article came out sixteen years ago, it was attempting to grope in the dark and arouse interest in the complex phenomena of the changing nature of war. After the 9/11 attack the phrase "Global War on Terrorism (GWOT)" has added to the dichotomy.[1] The inappropriateness of this term is often commented upon, but its common usage by the leadership, the elite and official United States strategy documents has resulted in its being embedded in the lexicon of the current war with non-state entities, in particular, al Qaeda.

Terror can be defined as "a state of intense fear," "one that inspires fear," "a cause of anxiety," or "an appalling person or thing." On the other hand, terrorism is "the systematic use of terror as a means of coercion" (Merriam-Webster Dictionary). A reflection on these meanings makes it obvious that war cannot be waged against a state of affairs, a cause or means. It could possibly be waged against "one that inspires fear" or "an appalling person" (al Qaeda, Osama Bin Laden). However, even this is not wholly correct, as it cannot be stated that the GWOT is directed against only al Qaeda or Bin

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[1] Certain official United States government documents, such as Congressional Research Services Reports for Congress, call it "Global War on Terror." However, the 9/11 Report (p. 333) as well as important papers such as the U.S. National Strategy for Combating Terrorism (p. 19) and the U.S. National Security Strategy 2005 (p. 26) call it the "Global War on Terrorism."

Laden because they are not the only threats to world peace or to the United States. The elimination of these two entities will not spell the end of terrorism. Therefore, the GWOT is actually directed at those who do not follow those conventions of war and international law that preclude the use of terrorism as a means of coercion of non-combatants.

From the time Lind and his co-authors wrote the article, though the basic structure of terrorism has remained the same, it has been quasi-legitimized as a way of war. The reason for this quasi-legitimacy is that nations that can justify its use have increasingly chosen to engage in terrorism. An example is Israel, which justifies assassination or sniping at suspected terrorists in the name of its security because its survival is at stake (Ben-Ari, 2004). To this extent, terrorism can be said to have evolved in ways different from the past, when it was considered an activity which was definitely against the conventions of war and hence, quite abhorrent. In recent times, terrorism has drawn much more discussion and debate. This is especially true post-9/11, which revealed terrorism in a new *avatar*. In addition to its classic definition of being a way to influence a target audience, terrorism in 4GW is synonymous to a weapon system. A person willing to detonate explosives tied on his body is like a guided missile, and the crowd or bus or convoy where he strikes is not innocent people but a military target. Hence, there is a requirement to recognize the place of terrorism in the conduct of war. In fact, the increased use of terrorism is one of the constituents that propel war from the Third to the Fourth Generation. Understanding the place of terrorism is essential to be proficient in 4GW. With that aim in mind, this part of the thesis examines the relationship between terrorism and 4GW to determine whether terrorism is an element or tactic of 4GW, or a form of war by itself.

1. Definitions

Before comparing 4GW and terrorism, it is pertinent to review the definitions of both war and terrorism to understand their intrinsic meaning. Of the definitions of war given in Chapter I, the definition taken from the Encyclopedia Britannica is the most apt because it best characterizes war as it is prevalent today. This definition addresses the following aspects, which are relevant to war.

- War is waged between "entities" (the word entity covers states, non-states and transnational or sub-national organizations).

- The violence in war is "intentional."

- The violence involves large bodies of individuals organized for war.

Terrorism is the action of a terrorist, and the terrorist is defined in Chapter I. Laqueur (2003, p. 235) says that terrorism has more than a hundred definitions, because concepts like terrorism (or nationalism, democracy or communism) can have no sacrosanct definition. Some more easily understood definitions of terrorism are given below.

- An act or threat of violence against non-combatants with the objective of exacting revenge, intimidating, or otherwise influencing an audience (Stern, 2003, p. xx).

- As per Title 22, US Code, terrorism is premeditated, politically motivated violence, perpetrated against non-combatant targets by sub national or clandestine agents, usually intended to influence a target (Tucker, 1997).

- The US Joint Staff definition is "the calculated use of violence or threat of violence to inculcate fear; intended to coerce or to intimidate governments and societies, often to achieve political, religious, or ideological objectives (Tucker, 1997).

- The US Intelligence community definition is "the threat or use of violence for political purposes by individuals or groups, whether acting for, or in opposition to, established governmental authority, when such actions are intended to shock or intimidate a target group wider than the immediate victims" (Tucker, 1997).

- Terrorism is a force employment process in which abnormal lethal force is used against a symbolic victim to affect the will of a target entity (Hanle, 1989).

- [Terrorism is] more than crime and less than war it is violence against innocents or non-combatants intended to influence an audience for the sake of some political objective (Tucker, 1997).

2.   War and Terrorism

War seeks to break the will of one side to resist the demands of the other. The First and Second Generations of war did this by the use of "physical" force. As Hanle

states, "physical force is manifested by destroying or damaging [the enemy's] means to fight and by killing, wounding and capturing the enemy's combatants" (p. 19). The physical forces of the opposing sides clashed with each other until one was weakened through attrition to be incapable of prosecuting the war, or was destroyed. The incidence of terrorism in these generations of war was normally not a deliberate endeavor because non-combatants were not involved in battles. In fact, a deliberate effort was made to avoid built-up areas because armies could not maneuver in their confines. As a result, there was little contact with non-combatants in a battle. For example, in the Battle of Gettysburg in 1863, there was only one reported non-combatant casualty out of the approximately 50,000 total casualties of both the sides. This was supposedly a woman killed by a stray cannon shell.[2]

Third Generation War aims to avoid the direct clash of force on force. It aims to out- maneuver the enemy. It avoids the enemy's strength and gets inside his defenses to make him incapable of effectively using his power in synergy or to defeat him piecemeal. Third Generation warfare is a war of ideas. It is asymmetry in organization and doctrine that tips the balance in favor of the side resorting to a war of maneuver. Wars and battles of this generation should be short because capitulation is quick after one side is outmaneuvered.[3] Such wars have little time for terror to be employed to achieve any end. If at all, terror comes to the fore in the subsequent phases of stability operations. An example is the combat between German and partisan forces throughout Europe in World War II.

In 4GW the question of using superior physical force to win does not exist. The side favoring 4GW is invariably so weak in the terms of orthodox determinants of power that the very act of embracing 4GW implies that it does not intend using physical force for quick and decisive results. In 4GW, moral ascendancy is sought by undermining the enemy's morale and willingness to fight. This is done not by targeting his military force,

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[2] Statement by guide during tour of the battlefield from the Naval Postgraduate School in Mar 2005.

[3] However, this becomes otherwise if one side does not do what is logically expected. For example, during the Russo-German War from 1941-1945, time and again the Soviet troops did not surrender when surrounded, which pushed warfare back from the Third to the Second Generation. This stymied German maneuver warfare and led to the costly battles of attrition typical of war on this front. The similar situation existed in the U.S. versus Japan island campaign in the Pacific theatre in World War II.

but by affecting the morale of first his population and then his military. To that extent, the war in Iraq started as a Third Generation war and has now become a 4GW. The Iraqi Sunni groups or Ba'ath remnants are fighting an insurgency. Their al Qaeda/Islamic fundamentalist allies are not fighting for Iraqi sovereignty; they are fighting a 4GW against America in which Iraq is one of the theaters. For them, the Iraqi insurgents are the tools to fight a proxy war against the Americans and to terrorize the Iraqis.

3.   The Effectiveness of Terrorism

The 9/11 attacks were conducted with the aim of creating an atmosphere of terror and distrust within the American population. The attacks succeeded in doing that. Four years after the attacks, with institutional memory having been diluted, people are apt to dismiss the notion whether terror was created at all by 9/11. The fact is that for a period of time, terror was created not only in the United States, but also all over the world. This is best explained by the near paranoia in countering terror that was generated and still persists in the United States.[4] The U.S. proclaimed a Global War on Terror and this confused the issue because the enemy was not terror *per se,* but those who were using terrorism as a weapon. The same adversaries can also use other means of 4GW. They can inflict financial damage through the internet and cyber war, they can undermine the target culture and society through proliferation of drugs and they can create rifts in society on the basis of religion. It is easy to understand why terrorism scores over the other methods as a very visible component of 4GW. Whereas other means may cause greater financial damage, they cannot create terror -- they can create only anxiety. It is wanton and random destruction of lives and material that creates terror.

4GW relies on moral force and ideas. In the biblical story of the fight between David and Goliath, David created an asymmetry of weapons by using a slingshot. Goliath's reliance on weapons (sword and sheer size) that were not appropriate against stone missiles negated his strength. This is a guiding principle of 4GW. It advocates use of those weapons and means that the stronger enemy is not geared to fight. If we consider terrorism the only way to fight a stronger foe, then David could not and did not have the

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4 The excited response that took place in Washington D.C. in May 2005 when a light private aircraft strayed over restricted airspace is an example.

capability of using terrorism against Goliath. He therefore created asymmetry in a different manner. This is the case in 4GW, where its proponents have terrorism as one of many weapons in their armory. The difference is while the effect of those weapons may not be spectacular; the effect of terrorism is quicker and more dramatic because sensational events draw and maintain greater media and public attention.. A vehicle accident with fatalities gets greater public attention than death through common diseases. An exotic disease gets more attention than a common disease.[5] Similarly, death through a shooting gets more attention than death through an automobile accident, death through a terrorist action gets greater coverage than a normal criminal shooting and death through decapitation by knife draws much more attention than shooting someone or blowing him to bits with a 1000 pound bomb. Terrorism, which menaces people with personal physical danger, creates a greater impact because of the greater anxiety it generates as compared to cyber-terrorism, which may result in greater economic loss but creates much less anxiety for the common man.

As the definition of war illustrates, war has to involve at least two entities. If an analysis is conducted with a bias towards one of the entities, the analysis would be incomplete. How other cultures see terrorism is also an important issue. Do they also see terrorism as a war? Morgan (2004) quotes S.K. Malik from *The Quranic Concept of War* that,

> [T]error struck into the hearts of the enemies is not only a means; it is in the end in itself. Once a condition of terror into the opponent's heart is obtained, hardly anything is left to be achieved. It is the point where the means and the ends meet and merge. Terror is not a means of imposing decision upon the enemy; it is the decision we wish to impose upon him.

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5 In India in the 15-44 year age group, HIV/AIDS and tuberculosis kill nearly the same number of people. However, greater attention is paid to the control of HIV/AIDS than to tuberculosis. For all ages, HIV/AIDS is the ninth leading cause of death, yet it draws greater media attention than the other leading causes, which, in descending order, are heart disease, respiratory infections, diarrhea, perinatal causes, cerebovascular disease, tuberculosis, road accidents, and measles. (1998 figures by WHO retrieved May 20, 2005, from http://whqlibdoc.who.int/hq/1999/WHO_HSC_PVI_99.11.pdf)

The above statement makes it seem that terrorism is war and imposing terror is the only aim of the *Quranic* concept of war. This is incorrect, as terror by itself has never won a war. It has always been a combination of means that created the conditions that forced one side to capitulate.

It is also pertinent to understand that terrorism itself acquires a shape based upon the "eye of the beholder." Public amputation or beheading may appear as terror to the Western eye. In a Muslim country following the dictates of *Sharia,* it is punishment as a consequence of the dispensation of justice. A public beheading shown in this vein is described in James A. Michener's classic historical fiction novel *Caravans* written in 1963. Terrorists, who are now more familiar with Western values, use a form of death which is not alien to them, but which the West considers repugnant. In this manner they successfully create terror. Terrorism aims to create a spectacle because one of its goals is to generate an audience. The nature of the spectacle, which is engineered to inspire insecurity through dread, is what separates this spectacle from entertainment.

4.   Terrorism as Legitimate Strategy and Tactics

On the eve of the 2004 presidential elections in the United States, a message from Osama bin Laden was shown on television. Bin Laden stated that security against future al Qaeda attacks on American citizens would depend on the actions of the American people, not the outcome of the election. In other words, Bin Laden (or those who follow his path) realized that regardless of a change in the Oval Office, United States policies in the war on terrorism would not change. U.S. policies will change only when the will of the people desires a change. The quickest way to effect the will of the people is through acts of terrorism. Since impacting the will of a nation is the objective of war, and terror is an effective instrument to do so, in recent years terrorism has gained much more legitimacy as a means of war. In the 20th century, Tucker (1997, p. 57) wrote,

> Terrorism, whatever else it may be, is now identical in common usage with violence that is illegitimate, not merely damaging to our interests, as would be the military actions of an enemy, but unjustifiable and unconscionable.

Since that time and into the 21st century, there has been a perceptible change in the attitude towards terrorism. Terrorism has become much more legitimate as a strategy or tactic in war, even though it is still politically expedient to label 4GW opponents as "terrorists," implying that the use of terror is negative.

a.   Terrorism as Strategy

Strategy is the broad overarching concept for achieving a particular objective. It "fixes the direction of movements" (Jomini, 1838, p. 175). The Merriam Webster dictionary describes strategy as the "science and art of military command exercised to meet the enemy in combat in advantageous conditions." The word "strategy" also implies a variety of the use of strategy. An example is the strategy of deterrence through "mutual assured destruction" in nuclear war. As a variety of means used in 4GW, terrorism is a strategy. An entity can decide that it will launch a campaign of terror with the aim of affecting the will of the opponent so that the opponent is forced to accept the desired outcome. In this case terrorism is a strategy.

b.   Terrorism as Tactics

Tactics are the means used for executing strategy (Jomini, 1838, p. 175). They area the method of employing forces in combat and hence are related to actual conduct. A specific terrorist act is therefore terrorism employed as a tactic.

Terrorism has always been considered legitimate by revolutionaries as a form of war. Johnson (1982, p. 152) says, "a terrorist is a person who seeks to create conditions of extreme fear and anxiety, […] but who fails." Had he succeeded he would be a revolutionary or a freedom fighter. In the present day, as the face of war is changing, terrorism is gaining legitimacy. The clearest mirror of changing values in society is the film and television industry. This is truer in the United States than in any other part of the world because of the American liberal tradition, which does not attempt to cloak the views of its citizens. The fourth season of the popular American television serial titled "24," aired on Fox Broadcasting Network in the United States, provides an example. The serial showed both terrorists and innocent suspects being subject to torture, which is considered a *modus operandi* of terrorists. The serial showed a fictional Defense Secretary of the United States permitting torture with drugs, stun guns, and coercive

threats of violence directed at people. These include his own son, who is suspected of withholding information vital to the security of the United States in a "ticking bomb" scenario. The serial showed similar torture, including applying electrical shocks to a federal employee wrongly presumed to be compromised, as almost routinely applied desperate procedures to gain information.

This dramatization created no ripples of protest about the use of torture from any quarter of the people or media. This demonstrates that acts that constitute terrorism, if directed to achieve national interests, evoke much less outrage and are increasingly considered acceptable by the people. Such acquiesce legitimizes terrorism. On the other hand, the producer and lead actor of the series appeared on television to convey to the viewers that the depiction of some Moslem citizens of the United States carrying out horrific acts of terrorism should not be taken to mean that the complete Moslem community is anti United States. This was probably the result of complaints about depicting Moslem United States citizens as enemies of the country.

5.   Key Elements in 4GW and Terrorism

Some key elements in 4GW and terrorism are compared in Table 2.

Table 2.   Key Elements in 4GW and Terrorism

Key Elements	4GW	Terror
Aim	Imposing will upon an opponent by targeting his moral strength rather than pure destruction of military potential.	Influencing the will of a target by creating a sense of insecurity.
Strategy	Rendering the enemy militarily ineffective by a combination of means, including gradual attrition, raising economic costs, psychological operations, propaganda and diplomacy.	Surprise attacks by using unexpected and abnormal lethal force on a target to influence an audience.
Tactics	Sporadic but prolonged hit and run attacks, terrorism, allegations of violations of human rights, hacking and disruption of communications and essential services.	General or suicide bombings, atrocities and rape, hijackings, kidnappings and executions.
Primary Targets	The armed forces, the population	Specific key people and the

Key Elements	4GW	Terror
	and the government.	population.
Method of Breaking the Cohesion of the Target or Alliance	By diplomacy (engineering dissensions), direct action (terrorism through non-state actor/proxy), cultural war (drug trafficking, creating schism in plural societies (on the basis of religion and ethnicity), economic war (hacking networks, slowing down free movement of trade, causing loss of productive work time).	By creating a sense of insecurity through abnormal lethal acts.

The table above shows that 4GW in essence, as in all generations of war, is a struggle to impose the will of one side on the other. 4GW involves one side using a number of different means to impose its will on the other side. None of the means is effective alone.

Rather, a combination of means creates the synergy needed to achieve the aim. Terrorism is one such prime mean used to influence the will. In 4GW, it is the most effective military mean available to the weaker antagonist. Terrorism is not war; it is a part of 4GW's larger canvas.

6.   The Place of Terrorism in 4GW

When viewing the generations of warfare, it can be stated that the First and Third Generations entailed war between armies. Civilians were expected and permitted to get out of the way of direct harm. This is not to say that they do not suffer through dislocation, shortage of food, etc., but the intent was not to harm them directly. Second Generation warfare is less discriminating, especially as seen in World War II. Neither the Axis nor the Allies restrained themselves because of the presence of civilians. The bombing of Coventry and London, thousands of bomber raids on Germany, the firestorms created in Tokyo and even the nuclear bombs on Hiroshima and Nagasaki killed hundreds of thousands of civilians. Ostensibly, the aim the aim was not to kill civilians to create terror, but to destroy cities that were industrial centers (Hanle, 1989, pp. 179-180). In any case, as all the instances demonstrate, if we assume that the bombing of cities was designed to create terror among the civil populations, the method failed. In none of the

cases were national cohesion and resolve broken through terror bombing. Third Generation War attempts to target the things that make conduct of war possible, such as industrial installations and C³I systems. However, because Third Generation War is essentially a war to outmaneuver armies in the field, direct assault on civilians is not an essential principle.

The First to Third Generations of war aimed to change the political structure of a nation-state, after overcoming the protection provided by its armed forces. 4GW attempts to directly erode the political structures that guide warfare. Achieving this goal without the use of armed forces is preferable; indeed, a deliberate attempt is made to do just that. Lind, et al., (1989) state that 4GW has "a goal of collapsing the enemy internally rather than physically destroying him. Targets will include such things as the population's support of the war and the enemy's culture." All political structures are made up of the leaders and the people. What affects the people and how they pressurize the leaders to influence their decisions is used to advantage in 4GW. People are most affected by insecurity. The quickest and most efficient way to bring about insecurity is through terrorism. Terrorism thus becomes one of the preferred means of waging 4GW within an overall military sphere.

In 4GW the stronger side is easy to condemn if it uses disproportionate force, especially if it causes collateral damage. The weaker 4GW opponent utilizes the media to highlight such collateral damage and gain the support of the international community or even of its opponent's population. To avoid such damage, precision attacks by smart munitions (which were actually developed for a Third Generation battlefield) are used against primitive war making means. This results in a mismatch of economics. A million dollar missile is used to destroy a facility which may be preparing Improvised Explosive Devices (IEDs) and which will inflict only a thousand dollar loss (if the targeting intelligence is accurate, which may not be the case).

7.   **Terrorism: A Component of the Military Sphere of 4GW**

Hammes (2004) says that "4GW uses political, economic, social and military networks to achieve its aim" (p. 155). Each of these spheres is comprised of a number of components. The principal military components of 4GW are defined below.

- **Conventional Operations.** Direct operations can be defined as the kinetic clash of force using firepower and movement.

- **Information Operations.** Operations with the aim of acquiring all types of information and intelligence and preventing the enemy from making use of his own information and intelligence. These include actions taken to protect, simulate, dissimulate, breakdown, disrupt or monitor any or all means of communication to degrade or facilitate decision-making.

- **Psychological Operations.** These consist of the application of propaganda, terror and state pressure (Heath, 2001). The aim is to affect the psyche of the target for negatively influencing its behavior, discrediting the opponent, sowing dissension among allies and inducing deception regarding plans and intentions. Of the three elements, the state actor invariably does not use the element of terror for fear of ostracism or because it follows humanitarian values. In 4GW, the non-state or weaker actor cannot use state pressure. It therefore relies exclusively on propaganda and terror.

8. Terrorism: A Tactic of 4GW

The above illustrates the place of terrorism within 4GW. It clarifies ambiguity regarding whether terrorism is a tactic of 4GW, the same as 4GW or a different type of war in its own right. The essence of terrorism, exemplified by its very name, is to cause terror. Terror can be best inflicted by conveying an example to the target audience of a very real and tangible threat of extreme pain and death as well as abnormal insecurity. Uncertainty regarding the exact time and place of potential terror events disproportionately heightens feelings of insecurity. Terrorism is organized intimidation. It aims to make the objective malleable to facilitate molding it to the desired state. Terrorism facilitates the aim desired to be achieved through war, but it is war that ultimately achieves the aim. Terrorism by itself has never won a war. The French counter-campaign of terrorism in Algeria won them the battle of Algiers, but they ultimately lost the war.

Recently, professional armies have contemplated using Special Forces (SF) to fight 4GW on a symmetric stage. The logic behind this is that SF will be able to overcome the asymmetry imposed by the 4GW opponent. Of all the means used by

Special Forces, Direct Action (DA) is what they are most identified with. The reason is that in the public eye, DA is as spectacular as terrorism. Often, DA is carried out away from public view; however, an event such as the live telecast of the SAS action at the Iranian embassy in 1980 was watched by millions of people (SAS Rescue, 1980). Such exposure reinforces the image of Special Forces glorified through motion pictures. In the focus on DA, other important actions in the realm of Special Operations are pushed to the sidelines (for example, psychological operations, civil affairs, etc.). This gives the impression that only DA is the only component of Special Operations. In much the same way, terrorism overshadows the other means of 4GW; creating an impression that terrorism is itself a type of war rather than a tactic of 4GW.

4GW is a new generation of war. It has not arisen out of the blue. Its roots are spread over a wide period in time. It has evolved through guerilla wars and wars of national liberation. The norms of modern society, in particular modern democracies functioning with modern means of communication, have given it greater power. Its power does not come from modern weapons. The preferred weapons of 4GW warriors are the ubiquitous AK 47, with Rocket Propelled Grenades (RPGs), bombs, pistols and grenades coming a close second. These are all the basic weapons of previous generations. What differs is *how* these weapons are used. They are not used for direct confrontation. They are used for surprise attacks on the military and for terrorizing the civilian population. The best weapons in 4GW are those which can be carried surreptitiously with ease and have sufficient firepower with which to overawe, coerce and terrorize the population.

Sophistication of weapons is not relevant in 4GW as compared to conventional war. This is clear from a comparison of the two *Intifadas.* In the second *Intifada,* terrorism through suicide bombing has been the cornerstone of the Palestinian strategy. This has in no way been successful for them in the same measure as creating simple asymmetry was in the first *Intifada*. At that time, the rock throwing Palestinian youth facing Israeli tanks did more to win the 4GW than the suicide bombers of the second *Intifada.* They created such an asymmetry that the Israelis were at a loss as how to deal with unarmed youth using tanks.

This makes it clear that terrorism is but one of the many weapons in the armory of 4GW. The versatility of this weapon is limited only by the creativity of the human mind. Terrorism is the Fourth Generation War's directly offensive tactic.

B.   MORAL AND ETHICAL ISSUES

4GW raises a number of moral and ethical issues. This is because 4GW uses strategy and tactics that are at cross-purposes to conventional war. These include the use of methods that evoke terror or are contrary to the rules of war. Often, conventional armies have a lament that they are fighting with "one hand tied behind their back," or that the 4GW foe is "fighting dirty." For those brought up to fight conventionally, any use of unconventional appears unfair. The current ethics of war are a result of the body of international law formulated by Hugo Grotius and Emerich de Vattel in the 17th and 18th centuries. That international law largely based on Christian ethics led to the formulation of the Geneva Conventions, which progressively became more encompassing from 1899 to 1977 (Rizer, 2001). Christian ethics are not very different from the ethics of other religions, and nation states all over the world have not found it difficult to make their armies follow the Geneva Conventions or at least acknowledge their spirit. This is because all major religions believe that God is kind, compassionate and just and these values guide the Conventions. The Geneva Conventions, which were established with interstate conflict in mind, have gray areas when war acquires Fourth Generation hues. An example is the questions arising about the status of the detainees at Guantanamo. As per conventions on prisoners of war, they are not prisoners of war. But then in 4GW, increasing incidents of unorganized militants being taken prisoner will continue. Non-state terrorists, proxy wars and attacks focused on undermining cultural and ethnic harmony present different challenges. These challenges bring to the fore strategies and tactics that may be ethically incorrect from the viewpoint of conventional nation state war.

While framing the laws of war, there is a degree of practicality in ensuring that the laws do not unduly hinder the conduct of war. Legal verbiage purges terms that imply that where there is a question of national interests, the military will not be restrained by ethical constraints. For example, the 1949 Geneva Conventions sought to protect civilians

in war to avoid a repeat of the horrific slaughter of civilians in World War II. This convention, however, states that prosecution of those who harm civilians was to be carried out only if the harm they inflicted on civilians was "not justified by military necessity and carried out wantonly" (Rizer, 2001, p. 2). Because of this clause, in practice it is easy to cover up infringements by citing military necessity as justification for failure to adhere to international law/convention. An effort was made through Protocol I of the 1977 Convention to overcome this shortcoming. The United States has yet to ratify this convention (p. 3). This is not surprising because otherwise the United States would have to rule out a large number of options that are essential in 4GW.

Following the same logic, the United States renounced the International Criminal Court treaty in May 2001, asking for signatory states to withhold the application of this treaty to U.S. servicemen (Lynch, 2004). Those states that do not do so and are the recipients of U.S. aid will be denied that aid. This has led to an outcry about partisan U.S. motives because such cuts will not apply to NATO members or other key U.S. allies. What has happened is that the reality of 4GW imperatives has guided U.S. actions. It is unreasonable to expect soldiers to fight a war where any inadvertent action under extreme stress may open a soldier to prosecution. Those who have led troops in stressful situations know that morale is the first casualty when opponent soldiers feel that their country expects them to fight a 4GW but will not support them or provide legal defense in case of an inadvertent error of judgment. Nations faced with fighting insurgencies have always sought to create provisions to protect genuinely inadvertent actions from prosecution. India created such a provision as far back as 1958 when its military was engaged in counter-insurgency in its North-East region. Known as The Armed Forces Special Powers Act, the Act has been extended wherever the military has been employed to combat insurgencies or terrorism, be it Punjab or Kashmir (India: Intelligence). Similar rules also exist for police personnel. Organizations like Amnesty International, which serve an important watchdog function, often oppose such acts. However, the reality of 4GW keeps these acts in place. Genuinely deliberate and unacceptable infringement of human rights should always be punished. For example, in Kashmir since 1990, 68 Army personnel have been punished for human rights violations. Punishments ranged from

imprisonment for seven years to dismissal (Army in Kashmir). However, it must be noted that in 4GW, false allegations are a part of the armory of the 4GW practitioner to the same extent as acts of terrorism.

The use of euphemisms such as "enhanced interrogation techniques" or "extreme coercive persuasion" separate torture and terror practiced by the "good" and the "bad" sides in 4GW. It is difficult to acknowledge but easy to visualize that both euphemisms indicate the same practice. 4GW has evolved more from the actions of the militarily weak. The responses of the strong, who find themselves frustrated by the advantages that the weak acquire through 4GW, are also within the genre of the Fourth Generation. Terrorism is the strategy and tactic of the weaker antagonist in 4GW. In the search for methods to counter 4GW foes, the stronger party may also have to use harsh measures, though tempered by restraint. These measures could be labeled "terrorism" in the eyes of the beholder, as they often are by human rights organizations. These human rights organizations operate under a set of rules framed by conventions appropriate to earlier generations of war. In other words, as all adapt to 4GW, so must the laws of war and the outlook of those who interpret them.

This raises questions of ethics. Should regular armies steeped in the tradition of *jus in bello* adapt coercive methods of warfare? If they are adopted, might it ultimately result in the legitimization of terrorism?

The Israelis justify their compulsion and need to fight terror with terror because the nature of the threat to their state validates its use. For example, Israeli sources state that with the use of coercive measures they foiled at least 90 terrorist attacks in the period 1995-1997 (Schmemann, 1997). Neither the exact details nor the accuracy of this statement can be verified because, for obvious reasons, no records are kept of the use of police methods for extracting information. Post-9/11 there has been a perceptible decline in the arguments against the use of terror in war. While outwardly the *jus in bello* arguments are still valid, in reality, logical arguments are found to circumvent its dictates.

An argument that is successfully advanced is the distinction between "military necessity" and "military convenience" (Cook, 2001). Coercive acts under military

52

necessity (the ticking bomb theory) are justified and considered legitimate. Similar acts under military convenience are not justified. However, in reality, while operating in the field the distinction between necessity and convenience either gets blurred or can be blurred if justified. Cook further states (2001, p. 2) that he proposes application of a standard from the American Civil War to the "different" war in which the U.S. is engaged, i.e., 4GW. This is the "reasonable person" standard of proof. The reasonable person is a hypothetical individual whose view of things is consulted in the process of making decisions of law. The question, "How would a reasonable person act under the circumstances?" performs a critical role in legal reasoning in areas such as negligence and contract law. This standard of proof states that if reasonable and prudent persons should have known a particular piece of information in the circumstances that they are in, then even if they truthfully state that that they are unaware of the activities of terrorists in their area, this otherwise truthful statement does not provide them moral immunity from prosecution. As Cook (2001) explains, "[t]his standard asks not what they *did* know but what *they ought to have known* had they exercised the diligence and degree of inquiry a reasonable person in their circumstance would have exercised" (p. 2).

Another argument advanced to deal with the ethical issue of collateral damage to innocents is the moral principle of "double effect" (Cook, p. 3). Saint Thomas Aquinas is credited with introducing the principle of double effect in his discussion of the permissibility of self-defense in the *Summa Theologica* (II-II, Qu. 64, and Art. 6). Killing one's assailant is justified, he argues, provided one does not intend to kill him (McIntyre, 2004). This is propounded to counter the use of civilian shields by the 4GW antagonist. This principle states that when it is not possible to separate civilian from military targets [in 4GW], it is acceptable to proceed with an attack even knowing that innocents may be killed or injured, because killing innocents was not a part of the plan or intention. Rather, it is, as Cook says, "an unavoidable by-product of legitimate military action" (p. 3).

The apparent utility of 4GW methods in permitting low cost war to be waged makes it more attractive to everyone. If conventional armies exercise any restraint in using 4GW methods it is because of the restrictions imposed by international military and social ethics. These ethics owe a great deal to the "Golden Rule" principle, which states

"do to others what you would like them to do to you" (Kidder, 2003, p. 25). This principle has been preached by all religions and by a number of ancient and modern philosophers. Modern Western democracies have developed ethics for legitimate killing based upon this principle. The distinction lies with the manner of killing. Dying is bad, but a less painful death is preferred to a more painful one. Extending this argument, preference to die by or kill with a firearm is acceptable by society and not considered barbaric. It does not create the same indignation as when killing is accomplished by beheading using sharp edged weapons; this is considered barbaric. One of the major reasons why 4GW favors application of terrorism is that the weaker cultures, which have evolved this form of war, find what are considered terrorist methods easier to apply because they are not so alien to them.

C.   CONCLUSION

A defining character of the advent of 4GW is the gradual legitimizing of terrorism as a part of war. It is prudent to accept and recognize terrorism as a strategy and tactic that must be countered by a new theory of war. Such prudence is more practical than pushing it out of sight as a distasteful act more in the realm of unconventional forces than conventional ones. Perpetual complaints or criticism about the moral degradation inherent in terrorism will not deter those who use it because of its obvious value. In the arena of 4GW, the study of terrorism must be a part of all curricula and training to bring this subject to center-stage. This will increase awareness about countering terrorism and encourage armies to consider what limitations should apply in the event that coercive measures are required. One must be realistic on this score as it cannot be expected that a grossly weaker foe will fight on the terms of the stronger. Therefore, terrorism is as much a reality to be confronted as is 4GW.

Defeating terrorism requires a realization that it is a strategy and tactic of 4GW. Just as doctrine has to be developed to fight wars of maneuver, so must it be developed to fight terrorism in 4GW. Some associate 4GW with a new name for insurgency (Echevarria, 2005). Another common perception is to associate 4GW with a form of war utilizing only terrorist techniques. It would be closer to the mark to state that 4GW is unconventional war that utilizes any means that can counter

the firepower and technical superiority of conventionally superior armies. Because of its favorable cost/benefit ratio, terrorism has to be inherent in 4GW. However, 4GW does not refer to only terrorism because it uses four different spheres: political, economic, social and military. Terrorism lies in the military sphere but can affect the other three. The importance of terrorism in 4GW lies in this reality.

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IV.   EFFECT OF 4GW ON THE PRINCIPLES OF WAR

> The strategic elements [principles] that affect the use of engagements may be classified into various types: moral, physical, mathematical, geographical and statistical. The first type covers everything that is created by intellectual and psychological qualities and influences; the second consists of the size of the armed forces, their composition, armament and so forth; the third includes the angles of the line of operations; the fourth comprises of the influence of terrain; and finally the fifth covers support and maintenance.
>
> -Carl Von Clausewitz (*On War*, p. 183)

Doctrine and principles are synonymous. "Doctrine is a set of principles or techniques accepted as correct by practitioners in the field of endeavor" (Adams, 1998, p.13). Doctrine evolves through usage. The cumulative experience of successes and failures shapes doctrine. Different militaries may have differences in doctrine relevant to their peculiar requirements and experience. However, there are some aspects of military doctrine that are considered almost universally relevant. These aspects have been shaped through a combination of studies by military thinkers on the conduct of warfare over the ages, and the views of great captains of war based on their practical experiences. These time-tested precepts are known as the "Principles of War." Fredrick the Great of Prussia rightly stated that "The lifetime of one man is not enough to enable him to acquire perfect knowledge and experience. Theory helps to supplement it; it provides a youth with premature experience and makes him skillful through the mistakes of others" (Air Force Doctrine, 2003). These principles are the essence of the theory of war.

The Principles of War are the distilled wisdom of the conduct of war over the ages. They are the centerpiece of the theory of war. The Principles of War are central to an officer's military education from the time he joins the profession. However, he learns their true importance at an intermediate stage in his career. By this time, their application should be intuitive and second nature to him in planning and conduct of operations. As per Miller (1956), the human brain has a limited processing capability. It can handle no

more than seven bits of information simultaneously, plus or minus two bits. Therefore, an aid in the form of Principles of War offers a paradigm for the conduct of war as well as a checklist to obviate errors.

The way war is fought has undergone changes since the writings of Clausewitz gave the Principles of War a concrete shape. However, the principles have largely remained unchanged; indeed, they have acquired a sort of permanence because of the acceptance of the Jominian logic requiring to have proven building blocks of war. Many military thinkers, soldiers and civilians alike, have held the view that changes in the world as well as in the environment of war make revamping the principles prudent. From time to time articles appear in military writings attempting to justify and introduce new Principles of War. However, the principles have nonetheless changed only slightly. In an era where change is so fast that the disorientation it causes was given the name "Future Shock," the Principles of War have remained largely unassailable. The reason for this is that under the veneer of technology and evolved modern organizations, it is still human intellect and emotions that formulate, conduct, order and act upon the dynamics that constitute war.

Warfare evolves along with technology and society, and logically so too must the Principles of War if they are to remain relevant. Even if they do not change, their interpretation has to change in consonance with the times. Since war is evolutionary, a sound theory of war must be flexible and able to accommodate change.

This chapter examines the need to change the Principles of War in light of the advent of 4GW. The examination is based upon the Principles of War that are followed by the U.S. Army. The first two generations of war were conducted at basically two levels, the strategic and the tactical. The Third Generation of war added a third, the operational level. The operational level involved the coordinated and related conduct of a number of battles (typically by a corps-sized formation), which led to the conclusion of a campaign in a particular zone of operations. This thesis contends that 4GW goes back to two levels, the strategic and the tactical. Most 4GW operations take place at the tactical level. This is because there is a deliberate effort to keep the intensity of war just below the boiling point. However, in 4GW, even actions at the tactical level can have strategic

implications. To illustrate, one soldier in the heat of the moment shooting a helpless wounded enemy in a tactical operation, when captured in the act by the media, raises a storm, which has strategic implications. Such an incident occurred at Fallujah in 2004 when a wounded insurgent/terrorist was shot dead by an American soldier.

A. THE PRINCIPLES OF WAR

The Principles of War have varied over the decades. Prior to 1920, the Principles of War took the shape of interpretation of the art of war rendered as advice by successful practitioners and theoreticians of war. They varied depending on the generation of war as well as the perception of the person enunciating them. From 1920 onwards, when they appeared in British regulations as "Principles," they acquired the more permanent state in which they are currently viewed. (Delleman, 1999). Regardless of when they were formulated, they have a great deal of commonality as outlined in is evident from their compilation in the table given at Appendix A.

1. The Necessity of the Principles of War

It is prudent to avoid recurrence of past mistakes and apply correct methods and guidelines in the conduct of war. As Clausewitz (1812) stated, "[P]rinciples, though the result of long thought and continuous study of the history of war, will not so much give complete instruction, as they will stimulate and serve as a guide for your reflections" (p. 11).

Some Principles of War may have to be applied while keeping in mind the strategic level of war. The national aim, international opinion, political consensus, geography, public opinion, morale and economic constraints, etc., have great relevance to the application of these principles. Others may be more relevant at the operational and tactical level as these form the fundamental tenets for appreciating a situation, these may include planning and execution. The relevance, application and relative importance of the Principles of War is flexible and depends on the operational environment, resources available and lastly, on the style of command. Successful commanders have adhered to more Principles of War than they have violated. Application of even a few related Principles of War in combination with judgment and common sense has resulted in success, whereas disregarding them has led to defeat or an extremely costly victory.

The Principles of War are not a guaranteed recipe for success. They offer a paradigm for success. All human progress builds on the accumulated wisdom of the ages. Space flight would not be possible without the accumulated bank of basic physics, chemistry and other sciences. The apparently mundane principle of physics that "every action creates an opposite reaction" is the basis for rocket propulsion. However, this and innumerable other established and apparently mundane truths are the wisdom of the ages, which are the building blocks that make space flight possible. In much the same manner, the Principles of War are the building blocks of the art of war.

There can be any number of Principles of War. However, if the Principles of War are continuously added, they are bound to lead to confusion. If there were fifty Principles of War and all were relevant (as they can be), the sheer number of principles would hinder their intuitive application because of Miller's theory of seven, plus or minus two bits. Miller's Theory goes on to say that each bit may itself be composed of seven plus/minus two bits of further separate (though related) information, "chunked" together. This may not be the reason why the U.S. Army has only nine principles, but it implies that there has to be a limit to the number of Principles of War, which are in essence "chunked" information. Table 3 shows a compilation of the main Principles of War and the possible minor bits related to each of them.

Table 3.   The Nine Principles and Their Constituent Bits

Principle	Constituent Bits
Objective	Aim, Center of Gravity, Focus, Singleness of Purpose, End State, Goal
Offensive	Initiative, Action, Orchestration, Simultaneity, Engagement, Combat Activeness, Annihilation, Escalation Dominance, Counterforce, Neutralization
Mass	Concentration, Overwhelming Force, Momentum, Tempo, Superiority, Strength, Depth
Economy of Force	Maximization of Resources, Synergy, Preservation of Combat Effectiveness, Precision, Restraint

Principle	Constituent Bits
Maneuver	Flexibility, Movement, Dislocation, Avenues of Approach, Fire and Movement, Alternatives, Indirect Approach, Agility, Depth of Attack, Synchronization
Unity of Command	Control, Defined Hierarchy, Joint Operations, Cooperation, Coordination, Unity of Effort, Mutual Support, Air and Naval Power, Inter-working
Security	Protection, Secrecy, Vulnerability, Offensive Defense, Pivots, Reserves, Readiness
Surprise	Deception, Speed, Paralyze, Stun, Psychological Warfare, Information Dominance, Asymmetry
Simplicity	Easily Understood, Limited Objectives, Clarity, Brevity, Delegation, Decentralization, Autonomy

If a computer were used to evaluate a situation and tell us which principles should be applied in what measure, sequence or interrelationship, a satisfactory answer would not be possible. This is because the way the Principles of War are to be applied in relation to each other, and to a constantly evolving situation, cannot be generated scientifically without loss of the "art" aspect of war. The Principles of War, therefore, are best kept to manageable numbers encompassing the most important precepts into which the lesser important (which can be called their constituent bits) are merged because of their underlying similarity. This ensures that in war, the major principles remain relevant aids to planning and decision-making.

2. Principles of War in the U.S. Army

The Principles of War in the U.S. Army remained unchanged since 1949 (Alger, 1982). The only variation has been the sequence in which they have been listed. One could presume that this is either because of their perceived relative importance or to facilitate their sequential, logical application. These are listed below:

Table 4.   **Comparison of Principles of War - 1949 and 2001**

Order of Importance	2001	1949
1	Objective	The Objective
2	Offensive	Simplicity
3	Mass	Unity of Command
4	Economy of Force	The Offensive
5	Maneuver	Maneuver
6	Unity of Command	Mass
7	Security	Economy of Force
8	Surprise	Surprise
9	Simplicity	Security

There are differences in the interpretation of some of the Principles in 2001 compared to 1949. The 2001 interpretation of some of the Principles of War differs from that of 1949.This shows that the interpretation of the Principles does change as per the organizational, technological and cultural environment. Based on input from Alger (1982) and FM 3-0 (Operations) 2001 (Para. 4-32 to 4-49), the Principles of War as interpreted in 1949 and 2001, are compared in the succeeding paragraphs.

> **a.**   ***Objective***
> The 1949 version sees the ultimate objective as the [physical] destruction

of the enemy. Intermediate objectives are those that contribute to attaining the ultimate objective. The 2001 version looks at objective as the aim of the higher commander, whatever that aim may be, specifying that it should be clearly known, defined and attainable. Intermediate objectives are those actions that contribute to the goals of the higher headquarters. The objective should be strategically and politically correct, and obtained using an appropriate, legitimate and restrained level of force. The objective must be speedily attainable unless it involves protracted stability or support operations.

b.   *Offensive*

The 1949 version sees this principle as central to retaining the freedom of action (initiative). Defensive operations are envisaged only in sectors where forces are to be economized. The 2001 version understands offensive as essential for seizing, retaining and exploiting the initiative. The offensive is taken to dictate the nature, scope and tempo of an operation, thereby forcing the enemy to react in the manner that we want him to. In this manner, the battle is orchestrated to exploit the vulnerabilities of the enemy.

c.   *Mass*

The 1949 version looks at mass as the concentration of superior forces at a decisive place and time and employed in a decisive direction. The 2001 version also envisions concentration of combat power in time and space. Massing in this case is not perceived as massing of numbers, but of applying different elements of combat power against a single target. Massing is now more relevant to massing of fires because of the longer ranges and faster reaction times of modern weapon systems. Some of the enemy elements may be concentrated and vulnerable to operations that mass in both time and space. Others may spread throughout the Area of Operations, vulnerable only to simultaneous, nonlinear operations that mass in time only.

d.   *Surprise*

The 1949 Principles of War envisage achieving surprise by denial and deception, variation in operations, rapidity and power of execution and use of unexpectedly difficult terrain. The 2001 version aims to achieve surprise by striking the enemy at a time, place or manner for which he is unprepared. Surprise results from taking actions for which an enemy or adversary is unprepared. It is a powerful but temporary combat multiplier. It is not essential to take the adversary or enemy completely unaware; it is only necessary that he become aware too late to react effectively. Factors contributing to surprise include speed, information superiority and asymmetry.

e.   *Maneuver*

The 1949 version sees maneuver by itself as being unable to give decisive results until combined with the principles of offensive, mass, economy of force and surprise. The 2001 version sees maneuver as action to place the enemy in a position of disadvantage through the flexible application of combat power. In stating that "effective

maneuver keeps enemies off balance by making them confront new problems and new dangers faster than they can deal with them," the newer version adopts the tenets of the Observe, Orientation, Decision, Action (OODA) loop. Maneuver is seen as not only physical movement on the ground, but also as flexibility in application of leadership, firepower, information and protection, thereby achieving and applying mass, surprise and economy of force.

f.   *Economy of Force*

The 1949 version looks at this principle as a corollary to the principle of mass. In order to concentrate superior mass at one place, economy of force must be exercised at other places. The 2001 version, while being in line with the earlier definition, also views economy of force as ensuring that there is discriminating employment and distribution of forces. While minimum essential combat power is to be allocated to secondary efforts, commanders should never leave any element without a purpose and all elements should have tasks to perform.

g.   *Unity of Command*

The 1949 version implies achieving cooperation between all elements of a command for decisive application of full combat power. The 2001 version states that for every objective, unity of effort under one responsible commander is essential. Cooperation may produce coordination, but giving a single commander the required authority unifies action. With the advent of joint operations, U.S. armed forces may have to take part in multinational and interagency coordination and there may be situations where the military commander does not directly control all elements in the Area of Operations. In the absence of command authority, commanders cooperate, negotiate and build consensus to achieve unity of effort.

h.   *Simplicity*

The 1949 version paraphrases Clausewitz by saying that in war even the simplest things become difficult. In order to ensure success, plans must be simple. The 2001 version requires that plans be clear and uncomplicated and orders be clear and concise to reduce misunderstanding and confusion. This will aid speed of execution as well as facilitate operating in multinational operations.

i. *Security*

The 1949 version looks at two aspects of security. One is the physical security of units and formations. The other aspect of security refers to being prepared to meet any action by the enemy in order to prevent being surprised. The 2001 version looks at security as never permitting the enemy to acquire an unexpected advantage. Security protects and preserves combat power. It does not involve excessive caution as calculated risk is inherent in conflict. The 2001 version looks at military deception to enhance security. It stresses security from asymmetric threats in low-threat environments.

3.   The Relative Interaction between the Principles of War

Any given Principle of War cannot be considered in isolation. All principles must be considered relative to each other as such connectivity imparts synergy. With this operating philosophy, the nine Principles of the U.S. Army need to be seen with the thread of logic and sequence which binds them. This is explained in Figure 5 below.
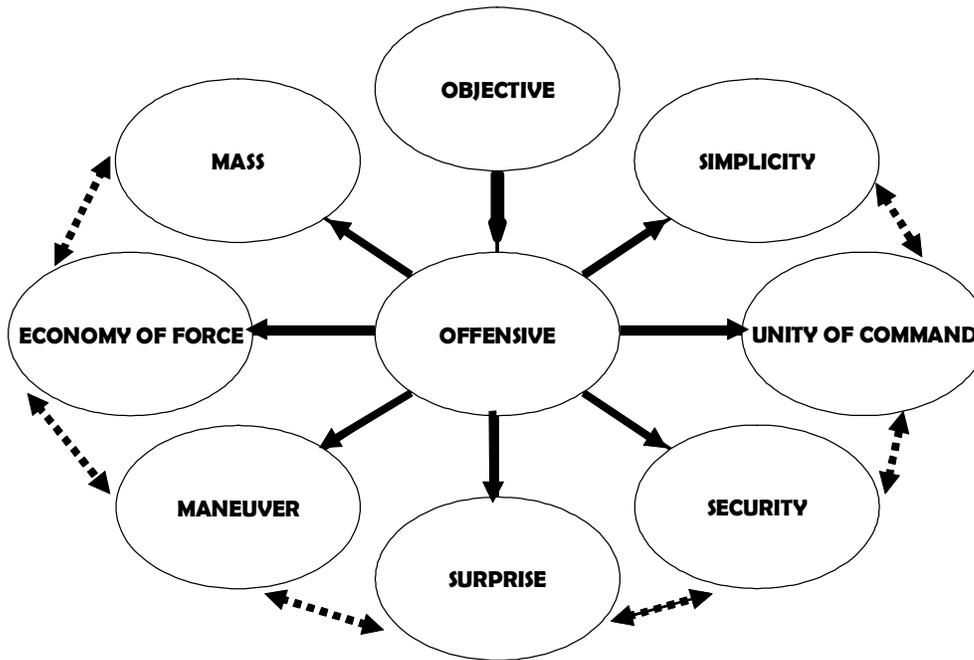
Figure 5.   Interaction of the Nine Principles of War of the U.S. Army

- Everything flows from the Objective. The Objective defines what is meant to be attained as the end state of the war.

- The Objective is attained through the offensive, which implies positive dynamic action and involves the application of the rest of the principles.

- Mass has to be applied keeping in mind Economy of Force lest it become wasteful.

- Economy of Force applied to Mass facilitates Maneuver.

- Maneuver aids Economy of Force and achieves Surprise.

- Surprise can be achieved through Maneuver applied with Security.

- Security achieves and maintains Surprise; Unity of Command facilitates Security.

- Unity of Command provides Security and makes the exercise of command over diverse elements in different scenarios relatively simple.

4. The Principles of War in Relation to 4GW

The Principles of War are timeless. With minor variations, they are couched in identical language in all armies. This is because the basic concept of war is the same whether it is derived from Sun Tzu, Vegetius or Clausewitz.

Introducing new Principles of War should be restricted because the confusion of change hinders understanding. It is easier to build upon existing knowledge than to state a theory afresh. Terminology should also have continuity in order to avoid the tendency to reinvent the wheel. It would be preferable to interpret the existing Principles of War for application in 4GW than to coin new principles that may obscure the essence of what is implied. Only where unavoidable should new principles be introduced. The succeeding paragraphs interpret existing Principles of War for application to 4GW. They refer to application in the tactical and strategic fields, because this is where 4GW is fought.

a. Objective

Clausewitz stated that "No one starts a war, or rather, no one in his senses ought to do so without first being clear in his mind what he intends to achieve by that war and how he intends to conduct it" (Clausewitz, 1832). In conformity with previous generations of war, a clear objective is essential in 4GW. No objective, whether at a

strategic or tactical level, can be formed without correct knowledge of the situation. In 4GW, it is imperative that the objective be such that the necessity for war and the righteousness of the cause are incontrovertible. 4GW, to those used to the "clean and fair" wars of the earlier generations, is psychologically debilitating and also difficult to handle. For a conventional military and a society attuned to conventional wars, 4GW is a cultural shock. Therefore, an objective that is morally correct imbues both the army and its supporting society with a spirit for persevering with 4GW. In 4GW, the overall strategic objective should be known down to the lowest level. Inappropriate action by one overzealous man who is not clear about the ultimate objective can wreak a disproportionate amount of damage. At both the tactical and strategic levels, correct selection of the objective and maintaining focus on that objective during subsequent progress of war is of utmost importance. The tactical objectives should be known at least two levels up. This helps in seizing the initiative when fleeting opportunities present themselves. As an example, within a unit, the platoon commander should know the battalion commander's tactical objective (establish control in Area A, or clear Area B). It is irrelevant for him to know the brigade commander's objective (establish control in Area A with the ultimate aim of addressing the adjoining Area C, or clear area B to open Highway X for secure movement of road transport).

b.   *Offensive*

In 4GW, offensive implies being one step ahead of the adversary at all times in the war of ideas. It implies proactively anticipating the future course of events. In 4GW, future actions in many instances have symbolic value and can be anticipated when viewed in relation to past events. For example, terrorist attacks have greater appeal when linked to a past event, such as retaliation for a specific loss in the past. Offensive strategy in 4GW envisages allowing no respite to the enemy over prolonged periods by using a combination of all means available, including the media, civil affairs and police forces. Offensive tactics in 4GW pertain to seizing the initiative and persevering in building up intelligence. Results of offensive action must be measured in terms of paralyzing the opponent's freedom of maneuver within the population. Preemption and prevention should be emphasized over quantifiable results, which lead to the pernicious

practice of measuring success in terms of the dead. Counting the dead is a First and Second Generation measure of success which is counterproductive in 4GW.

c. Mass

In 4GW, the conditions for the classic application of mass do not exist. There are no fortified trench lines to break through, no massed armies to defeat and no battles of encirclement to fight. Massing of fire is not as relevant as the application of precision fire. Massed fire in urban areas is more likely to hurt the population than the 4GW foe. Mass, however, is still relevant when applied in a different context. In 4GW, large areas need to be physically kept secure. Boots are required on the ground in very large numbers to restrict the maneuver space of the enemy. At the strategic level, the size of the population has to be considered in evaluating the requirement of mass. The mass is required whether the population is friendly or unfriendly. If they are unfriendly, the mass of manpower is to keep them in check, and if they are friendly, it is to reassure and protect them. This involves prolonged and persistent deployment of a large number of troops, notably infantry or paramilitary/police forces who must persevere in carrying out the task of population control, a mentally tiring and thankless job.

At the tactical level in 4GW, small unit operations are more relevant than large operations. Mass is more relevant to the ability to concentrate resources at one point after contact with hostiles is made. Massing prior to contact is counterproductive as it gives away surprise. Therefore, correct and actionable knowledge and intelligence is essential. Operations launched with inadequate intelligence will not achieve results as the 4GW foe will easily avoid contact where he does not want it. The 4GW opponent will not tackle mass, he will always skirt it. The population will always outnumber the armed forces, especially in urban areas. Urban areas must therefore be handled piecemeal. Areas that are cleared must be held by paramilitary or police forces to prevent the 4GW enemy from flowing back in after the military presence is removed. This implies that mass in 4GW is a combination of all the resources of the government, not just the army.

d. Economy of Effort

A Robo-Soldier is a small, tracked, electrically powered vehicle, capable of climbing stairs silently. It is armed with a 7.62 mm machinegun, a night vision device and sensors that allow it to be remotely guided into hazardous areas where it can kill

militants. It costs $230,000, and 18 have been ordered to be deployed in Iraq by 2005. (The Most Amazing Inventions: 2004). The United States is investing in this technology because of the great value it places on human life and because the U.S. can afford it. The far lesser value placed on human life by poor countries (not because of choice but because of compulsion) creates a cultural schism that is difficult for a Western mind to comprehend. Theoretically, for the cost of a Robo-Soldier, eighty human fighters could be produced in a poorer part of the globe.[6] A 4GW foe can easily afford to sacrifice twenty ill-trained fighters (costing one-fourth of the Robo-Soldier) to destroy a machine such as a Robo-Soldier. To quote an example, the 4GW incident in Mogadishu, Somalia, is perceived as an American defeat despite a 1:75 kill ratio in the favor of the American soldiers. (Bowden, 1999). This incident proved that a low technology opponent, having no dearth of manpower, could achieve its aim against a high technology foe through the willingness to accept very heavy casualties. Even the richest of societies cannot sustain high expenditure in the long run. This illustrates the importance of the principle of Economy of Effort even for the materially preponderant side in 4GW. The hypothesis is that Economy of Effort must be kept in mind as a Principle of War, regardless of the relative difference in might between two adversaries. In this principle it is essential to outlast the enemy over the prolonged period that 4GW runs. The 4GW foe aims to wear down resolve. It does so by inflicting human and economic loss. The long timeline of 4GW means that all resources, human and material, should be used judiciously even if there is no apparent lack of resources. Economy of effort in management of human resources is much more important than that of material resources. Wasteful use of men wears down moral stamina and degrades perseverance. The paradox is that in quantity of human resources the 4GW foe is invariably at par or superior to his opponent, regardless of his material inferiority.

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6 Estimate based on an exchange rate of $1=Indian Rupees 45/-, per capita monthly family income in India being Rupees 2124/- (from http://www.ficci.org/fsedf/jdrchild4.htm) and an average estimated monthly cost of rearing a child (giving him free government education/no formal education) until the age of 18 (after which the child can add to the income) being approximately Rupees 550/- per month.

e. Maneuver

In 4GW, maneuver implies agility of mind as well as the flexibility to take advantage of fleeting windows of opportunity. It signifies mental mobility as well as the ability for dynamic movement to conform to changing situations. Such a mindset is imperative in a war situation where there are no linear frontlines, no fixed defenses and no areas to capture and hold. The concept of "unconditional surrender" is unrealistic in 4GW. That concept leaves no room for flexibility. In 4GW, if the enemy offers to negotiate it should be considered. Maneuver should not be restricted to physical maneuver, but should also include maneuver by other means, including psychological war and civil affairs (the classic war to win hearts and minds). The aim of maneuver at the tactical level within an Area of Responsibility (AOR) is to deny maneuver space to the 4GW foe. It also implies having a strategy of dynamic deployment. This is possible by constantly keeping the AOR under surveillance, avoiding patterns and addressing all areas. Correct maneuver requires an efficient intelligence infrastructure. Maneuvering as a reaction to events should be avoided because in many cases, that is exactly what the enemy may want. Future events must be anticipated and movement planned accordingly. At times, such action may appear fruitless and may lead to a decline in morale. However, if the troops are imbued with the right degree of moral spirit, they will understand the need for such action and will be able to carry out the task with the required perseverance.

f. Surprise

There is little scope for strategic surprise at the military level in 4GW, as in this war surprise is confined to the political field. Political initiatives are not in the realm of the military commander. By being aware of the potential political initiatives that can be undertaken to facilitate the military effort and by keeping in mind the military situation, the military leader will be in a better position to render correct advice to the political decision makers. Tactical surprise can be achieved in 4GW. Varying routine and operations is an obvious way to achieve such surprise. However, it is more important to think and operate unconventionally. The military actions of the 4GW foe invariably occur on a tactical level. They aim to cause attrition over a prolonged period of time. Their tactics are focused on taking advantage of the conventional methods of operation of their stronger opponents. If the stronger opponent itself adopts 4GW tactics, it will be able to

achieve tactical surprise. Use of Special Forces and unconventional methods will help to mentally outmaneuver the 4GW foe.

g. *Security*

At the strategic level, security is best maintained by having contingencies. Contingencies can be applied only when there is knowledge about enemy intentions. In the earlier generations of war, enemy actions and reactions could be anticipated by obtaining insight into his mind by studying his doctrine and methods of instruction and the way he trained himself in military exercises. The 4GW foe has no such institutionalized and formal parameters. Hence, knowledge through electronic surveillance supplemented by Human Intelligence (HUMINT) is very important. 4GW is a war of ideas. In such a war, political and diplomatic initiatives will frequently be launched by the enemy. These initiatives will attempt to negate military gains. Security, therefore, implies being prepared for complete changes in orientation of operations. Security also requires effective and imaginative management of media. This is to gain strategic moral advantage as well as to avoid premature disclosure of emerging strategies. Control of information, appropriate to operations, needs to be exercised regardless of the missionary inquisitiveness of free societies. At the tactical level, security of movement and plans is essential to avoid unnecessary casualties and compromising operations. Judicious use of communication media with secrecy devices will pay dividends. The 4GW foe must not be confused with an enemy of the previous generations and credited with having capabilities that he does not have. The ultimate guarantee of security is to respect the ability of the 4GW foe to do the unexpected. Unfortunately, this is often a culturally difficult lesson, which is assimilated only after "blooding."

h. *Unity of Command*

At the strategic level, single point command under a person combining military and civil executive authority is essential. It facilitates success in 4GW because 4GW is not a war that encompasses only military matters, targets or objectives. Defeating 4GW foes requires synergy between a number of agencies. This requires a joint command, joint headquarters and intimate civil military interaction. Operations need to be coordinated with other military forces to achieve the objective. Tactical operations should not be launched without a purpose and without reasonably accurate intelligence.

Competition between different departments, arms and units needs to be curtailed, as it will eventually lead to a lack of coordination and economy of effort.

i. *Simplicity*

4GW is a complicated war because the conventional military is not attuned to wage it. It is also complicated because an element which is supposed to keep out of the way of war, i.e., the population, is by compulsion at center stage. A national single point of command authority, which results when an absolute monarch or dictator is the head of the government, makes it simpler to coordinate 4GW. That form of government, however, has proven and obvious disadvantages. In democratic setups, such single point command is an anathema. This makes the system of command, as well as consensus strategy, a complicated affair in 4GW. In the strategic sphere, there should be a conscious effort to create simple plans that are understandable and easy to execute. Operating in a joint environment makes understanding different work cultures and procedures difficult. Unity of command at lower levels of 4GW can make things simpler. In the tactical sphere, 4GW can be made simpler by intuitive application of knowledge. The value of intuition has been officially accepted by the U.S. Army, as evidenced in FM 3-0 (2001) which says, "In unclear situations, informed intuition may help commanders make effective decisions by bridging gaps in information" (Para 5-3). The deception specialist Barton Whaley (2004) says, "Intuition has … only one source, prior experience that has been stored in memory." This is possible after sufficient time has been spent in the Area of Operations. Development of intuition for conduct of operation requires long tenures within an AOR and the perseverance to see them through.

5. An Analysis

The United States of America has been involved in a 4GW since the 9/11 terrorist attacks in New York City and Washington, D.C. Many military theorists justify that the 4GW preceded 9/11 and actually began from the time of the earlier Islamic bombings of U.S. targets. However, attempting to respond to the Islamic terror issue through political or diplomatic activities, rather than engaging the full might of the U.S. military. Only post 9/11 have there been active efforts which can be called war. The war in Iraq is referred to as an insurgency. In fact, insurgency is an armed rebellion against the established and constituted authority, which should be a sovereign state. In the period

after the end of active hostilities in May 2003, until 2005, when the Iraqi government was sworn in, Iraq did not fit this definition. What is happening in Iraq is a 4GW. The war involves more than indigenous militants. It involves Islamic militants from countries other than Iraq, fighting a 4GW against the U.S. and its allies. Just as the Cold War took nearly half a century to win, this war too could go on for an equally long time.

The variation in the interpretation of the Principles of War between 1949 and 2001 (see Table 4) is the result of the changing realities of the Cold and post-Cold War world. The 4GW the United States is involved in affects the interpretation of the principles of war in the same manner. An effective global war with terrorism requires that the Principles of War be interpreted relevant to *this* war. As mentioned earlier, the process of formulating the Principles of War occurs through learning a number of lessons and chunking them under headings that encompass their implications or applications. Previous studies of 4GW and the Principles of War present some aspects relevant to 4GW that are not covered in the list of Principles of the U.S. Army, even though they often arise in examination of the Principles. These are Knowledge, Perseverance, Moral Force and Administration (the aspects they encompass can be seen in Table 5). Some may opine that Perseverance and Moral Force are similar. However, in the 4GW context they are different. The reason for this is the long timelines of 4GW, which are apt to wear out patience in short time periods. Keeping Perseverance as a separate Principle will ensure a focus on "lasting out," which is central to 4GW. Perseverance is the strength of the 4GW foe, though it is forced on him by his relative weakness. Statements made by Osama Bin Laden or his lieutenants often refer to how al Qaeda and Islamists will eventually win the war even if it takes decades. Such statements are made because the weaker entities have no other option and this forces them to persevere. This is not difficult for them because perseverance is a cultural trait in most of the poorer parts of the world. No one desires long wars, yet the reality is that 4GW will have long timelines. Being as strong as the 4GW foe in terms of perseverance would help in fighting in the new environment of war.

The succeeding paragraphs elaborate on these four principles.

a.   *Knowledge*

Knowledge is essential in any war. Intelligence is derived from knowledge about the enemy. In 4GW, where the enemy operates in shadows and may not even have the spatial extent and structure of a state, obtaining intelligence becomes even more important as well as more difficult. Knowledge of the nature of the 4GW enemy, his strategy and tactics, and his political, financial and military base will facilitate combating him. At the tactical level in 4GW, actionable intelligence assumes great importance. In 4GW, such intelligence is obtained quickest when it is intuitive. Intuitive intelligence arises from knowledge which has become a capability. As Clausewitz stated, "Knowledge must be so absorbed into the mind that it almost ceases to exist in a separate, objective way" (1832, p. 147). The value of intuition has been officially accepted by the U.S. Army, as evidenced by doctrine contained in FM 3.0 (2001), which states,

> Skilled judgment gained from practice, reflection, study, experience, and intuition often guides it (exercise of command in operations). In unclear situations, informed intuition may help commanders make effective decisions by bridging gaps in information. (Para. 5-3)

The same is the case in the British Army, where the Army Doctrine (1995) gives due importance to intuition by saying, "the commander must still make his decision based on his military judgment, where his experience and intuition, as opposed to computer analysis, will continue to play a key part" (Para. 0333). Knowledge in 4GW also refers to control over information and use of the media, which is a powerful factor in 4GW. How and when to release information is a vital part of the principle of Knowledge. Terrorists apparently know this, as evidenced by news channels like *Al Jazeera* repeatedly broadcasting the picture of a Marine shooting a wounded terrorist in Fallujah. The same channel declined to show the execution of an aid worker, Margaret Hassan, which was carried out by terrorists at about the same time (Diehl, 2004).

b.   *Moral Force*

The relevance of Moral Force has been realized from time immemorial. As Napoleon said, "the moral is to the material as three is to one." Moral Force comes about from the following:

- Belief in the cause, including its righteousness and importance,
- Moral strength to persevere in spite of prolonged mental and material discomfort,
- A culture of discipline and sacrifice,
- At the tactical level, plain and simple *esprit de corps*.

Moral Force has been the reason behind the successes of weaker sides when logic dictated that they should not have been successful. In 4GW, Moral Force is all the more important since such wars will extend over long periods of time, which tends to wear out human spirit. The reason for prolonged 4GW is that since the enemy avoids open combat, there can be no decisive victories. Lack of decisive victories spells prolonged campaigns. In addition, because 4GW has a quasi-political complexion, typical military methods of swift victories can be counterproductive. This implies that on both sides there will be a requirement to persevere in spite of setbacks. In a way, 4GW is similar to First Generation War as it is also a war of attrition. However, in this case, it is primarily a war to attrite the spirit. 4GW often results in casualties among non-combatants because the war zone encompasses them. For the soldier who is prepared for previous generations of war, the sight of non-combatant suffering can be traumatic. Invariably, the suffering of the non-combatants can be used by the 4GW foe to target the national spirit of their enemy using public opinion, leading to effects that are more strategic than tactical. Tactical morale may still be maintained, but national morale may suffer attrition and decline, forcing a defeat.

c.   *Perseverance*

Perseverance implies the ability to continue with a particular course of action, unmindful of lack of apparent success. It is essential wherever a protracted application of military capability is needed. In a 4GW, it may take years to achieve the desired results. The patient, resolute and persistent pursuit of established objectives, for as long as is necessary is a requirement for success in 4GW. Perseverance is therefore essential in 4GW. Quick-fix solutions will not be lasting. Perseverance implies the following.

- Being mentally prepared for a long war.
- Reining in the desire for "quick-fix" solutions.
- Taking time to do a thing perfectly for a long-term solution.

- Mental robustness to withstand prolonged and continuous stress and strain.
- Inculcating a culture of consistency and patience.
- Continuing to strive for victory in the face of temporary reverses.

d.   *Administration*

The principle of Administration is one of the British Principles of War and it has been included as a principle by most armies of the British Commonwealth. In the United States military, this subject falls under the rubric of "Logistics." Logistics has always been important to the United States military, as the U.S. military will always deploy overseas, where sustenance and maintenance require stress on logistics. Administration is, however, something more than logistics. Whereas logistics is restricted to pure provision of the wherewithal of fighting, administration is wider in scope and encompasses the following things:

- Logistics,
- Movement,
- Coordinated support,
- Physical comfort, medical care, meeting psychological requirements and welfare of the army. The same care is extended to the next of kin in order to maintain morale.

While all aspects are important in the prosecution of war, administration is among the most important in long wars. It ensures that the military is capable of sustaining the prolonged discomfort and psychological attrition of 4GW. Administration directly impacts both the conduct of sustained operations and each of the other Principles of War. It is the lubricant that reduces the friction of war. However, even in the armies that consider Administration a Principle, it is a Principle that is often glossed over. The reason for this is that it is the least glamorous of all the principles, lacking glory, thrill, romance and attention.

B. U.S. ARMY -- PRINCIPLES OF MILITARY OPERATIONS OTHER THAN WAR

The U.S. Army has another set of Principles called the Principles for Military Operations Other Than War (MOOTW). These are meant to cater to conditions akin to war, but short of nation-state war. They are as listed below.

- Objective
- Perseverance
- Legitimacy
- Restraint
- Unity of Effort
- Security

While they consist of three of the nine general principles (Objective, Unity of Effort and Security), they have three additional ones (Perseverance, Legitimacy and Restraint). The concept of MOOTW presents several dichotomies:

- Operations cannot be separated as those that are war and those that are other than war. This is because what has hitherto been understood as "other than war" is in fact the predominant shape of war of the future, namely 4GW.

- Legitimacy and Restraint are factors that are relevant to dealing with a civilian population. The first should be an adjunct to the political decision to commit the military to war. If the decision lacks legitimacy, it will have a detrimental effect on Moral Force. The degree of restraint has political and humanitarian connotations. Restraint is a principle to be applied when dealing with a situation involving civilians. It cannot be a principle in war. In any case, restraint and legitimacy apply to the principle of "Objective" in FM 3-0. The manual states,

> Military leaders cannot divorce objective from considerations of restraint and legitimacy, particularly in stability and support operations…without restraint and legitimacy, support for military operations becomes unattainable. (Para 4-36)

- Perseverance itself is covered as one of the requirements in pursuit of the objective. FM 3-0 states that, "[t]o accomplish missions commanders persevere" (Para 4-37). However, in 4GW, perseverance acquires an enhanced role.

Perseverance is also at cross-purposes to certain ingrained views of military operations. One such example is the view that military operations have to be conducted at speed to achieve surprise and keep the enemy off-balance and guessing. This was true of the earlier generations, especially the Third Generation. In 4GW, while tactical contacts still have to be made at speed to utilize fleeting opportunities, at the strategic level, deliberation and preparation will pay dividends.

C. NEW GENERAL PRINCIPLES

This study recommends that four new principles be included in the U.S. Principles of War. These are Knowledge, Moral Force, Perseverance and Administration. Their constituent bits are detailed in Table 5 below.

Table 5.   Constituent Bits of Proposed Principles

New Principles	Constituent Bits
Knowledge	Information, Intelligence, Intuition, Detection, Command, Control, Communication, Observation, Orientation
Moral Force	Will, Esprit de Corps, Belief in Cause, Morale, Humanity, Military Spirit, Unity, Discipline, Legitimacy
Perseverance	Stamina, Persistence, Doggedness, Continuity, Decisiveness, Tenacity, Constancy, Repetition
Administration	Logistics, Welfare, Recuperation, Reconstruction, Civil Affairs, Support

The manner in which these three mesh with the existing principles is illustrated in Figure 6. This is explained as follows:

- The dictates of the Objective should pass through the Moral Force in the course of being translated to offensive action. This will ensure that moral force thereafter permeates all the other principles until the objective is attained. When every principle is applied and stiffened with moral force, they imbue the army with a

spirit for winning and a belief in the righteousness of the cause. At the strategic level, the apex objective will always be a political decision. The military head should guide the political decision makers while formulating the objective so that they are aware of the imperative of the principle of Moral Force. A 4GW breaks out only when the 4GW foe has built up his moral strength. It would be naive to take on the strength of a 4GW foe without being as strong morally.

- All actions for execution of the offensive should be conducted with perseverance. The Principle of Perseverance should be embedded in each of the Principles that will be evoked to fulfill the aim of the war. This implies that all actions emanating to translate the offensive into the desired end state have to be executed with perseverance. To make it easier to comprehend this requirement, what we are looking for in 4GW is the following:
  - Perseverance in maintaining the mass,
  - Economy of force through perseverance,
  - Perseverance in maneuver,
  - Perseverance in achieving surprise,
  - Perseverance in building up security,
  - Perseverance in building unity,
  - Simplicity through application of perseverance in that there should be no haste to complete a task that can be better executed with time.

- Knowledge is the connective tissue between the Principles. It reduces the friction caused by uncertainty and also facilitates interaction.

- Overarching over all the principles should be the principle of Administration, which is given the least attention in the formulation of plans. It is a repeated lesson of history that strategists incorrectly assume that all effort should be centered on attaining the objective, even if there are gray areas of administration and logistics. It is presumed that once military victory is achieved, the rest will fall into place. This is seldom the case. General Walter Bedell Smith, General Dwight Eisenhower's Chief of Staff in 1944--45, rightly said, "It is no great matter to change tactical plans in a hurry and to send troops off in new directions.

But adjusting supply plans to the altered tactical scheme is far more difficult" (Rutenberg, 1986). Many times, seemingly invincible or superior armies have had to give up victory because they neglected Administration. This is seen in a myriad of examples, from Napoleon's defeat at the gates of Moscow to the repeat of this feat by Hitler, to Dien Bien Phu, to the fiasco at Desert One during the ill-fated attempt to rescue U.S. hostages from Iran.
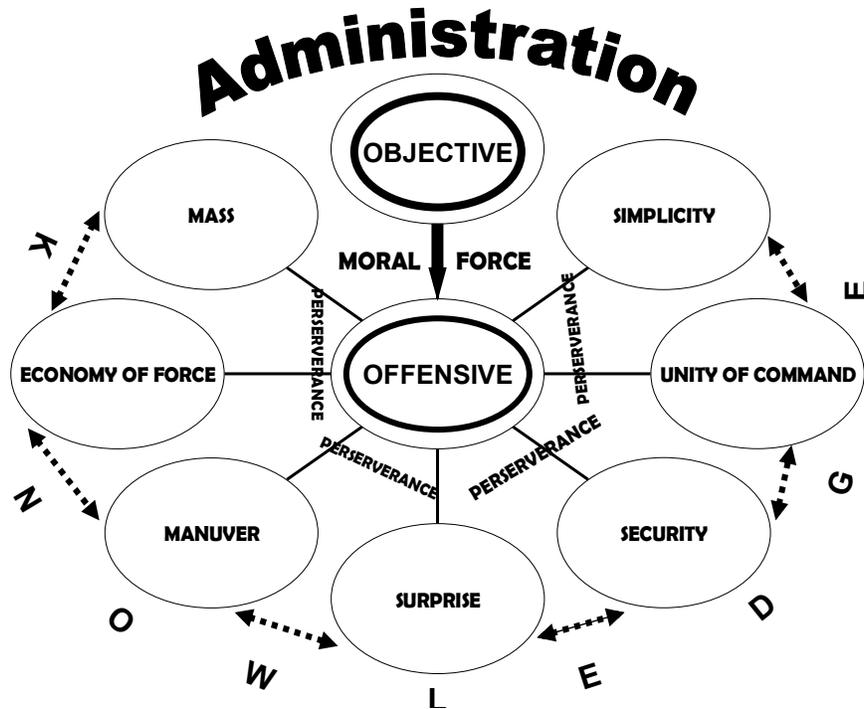
Figure 6. The Relationship of the Proposed Four New Principles

Application of Miller's hypothesis means that the Principles have to be kept to manageable "chunks." Grouping the 13 Principles would aid the human mind to mentally checklist them when applying them to a situation. A suggested chunking of the 13 Principles under three headings is given below.

- *The Core Principles*. Objective and Offensive.
- *The Operative Principles*. Mass, Economy of Force, Maneuver, Unity of Command, Security, Surprise, Simplicity.

- ***The Enabling Principles.*** Moral Force, Perseverance, Administration Knowledge.
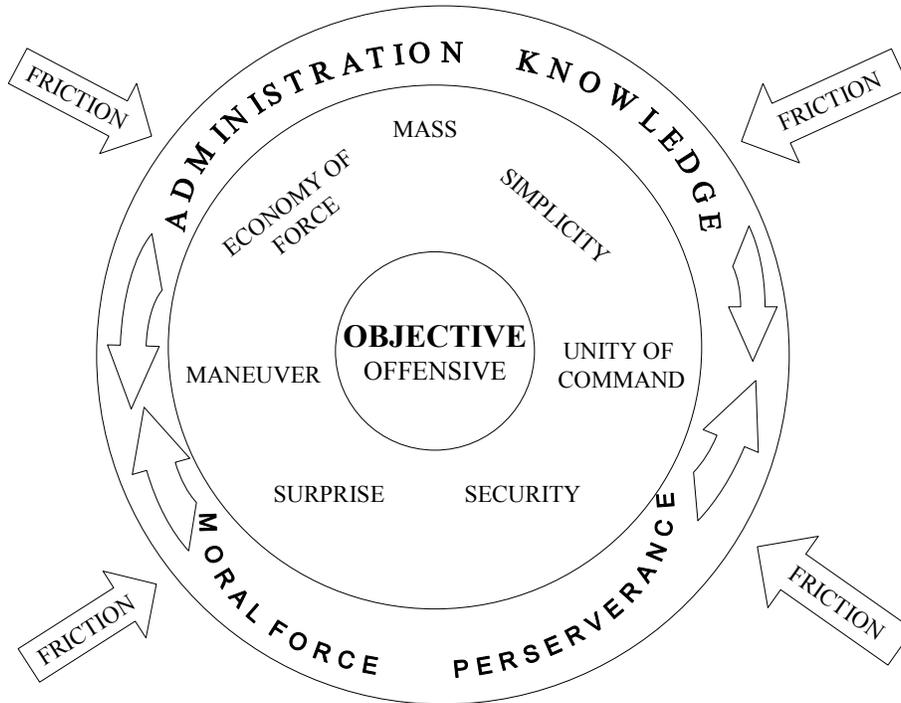
Figure 7. **The Core and Operative Principles drive the engine of war. The Enabling Principles bind the whole and reduce and protect against the friction of 4GW.**

D.   CONCLUSION

Clausewitz said that

[P]rinciples and rules are intended to provide a thinking man with a frame of reference for the movements he has been trained to carry out, rather than to serve as a guide which at the moment of action lays down precisely the path he must take. (Clausewitz, 1832)

Attempting to make the Principles of War specific to a given situation would defeat the intended purpose of establishing them. The Principles of War should ease and facilitate thinking and application of the art of war, rather than bind the military mind to "think within a box." There is no requirement to overhaul the Principles completely for 4GW. The best course of action is to reorient the scope of the Principles to cater to 4GW.

81

The Principles of War in general should be applicable to any generation of war. In this manner, they aid progressive continuity in the evolution of the doctrine of war.

One of the principles of war is "Simplicity." The aim of this principle is to avoid unnecessary complexity, which clouds the true meaning of things. In the same manner, a single list of the Principles of War will facilitate understanding. This list should encompass all principles relevant to war in general, rather than having separate principles for different generations or for MOOTW. The Principles can then be interpreted for the relevant aspects of a particular war scenario.

1.   **A Summary of Principles for War for 4GW**

While the Core and Enabling Principles are existing Principles applied with adapted interpretation to 4GW, the Enabling Principles are additions drawing attention to aspects of greater relevancy in 4GW. To summarize, the Principles with their focus on aspects of 4GW are:

- **Objective.** Clear, comprehensible, attainable and legitimate. Combining political and military goals.

- **Offensive.** Dynamic action with foresight and availability of correct information. The aim is to physically and mentally wear out the opponent and his source of sustenance and cohesion. Initiative and restraint required at the tactical level.

- **Mass.** Capable of dispersed deployment but concentrated application. Technology or firepower an aid but not a substitute for manpower. Mass essential to reassure the population, ensure their security and keep lines of communication secure.

- **Economy of Force**. Minimum military force for static security-related commitments; maximum in proactive operations. Coordination with and utilization of police forces. Sound intelligence of the enemy will avoid idle deployment. Central control of intelligence.

- **Maneuver**. Tactics varied to make maneuver unpredictable. Intelligence to aid maneuver essential. Flexibility inherent in that military maneuver be supplanted by political maneuvering wherever an opportunity presents itself.

- **Unity of Command.** 4GW has a political-military nature. Requires coordination between military, police and civil agencies.

- **Security.** Of plans, population and the military itself.

- **Surprise.** Initiative and maneuver negate the surprise the enemy may achieve. Unconventional operations essential.

- **Simplicity.** Achieved by manageable and systematic milestones with sufficient cushion of time.

- **Knowledge.** High level of cultural, political and military knowledge of the enemy and his networks is essential. This also facilitates intuitive operations. Media has to be used imaginatively in psychological warfare and the battle for hearts and minds.

- **Perseverance**. In 4GW it is "slow and steady" which wins the race because a lasting peace requires changing the opponent's mindset.

- **Moral Force**. Moral superiority, dedication, belief in the cause and esprit de corps need to be maintained over the period that it takes to fight a 4GW to a successful conclusion.

- **Administration**. As an aid to movement, maneuver, building trust and preserving morale. In the civil affairs field, administration should contribute to security of life of the population, which is a tangible, and security of their way of life, which is an intangible. This has to be a civil-military endeavor.

2.   A Recapitulation

A world devoid of war is a Utopian dream. War, sadly, has a timeless certainty. Differences of interests will always exist and entities will always have to be prepared for war. In this preparation, the Principles of War are invaluable tools to guide and focus military knowledge for the conduct of war. They aid the intuitive application of doctrine by their continuity. War has evolved to a new generation called 4GW. Conventional armies continue to follow doctrines more suitable for conventional war. This results in a situation where even the United States of America, undoubtedly the strongest military power in the world, finds it vexing to defeat enemies who follow 4GW methods. Though

4GW represents a sea of change in the way war has hitherto been conducted, the underlying principles of war remain the same. It is essential to reinterpret the essence of the principles in light of 4GW. The increasing recourse to 4GW does not mean that there is no likelihood of Second or Third Generation wars. Such wars may still take place. Broadening the scope of the Principles of War will ensure that the capability to fight conventional war is not lost and the adroitness and competence to fight 4GW is refined.

V.   SPECIAL FORCES (SF) AS THE PANACEA FOR 4GW

> However repugnant the idea is to liberal societies, the man who will willingly defend the free world in the fringe areas is not the responsible citizen-soldier. The man who will go where he colors go, without asking, who will fight a phantom foe in jungle and mountain range, without counting, and who will suffer and die in the midst of incredible hardship, without complaint, is still what he has been, from Imperial Rome to sceptered Britain to democratic America. He is the stuff of which legions are made.
>
> - T.R. Fehrenbach (This Kind of War, p. 658)

The Generation Theory, like all other theories regarding the conduct of war, is an attempt to understand and find solutions as to how to best fight the new way of war. Classifying war into various time periods based upon the character of war is an effort to comprehend the nature of war in the present period. As the military historian Martin Van Creveld (1991) writes, "[t]o understand the future, study the past" (p. 192). The theories, and the debates generated by those theories, attempt to identify the best way to defeat the 4GW enemy. In most cases, the conclusion is that where the opponent has found ways to negate the advantages of superior technology, there is a requirement to organize and train the military to fight like the 4GW foe. Hence, the ideal military configuration to fight in the 4GW battlefield is the Special Operations Forces (SOF) (Adams, 1998, p. 302), whose methods are as unconventional and "dirty" as that of the 4GW foe (McClintok, 1992). Progressing to the view that creating SOF or increasing the size of SOF is the panacea for 4GW is natural. Such a conviction or desire of the public is illustrated by the 2004 U.S. presidential elections, where a pledge to double the size of the SOF in response to 4GW foes such as al Qaeda or Iraqi insurgents was part of presidential candidate Senator John Kerry's election manifesto. SOF are increasingly viewed as the *mantra* to fight all sorts of 4GW foes, from narco-traffickers and religious zealots to ethnic terrorists and insurgents. The proliferation of tasks for SOF raises the question of whether this is the correct approach or merely one that is being adopted absent any other solution.

A.   SUITABILITY OF SPECIAL OPERATIONS FORCES (SOF) AS THE
       IDEAL MILITARY ORGANIZATION FOR 4GW

       1.   The 4GW Environment

"4GW uses society's networks to fight" (Hammes, 2004, p. 208). 4GW is geared to carry out actions that directly affect the minds of the enemy's decision makers. These actions could be terrorism, designed to mold public opinion through coercion, or information warfare, designed to affect the enemy's psyche. 4GW is initiated by the weaker side and is more offensive than defensive because the 4GW practitioner neither intends nor tries to hold on to large physical assets such as territory or vital pieces of ground. Fourth Generation foes intermingle with the population whether the population is sympathetic to them or not. This is in contrast to traditional guerrillas, for whom population support hinged on gaining approval of the population. 4GW is therefore fought in an environment of "hiding and seeking." Conventional militaries are not attuned to this environment, which combines detective and constabulary skills with military functions. Such skills need troops with adequate language and cultural skills to find clues for discerning 4GW foes from within the population, obtain actionable intelligence and launch immediate operations to utilize fleeting opportunities. It needs skills to counter disinformation and nullify the sources of support and sustenance of the 4GW foe. The troops who have such skills are the SOF.

       2.   The Iraq and Afghanistan Experience

The U.S. SF experiences directing precision air strikes or hunting Scud missiles in the 1991 Gulf War and their predominant role in Afghanistan has brought SOF to the fore as the best suited fighting force to operate in 4GW conditions. In Afghanistan in 2003, a very small number of SOF were able to impart such synergy to both air operations and operations of the Northern Alliance that a quick and relatively cheap victory was attained. This has raised the call to replicate the Afghanistan example elsewhere, including in the present war in Iraq. This may not be possible as a there are a number of differences between the two wars. First, the kind of ground-forces component that was available in Afghanistan by way of the Northern Alliance is not available in Iraq and will not be available until a dedicated Iraqi National Army and police force are in place. Second, the Afghanistan War was more in the nature of a conventional conflict than the insurgency in

Iraq (Biddle, 2002). Until the Taliban were defeated, there were discernible frontlines, which are the most defining characteristic of conventional war. However, though the factors that facilitated success in Afghanistan are not available in Iraq, the enduring conclusion is that SOF enables a cheaper and quicker victory over an elusive 4GW foe.

3.   Assessment of the Suitability of SOF

Defining and explaining 4GW, and elaborating on its complex character, brings out that fighting 4GW requires the following characteristics in the army:

- An ability to think and fight unconventionally,

- An ability to operate in adverse terrain, whether natural or man made urban jungles,

- An ability to maintain a low profile, remain undetected and achieve tactical surprise,

- Very high standards of morale, esprit de corps, endurance and perseverance,

- Capability of creating ambiguity of involvement, leaving a small footprint and providing the government with an avenue for retracting and denying involvement when required,

- A high level of cultural understanding of the area of operations,

- An ability to organize, train and empathize with local forces.

The characteristics given above are intrinsic to SOF. This implies that SOF *are* the most appropriate part of the military to meet 4GW challenges. In addition, of all the components of the military, SOF appear to be the most suitable to apply the Principles of War that are relevant to 4GW. This is evident when interpreting the Principles of War for 4GW as detailed in Chapter IV.

4.   Principles of War Applied to Special Forces

How the Principles relate to the SOF is given below:

- **Objective.** SOF are the only component of the military that are capable of attaining or influencing political and strategic objectives through tactical actions.

- **Offensive.** The nature of their employment dictates that SOF are steeped in an offensive outlook. The training of the SOF is focused on this quality. Dynamic action is the forte of the SF.

- **Mass.** In 4GW, this Principle is arrived at with an application of all resources of the government. The SOF are one of those resources. The nature of the employment of SOF compensates for mass, but does not substitute for mass in all circumstances.

- Economy of Force. Use of SF is the epitome of Economy of Force. As a result, employing SF carries the greatest appeal in the minds of the political leadership and the public. They have an aura of giving "more bang for the buck."

- **Maneuver**. SOF follows UW tactics, which makes their actions unpredictable. They can maneuver with agility on any terrain because of their lighter configuration.

- **Unity of Command.** SOF enable the combat power of a country to be applied without an irrevocable military commitment. This characteristic gives SOF applications a political-military nature and a greater ability to be employed under civilian direction.

- **Security.** The nature of SOF leads to their reputation as being "the quiet professionals." This aids their clandestine deployment and ensures the security of their employment.

- **Surprise.** Unconventional operations are designed to surprise. The SOF doctrine rests on unconventionality.

- **Simplicity.** Being small in size, the SOF have a limited footprint. The employment of SF aids simplicity, especially in complex situations.

- **Knowledge.** SF are that part of the military which has a high level of cultural, political and military knowledge of the enemy and his networks. The conduct of operations by SF is intuitive, which is the result of their extremely high standards of training and detailed knowledge of their enemy.

- **Perseverance**. In 4GW, it is strategic persistence and tactical speed that wins the race. SOF can be deployed over prolonged periods waging a quiet (and

maybe dirty) war, yet they do not create resentment against the war, either nationally or internationally.

- **Moral Force**. Traditionally, SOF have an organization and doctrine which aid in generating, developing and maintaining of moral superiority, dedication, belief in the cause and esprit de corps.

- **Administration**. SOF can operate with a limited administrative backup because of their small units of employment and ability to improvise.

Rear Admiral William H. McRaven, in his study on validating the applicability of specific principles for special operations, arrived at six principles. These "Principles for Special Operations" are Simplicity, Security, Repetition, Surprise, Speed and Purpose (McRaven, 1995, pp. 11-23). All of these principles appear among the thirteen Principles of War given above, or among the details of their constituent bits given in Tables 3 and 5 of Chapter IV. McRaven identifies "Repetition" as a separate principle, instead of a constituent of the larger principle of Perseverance as given in Chapter IV. McRaven stressed repetition because he identified constant practice and rehearsals as a determinant of success in special operations. Practice and rehearsals are conducted at the tactical level of war. This alludes to the suitability of keeping special operations at the tactical level of conduct, though their impact can be at the strategic level.

From an examination of the principles described in Para. 4 above, it is evident that other than the principle of Mass, all principles are relevant to SOF. This reinforces the argument regarding the suitability of SOF in 4GW. The performance of SOF in the first Gulf War and in Afghanistan validated their importance in unconventional applications. SOF are the best structured to fight on the 4GW battlefield. If the size of SOF was increased to an extent that their mass became significant enough to impact the 4GW battlefield, theoretically, they would be the ideal army to be employed in 4GW. Practically, however, there could be pitfalls as the "footprint" increases.

The nature of sensors, air power, precision weapons and weapons of mass destruction negate large-scale conventional wars between nation-states. In this milieu, heavy armor, artillery or other firepower-based armies are not the more efficient means of fighting. Armies need to be centered on infantry using the tenets of UW. Light infantry

utilizing UW is best suited for 4GW. Special Forces are the best light infantry trained in UW. Hence, the obvious optimum solution is to increase the size of SF. Increasing the size of SF would make SF a sort of "Super Infantry." Imparting such a shape to the army is in consonance with the reasons that led to the transformation of the battlefield from the Third to the Fourth Generation.

B.   WHAT AILS THE ARMY?

Successive, apparently cumbersome deployments of the Army in 4GW conflicts, whether by the United States or other countries, have given rise to the perception that something ails the army. American, Russian, Indian, or even the hitherto hallowed Israeli Army have had their share of blundering on the 4GW battlefield. Whether in Somalia or Iraq, Afghanistan or Chechenya, Sri Lanka or Kashmir or the First or the Second *Intifada,* the public perception is that the conflicts could have been better handled by the militaries involved. This is evident from the volume of writing on these wars and the greater interest in theories of the changing nature of war, one such theory being that of 4GW.

Lessons learned from the above wars give rise to questions about what is wrong in the army. These questions persist even though these wars have ultimately had military success. The reason for this is that in the public eye success is no longer measured by a favorable outcome. Success is a favorable outcome with minimum casualties, accompanied by political success and achieved in the shortest timeframe. A study of these wars reveals some of the shortcomings in the approach to war in conventional armies as given below:

•   **Doctrine**. Army doctrine is still embedded in the mold of previous generations. Victory is still measured through the physical occupation of an area or the capitulation of an army. In 4GW, where both of these determinants may be absent, the army has to identify other tangible ways in which to define success. Body counts are one such answer, but in most cases, body counts have given an incorrect picture of success. The populations in the parts of the globe where 4GW foes are encountered are large. They have a greater capacity to sustain human

losses. The ability to sustain losses and the occurrence of losses eventually fosters a stoic culture. This makes the task of the conventional military even more difficult. Under such circumstances, body counts create an incorrect aura of victory. The 4GW foe is more than willing to sacrifice numbers to achieve success. Body counts do not lead to victory. Victory is more the result of winning over the population and marginalizing the leadership. The Airland Battle doctrine of the extended or deep battlefield was specific to the big war in Europe, and as that big war has vanished, so has the relevancy of that doctrine. Unfortunately, the U.S. Army and armies all over the world are still steeped in that doctrine. Wherever nuclear weapons are available, their presence is almost disregarded in the formulation of doctrine because their use is considered almost unthinkable. Even between adversaries armed with nuclear weapons, armies continue to use a doctrine for conventional war because they cannot imagine any other doctrine. The use of nuclear weapons on military targets is factored in without much consideration for the consequences of the use of those weapons.

- **Organization.** Organization has to keep pace with technology or the benefits of technology cannot be realized. In 1939, the tank and the aircraft were both available to the French in greater numbers than they were to the Germans. However, the Germans organized themselves in combined arms teams to exploit the benefits of technology. 4GW is more a product of organization than of technologies. When available technologies are adapted or organized in a manner that fulfills needs, they change the nature of war. The Army/Corps/Division organization of conventional armies is meant for conventional war. However, this organization continues to persist in 4GW, even though most of the engagements of these wars have been at the tactical level. It can be argued that it is incorrect to change an entire military organization in response to a type of war that may be merely a passing phase. However, this phase has been around as a predominant form of war for almost 40 years, since the end of the Vietnam War.

- **Equipment.** The equipment (and related technology) of conventional armies is tailored to fight conventional wars. The equipment of one side is akin to

that of the other. To gain an advantage, resources are spent to ensure that your equipment is better than that of your opponent. Commonality of equipment and technology also aids in predicting the way the enemy will fight. For example, even if the enemy has superior tanks, one can still superimpose the capability of his equipment on your own template to make reasonable deductions about how he will conduct his operations. In 4GW, there is a mismatch between the equipment of one side in respect to the equipment of the other. This mismatch makes intelligence about the enemy difficult to gather. Even if equipment is the same in certain spheres, the method of its exploitation will be different. For example, the primary use of the RPG-7 when used by a conventional army is as an anti-armor weapon. The conventional mind rebels at its unconventional use and never imagined the RPG-7 as an anti-aircraft weapon. Though RPG-7s are reported to have been used against helicopters in Vietnam, journalist Mark Bowden writes that prior to the Mogadishu incident, the firm view was that "It was difficult and dangerous, almost suicidal, to point [an RPG] skywards [and that] they were useless against helicopters" (1999, p. 106). The Somalis proved that RPGs could be used against helicopters and so did the Afghans (Operation ANACONDA, Feb. 2005, p. 72). In 4GW, the RPG may be used as an anti-armor or anti-personnel weapon, an area weapon, a precision weapon or as a high trajectory mortar (Thomas, 1999). Other variations have included use as an anti-bunker weapon or modified to be an incendiary. 4GW has seen the utilization of weapons and equipment in ways for which the stronger side has been unprepared.

- **Training.** The conventional military trains for the "big war." Very little time is devoted to 4GW-related instruction. Every year militaries all over the world conduct their maneuvers. These maneuvers have no scope for preparing the army to fight in a 4GW environment. Archetypical maneuvers have spawned a number of jokes on army life alluding to the rigidity of ideas and the mindset in the military. The reason for this is the breakup of military affairs into strategic, operational and tactical fields. Strategic training is not conducted on the ground. It is the domain of war rooms and government directives. Tactical training occurs

mainly at the battalion level, conducted for the most part in the vicinity of peacetime billets. Operational training, which requires larger areas, is for armies that schedule large-scale annual maneuvers. The problem is that 4GW has little scope for the operational aspect. In the maneuvers themselves, while tactical exercises are conducted under realistic conditions, the operational exercises have a surreal atmosphere, because to complete the maneuvers in a given timeframe, tactical exercises are telescoped in order validate operational concepts.4GW actions are dispersed and do not involve large bodies of troops. Higher headquarters are involved in 4GW more in respect to the administrative aspects. The divergence of requirement and reality leads to a situation where training in aspects relevant to 4GW gets second shift in the conventional army. This leads to setbacks such as the lack of a coordinated approach when the war in Iraq became a 4GW, the casualties that the Indians suffered at the outset in Sri Lanka and the massacre of Russian troops in the initial stages of the war in Chechnya. In all cases, the armies involved improved their performance after paying a price in lives.

1.   The SOF Image

SOF have one enduring image in the public eye, which is difficult to change. This image is that of efficient and calm killing machines who are force multipliers. This image has been built over the years, shaped by the kudos or opprobrium heaped on "special operators" or "commandos" (the erstwhile name for unconventional soldiers) in either print or movie media. The image cannot be dismissed as incorrect. If a Hollywood movie is made about Special Forces, what appeals to the public is what is called in SOF vocabulary as DA or "Direct Action." Viewers find it more interesting to see SOF in the thrill of combat than to watch how they carry out mundane tasks such as training guerrillas.

Because of this enduring image, there is confusion and shock when the people see their military struggling to win a 4GW. In such a case, the people logically ask why their government is not using UW forces to fight unconventional enemies. In their Hollywood-created perception, SOF are not a scarce resource. They feel that in the same manner that

they saw or read about the amazing efficiency of SOF, the SOF can go and get the enemy. This picture exists not only in the minds of U.S. citizens, but also in the minds of people all over the world. Worldwide, people expect that what cinemas portray about SOF is close to their actual capabilities. Over the decades, movies like "Green Berets" (1968), "Rambo" (1982), "Commando" (1985), "Delta Force" (1986), "Navy SEALS" (1990), "Universal Soldier (1992)" and their clones have given the SOF an image synonymous with those who snatch victory from the jaws of defeat through the means of unconventional warfare. Research conducted at the University of Oklahoma suggests that while average moviegoers realize that the images of the U.S. Army are fictional, they are too strong to ignore and are used unconsciously by people in forming opinions. If such movies constitute the majority of exposure a person has to the military, the person will then draw upon those images when considering military affairs in forming opinions and making decisions about the military (Trammel, Turner and Briggs, n.d.). Public opinion does not appear miraculously from the sky. Its formation is aided by the media, which includes the entertainment industry. When the public has to make complex decisions on topics about which they are uninformed they turn to "knowledge supermarkets." These supermarkets are primarily the media and the entertainment industry. George Gerbner's Cultivation Theory states that images such as those seen in television and movies can form misrepresented expectations (Trammel et al.). The Cultivation Theory states that heavy exposure to mass media, namely television, creates and cultivates attitudes more consistent with a media-conjured vision of reality rather than actual reality. Public opinion shapes the views of policy makers. The policy makers and politics are deeply intertwined. When there is a requirement for increasing or reducing the size of the military, public opinion plays a great role in making the relevant decisions. This is not just to motivate young people to join the military or to inspire taxpayers to willingly fund the cost of the military. Considering public opinion helps create convictions that in the present world, elite forces are the best and most economical antidote to 4GW. The scores of articles that appear in the media on this subject are evidence that such a conviction has indeed been created.

2.   **Strengths and Weaknesses of SOF**

SOF are the successors to the Commandos, elite troops who fought unconventionally. Because 4GW is war waged by unconventional means, the natural conclusion is that 4GW should be fought by SOF.

Terrorists, insurgents, militants, etc., are umbrella terms for 4GW fighters. In the same manner, in the present day there are two types of unconventional soldiers; first, Special Forces and second, contracted soldiers (or the erstwhile mercenaries). Contracted soldiers differ from mercenaries in that they are contracted openly by states, similar to commercial enterprises. Mercenaries on the other hand, are soldiers who operate in the shadows. No laws regulate their employment or restrict their actions. High quality contracted soldiers and mercenaries are for the most part ex-SOF. In fact, the high salaries being offered to contracted soldiers is causing a problem in retention of trained manpower, especially of the DA variety, in the SOF (Couch, 2005, p. 38). Such practices reinforce the view that SF are the most suited for 4GW. To examine this further, it is pertinent to go over the strengths and weaknesses of SF.

a.   *Strengths of SOF*

The following are the strengths of SOF.

- They have a strategic reach. Small size, modular self-contained organization, enhanced language and cultural skills and the ability to quickly adapt to changed operating conditions make it possible to deploy SOF in any part of a large country or in any part of the world (in case of the U.S. SOF) as a quick reaction force.

- They have an independent direct-action capability. They are trained to carry out missions based upon their organic weapons and equipment.

- They have the training and equipment to conduct operations that involve human intelligence collection.

- They leave a small footprint. As a result, they are the preferred means of employment of force where political or strategic conditions dictate a need.

- They have the ethos and training to persevere in the face of setbacks without a decrease in morale.

- U.S. Army Special Forces (SF) can task-organize better to suit the mission requirements because of the mix of specialists in each team (this comment is based upon the U.S. Army SF organization of A Teams). Most SF in the world follow the U.S. model.

- SOF can respond faster to contingencies because of their small size and ethos to kick-off for an operation from a cold start.

- They have a higher endurance level than conventional forces because of their selection and training.

- SF are better oriented for conduct of operations in any region. This is a virtue of their small size, which enables them to carry out far ranging, and if required, covert, reconnaissance in peace time when the use of conventional units becomes difficult.

b. *Weaknesses of SOF*

The following are the weaknesses of SOF.

- Because of their restricted size, they cannot maintain continuous oversight over an area with large magnitude either in terms of geography or population.

- For prolonged deployments, they require the support of conventional forces whether they are of their own country or of friendly forces. Small SF detachments like "A Teams," if tasked to train friendly forces, can carry out this task better if they do not have to cater to their own protection and administration.

- They take a long time to be trained to full capability.

- SOF are difficult to integrate in the big army because of the differences in their ethos and organization. This is a paradoxical situation because integration would undermine the autonomy that

builds up the unconventional approach that is the *raison d'être* of Special Operations.

- SF do not have the capability of winning the peace among a hostile or threatened population. Where an area has to be occupied, SF do not have the mass to ensure that the population sees their presence at every location, which is essential for instilling confidence.

3.   The Misconception of the SF Image

The term "Commando" created an image of conventional soldiers trained to carry out unconventional operations. This image evolved as a result of the Commando raids carried out in occupied Europe during World War II. Commandos were part of the conventional army and carried out "covert-overt" operations. The operations were covert, but after their conduct was over they could be overt as they were an adjunct to a larger war. The SF concept grew out of the insertion of Office of Strategic Services (OSS) teams into various occupied areas to organize partisans. The OSS, being more of a "cloak and dagger" entity (Adams, 1998, p. 33) had a requirement of operating unconventionally but not as part of the "big army." Based on the British Special Operations Executive (SOE) model, the OSS conducted tasks such as "sabotage, espionage, subversion and propaganda" (Marquis, 1997, p. 9). Hence, they were carrying out tasks that were more political in nature. Adams (1988), when describing the nature of operations carried out by SF, writes, "Special Operation Forces act out their deadly games in a clandestine environment that is only rarely visible to the public" (p. 9). SF are required to be clandestine to remain effective because too much exposure to their modus operandi dilutes their effectiveness in achieving surprise.

The period of the 1960s saw an upsurge of revolutionary activities all over the world. In most cases, these were aided and abetted by Communists. The involvement of the U.S. military in Vietnam saw the deployment of Army SF in the Civilian Irregular Defense Group (CIDG) program, which was otherwise a CIA operation (Adams, 1998, p. 84). Later, the 1970s saw an exponential increase in terrorist activities all over the globe. The U.S. response to this was specialist anti-terrorist units such as the GSG 9, 1st Special

Forces Operational Detachment-Delta (Delta Force), etc. By associating counter-terrorist components with the overarching concept of Special Forces, people have at times considered SOF anti-revolutionary, anti-communist and anti-terrorist. As per McClintock (1992), counter-terrorism is too often a name for torture and assassination, and despite terms such as psychological warfare, counterinsurgency, UW, and Low Intensity Conflict (LIC), when one takes away the rhetoric, the problem is that this type of war has always been associated in the Western mind with the "dark art." The military is made up of people and this perception of the SOF flows not only into the people, but also into the conventional military.

C.   ANALYSIS OF THE PANACEA

Conventional forces win by sheer numbers, air power, more firepower and superior training. SOF contributes to victory by achieving objectives that are conducive to their skills, weapons, tactics, training, physical fitness and organization. SOF skills are symmetric to 4GW and hence SOF are the ideal force to fight 4GW. Other than Mass, they have the qualities to bring every Principle of War to fruition. A solution to overcome the problem of deficiency of mass is to increase the size of the SOF. This is the same solution that public opinion arrives at, as previously described. The conclusion of this Chapter is that SOF are the panacea for at least the military aspect of 4GW as far as it relates to the conduct of operations. This makes for a compelling argument to increase the size of the SOF so that they can fight 4GW with a greater degree of efficiency than the conventional forces.

Conventional forces have a role in a conventional war. If countries have enemies who will engage them only conventionally, then the requirement for conventional forces still exists. But the lessons and history of 4GW over the last 40 years have convinced every one of the weaker of two opponents that there exists a way to fight a war asymmetrically to negate the advantages of the stronger. Whether the asymmetry is created through nuclear weapons or through 4GW is a different issue. Among any two belligerents there will always be one who is weaker. India is weaker than China, Pakistan is weaker than India, the Israelis are weaker than the Arab world, the North Koreans are weaker than the South Koreans backed by a U.S. nuclear fist, Taiwan is weaker than

China, and Ecuador is weaker than Peru. The list goes on. Open war between equally matched belligerents is rare. Where there is a likelihood of that, as between Germany and France in 1939 and between the U.S. and the Soviet Union in the Cold War, other solutions are found. The Germans graduated to the next generation of war, and in effect so did the U.S. and the Soviet Union. They indulged in 4GW through proxies all over the globe.

There are two things that create a "demand pull" for an increase in the size of the SF. One is public opinion, which shapes the actions of the political leadership. The other is the views of military theorists and thinkers, which shape the views of the military leadership and the bureaucracy.

SOF are expected to play both the "Rambo" role and that of the winners of hearts and minds. The public perception, based on movies and a far greater exposure to the activities of the SOF than in the past, is that SOF are the answer to all vexing enemies, especially of the unconventional variety such as al Qaeda or the insurgents in Iraq. The public, therefore, expects that SOF will be utilized to a greater extent than the conventional military in 4GW.

Military intellectuals are also increasingly advocating the view that the problems of 4GW require manpower skills and not technology. As military analyst Anthony Cordesman states, "[T]he missions that are emerging require skilled and well trained troops with area expertise, linguists in far greater numbers, and specialists in civic action and nation building as well as guerrilla warfare" (2004, p. xiii). The description of the requirement that Cordesman spells out fits the SOF like a glove. If Cordesman is not referring to the SOF, then he is suggesting that the entire army be trained in the image of SF. In other words, he advocates transforming the army to think and fight unconventionally. Similarly, Admiral Arthur Cebrowski, the father of Network-Centric Warfare (NCW), also veers towards SOF-like qualities as the solution for the battlefield of the future because the battlefield with which NCW was conceived has spouted 4GW features. Cebrowski and Garstka (1998), writing on NCW, stressed the utilization of computerized information networks to turn "information superiority into significant competitive advantage." This was envisaged to be done through linking technological

sensors, Command and Control centers and weapon platforms. NCW was a means to transform the military. However, the concept of NCW has adapted to the changing face of war. In an interview as Director of the Office of Force Transformation, Cebrowski stated:

> [NCW] is not about the network, rather it is about how wars are fought. How power is developed. During the industrial age, power came from mass. Now power tends to come from information, access and speed. The issue is not weapons reach. The issue is sensor reach. The whole world knows that if U.S. military systems can see a target we can kill it. Consequently, potential enemies are working very hard to make it difficult for us to sense their targets, so we are shifting from a weapons game to a sensor game. If you look at those Special Operations personnel on the ground in Afghanistan, they were sensors. (IITA Interview, 2002)

Such interpretations are studied in all military institutes where doctrine is evolved, whether in the United States or elsewhere in the world. The message that comes across is clear; SOF can provide the answer to 4GW problems, get more of them. However, the question arises whether expansion may be a drawback in itself. Many within the SOF community have been of the opinion that the rapid expansion of the SOF in Vietnam seriously diluted the quality of the force. Expansion brings conventionally minded people into the Special Operations community. This undermines their greatest strength, which is to think and act unconventionally (Adams, p. 158). This aspect is examined in greater detail in Chapter VI.

VI. WHEN SPECIAL IS NO LONGER SPECIAL

The smaller the unit the better its performance.

-- T.E Lawrence (The Seven Pillars of Wisdom)

Special Operations Forces (SOF) have traditionally been that part of the conventional military whose *modus operandi* is unconventional. When conventional armies are stymied by the methods of unconventional enemies, the perception is that SOF will be most suitable to beat this enemy. This perception is not misplaced. Indeed, sayings such as "fight fire with fire" and "set a thief to catch a thief" have time-tested logic. When faced with a difficult unconventional war situation, the first thought that springs to mind is to advocate an increase in the strength of the SOF. This was elaborated upon in Chapter V. In the U.S. military, SOF encompasses Special Forces of all the services. SF by itself refers to Army Special Forces. The Naval Special Forces are not referred to as SF; the terms used for Navy Special Forces are Naval Special Warfare Units or the more familiar SEAL Teams (Adams, 2001). Worldwide, the generic term "SF" refers to all types of Special Forces. For this reason, the terms SOF and SF have been used interchangeably as appropriate in this Chapter, as well as elsewhere in this thesis.

Ross (1952) and Williamson (1967) have theorized that an increase in size does not necessarily translate to greater efficiency. Regarding both the economic field and organizational theory, they have suggested that greater size can lead to a decrease in performance. If this is the case and if the SOF are increased in size without deliberation, it is likely that their operating efficiency will be degraded. A question arises about whether the SOF be expanded to improve the ability to fight in the 4GW environment. In seeking an answer to this question, this chapter examines:

- Factors affecting the optimum size of Special Forces,
- Whether large size affects Special Forces in that an increase in size impacts negatively on their "Special" character.

This examination refers to the U.S. SOF but is applicable to SF anywhere else in the world.

A.   SUITABILITY OF SOF FOR THE 4GW ENVIRONMENT

1.   Special Forces and What Makes the SOF "Special"

Special Forces are elite units with specialized personnel, equipment, training or tactics exceeding the capabilities of conventional military forces. They have a very high level of skill in specific areas. They normally follow unconventional methods of operation. Philosophers and economists agree that only the scarcity of a thing adds to its value. In the same manner for something to be considered "special," other things must be considered "ordinary" in comparison. For SOF to be "Special," they have to build and maintain skills and standards that the conventional military does not possess. The reason that the conventional military does not have "special" skills is because the skill sets of SF are unique and take time to acquire and perfect. To some extent they are also inborn. SF personnel need to have greater initiative, a sharper intuitive intellect and a streak of daring along with physical and mental stamina. All those who volunteer and join the SF have this quality in good measure. The conventional military at present finds it either unnecessary or unfeasible to acquire special skills because these skills are not central to the strategy and tactics of the First to Third Generations of War.

2.   The SF Operator

An SF operator, if he is to be truly "Special," needs to be an expert in his profession. Acquiring expertise takes time; hence inducting a "rookie" into the SF is not desirable. Therefore, SF ideally begins with inducting trained soldiers, who have put sufficient time in the military, into their ranks. The feeder units for entry into U.S. Army SF are generally the airborne formations and the Rangers. Those SF recruits therefore start off with a higher level of skills and a greater ease in assimilating the SF standards of fitness, culture and doctrine. The SF operator is typically older than the average enlisted soldier/sailor as learned by Clancy (2001, p. 5) and Couch (2005). The latter states that the average age is 28 years for a SEAL and 32 years for a member of an SF A-Team. This is because his training should ideally begin without having to spend time on basics. He *ab initio* needs military skills that come with combat experience and maturity, which a fresh entrant will not have. At the same time, he needs those qualities of daring and

risk-taking, which in an average person decrease with age. He requires the maturity to make considered decisions and must have the mental makeup to take risks with an icy clarity of mind, unhindered by the fog of youthful exuberance and bravado. The SF require mature people who can make considered and calculated decisions and risks. While risk-taking is a common feature among the young (say less than 25 years of age), it is rare in older people. The operator has to have above average physical fitness, which has been the traditional hallmark of a Special Forces soldier. He need not be a superman, but he should have the capability of sustained endurance in any terrain or weather.

B.   THE SOF SIZE AND PERFORMANCE EQUATION

Normally, size is not associated with agility and flexibility. These two qualities are among the greatest virtues of the SOF. Axiomatically, an increase in size should result in a reduction in these qualities. There are three main factors that call to question the suitability and feasibility of increasing the size of the SOF. These are:

- The likelihood of deterioration in efficiency with an increase in size of the SOF,
- The limits imposed on size by the kind of organizational structure most suitable for SF,
- The limits imposed on size by the shortage of the correct quality of manpower for SF.

In order to examine these factors a brief overview of SF is necessary.

1.   What Makes the SOF

As per the techno--thriller author Tom Clancy (2001), modern SF may have had their beginning in the German "Storm Troopers" of World War I, who were the first units of soldiers with special skills (p.5). However, even prior to this era, soldiers who were different from the ordinary existed in the shape of the British "light infantry" or the American "sharpshooters" and "scouts" of the frontier wars. In modern war, SF came to the fore with the British Commandos and SAS. These were the models and forerunners of SF. These units were part of the conventional army and all their support functions, such as intelligence, logistics and transportation, were carried out by the army. The U.S. SOF,

as they are structured at present, have developed integral support facilities to a much greater extent. This enables the deployment of the SOF with minimal assistance from the mainstream army; the only assistance needed may be transportation and strategic intelligence. This capability, while being useful in situations where a low profile deployment is preferred, has its downside. It creates a belief that the SOF have the ability to independently handle even large conflicts. This impression gives rise to the demand for increasing the size of the SOF, with the belief that operations such as those in Iraq can be better handled by the SOF.

The U.S. SOF consists of the actual operators (the trigger pullers or pure shooters) as well as those who support them through related activities. The operators represent approximately 25% of the total SOF strength. Couch (2005) states that the SOF are a little over 50,000 personnel with 16,000 being the "pure shooters." Of these, no more than 5,000 can be deployed in prolonged sustained operations. The supporting personnel include PSYOPS and Civil Affairs (CA) units. Though these are support units, they can carry out operations in their own right. As given by Adams (1998, p. 16), the tasks of the SOF and the components entrusted to carry them out include:

        a.   ***Army***

- Special Forces --- Unconventional Warfare (UW), Foreign Internal Defense (FID), Direct Action (DA), Special Reconnaissance (SR), Counter-terrorism (CT)
- Rangers -- DA, CT
- SO Aviation -- DA, SR and support all operations
- PSYOP -- Support all operations
- CA -- FID, UW, Information Warfare (IW)

        b.   ***Navy***

- DA, SR, CT, FID, UW
- Special Boat Unit (SBU) -- Support all operations
- SEAL Delivery Vehicle Team (SDVT) -- Support all operations

c.   *Air Force*

- Support all operations

The U.S. SOF have supporting units in terms of CA/PSYOPS as well as aviation, supply and communication assets. This is not the case in most other countries, where the SF rely to a much greater degree on the mainstream military and hence cannot contemplate independent operations. While all SOF need to have cultural, language and intelligence skills and the ability to think "outside the box," the operators need a particular "special" mental makeup as well.

2.   The Limits of Organization Size

Two aspects of organizational theory are relevant to the issue of limiting an organization's size. The first relates to the span of control, which becomes larger with size and is thought to reduce efficiency. The second relates to the organizational type to be adopted, keeping in mind the specific requirements of an organization.

The size of a country's military establishment is dependent on the following:

- The nature and level of threats that a country faces,
- A country's aspirations to power, since the armed forces are the source of and a determinant of power,
- The tasks that the armed forces of a country have been given by the political leadership; e.g., in totalitarian states, the armed forces may have the task of keeping their own population in check,
- The resources available to a country, such as population and financial resources,
- The geography of the country; e.g., nature of its terrain and length of land and/or sea borders.

Ultimately, the determinant of size is the availability of human and financial capital and the requirement for resources relative to present and future tasks. Capital is important because a country has to invest not only in the military but in economic tasks in other areas. If these areas are neglected, the social climate, quality of life and overall development could deteriorate. This is a politically important issue, especially in democracies. The size and cost of the army has to be prudent to avoid waste and

sufficient to carry out the required tasks. Studies have analyzed the relation of large-size firms to organizational efficiency. These studies conclude that there has to be a limit to firm size because beyond a particular size, performance is affected. This is especially true of organizations that are carrying out specialist functions.

3.   Effect on Size Due to Diseconomies of Scale

The economist Dr. Staffan Canback (Feb. 2002), utilizing work done on this subject by O.E. Williamson (1975), concludes that there are four major categories of diseconomies of scale. These are:

a.   *Atmospheric Consequence*

As companies expand, there is increased specialization but also less commitment on the part of the employees. The employees often have a hard time understanding the purpose of corporate activities, as well as the small contribution each of them makes to the whole. Applied to the military, we can state that as armies expand there is a requirement to specialize in specific areas, as the complete army cannot be expected to carry out each task with equal competence and precision. Theoretically it may be possible for the complete army to undertake any task, but the time taken to reach the required level of expertise, and the expenditure involved, will make that imprudent. Couch (2005, p. 38) states that

> it takes three years or more to train a SF operator for duty, and many more years before he becomes an impact player in that unit. New men entering the SOF training pipelines in 2005 will not deploy in operational units until 2007 at the earliest, and not reach their potential as special operators until well past the end of the decade.

Because of such organizational constraints, there is a requirement to specialize components of a military for specific tasks. The SOF are a result of such specialization. The limits of firm size in turn apply to this specialized segment of a larger organization. If this segment is to be increased in size, it will itself become a bureaucracy. The soldiers that form the SOF will suffer from the weakness of a bureaucracy in terms of maintaining esprit de corps, and SOF soldiers will have less commitment because they will become such small cogs that they will have a hard time understanding the purpose of

their operations. They will feel that their contribution is too inconsequential in a large war machine to be carried out with the required degree of daring and perseverance.

b. Bureaucratic Insularity

As companies increase in size, senior managers are less accountable to the lower ranks of the organization and to shareholders. They thus become insulated from reality and will often strive to maximize their personal benefits rather than the overall corporate performance. This results in organizational slack. The very high degree of esprit de corps in SOF is the result of the officers being closely associated in the conduct of operations. It is in the conduct phase and in the operational field that esprit de corps is fostered, not in the planning phase, where there is no contact between the leaders and the led. It is because of this distance between the leaders and led that the conventional army has a lower degree of drive relative to SOF. If the size of the SOF is increased, so too will the bureaucratic insularity. In small SF units, planning is an interactive process involving the leaders and the led, because those who are led have specific core competencies which leaders draw upon to make plans. The officer-enlisted ratio in the SF A-Teams is 1:5. Such a ratio is unachievable in the conventional military without reducing the quality of officers. This ratio reduces the bureaucratic insularity at the grass roots level in SOF.

c. Incentive Limits

Large corporations tend to base incentives on tenure and position, rather than on merit, because of the difficulty in structuring well-functioning incentive programs. Large payments to employees may threaten managers and are avoided. This puts large corporations at a disadvantage when compared with smaller enterprises in which employees are often given a direct stake in the success of the company. In SOF, because of their smaller size, the soldiers have a direct stake in the success of their missions. The more non-bureaucratic leadership style means that leaders can more easily adapt to follow the advice of seasoned operators of special merit. The feeling of "ownership" that can be fostered in small, specialized units makes the members of the unit feel that they have a direct stake in its success.

d. Communication Distortion

A single manager cannot understand every aspect of a complex organization. Thus, it is impossible to expand a company without adding hierarchical

layers. Information passed between layers inevitably becomes distorted. This reduces the ability of high-level executives to make decisions based on facts. This factor is the easiest to apply to the SOF scenario. The larger the SOF, the more hierarchical layers that are required going by standard organizational practices.[7] The smaller the SOF, the less noise there is in the passing of orders. Having flatter organizations may permit larger organizations to function without the corresponding increase in noise. However, flat organizations have their own shortcomings in that they reduce the tempo of large operations. The terrorist's cell-based network is a flat organization. However, the cells do not operate in unison. Defense analysts John Arquilla and David Rondfeldt (2000) visualize that a very high level of Information Operations capability will permit "sustained pulsing" of swarms of small units to achieve a common objective, permitting flat organizations to execute high tempo operations. However, at the present time, the organizational changes and Information Operations competence permitting the level of stigmergic communications, which are required in swarming, are not developed to the required level of competence (pp. 85-87). The larger the SOF becomes, the more difficult it becomes to avoid communication distortion, which ultimately leads to loss of efficiency.

4.   Effect on Size Due to Problems of Coordination and Management

Problems of coordination and management always manifest themselves as an organization grows larger. The problems of coordination and management are the fundamental factors that limit the size of organizations (Ross, 1952). This is supported by the following reasoning:

- Coordination has to be the act of a single center. The principle of division of labor cannot be applied to the task of coordination.
- The supply of coordinating ability available to an organization cannot be increased along with other factors since coordination is single point.

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7 The move towards flatter organizations is currently gaining momentum as one of the objectives of transformation, taking the cue from the terrorist 4GW organizations, which, being based on the networked cell structure, are flatter. How flat military organizations can become is a matter of conjecture. The smaller the organization, the flatter its structure can be made.

- The supreme coordinating authority must have knowledge of the details of the problems as a condition of their solution. The larger the field in which coordination is attempted, the greater the knowledge required to be possessed by the coordinator.

- Every increase in size beyond a certain point requires a lengthening of the scalar chain of authority because the top coordinator has to delegate authority to maintain the ability to manage effectively.

- The scalar chain of authority has a limit. In other words, the span of control has a limit.

Ross' study occurred prior to the information revolution. The information revolution has increased the ability to increase the span of control. Coordinating ability can vary depending on individual ability, which explains the reasons why some Chief Executive Officers or Generals are more successful and sought after than others. Ultimately, however, the human brain has a limit. In spite of information management tools it can suffer from information overload.

Armies have traditionally had the capacity to increase rapidly in size without apparent ill effects. Between 1933 and 1939, the German armed forces increased in size by 3500% (from 100,000 to 3,500,000 personnel) without any deleterious effects. This was made possible by increasing the number of controlling headquarters and by delegation, especially at the operational level. The strategic level, however, being a single center in the form of the Fuhrer, became overloaded. As a result, many crucial strategic decisions were erroneously made, not made at all or delayed because the military had grown too big for Hitler to have a grip on the situation or be able to devote all his attention to it.

It is because of the decrease in efficiency that is concomitant with an increase in size that specialized organizations have short chains of command, a situation which has resulted from hard experience more than deliberate design. Whenever specialized organizations have grown too large, their efficiency has suffered. An example is the *Waffen SS* who were in essence specialized troops. They were formed in 1940 as

specialized bodyguards or to carry out specialized tasks that were political in nature and not in the realm of the regular army. By the end of the war they had grown to 600,000 men (Pipes, n.d.). By this time, very little was left of their specialized character other than a marginally higher level of élan and ruthlessness. In the later part of World War II, the *Waffen SS* had in essence become much like the U.S. Marine Corps; they were a fourth service with their own formations up to corps size. They had become and were used like conventional troops.

The U.S. Marines have traditionally been more special than the other services. They have particular standards of physical fitness and esprit de corps which they have maintained and sustained. The image they have assiduously built by word and deed has created an aura around them, exceeded lately only by the Special Forces. However, their size has militated against their becoming truly "special." At the present moment, they can be considered elite infantry forces.[8] The very reason that the SOF have remained a notch above the Marines is their smaller size. This enables them to adapt organizations and tactics, induct new equipment and reshape doctrine without the turmoil associated with change threatening to stymie these efforts. Should the SOF become bigger, they too will spout bureaucracies that will stifle innovation and initiative. The SOF remains more "special" than the Marines in the same manner that the flexibility afforded by size permits the Marines to introduce and adopt new concepts faster and more easily than the mainstream Army.

If the SOF were to carry out operations independent of the combatant commands, as is often the point made by a number of military thinkers, they would eventually find themselves becoming more bureaucratic. If they have to go it alone in a country the size of Iraq, they would need large support staffs and technocrats. This would convert them into what they are trying to supplant. The net result would be having an instrument that is inappropriate for the task and which, in the process, looses its own sharp edge. As organizations grow larger they have greater communication and reporting requirements (Draft, 2003, p. 103). This increases the professional staff ratio. While proportionately,

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8 This is a considered opinion of someone from another country who gets a macro view of the Marines when looking at the U.S. armed forces as a whole.

the administrative personnel may diminish with economy of scale in large organizations, the professional support staff increases greatly. The end result is that in large organizations, the proportion of the actual operating personnel declines.

C.   THE LIMITS ON SIZE DUE TO THE ORGANIZATIONAL STRUCTURE

1.   Mintzberg's Structure in Fives

The Organization Theory specialist, Henry Mintzberg (1993), lists the five configurations of organizations as Simple Structure, Machine Bureaucracy, Professional Bureaucracy, Divisional Structure and Adhocracy.

A brief description of these configurations is given below.

- ***Simple Structure***. An organization characterized as being small and informal, with a single powerful individual, often the founding entrepreneur, in charge of everything.

- ***Machine Bureaucracy***. An organizational form in which work is highly standardized. There is a large middle line hierarchy overseeing the work of the operating core. It is vertically centralized with decision making concentrated at the top. The work environment is not prone to change and fits best with mass production.

- ***Professional Bureaucracy***. Organizations that rely on trained professionals for their operating tasks. The trained professionals are given considerable control over their own work. The employees are highly skilled and free to make decisions on their own.

- ***Divisional Structure***. The form used by many large organizations, in which separate autonomous units are created to deal with entire product lines, freeing top management to focus on large-scale, strategic decisions. The separate units may be operating in the form of the other configurations.

- ***Adhocracy***. A highly informal, organic organization in which specialists work in teams, coordinating with each other on various projects. Adhocracies can innovate solutions in complex environments.

2. Applying Mintzberg's Structures to the Military

Large conventional armies are predominantly Machine Bureaucracies with some qualities of the Divisional Structure. Decision making is concentrated at the top and little innovation is permitted even in complex situations. War is a complex and dynamic environment. However, since armies are not perpetually at war, peacetime configurations settle down to the structure of the Machine Bureaucracy, which permits assembly line functioning. Recruits enter the assembly line, come out as trained soldiers, carry out normal administrative and training functions and exit the system. This way of functioning becomes the predominant military culture. As a result, even if war increases the complexity of the environment, the dominant culture keeps the assembly line methods predominant.

Mintzberg's organization structure is determined by its environment. The environmental varieties rise from two determinants, first, its complexity and second, the speed of changes that take place in it. Based upon these determinants, four types of organizational form can be identified as detailed in Table 6. The Divisionalized form is not mentioned in the Table because it is a partial structure, superimposed on the others (Mintzberg, 1981).

Table 6.   Environmental Determinants of Organizational Structure (From *Mintzberg's Taxonomy of Organizational Forms* **by F. Beshears)**

Environmental Variety = Complexity x Pace of Change

	SIMPLE	**COMPLEX**
STABLE	**Machine Bureaucracy** Standardized work processes and output	**Professional Bureaucracy** Standardized skills and norms
DYNAMIC	**Simple Structure** Direct Supervision	**Adhocracy** Mutual Adjustment

The Table above shows that Adhocracies are the structures that are most suitable for environments that are complex and dynamic. Mintzberg (1993) states that

> a dynamic environment calls for organic structure and a complex one calls for decentralized structure. Adhocracy is the only organization that is both organic and relatively decentralized. (p. 267)

War is complex and dynamic. Within the field of war, 4GW is even more complex and dynamic. Conventional war is relatively stable compared to 4GW because the military knows how to cope with a conventional war environment. In 4GW, the traditional uniformed and recognizable enemy is absent. 4GW enemies are hidden and unrecognizable and can attack at anytime from anywhere. Their actions are unpredictable and difficult to anticipate. Conventional war follows a relatively predictable path. In comparison, 4GW is a Pandora's Box of surprises. For this reason it can be considered more dynamic, though the relative tempo of operations is slow. Therefore, an Adhocracy, which is meant for a complex and unstable environment, would be more suitable for 4GW. An Adhocracy, because of its organizational construct and system of operation, has limits to its size in comparison to the other forms of structures.

3.   Understanding the Adhocracy

Mintzberg (1993), in his analysis of organizations based on five configurations (Simple Structure, Machine Bureaucracy, Professional Bureaucracy, Divisional Form and Adhocracy), defines adhocracies as highly organic structures with little formalized behavior. They have high horizontal job specialization based on formal training; a tendency to group the specialists in functional units for housekeeping purposes but to deploy them in small, market-based project teams to do their work. An adhocracy relies on liaison devices to encourage mutual adjustment, which is the key coordinating mechanism within and between these teams. These devices are located at various places in the organization and involve various mixtures of line managers, staff and operating experts. Zander (1982), states that in making group decisions, a smaller group makes decisions faster and better than larger groups "because give and take is more rapid and widespread in a small group than in a large one" (p. 21). For this reason, an adhocracy, which relies on mutual adjustment for decision making, has to be smaller than other organizations doing the same task. Mintzberg (1993) also says, "project teams [in

adhocracies] must be small to encourage mutual adjustment. This results in narrow 'spans of control' for the adhocracy, by conventional methods" (p. 256). We know through intuition that smaller organizations can be better entrusted to carry out complex tasks. This is because complex tasks require greater coordination and coordination is easier when the span of control is narrower. When an order is transmitted through a longer chain of command, it loses some of its content or its meaning undergoes so many subtle changes that the result is a totally different effect from that intended.

All the above reinforce the idea that the SOF organization will fare best when functioning as an adhocracy, and will therefore suffer if it grows too big because then it will start transforming into a bureaucracy. At the basic building block level, Special Forces are organized as specialists working in teams called Operational Detachment Alpha or colloquially, the A-Team. The A-Team is a miniscule adhocracy. As a result, the SOF organization is thoroughly permeated with the culture of an adhocracy. This is evident when comparing the characteristics and commonalities of an adhocracy and the SF, as illustrated in Table 7.

Table 7.   Comparison of Adhocracy and Special Forces

Point of Comparison	Adhocracy	Special Forces
Personnel	Fuses experts drawn from different specialties into smoothly functioning creative teams.	The basic sub unit is the A-Team of 12 men.[9] The men are all specialists in their respective fields. The A-Team is the building block of the core SF organization, the SF Group.
Environment	Operates best in a complex and dynamic environment.	Have the training, organization and equipment to respond to rapidly changing situations in a high threat environment.
Coordination	Coordination and control are by mutual adjustment through the informal communication and	Coordination is much more dependent on direct interaction. Advice of specialists is sought

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9 The logic of having two men from each of the five specialties (operations/intelligence, weapons, medical, communications and engineering) and cross-trained in others, gives the twelve man A-Team a redundancy and reserve, as well as the ability to be split into two sub-teams called "split detachments," which consist of one officer and five sergeants.

Point of Comparison	Adhocracy	Special Forces
	interaction of competent experts. Power does not flow according to authority or status, but to wherever the experts need to carry a particular task.	and taken without the straightjacket of military rank hierarchy.
Method of operation	The operations essentially run themselves.	There is a much higher level and acceptance of initiative of junior leaders.
Restrictions	There is a reduction in the need for rules.	Actions are taken as per the emerging situation for which the lower level commanders are given great latitude and responsibility.
Strength	Cannot do ordinary things well, but is extraordinary at innovation.	Cannot take over the tasks of normal conventional military forces in situations where greater mass is required. However, they have the capability of dealing with unforeseen, unconventional threats.
Span of control	Has to have narrow spans of control due to the smaller size of the work units, which in turn makes the work of these units more efficient.	The ratio of officers to men (who are all non-commissioned officers) in the A-Teams is 1:5, which makes for a very narrow span of control from the bottom upwards.

The above makes it evident that the adhocracy and the SF organization have much in common. The optimum size for a small discussion group is five members. In a group of this size, deadlocks can be avoided and members can shift roles rapidly. Five persons representing a cross-section of competencies are enough to provide all points of view yet keep creativity high (Hare, 1982, p. 142). The A-Team, which can be split into two sub teams of one officer and five sergeants, is in line with this logic. This configuration of the A-Team of the SF is based upon the OSS experience in the Balkans in 1942 and not from theories of group dynamics. It has been through long and hard experience that an adhocracy-like structure has been determined to be most suitable for SF. SF draw their strength through being an amalgam of experts. The key means of coordination has to be

mutual adjustment, as each expert is an authority in his field and can provide the best advice on a problem relevant to his subject area. This also means that SF are not an organization that is suitable for a larger force because of the requirement for extensive liaison and coordination. Because of the small size of SF, this can be done very quickly. In a bigger organization it would take far longer, particularly as the number of coordinators and levels of coordination increase. Prolonged periods of coordination result in inefficiency in war, hence the application of the adhocracy structure has to be restricted to smaller organizations.

D.   THE LIMITS IMPOSED ON SIZE BY THE SHORTAGE OF THE CORRECT QUALITY OF MANPOWER FOR SF

1.   Base Military Population

With the plethora of "special" attributes required, the number of people suitable to be SOF soldiers is restricted. While SOF skills can be learned, the intuitive affinity for unconventional action is largely inborn. With such requirements there is a limit to the numbers of suitable personnel available for SF. In sum, there is a limit to the size of the SOF based upon the quality of manpower. This limit is dependent on the size of the base military population, which impacts the availability of entrants into the SOF. A sufficiently large military can be maintained with a large population and a reasonable level of resources. The U.S. apparently has a sufficient population base and no financial constraints. However, the current military base may not be large enough to accommodate the enhanced levels of SOF mandated by 4GW. This potential shortcoming is outlined in a number of writings that describe problems in maintaining adequate numbers of SF at current levels (Clancy, 2001; Kennedy, 2002; Jilson & Jorsh, 2002; Couch 2005). The last three references are from three different professional military journals. This implies that should the SOF be the ideal model to fight 4GW, then increasing the strength of the SOF without a dilution in quality may not be possible.

2.   The Vietnam Example of Factors Affecting Quality

During the Vietnam War, the U.S. Army SF strength peaked at 13,000 with seven SF Groups (Adams, 98, p. 157). The size of the U.S. Army was larger than it is today so it might be presumed that a high standard of personnel was maintained in the SF.

However, this was not the case. In 1971, the small number of operators who remained from the early 1960s era felt that expansion had seriously diluted the quality of the SF (p. 158). The reason for this was the lower quality of the base manpower, which was drawn from a conscript army during a very unpopular war that did not attract the right quality of volunteers. The correct deduction of the size of the base military and its capacity to feed the correct quality of manpower can be drawn from an all-volunteer force prior to the start of a prolonged and possibly unpopular war. Only danger to national survival and a firm belief in protecting national interests can keep the quality of conscripts high, as evidenced in Israel.

3.   The Law of Diminishing Returns

The Law of Diminishing Returns states that if one factor of production is increased while the other factors remain constant, the overall returns will decrease after a certain point (The Columbia Encyclopedia, 2001). In the same manner, if the size of the SOF is increased without increasing the size of the base population, then the quality of SOF has to start decreasing after a certain point. The point at which the Law of Diminishing Returns starts to operate can be shifted by adding different factors. For example, if the pay and perks, or career prospects of the SOF are improved, it will push up the point at which quality will decline, in case the base strength remains the same. This is because the improvement in service conditions will attract a larger number of volunteers.

The base manpower available and from which the SOF are drawn has declined from 1988-89 onwards, consequent to drastic downsizing in the U.S. military. During the same time period, there has been an increase in the size of the SOF, as shown at Table 8 below.

Table 8.   An Analysis of Base Military Strength to SOF Strength[10]

	1987-1988	2003-2004	2004-2005 (from CRS report for Congress Feb. 10, 2005)	Remarks
Strength of Army	774,104	485,000	502,400 (532,400 Proposed in 2006)	In 1987-88, there was a pool of 90 men out of which one SF soldier could be selected. In 2003-04, because the army had been downsized, there was a pool of 24 soldiers out of which one SF soldier could be selected.
Army SF	8,600	20,200		
Strength of Navy	583,800	400,000	365,900	In 1987-88, there was a pool of 277 sailors available to select one Navy SEAL. In 2003-04, there was a pool of 100 sailors available to select one SEAL.
Navy SF	2,100	4,000		
Strength of Air Force	606,800	367,600	359,700	In 1987-88, there was a pool of 148 airmen available to select one AF SF airman. In 2003-04, there was a pool of 39 airmen available to select one AF SF airman.
Air SF	4,100	9,320		
Strength of Marine Corps	199,600	174,400	178,000 (188,000 Proposed in 2006)	The Marines have a concept of Special Operations Capable (SOC) battalions. One battalion is trained for Special Operations and kept in readiness on both the East and West Coasts. The battalions are rotated after they serve a fixed tenure as SOC battalions. The logic of the Marines is that with additional training, any Marine can gain SF skills. This keeps the Special Operations skills at a high level throughout the force.
Marine SOF	1xMarine Expeditionary Brigade(anti terrorism), 3xReconnaissance Battalions, 3xForce Reconnaissance Companies			

An analysis of the information presented in Table 7 shows that:

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10 Figures taken from The Military Balance 1987-88 and 2003-2004 of The International Institute of Strategic Studies. Figures for 2004 - 2005 from the CRS report on the size of U.S. armed forces, dated Feb. 10, 2005. The USMC Special Operations Capable Concept taken from http://www.globalsecurity.org/military/lbrary/report/1992/MWJ.htm

- In the past 15 years there has been a 36% reduction in the military due to downsizing and a 100% increase in SOF. There is no direct recruitment into the SOF, which has two likely effects. First, if the percentage of those finally selected from those who apply is to remain the same, then the bar laid for selection has to be lowered. Second, if the same standard is to be maintained, and the present selection percentages are to remain the same as in 1988, there has to be a shortage of personnel vis-a-vis requirement.

- Since SOF are drawn from the serving military, a dilution in quality has to take place because of the reduction in the base manpower.

- The Naval pool has been very large and continues to be so today. This accounts for the reputation of the SEALs as being the most physically fit SOF (Adams, 1998, p. 5). This reiterates the requirement of a large base strength from which to select quality SOF.

- The 2003-2004 figures form the correct benchmark from which to draw conclusions, because the military at that time fit the parameters of an all-volunteer force. This was prior to the Iraq War, which can be called a prolonged war that does not meet the criteria of a war that has uniform support in the country11

E. OVERCOMING THE PROBLEM IN INCREASING THE SIZE OF THE SOF

The current size of the military is smaller than what is required to sustain the current size of the SF, while maintaining the quality of personnel at 1988 levels. Initiatives like stop loss are only of temporary help. If an increase in the size of SOF for 4GW is imperative, the following should meet the goal;

- Increase the size of the military base population from which SOF can be drawn,

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11 The voting pattern of the U.S. 2004 presidential election is an indication of that, as Senator Kerry, with a decidedly anti-war stance, received 48% of the popular vote.
(http://www.cnn.com/ELECTION/2004/pages/result/president/)

- Direct recruitment into SF with increases in salary to induce high quality manpower,

- Train the conventional military to take over some of those SOF tasks that require a lesser degree of expertise/difficulty. This will enable the SOF to concentrate on the high-end tasks.

The last solution can take pointers from the U.S. Marine Corps and its concept of the Marine Expeditionary Units (MEU), which are Special Operations Capable (SOC). These are standard Marine Corps battalions that are given additional training to make them SOC. One battalion on the East Coast and one on the West Coast are maintained in an SOC status and rotated after a period of time. The Marine Corps considers that Special Operation skills are capable of being developed in normal soldiers, albeit those who have the requisite standards of physical fitness.

What the Marines are attempting to prove (they state that they have proved it) is that it is possible for any good infantry to be Special Operations capable. This raises the possibility that perhaps what is required is not SOF *per se,* but training in aspects that makes regular forces capable of fighting in the 4GW environment. The Marine Corps starts off with advantages in terms of a higher level of esprit de corps and physical fitness. Such levels can also be found in formations like the airborne division.

That the Special Operations community does not consider SOC Marines to be Special Forces is a different issue. This view may be correct, but there is no harm in having SF auxiliaries to supplement the shortage of SOF by taking on the lower spectrum of SOF tasks. This approach has the added advantage of keeping the actual SOF small, thereby enabling them to retain their "Special" character.

F.   THE IDEAL SIZE OF SOF

The military, because of an environment in which it spends most of its time preparing for war, will find it difficult to break out of the Machine Bureaucracy mold. However, changes in the environment due to sociological and technological evolution make it imperative to maintain specialized skills. This leads to the requirement to selectively divisionalize the military organization. Divisionalized components have some

autonomy but operate under the standards and rules of the bureaucracy. An adhocracy is the organizational form, which, in its functioning and culture, is closest to SOF. Therefore, the ideal structure for the SOF could be what Mintzberg (1993, p. 269) describes as a "divisionalized adhocracy." This is in line with the statement that "diseconomies of scale can be overcome by a multidivisional organization" (Canback, 2003). The U.S. Special Operations Command can be likened to such a division.

However, if it has to be a proper adhocracy, then the SOF should not serve under regional combatant commands, but must handle operations themselves with the combatant commands providing, at most, administrative support. This may be possible or even desirable for small operations. However, if the SOF are to be used in larger operations, the imperative of administrative and support will lead to an increase in their size and the attendant inevitable development of bureaucracies. The Marine SOC concept has merit. It shows how to field sufficiently large forces that may not be SOF but can have SOF-like capabilities. This opens up the possibility that specially trained infantry can be employed in 4GW. The actual SOF can then be employed only where a higher level of core SOF capabilities are required. If manpower has to be maintained with the ideal level of competency, then the precedence of maintaining all-volunteer SOF organizations *during* peacetime[12] should be used as a benchmark to determine the strength of SOF that can be sustained at present competence levels. The Congressional Research Service report on SOF states that active and reserve SOF are 2% of active and reserve manpower (Feickert, 2004). Based on this benchmark, the SOF should not exceed 2% of the total military manpower, with the actual operators not exceeding 1% of the total military manpower. Couch (2005) gives the figure of 16,000 operators in the U.S. SOF. This would be 1.3% of the 1.2 million manpower of the Army, Navy and the Air Force given at Table 8. The actual figure may be 1.8% as the operators are primarily from the Army and Navy. The figures quoted are of the authorized establishment. The ground

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12 The motivating factor during wars of national survival provides larger numbers of highly motivated manpower than is the case in peacetime. Israel, which is perpetually facing the threat of national survival, is able to draw upon larger numbers of soldiers with SF suitable qualities than a comparable population can provide if not faced with the threat of national survival.

position may be different. Clancy (2001) states that the Army A-Teams are short 25% to 33% of their authorized strength (p. 61).

The bottom-line is that the *real* SOF should not be increased in size unless the right quality of personnel to form it can be sustained.

4GW is fought through various means including political, economic, sociological and military. The military burden of defeating a 4GW foe falls mainly on the army, and within the army, on the infantry. This is inevitable as 4GW attempts to offset the technological superiority of a stronger opponent by preventing him from utilizing his mechanized forces. This is accomplished by retracting into the population and intermingling with both the people and the enemy. 4GW therefore requires "boots on the ground." The soldiers on the ground need an expertise in UW to gain an advantage over the 4GW foe, whose way of war is UW. The SOF are the paragon of UW and thus are expected to shoulder the burden of fighting a 4GW. However, there is a limit to the size of the SOF. This leads to the conclusion that:

- SOF are the ideal force for 4GW. However, increasing their size without accounting for environmental influences will cause the organization to succumb to the Law of Diminishing Returns.

- The SOF that can be maintained depends on the base military of a particular country. The bulk of the operators are from the army. This is the case in both the U.S. and in all other countries. Therefore, the size of the army is crucial for recruiting sufficient SF.

- By a rough measure in an all volunteer force, an overall SOF level of approximately 2% of the armed forces can be maintained and trained with the actual SF "trigger pullers" constituting 1% of the armed forces.

An increase in the size of any organization leads to an increase in the span of control; large spans of control invariably lead to problems of coordination and management. Civilian organizations involved in cutting edge research and development suffer if there is a high vertical scalar chain of authority through which they have to proceed to get decisions. To avoid this, organizations have evolved which permit

specialized organizations much greater autonomy. The adhocracy is such an organization. If the SOF have to carry out operations independent of the combatant theatre commands, they will need to grow in size. Growth will inevitably lead to the development of a bureaucracy. In the author's opinion it is better that SOF operate under and report directly to theatre commanders rather than through intermediate headquarters. This will keep the chain of command short, and at the same time permit the SOF to retain their "special" qualities.

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VII. DOCTRINE, ORGANIZATION, EQUIPMENT AND TRAINING FOR 4GW

Machines don't fight wars, people do, and they use their minds.

--Col. John R. Boyd (Defense and the National Interest)

4GW is not fought on battlefields or in areas that facilitate conventional tactics. Neither is it fought in the space created after a population seeking its own succor has moved out of a war zone. 4GW is fought within a population in an environment where the ability of the air and naval forces of a superior enemy are degraded through a mix of natural or artificial terrain and the presence of the population. A battlefield is chaos personified; however, the professional soldier can discern the order in such chaos. In 4GW, for the proponent of war with a conventional mindset, the battlefield environment is chaotic. It is beyond his comprehension because things happen which are outside the realm of his doctrine and training.

Of all the constituents of the armed forces of a state, it is the army which is crucial in 4GW because foot-mobility is possible over any terrain and because of the greater discerning capability of the human eye and intellect. In addition, there is nothing more precise than infantry direct firing weapons. They are more precise than precision laser guided bombs because the man on the ground sees the human target; it is this knowledge that is the best guarantee of avoiding collateral damage. This is what gives ground forces importance in 4GW. As former U.S. Joint Chiefs of Staff General Eric Shinseki says in the foreword to FM -1, "The Army"

> [L]and forces alone have the ability to place enough 'boots on the ground'
> and interact with populations, directly and continuously. In this capacity
> for human interaction, ground forces are unique.

The army provides the crucial link between the government and the people when the normal civilian means of such interaction have been marginalized through 4GW. This is because the army has the ability to carry out missions while deployed within what may be a hostile or coerced population with the communications, fire support and logistics

125

integral to it. In fact, the army can extend assistance to the civil government and police forces through this capability. Because of this preeminent role in 4GW, it is imperative that if necessary, the army be optimally organized, trained, and equipped to engage on the 4GW battlefield. This Chapter is a heuristic attempt to bring forth ideas to improve the capability of the army to operate on the 4GW battlefield. This involves defining a doctrine for the army to make it suitable for 4GW and thereafter identifying the manner in which the organization, equipment and training of the army could be adapted to the 4GW environment.

A.   UNDERSTANDING DOCTRINE

Doctrine can be defined as a statement of official policy. A doctrine enables the formulation of strategy for achievement of objectives. National strategy guides military doctrine. As mentioned in Chapter IV, military doctrine and the Principles of War are synonymous because doctrine leads to the appropriate fundamental principles for guiding actions. Hence, doctrine provides direction to the application of the Principles of War. Doctrine should be clear enough to give direction, but at the same time should permit flexibility to cater to changes in the environment. Military doctrine provides a guideline as to the relative importance of the principles at a particular point of time. Therefore, doctrine is not as timeless as the principles, which are based on those aspects of doctrine which have, over long periods, acquired universal relevance. For this reason, doctrine needs to be periodically revised. As an example, the Indian Army doctrine consists of two parts, Part I being unclassified. The letter promulgating the doctrine directs that Part I be reviewed and updated every five years as necessary; the doctrine is re-issued every ten years (Indian Army Doctrine, 2004). Doctrine encompasses more than just principles, in that where the principles are the result of the military's education and experience, doctrine is dictated by the national strategy, which itself is dependent on geo-politics, ideology, resources and the nature of the government. It affects all aspects of the army, including its organization, equipment and training.

FM-3 describes doctrine as "[T]he concise expression of how Army forces contribute to unified action in campaigns, major operations, battles, and engagements" (Para. 1-44). In addition, Para. 1-45 states:

> Army doctrine provides a common language and a common understanding of how Army forces conduct operations. It is rooted in time-tested principles but is forward-looking and adaptable to changing technologies, threats, and missions. Army doctrine is detailed enough to guide operations, yet flexible enough to allow commanders to exercise initiative when dealing with specific tactical and operational situations.

The Indian Army doctrine, revised and issued in October 2004, defines doctrine as:

> [A] formal expression of military knowledge and thought that an army accepts as being relevant at a given time, which covers the nature of current and future conflicts, the preparation of the army for such conflicts and the methods of engaging in them to achieve success.

1.   U.S. Army Doctrine

In the U.S. Army, Field Manual 3-0 details the Army's doctrine. It begins by stating that the U.S. Army's doctrine depends on three fundamentals (Para. 4-1). These are:

- Elements of Combat Power,
- Principles of War,
- Tenets of Army Operations

These three fundamentals are the foundation of the U.S. Army operational doctrine. The principles of war of the United States Army were discussed in Chapter IV. In order to be aware of the U.S. Army's doctrine, it is essential to be familiar with the Elements and Tenets. These are briefly discussed in the succeeding paragraphs.

a.   *Elements of Combat Power*

- **Maneuver**. Maneuver is the means by which commanders concentrate combat power to achieve surprise, shock, momentum, and dominance (Para. 4-4). The aim of maneuver is to bring troops to a suitable position for close combat because the final outcome of any action requires close combat. Maneuver as an element is different from

Maneuver as a Principle of War, because the latter refers to action to place the enemy in a position of disadvantage.

- **Firepower**. Maneuver creates the conditions for the effective use of firepower. Firepower provides the destructive force essential to overcoming the enemy's ability and will to fight (Para. 4-11).

- **Leadership.** Teamwork and trust are essential for victory; these are developed through good leadership. Hence, leadership has to be nurtured, refined and honed through training.

- **Protection.** Protection is the preservation of the fighting potential of a force so the commander can apply maximum force at the decisive time and place (Para. 4-20). The basic philosophy behind this element is to prevent wastage of resources through good and practical drills, training, procedures and application of combat power.

- **Information.** Information enhances leadership and magnifies the effects of maneuver, firepower and protection (Para. 4-28).

b.   *The Tenets of Army Operations*

The tenets of Army operations which are given in FM-3 describe the characteristics of successful operations conducted using the principles of war. The tenets increase the effectiveness of the principles and are as follows:

- **Initiative**. Initiative has both operational and individual components. From an operational perspective, initiative involves taking such action that the enemy's options are eliminated, while own freedom of action is retained. From an individual perspective, initiative is the ability to operate on a directive style of orders.

- **Agility.** Agility is the ability to move and adjust quickly and easily. Operational agility stems from the ability to shift among offensive, defensive, stability, and support operations as circumstances and missions require. Tactical agility is the ability of a friendly force to react faster than the enemy. While physical agility is important at the tactical level, mental agility is important at all levels.

- **Depth.** Depth is the extension of operations in time, space, and resources. Depth is used to obtain space for effective maneuver, time to conduct operations and resources to achieve and exploit success. Depth enables momentum in the offense, elasticity in the defense and staying power in all operations.

- **Versatility**. Versatility is the ability of an army to quickly transition from one type of operation to another. Versatility is developed by organizing the structure, equipment and training in such a manner that the same force can handle different situations.

- **Synchronization**. Synchronization is arranging activities in time and space with the purpose of massing maximum relative combat power at a decisive place and time. Synchronization is a means, not an end, in that rigid adherence to it should not foreclose windows of opportunity.

The manner in which the Principles, Elements and Tenets form U.S. Army doctrine is illustrated in Figure 8 (FM 3-0, 2001, Fig. 4-1). As can be seen in Figure 8, Army doctrine is based on the application of the Elements of combat power, when applied keeping in mind the Tenets and following all the Principles of War. When applied in this manner, an operational framework is created for the U.S. Army to engage in and win decisive operations, be they offensive, defensive, stability or support.
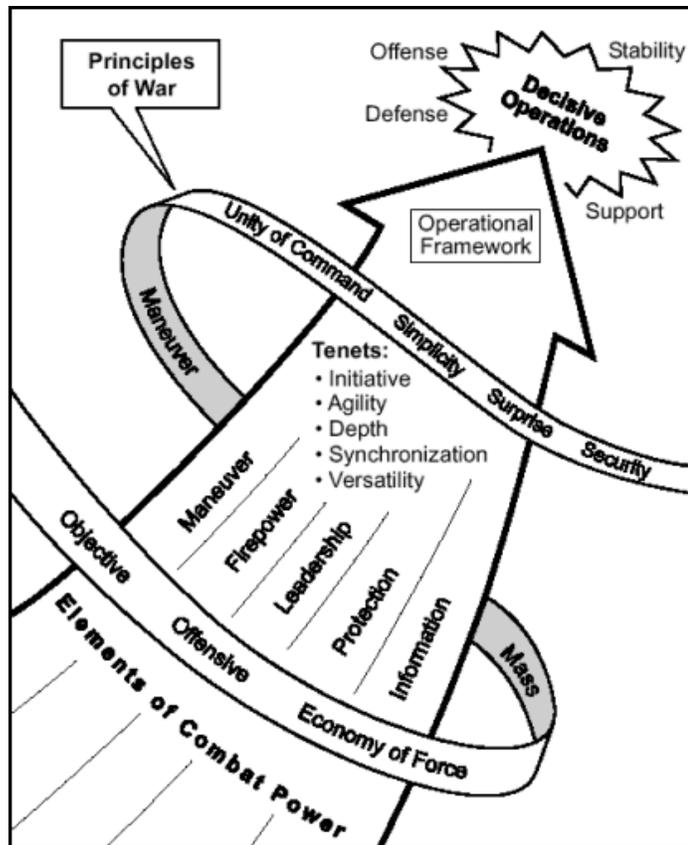
Figure 8.   The Fundamentals of Full Spectrum Operations (From FM 3-0, 2001)

2.   Formulation of Doctrine

It can be debated whether doctrine is best formulated using a "top-down" or a "bottom-up" approach. In both approaches there is a great requirement for situation analyses, because without knowing the situation, the doctrine formulated may be divorced from reality. The bottom-up approach should yield a better doctrine because ideas from the bottom have greater operational situation awareness. They are more workable because they are in touch with ground realities. The top-down approach *is* supposed to start off with greater situational awareness. However, this may not be the case, especially in 4GW, where the traditional determinants of an opponent's strength are not identifiable, traditional means of strategic intelligence are not as effective and the actions of the enemy are unpredictable because they do not adhere to conventional templates. The formulation of doctrine in the first two generations of war was top-down.

In these cases, doctrine was shaped by the views of higher-level military strategists, princes and generals, who based their decisions on technological developments that they were in a position to know of and guide.

The doctrine that gave rise to the Third Generation of War was more of a bottom-up product. The "storm troop" tactics, which were the precursor to the Third Generation of War, were a "bottom-up" phenomenon (Gudmundsson, 1989). Based on the vision of General Oskar von Hutier, these tactics were formulated as a solution to the trench warfare stalemates. General Hutier's vision was fulfilled in large part due to the latitude he gave junior leaders to solve this dilemma (Hammes, 2004, p. 31). This was further refined after World War I by other German officers who had seen the problems inherent in Second Generation War as young officers, and had realized the efficacy of combined arms teams in the form of the *Strumtruppen*.

Unlike the Third Generation, in 4GW, existing technology has meshed with social, economic and political situations to find ways to overcome asymmetry of strength by formulating a doctrine that enhances asymmetry by looking for a solution from a different perspective and direction. This is illustrated in Figure 9. Entity B is dis-advantaged in an asymmetrical confrontation with Entity A because of variation in conventional strength. This is overcome through adopting a doctrine which, through "swarms" of smaller entities, attacks the enemy indirectly and from within his own society. These attackers look different from the parent entity and cannot be formally identified with it. This creates a different kind of asymmetry; albeit one that has advantages for the weaker entity. In this manner, the doctrine of 4GW is based on creating strength out of weakness. The strength addresses the enemy's "conventionality," which becomes the enemy's weakness.
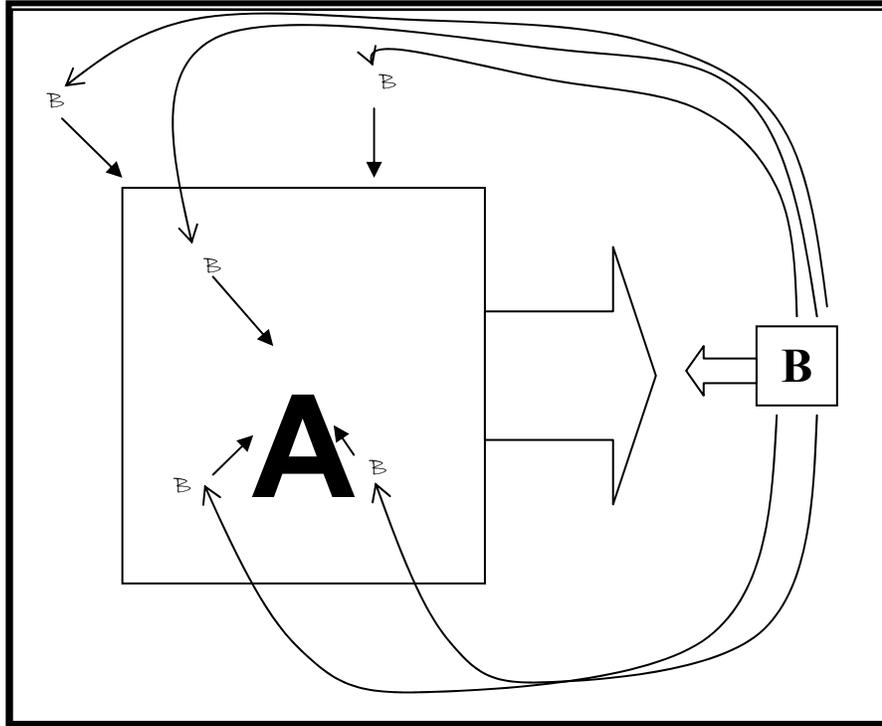
Figure 9.   4GW Doctrine: Turning Asymmetry into Strength

3.   Affect of Technology on Formulation of Doctrine

Technology has a great impact on the formulation of doctrine. Evolving doctrine first and then having to develop suitable technology to fit the doctrine is not normally a workable approach. The U.S. "Star Wars" doctrine is an example where a doctrine was formulated before the availability of the envisaged technology. However, the aim of that program was to pressure the Soviet Union technologically, psychologically and economically. In this respect, the doctrine succeeded as it gave the United States an upper hand in arms negotiations. The bottom-up approach cuts down the lead time as "commercially-off-the-shelf" equipment and technology is used to execute the doctrine. 4GW uses the bottom-up technological approach. This is also the reason why the 4GW foe sometimes manages to utilize technology that the armed forces either do not have or the straightjacket of conventional thinking does not permit them to have. For example, there have been a number of instances where sophisticated, light, portable and secure Motorola or Kenwood radio sets were found with the 4GW enemy in Kashmir or

Chechnya. These were better than the radio sets being used by their conventional army opponents (Devdas, Aug 2003 and Several Caches with Weapons Found, Sep 2002). Other examples of the innovative use of existing technology are the use of cell phones or camera flash circuits to explode Improvised Explosive Devices (IEDs) and the use of the internet for communications and psychological warfare.

B.   A REVIEW OF 4GW DOCTRINE WITH AN INDIAN BACKDROP

As per Indian Army Doctrine 2004, the following aspects concerning doctrine are important (emphasis is of the author):

- It is a formal expression of military knowledge and thought that an army accepts as being *relevant at a given time,*
- Covers the nature of *current and future conflicts,*
- The *preparation* of the army *for such* conflicts,
- The methods of *engaging in them* to achieve success.

1.   Indian Security Concerns

The security concerns of the Indian Army consist of two primary tasks. The first task is to defend the country against external threats, specifically China and Pakistan. The second is to defend the country against internal threats. The latter are in the form of insurgencies in the country's border States, which could potentially be exploited by India's adversaries. Among the primary external threats that India faces are:

a.   China

China and India fought a war over a border dispute in 1962. The Chinese claim a total of approximately 57,000 square miles of territory that India regards as its own. This territory is comprised of approximately 35,000 square miles in the Eastern Sector, 8,000 square miles in the Central Sector and 14,000 square miles in the Northern Sector. India came out the worse off in this fight, losing areas in the Northern and Eastern Sectors. After the ceasefire on October 24, 1962, the Chinese withdrew from the Eastern sector but retained the area in the Northern sector of Aksai Chin because it is vital for

their links between Tibet and Sinkiang. The Chinese claim over what is now the Indian state of Arunachal Pradesh in the Eastern sector remains, pending settlement of the boundary issue. India disputes the annexation in the Northern sector. This thesis will not go into the cause of the dispute. What is relevant is that a dispute exists and it is a complex issue, which explains why efforts to resolve the dispute are proceeding very slowly. Indeed, 43 years after the Sino-Indian War, the boundary dispute is still not settled.

The border with China is located along the Himalayan Mountains, which makes the Chinese threat infantry-based, as there is little scope to employ mechanized forces in the Himalayas. The terrain dictates that once the Chinese are on the Indian side of the Himalayas, their logistical problems become so acute that it is difficult for them to prosecute further operations. In addition, the Indians gain in conventional strength as the Chinese push inland. It is possible that China recognized this limitation and, after the 1962 war, withdrew from those captured territories that were difficult to defend. Thereafter China aided the insurgencies in India's northeastern states as a means to keep India under pressure. (Bhaumik, 2002). Presently China does not aid these insurgencies, however, it could do so in the future should it desire to up the ante.

b.   Pakistan

India has 1280 miles of border with Pakistan. This border includes two areas of dispute. First is the 350 miles of the Line of Control (the ceasefire line after the 1971 war, which is not recognized by either side as the international border). Second is 50 miles in the area of Sir Creek in the Rann of Kutch (on the Arabian Sea coast). This border can be divided into the Mountain Sector, the Plains Sector, the Desert Sector and the Rann Sector. The dispute in the Mountain Sector is in the state of Jammu and Kashmir, and it is the main flashpoint. In the Indo-Pakistan Wars, wherever there have been any gains or losses in terms of territory, in any of the other sectors, these have been returned after the end of hostilities. This signifies the inviolability of the international borders. One-third of the former princely state of Jammu and Kashmir is held by Pakistan and two-thirds by India. Each country considers the other's occupation illegal. Being in a position of conventional asymmetry, Pakistan has encouraged insurgency in Kashmir as a

proxy war against India. In the same manner, it encouraged the unsuccessful but bloody Sikh secessionist movement in the border state of Punjab in the 1980s to 1990s.

c.   Nuclear Factor

India is a nuclear-armed state. The rationale to go nuclear was the proximity of nuclear-armed China, as well as the humiliation of the 1962 war (Garden, 2002). The Indian nuclear explosion in May 1974 was the consequence of the Chinese atomic bomb test on October 16, 1964. The Chinese test came exactly two years after the 1962 Sino-Indian War in which India suffered a humiliating defeat. As far as India was concerned, the test was a reminder that it could never negotiate a settlement to the border problem as an equal because of the asymmetry created by nuclear weapons as well as the conventional asymmetry. China's imperative to have nuclear weapons was obviously the military and ideological tensions with the United States and the Soviet Union. It was probably the strength gained by nuclear weapons that gave the Chinese the confidence to militarily clash with the Soviets in 1969 and 1972 over the border dispute along the Usuri River. This dispute was settled in 2004.

The Pakistani decision to go nuclear was inspired by the growing Indian capability towards building a bomb as well as its humiliating defeat in the 1971 war, where 90,000 Pakistani prisoners of war fell into Indian hands and the country lost its Eastern wing. India conducted a "peaceful nuclear explosion" in 1974. This spurred Pakistani efforts. By the mid 1980s it was widely believed that Pakistan had the bomb. After 1998, India decided to end its nuclear ambiguity. Pakistan immediately followed suit. Overt nuclearization brought to the Asian region a state of affairs similar to the Cold War situation in Europe. Presently, large armies exist in China, India and Pakistan. They are the first, second and fifth largest ground forces in the world (The Military Balance, 2004). The presence of nuclear weapons makes the chances that these armies will have to fight large-scale conventional wars, extremely limited.

The only conventional wars that can take place are of the "limited" variety, which confines conflict below the threshold levels. Under these circumstances, the better option is to indulge in 4GW, which enables avoidance of a devastating full-

blown conventional war with a nuclear scenario. It also enables a weaker side to offset the advantages of the stronger. 4GW scenarios in this context are as under:

- Pakistan can utilize 4GW against India; it is following this pragmatic policy by indulging in 4GW in Kashmir,

- China or India may utilize 4GW against each other. Should there be any intransigence on the part of India to resolve the boundary issue, in all likelihood China would prefer to exert pressure on India by supporting the insurgents and militant groups in northeastern India, as it has done in the past. This would be a 4GW approach. U.S. Naval War College Professor Thomas Barnett (2004), however, states that the likelihood of conflict decreases with globalization. He includes China and India as states that may not fight wars because of the benefits of globalization.

2.   Development of Indian Doctrine

The Indian Army had two major borders to defend against countries with which it has disputes. The Indian Army experienced a generation of peace after the 1971 Indo-Pakistan War. This gave unfettered time in which to refine the concepts of mechanized plains warfare, which seemed to be the decisive war India would be called to fight against Pakistan. The heightened Cold War in Europe was influenced by books such as "Race to the Swift," and the doctrine of Airland Battle. This led to a version of the European battlefield on the Indian sub-continent. A proliferation of mechanized forces with electronic warfare capabilities took place, modest by European standards but large in the sub-continental context.

The growth of mechanized forces made the army effective in mechanized plains warfare to the detriment of fighting 4GW. As a result, in the 4GW that the army was repeatedly called upon to fight, the following shortcomings emerged:

- The army was ill equipped to take on 4GW foes. Its weapons for close quarter battle, which is where 4GW engagements take place, were not effective enough,

- The army lacked essential elements like body armor, protective clothing and night vision devices,

- There was a lack of vehicles which were IED proof or had sufficient off-road capability,

- The army lacked non-lethal weapons, which are essential to the conduct of certain operations in 4GW,

- The army lacked language skills and cultural knowledge, even within its own country. This is not strange in a sub-continental country which has 15 official languages and hundreds of dialects,

- Since the army realized that it was fighting a new way of war, there was initially a shortage of manpower as large elements of the army were not released from previous commitments in view of conventional threats on Indian borders. Whenever Army involvement in 4GW increased, a concern arose that its ability to defend itself in a conventional war was getting degraded because of loss of training time,

- The components of the Army, which were organized, structured, trained and equipped to fight Second and Third Generation Wars, were not organized, trained or equipped to participate in 4GW.

3.   Review of Indian Army Doctrine for 4GW

In line with the Indian Army Doctrine 2004, the factors that shape India's military doctrine for the era of 4GW should be:

- **Relevant for the Present Time.** As the paragraphs above have illustrated, the doctrine that supports large-scale conventional war is not relevant for the present time. While conventional war is not dead, at the present time it is unlikely. This state has persisted since the 1974 nuclear test. Since then, tensions with Pakistan have surfaced many times. These led to near-war situations in 1984, 1986-87, 1989-90, 1999 and 2001-2002 (Khan, 2003). In two of these cases, limited war took place; Siachen and Kargil (1984 and 1999; the former persists as a "no war-no peace" scenario). However, in all cases, intervention by big powers

because of the threat of nuclear conflagration prevented war. The security-insecurity paradox that was conceptualized by the Henry L. Stimpson Center, a U.S. think tank, states that with the presence of nuclear weapons, higher-level stability prevails, with war being seen as a non-option. However, at the lower level, this breeds instability through a proliferation of states of low intensity conflicts below the threshold level, such as "no war-no peace," proxy wars and insurgencies (Chari, 2001). The reality of the present time is that since the 1980s the deterrent impact of large mechanized forces has slowly decreased, to be replaced by deterrence through nuclear weapons. That such deterrence works, even if the nuclear weapons are held by two antagonists in asymmetrical quantities, is well known. The furor over possession of nuclear weapons by Iraq is a case in point. The quantum of deterrence with the suspected presence of a handful of nuclear weapons, even in conditions of total asymmetry, is evident from the situation concerning North Korea. Under these circumstances, the possibility of a conventional war in the high-intensity spectrum of conflict between India and Pakistan is unlikely. This calls for a doctrine for the Indian Army which supports building up capabilities for unconventional, low-intensity war or 4GW. *Such doctrine would be relevant for the present times*.

• **Cater to Current and Future Conflicts.** The current conflicts that India faces are insurgencies in Kashmir and the Northeast. While the insurgencies in the Northeast do not directly threaten the security of the country as a whole, the insurgency in Kashmir does, because it threatens the country's secular structure. A part of the country breaking away because it is inhabited by Moslems is unacceptable for a country that has the third largest population of Moslems in the world (CIA -- the World Factbook, n.d.). Because of the reasons given in the preceding paragraph, in the future there is little likelihood of conventional war on the Indian sub-continent. However, there is great likelihood of 4GW continuing. The Indian army will have to engage in fighting an enemy that uses 4GW methods. In the less likely scenario of aggression by China, a 4GW approach towards countering the aggression may be more suitable. Similarly, if China

encourages 4GW in India's Northeast, improving the Indian Army's ability to fight 4GW foes would be beneficial. Therefore, a doctrine that improves the Indian Army's ability to respond to 4GW methods would *better* cater to current and future conflicts.

- **Preparation for 4GW Conflicts.** Preparing for 4GW conflicts involves organizing, training and equipping the army for that role. To arm and train an army conventionally and then make it fight in an unconventional manner is wasteful. While the skills of conventional warfare should not be consigned to the scrap heap, they do need to be adapted to make them suitable for 4GW. This involves organizational changes to enable the army to overcome weaknesses that conventional armies find in themselves when engaged in 4GW. These weaknesses are mainly an inability to gather the correct intelligence, emphasis on attrition, weakness in waging information and psychological warfare in the Fourth Generation environment and lack of skills in building a relationship of trust with the population. This requires focus on education and training from the grassroots level upwards. Finally, the weapons and equipment for conventional war are not suitable for 4GW. They are either too destructive or inappropriate. There is a requirement to identify the correct way to equip the army for 4GW.

C. GENERAL DOCTRINE FOR 4GW

Army doctrine should be based on the fact that large conventional wars are unlikely in the near future. As its primary function, the doctrine should support the conduct of unconventional war. The doctrine should enable conventional armies to fight in an unconventional manner, which is the appropriate way to approach 4GW. It should enable the conventional firepower-based army to acquire an unconventional character where maximum destruction does not translate to success. Towards this end, doctrine for 4GW should stress the following features:

- **Light Infantry Forces in Sufficient Numbers.** The army should have the capability of deploying sufficient light infantry forces to fight 4GW. Where there is a paucity of such forces, the army should have interoperability with

paramilitary organizations and police forces to compensate for the shortfall. The other branches of the army should be capable of supporting operations in the 4GW environment. For this reason, within the army, the organization, equipment and training aspects of the infantry should be made appropriate to 4GW.

- **Restricted Heavy Forces.** Restricted heavy forces would be required where the enemy tries to play upon the symmetry-asymmetry paradox by alternating 4GW methods with conventional methods.

- **Synergy in Intelligence**. There should be a synergy between the intelligence agencies of the state and the army to provide actionable intelligence. The intelligence gathering abilities of the army need to be transformed; the focus should be on gathering intelligence in relation to a 4GW foe rather than a conventional army, which has different connotations. The doctrine needs to give primacy to human intelligence in urban areas and technological intelligence in open areas.

- **Practical Transformation**. Changes should be relevant to the nature of 4GW. Transformation should be attempted by building on existing strengths rather than attempting to introduce those capabilities which are ultimately more expensive. Transformation in capabilities should be relevant to the level of 4GW. Manpower intensive nations need to utilize their area of strength, which is their manpower. If they follow the doctrine of rich nations there is likely to be dysfunction.

- **The Conduct of War in Varied Fields.** 4GW encompasses war in political, social, economic and military fields. The army is closely concerned with the military field, but should have clear information about how the other fields interact with the military, what resources are available to them and how best to utilize those resources. The army doctrine should incorporate those resources in formulating the strategy for 4GW.

- **Adaptability.** 4GW involves carrying out multifaceted tasks such as offensive, defensive, stability and support operations. Since it is difficult even for

large armies to have dedicated troops for each field, the army should have the ability to carry out all or most of these tasks using the same troops.

- **Jointness.** Jointness is an essential concept in Third Generation Wars. In those wars, equal importance is placed on all components of the military. In 4GW, the war will primarily be fought by land forces. Conduct of 4GW by land force commanders will be more appropriate. Jointness in 4GW is related to interoperability with other branches of the government, such as the civil administration and police forces.

D. ORGANIZATION FOR 4GW

Chapters V and VI brought out that the nature of 4GW makes Special Forces and their unconventional warfare skills most suitable for 4GW. Chapter VI described the problems that might arise if the size of the Special Forces is increased. What emerged is that such action in the average society or country will be difficult because of the problem of finding the correct quality of manpower to fill the ranks of the Special Forces.

The answer lies in organizing the army in a manner in which it can carry out functions akin to Special Forces. In addition, 4GW requires defensive operations with the aim of creating a sense of security in the population. The population can restrict the maneuverability of whomsoever it chooses by withholding its cooperation. However, it will do this only when its own security concerns are not met.

An enduring thought that is central to the modernization of armies is that the modernization will permit the total manpower of the army to be reduced. The use of technologically advanced weapons and equipment enables a greater amount of firepower to be delivered more accurately, by weapon systems which can be operated by lesser numbers of personnel. That is the manner in which the U.S. and other Western armies have been able to greatly decrease their manpower component. Delivering firepower is a concept intrinsic to the first three generations of war. In the Third Generation, there is a variation in that firepower and maneuver are combined to upset the enemy's ability to make correct and timely decisions. Because of this, the enemy is out-maneuvered and defeated.

The Airland Battle doctrine called for highly mobile mechanized forces with integrated firepower and a large component of aerial firepower. This created a requirement for manageable armies that could move swiftly in time and space. The requirement reduced the size of U.S. Army formations to organizations that are less manpower-intensive and more equipment-intensive. The result has been that current U.S. Army infantry formations are so reduced that the infantry division is "infantry" in name only. This was fine as long as war was conventional and fought in the realm of the Second or Third Generations. However, a problem arises when war enters the realm of 4GW. The experience of Iraq is an example. Here, a combination of Second Generation "awe" and Third Generation "shock" enabled a technologically superior but numerically inferior army to win a decisive victory. It led to such a swift collapse that those who were interested in following the course of the war were almost disillusioned that the opponent was knocked out so soon. It was like going to see a much advertised prizefight only to have the more belligerent opponent knocked out with the first punch. However, from the moment the conventional war ended and the 4GW began, the shortage of manpower became painfully evident.

In 4GW, this problem is not specific to a first world army like the American Army. While fighting a 4GW in Kashmir, the Indian army has been forced to raise infantry-intensive units and formations for the specific task of fighting 4GW. While this restructuring was taking place, non-infantry units, especially artillery, which has had no role in 4GW, have been used to supplement the infantry (Indian Army Website, *Regiment of Artillery History,* n.d.). This arrangement is not the most satisfactory because good infantry skills take almost as much the time to acquire as technical skills.

As mentioned earlier, Special Forces skills are ideal for 4GW. When SF are at a premium, normal infantry can carry out some SF akin tasks.[13] However, acquiring the correct degree of proficiency takes time because these skills are learned through the medium of combat experience. In addition, problems arise because normal infantry do not have the specialized equipment available to the SF. It is possible to train the infantry to be like the SF, but it will take time. This has been demonstrated by the U.S. Marine

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13 Author's experience during counterinsurgency operations in Kashmir.

Corps concept of Special Operations Capable (SOC) units, where the duration of pre-deployment training for MEU (SOC) is six months. Training units for six months in SF-like skills for a six-month deployment is not a very time effective endeavor. The Marines do not subscribe to this view because they feel that the MEU (SOC) concept enables them to maintain the complete Corps at a level of training up to the standards of Special Forces. This is because at any time there are six MEU (SOC) units. Two are deployed, two are training for the next deployment and two are in transit to or from deployment. Since units are rotated from within the Corps, the Marines believe that this permeates SF skills throughout the Corps.

1. Organization Tasks in 4GW

In 4GW, the army is required to be organized in two complementary elements. A defensive element and an offensive element, as given below:

- The defensive element is required to provide security to the lines of communication, the government machinery and most critically, the people. In addition to providing security to the people, defensive elements may have to provide administrative support, which should help keep the people on the side of the government. This is particularly true when government agencies cannot function due to coercion or destruction of infrastructure such as communications. In addition, through providing passive security, they are to deter attacks and restrict the freedom of maneuver of the enemy. Such a role was carried out by the conventional French Army in the Algerian War. In Iraq, the indigenous Iraqi police and army forces seek to provide such security services. A defensive component must be capable of carrying out protective, policing, civil affairs, intelligence and psychological warfare tasks.

- An offensive component consists of appropriately armed, mobile (with the type of mobility depending on terrain) light infantry, backed by a viable intelligence generating organization. Special Forces are traditionally best suited for this task if they have the correct intelligence. The problem is that they may not be available in sufficient numbers relative to the area of operations. If that is the case, then this task would have to be carried out by normal infantry. In Algeria,

such a role was carried out by paratroopers and the Foreign Legion. In Iraq, the role is being carried out by U.S. ground forces.

2.   Organizational Components

4GW requires prolonged deployments, which result in psychological stress and strain on the troops who are committed. This creates a requirement to have sufficient troops for rotation; the result is that armies must maintain twice the numbers of troops needed for deployments. GW organizations, therefore, will have to be bigger in terms of manpower. The components required for 4GW are:

- **Special Operations Forces.** Special Operations Forces having an unconventional warfare ethos and training are the 4GW warriors of the state. The old term "commando" is not appropriate for 4GW because commandos, though unconventional warriors, were too identified with conventional war. Special Forces are suitable to be employed in 4GW as their methods of operation are in symmetry with their 4GW enemy. This enables them to counter the 4GW foe more effectively. To this extent, the propensity to increase the Special Forces to fight in the 4GW environment is logical. The drawbacks of Special Forces are first, an inability to develop intelligence on their own because of their smaller size, and second, unrealistic expectations from the establishment, which demands more from them than they can deliver. Special Forces can carry out very successful operations under very difficult conditions while operating in small units with a minimal footprint, if they have the correct intelligence.

- **Light Infantry Forces.** Chapter VI identified the problems inherent in increasing the size of the Special Forces. While Special Forces are best used for specialist tasks (for example, hunting a high value person such as Osama bin Laden), light infantry (i.e., infantry not armed with heavy weapons for conventional war) able to travel quickly over any terrain is required for those offensive tasks which are a daily experience in 4GW. These include operations where the intelligence while not as specific, is sufficient to maintain pressure on the enemy and prevent him from consolidating his position.

- **Paramilitary and Police Forces**. 4GW is a manpower intensive war requiring offensive and defensive capabilities. The defensive component does not require the same level of skills that the offensive component requires. Therefore, troops with a lower level of skills can take on policing as well as security tasks. Ideally, paramilitary forces in the form of a *Gendarmerie* are ideal for this task. The latter can operate better with a local police force that has a similar ethos and working culture. This is important because there is nothing better than local police for obtaining grassroots intelligence. The local police have the best language and local cultural skills, which are very difficult to acquire, develop and maintain. Where the police force is weakened and compromised, central police forces can better assist in building up the police grid. In Iraq, in the absence of sufficient forces of this type, especially when there were no Iraqi police forces, this void was filled by private military contractors.

3.   **Organizational Size**

a.   Defensive 4GWF Force

A defensive force should have an infantry-based component large enough to be deployed independently. This infantry-based component can provide security in a particular area of operations. It should be big enough to provide security for itself and for the civil population in its area, yet small enough to interact with the people on a personal level. This contact should occur with individual people. There should also be a hierarchical contact, both with the civil administration (if existing) and the informal leadership of the populace, which may consist of traditional heads, religious heads, intelligentsia or the socially or financially prominent people. This implies that the military hierarchy should interact at their respective levels with the hierarchy of the people. Such contacts are important as a source of intelligence and assist the military force in understanding and alleviating the population's fears and grievances. An infantry-based component deployed independently in a specific area must be able to ensure its own security and carry out its own housekeeping and tasks. The size of this component would depend on the size of the population in the given area, the nature of the terrain and the enemy threat level.

A suggested guide:

- High threat urban area with heavy density of population -- Company (100-120 men),

- Low threat urban area with high/low density of population -- Platoon (30 men),

- High threat rural area with heavy density of population -- Under-strength Company (50-60 men),

- Low threat rural area with high population density -- Platoon (30 men),

- Low threat rural area with low population density --10 to 12 men.

The area that the component can dominate cannot be sacrosanct. It depends on the terrain and situation. The components of this force need to be predominantly infantry, supported by sufficient intelligence components.

b.   Offensive 4GW Force

An offensive force for 4GW has to be organized in order to operate for prolonged periods on its own. It needs to have suitable means of mobility (air, vehicular or the physical fitness for foot mobility with appropriate equipment in harsh terrain). It needs to have firepower that is superior to the enemy's, but which is unconventional to the extent that it does not rely on conventional Second Generation means of fire support, such as indirect firing weapons. It requires secure and reliable means of communication. The size of this force is dependent on its method of operations. However, even where the traditional methods of counter-insurgency are applied, offensive operations above the brigade level rarely give commensurate results unless the terrain is very open (desert or bare mountains with low population density). In all other types of terrain, offensive operations based on intelligence are best conducted in small units. The author's experience has been that the most successful operations are conducted with the strength of a reinforced platoon (40 men) or, depending on the situation, an under-strength battalion (200 to 250 men). Co-locating the offensive force with the defensive force, if possible or required, helps reduce their administrative and protective requirements and provides larger numbers for offensive tasks.

When required, larger bodies of offensive elements can be concentrated, but as the strength of the offensive element increases so does its footprint. The result is a greater application of firepower, a bigger target for the enemy, the need for a larger administrative component and the creation of a longer chain of command. These slow down their tempo, flexibility and initiative.

To sum up, in 4GW there is a requirement to have the army organized in the following manner:

- It should have separate offensive and defensive components. These components should have the equipment and training appropriate to their tasks.

- Headquarters should be primarily concerned with the collection of information and the creation of intelligence. The conduct of operations should be left to the units. This is in line with a principle of management which states that the capacity of managers to direct knowledge workers is limited as the workers know best how to carry out the task (Kennedy, 2005).

- There should be a coordinated intelligence component in which all intelligence resources of the government, the police and the military are integrated. Intelligence staffs must be larger and available at all levels, from company upwards, in both offensive and defensive components.

- Units must have weapons and equipment appropriate to 4GW.

- There should be military police elements integral from company level upwards in the defensive component. They should be trained in policing tasks and able to advise others in this role.

- At all levels interpreters must be incorporated. This is in addition to the requirement to have cultural knowledge and functional language skills in all units.

E.   EQUIPMENT

The term "equipment" as used here encompasses weapons, equipment or other material means. While the list can be lengthy, the points made below are representative and meant to convey the apparently simple or unconventional aspects of equipment which need to be addressed for 4GW. There is a saying, "look for the potatoes at the edge

147

of the field."[14] This saying indicates the place to look for the solution to a problem. The genesis of this statement is that the largest number of pests and the least amount of nutrients and insecticides are located at the edges of a field. To grow hardy strains of potatoes, farmers transplant potatoes from the edge of fields in successive crops. The rationale of this saying in the context of 4GW is that workable and practical solutions to 4GW problems come from the experiences of those countries that have to fight 4GW with a paucity of resources.

1.   Weapons

There is a requirement to have weapons that are relevant to the generation of war that is being fought. Much to its chagrin the Indian Army found that the Liberation Tigers of Tamil Eelam (LTTE) in Sri Lanka, armed with the ubiquitous AK-47, had a basic personal weapon that was superior in terms of volume of fire, robustness and ease of carriage, to the individual weapon of the Indian army, the 7.62mm Self Loading Rifle (Athale, 2002). While other infantry weapons helped the Indian army hold its own in Sri Lanka, the fact was that in difficult terrain and an environment where the average ranges of engagement were at close quarters, the semi-automatic Self Loading Rifle or the 9mm carbine were not suitable (Subramanian, 2000). To cope with the same shortcoming in Kashmir, until such time as the indigenous 5.56mm Indian Small Arms System (INSAS) could be introduced, the Indian military purchased 64,000 AK-47's from Bulgaria (The Tribune, Apr. 05, 2004). 4GW does not require heavy artillery or modern battle tanks -- it requires weapons that facilitate agility and limit collateral damage.

2.   Equipment

a.   Vehicles for Protected Mobility

The U.S. experience in Iraq has illustrated the disadvantages of using a lightly armored vehicle such as the Humvee in high-threat areas. However, in 4GW, such a vehicle is sometimes needed because certain situations or areas require relatively nimble vehicles. The tank, which is the prime weapon for a conventional war, is not suitable in most 4GW situations. In any case, as has been experienced by some countries, the 4GW fighter can have surprises up his sleeve to engage heavy armor. The Russian

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14 Explained by Prof. John Arquilla at the Naval Postgraduate School during his course on Warfare in the Information Age.

experience in Chechnya showed that in an urban area, a 40-year old weapon like the RPG-7, when used in a swarm attack, can wreak havoc. Such problems arise when equipment designed for conventional war has to be utilized in the 4GW environment. Therefore, there is a requirement for equipment designed for 4GW. An example of the type of equipment required is the South African-built *Cassiper* anti-IED vehicle. Designed for the deadly guerrilla war fought in the South African bush before the collapse of apartheid, it is built to survive 4GW IEDs. It was inducted in limited quantity in Kashmir and found to be useful.

b.   Personal Equipment

The personal clothing and equipment of soldiers is designed for conventional war. Helmets which protect against artillery shrapnel, boots which are robust and protective over rough terrain, rucksacks which can carry 70 to 80 pounds of load and body harnesses which can hold entrenching tools and loads of ammunition are some examples of equipment more suited to conventional war. The troops employed in 4GW require equipment that is appropriate to 4GW. Examples are shoes that facilitate stealthy and swift movement, helmets and body armor that are light and convenient, and body harnesses that are suitable for carrying the minimal loads required in 4GW. While Special Forces may have such clothing and equipment, they may not be available to the rest of the army. Personal equipment needs to be designed with 4GW in mind.

c.   Security Equipment: Fences

A proliferation of electronic systems to monitor clandestine entry has its limits. Ultimately, the human monitoring the surveillance system has two eyes and a single brain to monitor the surveillance devices. The United States local media reports that certain towns advise people that they are unable to respond to burglar alarm systems. This is because with too many alarms installed and accidentally going off throughout the day, the police do not have sufficient resources to respond to them. The same is the case in border management. Hostile borders have to be monitored by more than just eyes. They need physical barriers. A poem by the famous poet Robert Frost written in 1915 states, "fences good neighbors make." Two thousand years after the Great Wall of China was erected and sixteen years after the Berlin Wall was torn down, the world is rediscovering the utility of fences in the 4GW world. Already there is a rival to the Great

Wall of China. The Indian border fence stretches almost 1000 miles along the Indo-Pakistani border and is the longest illuminated fence in the world. A similar fence is being erected on the Bangla Desh border, not to prevent movement of anti-national elements *per se*, but to prevent illegal immigrants. This is akin to the fence along sections of the U.S.-Mexican border. India is not alone in this experiment with fences, which is the result of looking for solutions in the world of 4GW. Fences or walls exist in Northern Ireland, Morocco, Cyprus, Botswana and Israel and their number is increasing. Just as walled-in communities are an increasingly visible sign of insecurity in today's world, fencing is a new 4GW protective measure. No obstacle is good until it is under observation, hence fences and protected areas such as the "Green Zone" in Baghdad add to the requirement of manpower in 4GW.

d.   Non-Lethal Weapons

The army requires arming and training with non-lethal weapons. Twelve years ago, the author was witness to an army operation against terrorists who were hidden in a complex of limestone mine caverns. After repeated attempts to induce them to surrender failed, a decision was taken to use force. However, within the confines of the caves no weapon was effective. An attempt to literally smoke out the terrorists using smoke generators did not produce the desired result. After twelve hours of fruitless siege, a tear gas gun was obtained from the nearby police post. Two tear gas shells forced the terrorists to surrender within five minutes. Tear gas is still not authorized in the equipment tables of the Indian army as it is a police weapon. This incident illustrates the viability of non-lethal weapons and the requirement to induct them as weapons for 4GW.

3.   Equipping the Infantry Soldier for 4GW

The infantry soldier is at the forefront of 4GW. There is, therefore, a requirement to equip the infantry soldier for 4GW. Continuing to regard conventional, big war as the army's primary task means that obtaining the equipment needed to fight 4GW remains second priority. The problem stems from a lack of realization as to which is the primary task of the army. This enables the Fourth Generation enemy to maintain its ability to sustain effective operations.

In order to make the infantry suitably equipped for 4GW, the following equipment is required:

- Protected high mobility vehicles,

- High quality personal protective equipment,

- IED detection and defusing equipment,

- Weapons capable of being used by day and night and which minimize collateral damage,

- Surveillance and detection equipment for offensive and defensive operations, both during day and night,

- Non-lethal weapons, as used for riot control, including means to use incapacitating agents whether physical or chemical (water cannon, taser, tear gas, rubber bullets, etc.),

- Restraining equipment to hold suspected individuals while operating amongst the population.

F.   TRAINING

The thrust of the training in an army indicates the generation of war which forms the cornerstone of that country's doctrine. Ever since the 1967 and 1973 Arab-Israeli Wars and the astounding success of the Israelis, the world has picked up ideas about the future conduct of war from the Israeli success. For example, Alvin and Heidi Toffler posit that the conception of the Airland Battle had learned much from the Israeli success in 1973 (1993, p.51).

The cornerstone of the Israeli success was Third Generation maneuver war. Because of that trend, maneuver has been the center point of training from the 1970s onwards. In the army, those lacking knowledge about maneuver warfare were relegated to the backwaters of the profession. In the world's major armies, officers who are ignorant of concepts such as *Auftragstaktik* or the Airland Battle cannot expect to rise in the profession. This has resulted in a vacuum in knowledge about unconventional warfare and low intensity conflict. This vacant space formed a "blind spot," which has been occupied by 4GW. The proponents of Second and Third Generation warfare have been targeted by weaker foes whose level of resources did not permit their adaptation of maneuver war.

As Col. Anthony Wood, USMC (Ret.), stated in an interview with the author, the transformed nature of war requires

> a *thinking* military which recognizes the *changes affecting warfare in all its forms;* one which understands the *capabilities and limitations of technology*; one with an officer corps and senior enlisted corps possessing highly *educated and trained* minds fit for *clear thinking and effective decisions.*

Understanding 4GW requires educated minds more than anything else. The point was previously made that 4GW requires more infantry, but it also requires educated infantry. The aim of training the army for 4GW should focus on this requirement.

The failure to understand the nuances of 4GW, in spite of its prevalence in almost all parts of the globe, has led to the apparent frustration of conventional armies in combating it. There is a requirement to focus and structure the training of armies towards 4GW as their primary mission in the conduct of war. This requires the following actions:

- **Basic Training**. The basic training and instruction must be aimed at preparing the army for 4GW, which translates to unconventional war. This training and instruction requires that UW be made the cornerstone of military training as long as another paradigm shift away from 4GW does not take place. 4GW requires stress on aspects such as basic infantry field craft, detection, deception and intelligence acquisition, including the generation of intuitive intelligence. Training has to stress fluid tactics on an extended and/or urban battlefield, widely dispersed forces acting with great initiative, decision support and small unit initiative and invention. Training curricula have to stress developing these basic infantry skills right from enlistment or entrance into officer training programs. Training junior leaders to hone their decision making and initiative skills is essential because military engagements in 4GW take place largely at battalion level and below. Training to be proficient on the 4GW battlefield has to be done with the realization that civilians will be present on the 4GW battlefield and that retaining their support is vitally important. While instinctive reaction is required when subject to an ambush, instinctive action should be taken with restraint, consequent to an ambush, to avoid alienating the

population. To be ahead in the OODA loop there is a requirement to train the army to comprehend what they have to "observe" and to anticipate what they have to be aware of in a 4GW environment. For example, there is a requirement to dismiss the conventional warfare template, which states that ambushes only take place in lonely bends on roads in the jungle. The jungle syndrome presupposes that an ambush is never expected on a busy street. This is not surprising as the earlier generations of war assiduously avoided inadvertent harm to non-combatants, and ambushes invariably took place or were expected away from inhabited areas. In 4GW, ambushes can take place anywhere, including within a busy marketplace filled with people. Indeed, one can say that the suicide bomber is a 4GW ambush.

- **Doctrinal Training**. The doctrine of 4GW should be part of the training curricula of both officers and enlisted personnel. If the imperatives of training for 4GW are stressed early in the career of a soldier, he will be that much more proficient in the craft of 4GW. Training in police-type, humanitarian and administrative operations, as well as offensive operations, is required. They highlight the dichotomy in 4GW.

- **Inter-Agency Cooperation Training**. 4GW involves extensive inter-agency operations. Extensive interaction and jointness is required, not only among the three services, but more importantly between the army, the police and the administration. This requires educating armies about the procedures, techniques and methods of operations of the other government agencies. This education is required not only at the unit level but also at the level of the staffs that have the important tasks of liaison and coordination.

- **Intelligence Training**. Troops should be proficient in integrating technological aids to intelligence acquisition, utilizing human intelligence. Gathering of human intelligence should be given impetus because in 4GW it pays greater dividends. Training should include extensive area and cultural familiarization, which helps the application of intuitive intelligence.

- **Technological Training**. Training is required in recognizing and utilizing those aspects of commercial technology that can be made use of in 4GW, whether in adapting 4GW methods or countering them. Training should stress the use of technology as a lever to increase efficiency of actions, but to not consider technology as the end all, which may lead to the neglect of basic infantry skills required in 4GW. The 4GW enemy may be using primitive means to carry out his actions. Unless troops are trained to recognize the kinds of primitive means that can be used, they will be victims of asymmetry in that they will not be able to anticipate enemy actions and will be surprised by the 4GW foe.

- **Training in Consequence Management**. Training is required in "consequence management," which is a term used for action to restore function to any effected areas of the establishment after an enemy attack (or a natural disaster). The most important part of this training focuses on not viewing a temporary setback as a permanent defeat, thereby causing loss of morale or leading to blindly destructive reaction. Training should stress the long time-span of 4GW in comparison to training in conventional war, which ingrains the importance of speedy termination of operations.

- **Training in Psychological Warfare**. Media management is extremely important in 4GW. Armies have to be aware of the impact that media has and the correct way to handle media. Psychological warfare in 4GW can be effectively utilized only if there is adequate cultural awareness.

- **Cultural Training**. 4GW is fought within the population. The support of the population is extremely important and can be the basis of victory or defeat. Every culture has its own set of rules of behavior. Even within a country different communities have different sets of values. Unless these are known, the correct way to handle and interact with the population cannot be identified. Cultural training is required to understand the networks that operate within a society. Knowledge of such networks is required to preempt actions, cut off sources of support or locate fugitives.

•   **Language Training**. Language training is essential to enable acquisition of human intelligence, assimilation of cultural awareness and working with the people.

•   **Training in Ethics and Laws.** Training in ethical considerations and discipline to ensure that armies know the limits and standards they should adhere to in their interaction and handling of the population. This is essential to ensure that the 4GW strategy of attempting to alienate the population from the other side by highlighting atrocities, illegality or insensitivity is negated.

•   **Police Training.** Armies need to take on policing tasks where the local police forces have been marginalized. Before the state apparatus gets back on track, armies will have to be involved in bringing order within a community, resolving disputes, invigorating flagging civic agencies and goading reluctant public officials. Police training will also assist in the conduct of other operations that need greater investigative skills.

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VIII. CONCLUSIONS AND RECOMMENDATIONS

[T]he man who sacrifices the possible in search of the impossible is a fool.

-Carl Von Clausewitz (On War, p.637)

War as a means to resolve interstate conflict has restrictions and limitations in the present globalized world. War anywhere in the world affects the global economy; this leads to efforts from the world community to prevent its outbreak, and if war does erupt, to terminate it swiftly. The world community aims to prevent war by pressuring the nation-state responsible for initiating war through international ostracism, trade sanctions, withdrawal of aid and restrictions on the travel of its people. One or more of these means, singly or in combination, can exert enough pressure to force a country to refrain from any activity that disturbs the world equilibrium. In 1994, even a country as divorced from the world economy as Sudan found that it had to evict Osama bin Laden when the United States and Saudi Arabia exerted pressure on it to do so. This limitation of modern war can be overcome by keeping war at a level of low intensity conflict or below the level of regular state--versus--state war. Under these circumstances, those fighting wars have an ambiguous identity that is becoming more confusing by the day. Such fighting is done more often by paramilitary forces, guerrilla groups, ethnic militias, vigilante squads and even criminal gangs and mercenaries than by regular, uniformed soldiers (Renner, 2000). The nature of these enemies is even more confusing as it becomes difficult to differentiate between terrorists, freedom fighters, militants, insurgents, guerrillas, criminals, gangsters, rebels, volunteers and so on. This is evident from the war in Iraq, where the terms used by official sources and the media to describe the enemy are constantly changing. For example, one news item in the Washington Post newspaper referred to the same enemy as "insurgents," "rebels," "militants," and "miscreants" (U.S. and Afghan Forces Kill Ten Insurgents, May 22, 2004). Rather than untie the Gordian knot of identity, it is easier to state that all these entities are 4GW fighters.

Since the Second World War, nuclear weapons have proliferated throughout the world. This, along with the extreme expense of modern conventional weapons, in

combination with globalization, has made conventional war an unviable option. In all the major flashpoints in the world, India-Pakistan, United States-North Korea, United States-Iran, China-Taiwan, Israel-Arabs, China-India and Russia-Chechnya, one of the belligerents is either so inferior conventionally or nuclear weapons are available to both sides in enough measure as to negate conventional war. However, in all these areas countries maintain large conventional armies. They prepare for an impossible war and neglect the possible. The words by Clausewitz quoted at the commencement of this Chapter indicate that such action is obviously unwise. Clausewitz also said that war consists of reciprocal actions of application of force by two belligerents which has no limit (1832, p. 77). This is not a sensible option for the weaker side, which knows that limitless escalation on the conventional plane will result in defeat. The weaker sides in conflicts have learned that through 4GW they can level the playing field. 4GW increases the chances of a weaker belligerent attempting to engage in war, albeit in a shadowy and ambiguous way. This thesis argues hat the shape of war for the foreseeable future is 4GW, and for this war, infantry-based armies that can fight unconventionally are essential.

A.   SUMMARY

This thesis began by examining some theories about the changing nature of war. These theories support the view that both the present and future nature of war is Unconventional War. For ease of reference the thesis calls this war "4GW." There are a number of theories attempting to explain the transformation of war; the "Waves" of the Tofflers, the "Epochs" of Robert Bunker, the "Ages" of van Creveld the "Eras" of Hanle and the "Generations" of Lind.

All these theories try to explain the same issue; they try to make sense out of the transformations in war that have taken place earlier in order to understand the transformation that is taking place now. Such transformation is inevitable because there have been dramatic changes in society and technology in the past 50 years.

All theorists, including those who promulgate the "Generation Theory," attempt to explain the new face of war wherein efforts are made to circumvent the strength of the opponent. A large content of 4GW *is* "evolved insurgency" as the theorists of the

Generation Theory acknowledge. The generation theorists also acknowledge that the generations do not displace each other, but overlap and even coexist. The Generation Theory, like the other theories, attempts to open our minds and makes a case for the transformation of the military in line with the transformation of war.

Chapter II examined war and went into detail on the Generation Theory. In brief, 4GW is a form of warfare whose methods enable a weaker entity to wage war with a stronger entity by using their weakness and the strength of the adversary as levers to gain advantage. To do this, 4GW uses unconventional strategy and tactics that are very different from conventional war. 4GW undermines enemy strengths by circumventing them. It attacks the enemy's moral strength and aims to attrite his will to continue the war through the very means that give democracies their strength, viz. openness, easy availability of technological means, trade and easy immigration. This is aided by another great strength of democracies, the media. The global media make it possible to influence audiences all over the world. Therefore, management of the media is of great importance in 4GW.

Chapter III dealt with two issues; the relation between 4GW and terrorism and the moral and ethical issues of 4GW. Because the 4GW foe uses terrorism as a means of war, 4GW and terrorism tend to get mixed-up. This Chapter described the manner in which the advent of 4GW has brought some legitimacy to terrorist methods in that many theorists find them acceptable in 4GW. Therefore, it would be prudent to accept and recognize terrorism as a strategy and tactic within a new way of war. Criticism about the moral degradation inherent in terrorism does not deter those who use it. This is because of terrorism's obvious value. Just as doctrine has to be developed to fight wars of maneuver, so must it be developed to cope with terrorism in 4GW. Because of its favorable cost/benefit ratio, terrorism *will* be inherent in 4GW. Though a military action to the extent that it is involves violence, the impact of terrorism is political, social and economic rather than military. It can result in political decisions as in the impact of the Madrid bombings on the Spanish elections in 2004, social fissures as created by ethnic cleansing in the former Yugoslavia and in Kashmir and economic slowdown such as caused by the terrorization of truckers or construction workers in Iraq.

Chapter IV dealt with the effect of 4GW on the Principles of War. The Chapter examined whether the Principles of War as subscribed to by the U.S. Army need modification in light of the new way of war. The conclusion was that though 4GW represents a sea of change in the way war has hitherto been conducted, the underlying Principles of War remain the same. It is essential to reinterpret the essence of these principles in light of 4GW. The increasing recourse to 4GW does not mean that there is no likelihood of Second or Third Generation wars. Such wars may still take place. Broadening the scope of the Principles of War can help ensure that capabilities to fight conventional war are not lost while the adroitness and competence to fight 4GW is refined. The Chapter concluded that there is a requirement to not have separate principles for what is called MOOTW. Such differentiation creates the impression that 4GW is not war. There is a need to include Perseverance, Knowledge, Moral Force, and Administration as principles of war. These have existed in some form within the commonly accepted nine Principles of War. However, these aspects require greater focus in 4GW. Therefore, they need to be considered as separate principles.

Chapter V examined the manner in which Special Forces are more suited to operate in the 4GW environment. The Chapter also looked at why the mainstream army is not as effective in the same environment. The Chapter identified the strengths and weaknesses of both forms of the army and concluded that the Special Forces are more suited to conduct 4GW than the mainstream army. This led to the view that increasing the size and utilization of Special Forces is the answer to the problems that states face in 4GW.

However, increasing the size of the SOF is apparently not easy. It takes time and requires specialized manpower resources. Chapter VI examined the problems inherent in expanding an organization without diluting its qualities. The Chapter used economic and organization theories to support a conclusion that even countries with large armed forces cannot maintain "true" Special Forces without diluting their character. The Chapter concluded that an adhocracy structure is the best structure to ensure the effectiveness of Special Forces but such structures have limits of size. The Chapter concluded that it would be both more effective and more feasible to train armies to engage in some of the

tactics, techniques and procedures of SOF. This would enhance their effectiveness without having to increase the size of the SF.

The conclusion of Chapter VI was that it is better to transform armies into a light infantry forces with SF like unconventional warfare capabilities for 4GW. This requires a transformation in the doctrine, organization, equipment and training concepts of armies to make them appropriate for 4GW. Chapter VII suggested the means and aspects that need to be incorporated to make armies suitable for 4GW. This transformation should make unconventional war the primary way to wage war for armies. A conventional big war would be a secondary way to wage a war.

B.   RECOMMENDATIONS

Change generates resistance, and so will the statement of this thesis, that the shape of the future is infantry-based armies whose primary role is in unconventional warfare. This is understandable as the primary unconscious and romanticized picture of a modern army is tanks, artillery and missiles, just as the primary picture of an air force is jet fighters rather than transport aircraft. Modernization has ingrained an image that negates infantry-heavy armies. Force projection is a more enduring image of the military, regardless of the fact that all nations stress that their military is only for defense. Force projection recalls mechanized armies sweeping away all resistance in their path. This image is rooted in use of firepower, especially that which is based on tanks and airpower. There is no place in this image for slow moving infantry, which is the image of the First Generation of war. The fact is that 4GW seeks to negate the effectiveness of traditional means of force projection by creating conditions of asymmetry. This symmetry-asymmetry paradox is illustrated in Appendix B.

This thesis was motivated by the author's view that large conventional armies need to adapt to 4GW as their primary mission. The basis for defining the paradigm for change was the manner in which the U.S. and the Indian armies are structured and operate. There are a number of differences between these two armies because of their historical background, the economies supporting them and their geopolitical interests. However, they do have some commonalities. These commonalities render the recommendations presented in this thesis applicable to both armies in varying degrees.

Their commonalities are the following:

- As military organizations in democracies, both armies operate under the same constraints of civilian control,

- They are subject to the same dynamics as any large organization. These include bureaucratic friction, career competition and personnel problems,

- For a long time their armies have been stressed by involvement in 4GW.

The recommendations can be framed more in conceptual terms than concrete terms because of the wide scope of this thesis. The following recommendations are made for defining the paradigm for change in light of 4GW:

1.   A Return to Manpower-Based Armies

The reference to the paucity of "boots on the ground" is often heard in advocating solutions to the 4GW in Iraq in which the U.S. is involved. This thesis highlighted the importance of the presence of soldiers among the population to reduce the freedom of action of the 4GW foe as well as instill a sense of security in the people. The link between the people and the government cannot be maintained in an unsecured environment without the physical presence of the armed forces of the government. It is immaterial whose "boots" they are, as long as their accountability and allegiance is to the government. The boots could be of the army, paramilitary forces, police, private security agencies or armies of allies. The last is a viable option only when operating in another country. Where countries are involved in 4GW within their own geographical limits, allies can be counterproductive as they dilute the legitimacy of the government. However, it is important what sort of "boots" they are. This implies that the people in those boots must be educated and trained for 4GW.

It is commonly accepted that decreases in size through induction of high technology enables reduction in manpower with similar or increased efficiency. The Revolution in Military Affairs, Transformation or the Future Combat Systems (FCS) all aim to improve performance in terms of precision fires and flexibility of employment with a backdrop of achieving economies of manpower (CBO, 2005, p. 16). This is good as long as the potential wars are of the Third or earlier generations. However, for 4GW, the payoff with increased technology and decreased strength will increase the problems in

successful conflict termination because 4GW needs manpower to interact with people as much as it requires improvements in technology. An initiative such as FCS will decrease the personnel in combat units by one-third (p. 37). This decrease is offset by enhanced firepower. If the 4GW presents no targets other than those which can be engaged by small arms, the increase in precision firepower will not convey any advantages. This thesis recommends that in 4GW the size of armies in terms of manpower must be maintained at a high level: high in terms of numbers and high in terms of quality. High numbers indicate that the manpower should be sufficient to dominate the area of operations by physical presence rather than firepower. Size is related to geographical considerations, terrain conditions and the size of the population. The larger the geographical area, the more difficult the terrain for mechanized movement and direct observation: the larger the population size, the greater the requirement in terms of manpower. In the world of 4GW, numbers matter.

2.   An Infantry-Centric Army

In all the 4GWs that have been or are being fought, the infantry has had to bear the maximum responsibility and suffer the most casualties.[15] Infantry is the most maneuverable and the most mobile of all arms. It can operate in any terrain or weather. The infantry is the arm that can operate in conditions that give it an intimate feel of ground realities. This gives infantry the ability to close in and engage the 4GW enemy in a condition of symmetry. This ability also enables the infantry to interact best with the population. Within its integral capability, the infantry can carry out stability and support operations and offensive and defensive operations with equal competence. 4GW requires a light infantry predominant army. "Heavy" infantry capable of beating tank attacks is suitable for the conventional battlefield, not for 4GW.

Additional civil affairs and intelligence capabilities can greatly increase the infantry's effectiveness. Technology must enhance the nimbleness of infantry in 4GW,

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15 The list for awards given by the Indian Army in 2005 is representative of the infantry-centric nature of 4GW. Of the 100 awards, 87 have been awarded to infantrymen (26 posthumously). Ten were awarded to other army personnel, including one posthumously, and all ten were serving in infantry units involved in 4GW. The remaining three were awarded to an Army aviator, an Indian Air Force pilot and a soldier from a paramilitary organization. List of Personnel Recommended Gallantry Awards on Republic Day 2005. Retrieved May 15, 2005, from http://indianarmy.nic.in/rd2005/gallantryawards_05.htm

not make it dependent on static assets that reduce its great maneuverability. A stress on infantry and its modernization should be countered by a balanced reduction of the "heavy" forces.

3. Keeping Special Forces "Special"

The thesis recommends that Special Forces need to be kept "special" by not permitting them to be expanded indiscriminately. The Special Forces must have very high standards of quality of manpower, equipment and training. There is a finite capacity for a society to organize and maintain high-quality Special Forces. Uncontrolled expansion of Special Forces will dilute their effectiveness; the result will be Special Forces which are not as competent in carrying out special tasks. The requirement for lower spectrum Special Forces skills can be achieved by training the infantry in the ways of Special Forces.

4. Principles of War

The thesis recommends reinterpreting the essence of the Principles of War in light of 4GW. Existing Principles of War need to be applied while keeping in view the reality of 4GW. Where inevitable, the scope of the Principles of War can be enhanced by separating essential aspects that exist within present principles and giving them the status of separate principles. The thesis recommends that Perseverance, Knowledge, Moral Force, and Administration be included as Principles of War to supplement the nine existing principles in the U.S. Army. This will ensure that capabilities for fighting conventional war are not lost while the focus, adroitness and competence to fight 4GW are strengthened.

5. Knowledge Based Operations

The inclusion of knowledge as a Principle of War indicates the importance of intelligence in 4GW. Conventional war with clear frontlines is unambiguous about who the enemy is and where is he generally located. In 4GW, the biggest challenge is to identify and find the enemy. This strength of the 4GW foe can only be overcome by excellent intelligence. Intelligence organizations need to be made more appropriate to 4GW. They have to interact with the civil intelligence agencies to an extent that is not as important in conventional war. The starting point for improving intelligence acquisition needs to be a change in a salient aspect of the previous generations -- the primacy of

"operations" as a career field. The overriding importance of operations results in the best manpower and equipment resources being allocated to operations. The best manner to improve intelligence acquisition is to provide it with the best equipment and the best manpower. This will require changes in personnel policies that favor performance in the intelligence field. While is it easy to say that HUMINT must be improved, it can only be improved if the intelligence organization in an army has the best and the brightest people. Knowledge based operations include cultural and linguistic knowledge. This is important for operations outside the home country and also within large countries where there are ethnic diversities and varied languages.

6. A Doctrine Supporting Unconventional War

The thesis recommends that the doctrine for the army must begin with the fact that 4GW is its primary responsibility. The nature of 4GW requires transforming the army into an infantry force with Special Forces like unconventional warfare capabilities. This requires a transformation not only in the doctrine of the army but also in its organization, equipment and training. The doctrine has to de-emphasize large operations and stress on firepower. It has to focus on intelligence, contact with and knowledge of the population and technology to improve grassroots functioning rather than facilitate delivery of heavy firepower. Stress on urban warfare should bring in the consideration of built up areas as "terrain."

Unconventional warfare is not something that should be learned after having learned the art of conventional war. Rather, unconventional war must be the focus of training, with conventional war being taught as a specialty that *may be* required. It is only with this metamorphosis that conventional armies can be structured to fight unconventionally in the 4GW environment. In the generation of 4GW, the hitherto unconventional must become the conventional.

7. Organization Changes for a Practical Transformation

Transformation should be relevant to the nature of 4GW being faced. It must begin with a clear understanding of the new battlefield imperatives and their implications. Change should not start with the application of technology, it should end with it. Organizational changes are not only about the shape and size of organizations but must include other areas such as personnel management. A stumbling block to retaining the

best talent in the Special Forces is the career development and promotion pattern of the conventional army, which insists on a particular career progression to reach high ranks. This dissuades unconventional soldiers from pursuing careers within Special Forces. Personnel policies should also permit the best manpower to be retained in the army. An army that requires lower-ranked officers and men to exercise greater initiative and assume greater responsibility must ensure that those personnel have adequate training and expertise.

8.   Approach to Terrorism

Terrorism is viewed as an evil but inevitable adjunct to 4GW. To this extent, the training of armies must include measures to deal with and withstand terrorism. Since terrorism targets the population, the public must be educated about how to cope with terrorist incidents. For the same reason, the media must be responsible in that their actions should be balanced to not encourage terror incidents. Fatalism is a negative quality. However, response to terrorism must be tempered with fatalism. Terrorist acts abound in 4GW. To go on a crusade after every terrorist attack is a reflex. In 4GW, restraint is required because the Fourth Generation enemy gains by such reactions; indeed, it is his endeavor to initiate "knee-jerk" responses.

9.   The Ethics of War Require Conforming to the Times

4GW requires that the ethics of war be re-examined by the international community to enable them to fight a war which uses terrorism as a tactic and which blurs the distinction between civil and military. Adhering to ethics framed during the time of First Generation War creates hindrances in the prosecution of 4GW. This is all the more relevant when one side in 4GW is creating asymmetry by having a different set of ethics to prosecute the war.

10.   The Media

The army must institute measures to ensure that its officers and men know and understand the assistance that the media can render in the conduct of 4GW. At the same time, the media has to be educated about the conditions under which 4GW is fought and the areas where the media has to show responsibility in whetting any news that might retard or damage the efforts of the army.

C.   CONCLUDING REMARKS

4GW is fought to a greater extent by the army than the other branches of the military. The other branches serve in a support role. The reason for this is obvious: recourse to 4GW takes place when one side is far weaker in conventional determinants of strength, such as air or naval forces. The non-state character in any case virtually rules out use of conventional air or ground forces by one of the sides. Perforce, this thesis has been army centric.

4GW, the shape of future war, has arrived. This shape manifests in unconventional war. This thesis argues that while taking advantage of technology that enhances effectiveness and saves manpower, one must keep in mind that 4GW *requires* greater manpower. 4GW also requires that low technology fighting skills be refined because the doctrine of 4GW is centered on circumventing the advantages of technologically superior enemies.

This thesis argues that the ideal means to fight in the milieu of 4GW are organizations that can fight unconventionally, such as SOF. However, the constraints of expanding SOF mean that the task of fighting 4GWs will devolve on the next most suitable means, which is infantry. Infantry in 4GW must not be organized as conventional heavy infantry, dependent on heavy firepower; it should be light infantry capable of operating with integral weapons and equipment.

With the growth in the number of countries possessing nuclear weapons, restrictions on conventional wars will increase. As states are restricted in their actions by the world community, if they wish to degrade another state, their actions are more conveniently done in the non-state and transnational arena. This is done through non-state para-military, terrorist and criminal elements that in turn become semi-independent and draft their own scripts and redefine the use of force and violence. When we hear labels such as "terrorist" and "thug" we often picture some sort of sub-species. However, this subspecies is clever, inventive and committed, and often willing to die individually or collectively for his or her cause. Defeating them demands understanding their motives and values, respect for their courage and sober appraisal of their abilities. This requires a military which considers delving into this murky realm part of its job and not an unsavory business created by inefficient politics which only politicians should handle. The reality

is that if bad politics or other internal causes, lead to a 4GW for a country and the country then wants out of the problem, it cannot expect someone else to come and take care of the problem. That country will have to pull its own chestnuts from the fire and it will need its own army, the ultimate guarantor of security, to do it.

This thesis raises the question of whether we should continue planning and preparing for a war that will never take place, or should we prepare for a war that has been with us for decades now and is likely to remain. Making a change creates apprehensions that the change may usher in even greater difficulties than it solves. It is easier to deal with existing difficulties than to contemplate the unknown. Evolution can occur only by stepping out to try something different. 4GW has been evolved by the weaker entities because of compulsion. The stronger must evolve means to tackle 4GW with the confidence of familiarity, rather than with the apprehension of the unknown.

This thesis has been written by an author who was born into an Army steeped in the Second Generation and whose professional education idolized Third Generation War. However, in his 28 years in the army he has seen that when it came to applying his accumulated conventional knowledge to actual combat situations, the conventional knowledge did not help because the situations had more of a 4GW character. This thesis has been a result of a desire to identify the correct course of action to resolve this dilemma, which manifests itself increasingly all over the world. Because of the strong foundation all armies have in conventional war, a radical departure from conventional war becomes an anathema. This may be evident in the thesis where certain suggested courses of action to transform the army for 4GW ultimately produce suggestions that appear shackled by the chains of conventionality.

It is the belief of the author that if the ethos of armies is not directed towards unconventionality, they will not be able to adapt themselves to 4GW.

Sir B.H. Liddel Hart's theory of the Indirect Approach had been the basis of Third Generation War. The theory of the unconventional approach thrust onto us by "evolved insurgents" promises to be the basis of Fourth Generation War.

(Refers to Chapter IV, Para. A)

Comparison of the Principles of War
(in order of priority)

PRINCIPLES OF	1	2	3	4	5	6	7	8	9	10
Sun Tzu, 4th Century B.C.[16]	Objective	Offensive	Surprise	Concentration	Mobility	Coordination				
Vegetius[16]	Mobility	Security	Surprise	Offensive						
Napoleon 1822[16]	Objective	Offensive	Mass	Movement	Surprise	Security				
Clausewitz 1832[16]	Objective	Offensive	Concentration	Economy of Force	Mobility	Surprise				
Jomini 1836[16]	Objective	Movement	Concentration	Offensive	Diversion					
Fuller 1912[16]	Objective	Mass	Offensive Security	Surprise	Movement					
British Army 1920[17]	Objective	Offensive	Surprise	Concentration	Economy of Force	Security	Mobility	Cooperation		
U.S. War Dep't 1921[16]	Objective	Offensive	Mass	Economy of Force	Movement	Surprise	Security	Simplicity	Cooperation	
Fuller 1925[16]	Direction	Offensive	Surprise	Concentration	Distribution	Security	Mobility	Endurance	Determination	
Liddell Hart[16]	Objective	Movement	Surprise							
CGSC 1936[16]	Offensive	Concentration	Economy of Force	Mobility	Surprise	Security				
Mao 1938[16]	Political Objective	Mobility	Offensive	Defensive	Concentration	Surprise				
U.S. Army 1944[16]	Objective	Simplicity	Unity of Command	Offensive	Concentration of Superior Force	Surprise	Security			

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16 From Whaley (2003).

17 Alger (1982).

| PRINCIPLES OF	1	2	3	4	5	6	7	8	9	10
Giap[16]	Political Objective	Speed	Surprise	Morale	Security	Cooperation				
U.S. Army 1962-1968[16]	Objective	Offensive	Mass	Economy of Force	Maneuver	Unity of Command	Security	Surprise	Simplicity	
Montgomery 1968[16]	Surprise	Concentration	Cooperation	Control	Simplicity	Speed	Initiative			
U.S. Army 2001[18]	Objective	Offensive	Mass	Economy of Force	Maneuver	Unity of Command	Security	Surprise	Simplicity	
British Army (Montogomery 1945-46) [18]	Selection and maintenance of aim	Offensive action	Concentration of Force	Surprise	Flexibility	Economy of Effort	Cooperation	Maintenance of Morale	Security	Administration
Israeli Army[18]	Objective	Initiative and Offensive	Concentration	Economy of force	Flexibility	Security	Surprise	Cooperation		
Indian Army[18]	Selection and Maintenance of Aim	Offensive Action	Concentration of Force	Surprise	Flexibility	Economy of Effort	Cooperation	Maintenance of Morale	Security	Administration
Former USSR[19]	Surprise	Massing of Force	Economy of Force	Initiative	Coordination					
China[19]	Aim	Morale	Offensive Action	Surprise	Security	Concentration of Force	Initiative and Flexibility	Coordination		
Principles of MOOTW[20]	Objective	Unity of Effort	Security	Restraint	Perseverance	Legitimacy				

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18 FM-100-5 (2001).

19 From U.S. Joint Staff Officer's Guide (Washington: DoD, 1997)

20 JP 3-07 1995

APPENDIX B

THE SYMMETRY - ASYMMETRY PARADOX

I

A
B

II

III
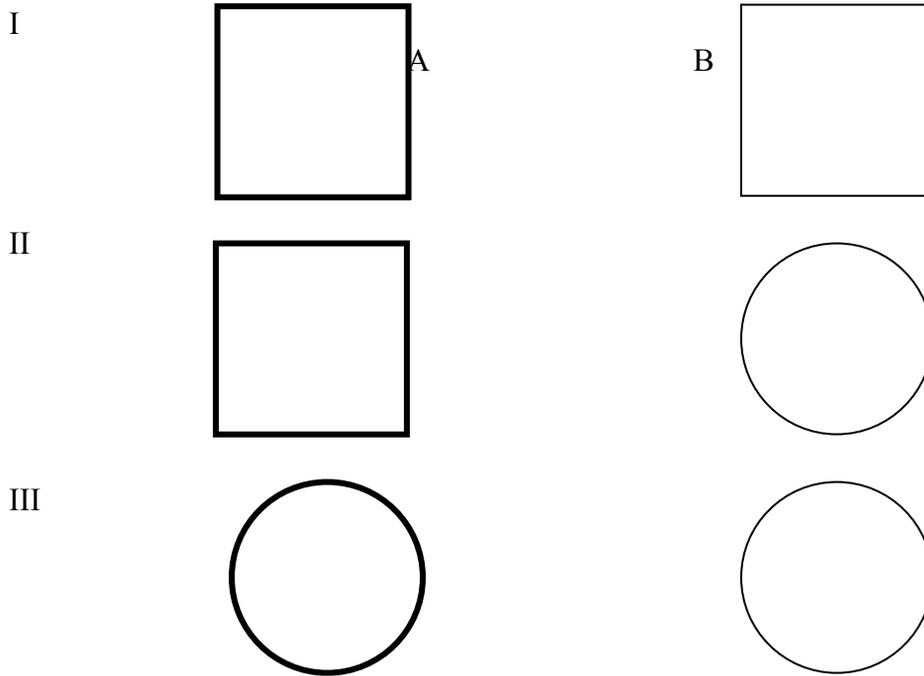
- A and B are two symmetrical antagonistic entities that both follow the conventional method of war. While they look alike (square with identical dimensions), the structure of A is stronger (educated population, better technology, better economy, more stable). In a contest where each exerts force on the other, A will successfully push itself inside B (signifying defeat of B).
- B adapts unconventional war. Its basic shape changes though its diameter remains equal to the side of the square. A cannot now force itself into B (square peg in a round hole), whereas B can force itself inside A. With asymmetry in shape, the one who has changed its shape has an advantage.
- A also adapts unconventional war. There is again symmetry. A's initial advantage of a stronger structure again manifests itself. A can again force itself inside B and win.
- If B reverts to its original shape (square) it still does not help.
- The conclusion is that in a war between mismatched opponents, one weaker, one stronger, the weaker entity will benefit by introducing asymmetry, while the stronger side is best served by maintaining symmetry.

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