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Chapter 1

Introduction

This thesis will focus on Major-General John F.C. Fuller's science of war and his view on national force. Fuller believed that a better understanding of the use of force was needed in order to make war a more effective tool for politicians.

Harald Høiback argues that military theory can be viewed as tool for understanding how the use of force can be directed, and especially build a common arena where generals and politicians can discuss how the use of force can accommodate state interests (Høiback 2007). Clausewitz believed that war is an "act to compel our enemy to do our will" (Clausewitz 1976: 75). This thesis will focus on war as a means of pursuing state interests. In this sense, military theory becomes a "manual" made for politicians about what military force can do, and how it should be used in order to achieve certain objectives.

John F.C. Fuller was one of the leading theorists on armored warfare during the 1920s and 1930s. During World War I he served in the newly formed Tank Corps, and responsible for implementing the tank on the European battlefield. Even though the tank faced serious problems and often broke down, Fuller was able to see the potential of this new weapon and its impact on warfare (Fuller 1993). Fuller was a strong supporter of understanding how technological advances could affect the conduct of war and then apply it on the battlefield.

Fuller's writings span nearly 6 decades, covering topics such as mysticism and cabbala, news reports, military theory and history. In *The Reformation of War* (1923) and *Foundations of the Science of War* (1926) Fuller presented his views on war as a scientific activity, and will be the focal point of this thesis. The misconduct of World War I led Fuller to believe that the use of force needed a better foundation – a scientific foundation. Fuller believed that the two world wars of the 20th century showed lack of understanding of how military force should be directed in order to obtain the true objective of war: a better peace (Fuller 1993).

Fuller argued for a strong political control of the military forces, and believed that a great cause of war is the lack of civil control of the military, or as Fuller wrote: "due to the existence of a hiatus between the mentalities of the nation and its army" (Fuller 1923: 11). Fuller explains: "It frequently arises, however, especially in prosperous nations, that the

national will to hunt for wealth is so great that it monopolizes all their efforts, and, consequently, that little thought is given to the maintenance and protection of their wealth through military action. In these circumstances, an army, which should be of the nation, becomes separated from it" (ibid). Fuller underlines the importance of a strong civil presence in the study of war: "To restrict the development of war by divorcing it from civil science is to maintain warfare in its present barbarous and alchemical form. To look upon war as a world force and attempt to utilize it more profitably is surely better" (Fuller 1993: 32). Fuller argued that politicians should take an active role in the development of their armed forces, because these forces should serve the interests of the nations formulated by the politicians. And in order for politicians to take a constructive role in this development, they need to be educated. Fuller writes in the preface to The Reformation of War "I have not written this book for military monks, but for civilians, who pay for their alchemy and mysteries" (Fuller 1923: xii), and sums up his efforts in the epilogue: "In order to protect our homes and our institutions we must not only protect our army and look upon it as our shield against adversity, but we must determine whether the shield we have is worthy to protect us. In this book I have examined the possibilities of future warfare in order to lead up to this conclusion. I feel that I have written enough to enable any intelligent citizen, after he has studied what I have said, to turn to the army he is paying for in order to maintain the peace which he enjoys and to say: 'Thou art, or thou art not, found wanting'" (Fuller 1923: 282-283). Fuller wanted to create a manual for politicians, so that they could better understand how the use of force should be applied in order to serve the nation's interests. This will be the focus of this thesis.

1.1 Research Questions

1) Military theory is either viewed as an art or a science; how did Fuller view military theory?
2) How does Fuller's view on military power compare to the power definitions of the realist school of International Relations theory?

1.2 Thesis Presentation

The thesis is divided into several chapters; chapter two gives a brief presentation of John Fuller and his early military career. The aim is to provide the reader with background information on military events that shaped his thinking on warfare.

Chapter three presents the theory that will be used in order to discuss Fuller's writings. The thesis focuses on two different theoretical topics: the first is power in International Relations theory, with emphasis on the realist tradition. The second topic regards military theory with focus on Antoine-Henry Jomini and Carl von Clausewitz. These writers represent two different views on military theory, and will be used in order to discuss Fuller's view on military theory.

Chapter four presents Fuller's view on military theory. This chapter will focus on Fuller's writings in "The Reformation of War" and "The Foundations of the Science of War". It will cover Fuller's own believes in military theory, how he defines science in general, why we need military theory, and how Fuller's military theory looks like. After presenting his writings, the thesis will compare Fuller to Jomini and Clausewitz.

Chapter five presents Fuller's view on the use of force, and how he described the causes and objects of war. While chapter four focuses on the epistemological framework for Fuller's military theory, chapter five presents Fuller's attempt to provide advice on how to use power in order to obtain national objectives.

Chapter six provides a conclusion where the thesis is summarized, and a brief evaluation of the research and writing process is given.

1.3 Methodology

Historicism

"'All history' it has been said,' is a negotiation between familiarity and strangeness'" (quoted in Tosh 2010: 10.

The study of history is to liberate the past from the present (Tosh 2010). By this, Tosh means that by studying the past, one should make sure that the past is presented on its own terms, and not influenced by the present or the historian's own views on the subject matter. Each

historical period is a manifestation of the Zeitgeist, with its own culture and values (ibid). Making sure that the historian respects this is the essence of historicism.

Historicism grew out of the Romanticism, the dominant movement for literature and art – starting in Germany – in Europe during the first half of the 19th century. The objective of writers of this period was to introduce the reader to "the authentic atmosphere of the past", and historicism became the academic wing of the historically obsessed past (Tosh 2010: 7).

Historicism deals with the otherness of the past, and the problems that follow studying past in the light of the present. In this sense, the historian must have historical awareness. Historical awareness rests on three principals. First, the historian must appreciate the *difference* that separates our own time and the past. The historian must not assume that the peoples of the past thought and did as we do; each period has its own culture and values, which is manifested in the mentality of those living in past historical ages.

The second principle is to put the past in *context*. The historian must not only to show the difference in past and present, but also understand and explain it. Not only show that people behaved differently in the past, but also try to understand why they did so. This requires a broad base of knowledge of the subjected period.

The third and last principle of historical awareness is the awareness of the historical *process*. Historical events are not just snapshots of the past; they are one continues film that records the flow of time. An event follows – and is followed – by another event, making it important to not isolate events from the whole picture.

This thesis will deal with meaningful material, and will therefore be subject to the prejudices of the historian and the interpreter. Paul Knutsen argues that "A hermeneutically oriented historian will – in his pursuit to understand – strive to make the *most possible correct* interpretation, which – among other things – involves that she or he will utilize the insights and techniques the historical profession has made available through its source criticism" (Knutsen 2002: 120). Hermeneutics deals with the philosophical problems of the historical profession, while historical source criticism provides the practical methods of dealing with these problems. The thesis' methodological weight will be on historical source criticism, while hermeneutics will provide the thesis with its epistemological foundation. In this sense, historical source criticism provides the researcher with a roadmap of interpretation, well knowing that interpretation is a subjective endeavor. This becomes even more evident when

we know that the historian constructs his study object through the choice of theme and research questions (Knutsen 2002). The historian must therefore first construct the study object, analyze it by using the historical source critical method (deconstruction), and then reconstruct the object (synthesis) in the light of the historian's research questions and topics. Knutsen argues that it is important that the historian is conscious of the tension between construction and reconstruction (Knutsen 2002).

1.4 Thesis Approach

The collection of sources for the thesis was based on a combination of two principles of using source material. The first principle is the source-oriented approach. This approach is based on extracting data from the sources that are of interest to the researcher. The researcher defines a general area of interest, and lets the sources steer the research in a certain direction (Tosh 2010).

The other principle is the problem-oriented approach. In this approach, the research questions determine what sources should be gathered and studied. The approach is often prompted by a review of relevant secondary-literature, and then the research focuses on primary sources (Tosh 2010).

In the beginning of the research, the source oriented approach was used to get an overview of the material. Not being familiar with the writing of J.F.C. Fuller, the researcher had to go through the sources and determine how the study should be approached. The source oriented approach gave a good overview of the material, and allowed for a thought process regarding how to formulate the research questions and scope of the thesis. However, this does not mean that the sources stood free to determine the scope of the thesis; being a master thesis in International Relations, the focus had to be on I.R. theory in some way to make it relevant. In this way, the process of selecting material from the sources was from the start influenced by a certain direction.

Studying the sources soon took on a problem-oriented approach, as the researcher got more acquainted with the sources and the scope of the thesis became clearer. In this stage, studying the sources in the light of the research questions became important, as the researcher extracted material from the sources that were relevant in order to answer the research questions. However, since the research questions were continuously revised, the researcher went back to the source oriented approach, in order to discover new ways of applying the source material.

There were challenges regarding the research design. It took a long time developing a relevant scope for the thesis. J.F.C. Fuller was not an I.R. theorist, and even though he touched upon several I.R. topics, it was challenging to formulate research questions that were I.R. relevant and relevant according to the sources. The problem constituted an awareness of integrity of the sources. The challenge of constantly making sure that the scope was compatible with the material meant that the research design process continued from beginning to end.

In analyzing and comparing the sources with International Relations theory and military theory, the thesis employed a lens - or keyhole - comparison. This approach is used to compare two texts, or theories or phenomena, but one is given more weight than the other. This approach allows the researcher to look at one thing through the lens of the other (http://writingcenter.fas.harvard.edu/pages/how-write-comparative-analysis). In this thesis, John Fuller's writing is given more weight than both I.R. theory and military theory; the latter is only used as a framework for understanding and explaining Fuller's writings. By using this approach, Fuller's writings can be contextualized in a broader theoretical discussion over similarities and differences, and the text will be presented in a point-by-point manner, where the thesis alternates between Fuller's views and the theoretical framework in order to compare and contrast.

1.5 Sources

Primary Sources

The main primary sources for the thesis are "The Reformation of War" and "The Foundations of the Science of War". These books were written during the 1920s, and "The Reformation of War" is the intellectual precursor to the more sophisticated and developed ideas that we meet in "The Foundations of the Science of War". These sources cover much of the same, but Fuller's ideas are more developed in "The Foundations of the Science of War". The use of these two sources provides the researcher with a chance to see how Fuller's views developed over time.

In addition, three other works by Fuller were consulted more or less in order to provide a fuller picture of his ideas. These books are "The Decisive Battles of the Western World I-II" and "The Conduct of War: 1789-1961". These books represent Fuller as a military historian, and he traces the development of war over several decades in these books.

Secondary Sources

Secondary sources cover both biographies on Fuller and literature that is relevant for the theoretical discussion. On biographies on Fuller, the thesis uses two books: Anthony John Trythall's "Boney Fuller: Soldier, Strategist and Writer 1878-1966" and Brian Holden Reid's "J.F.C. Fuller: Military Thinker". These books cover more or less the same topics and give a similar perspective on Fuller as a military writer. These books were helpful in writing chapter two on John Fuller.

Regarding Clausewitz, the researcher has decided not to use *On War* as a primary source; instead, he leans on interpretations of Clausewitz by Bassford and other known Clausewitz-scholars. This was determined because of the limited knowledge of Clausewitz' writings and the researcher feels uncomfortable making my his interpretations of his work. Clausewitz' dialectic writing style and the fact that *On War* was never finished makes it difficult to get a solid grasp of his intentions and thoughts on a more than general level. The study of Clausewitz' writings have been undertaken by many a historian and social scientist, and the researcher have nothing of value to contribute to this accumulation of knowledge. This is true for the writings of Jomini as well.

Chapter 2

"Boney" Fuller

The Spirit of Progress: Halt! Who goes there?
The Spirit of Mankind: War!
The Spirit of Progress: Pass, War, all's well.

Major General John Frederick Charles Fuller was one of the most influential and controversial military writers of the 20th century. Brian Holden Reid wrote in the Fuller biography "J.F.C. Fuller: Military Thinker", that Fuller was with his intelligence a rare commodity in the pre-1939 British Army (Reid 1987).

John Fuller was born September 1 1878 in Chichester, England. Fuller started his military career with the admittance to Sandhurst in 1897. He preferred to read rather than socialize with the other soldiers, and his small physical stature and "geeky" nature awarded him the nickname "Boney" (ibid).

Fuller was indeed a different soldier than his peers, and he admitted that he initially took no interests in military things, and would rather read classics. After one year at Sandhurst, Fuller got a commission and left for the 1st Battalion of Oxfordshire Light Infantry (ibid).

Fuller saw his first action in the Boer War. Here he observed the ignorance of his fellow officers, and remarked: "We knew nothing about war, about South Africa, about our eventual enemy, about anything at all which mattered and upon which our lives might depend. Nine officers out of 10 – I might say 99 out of every 100 – knew no more of military affairs than the man on the moon and do not intend or want to know more" (http://www.historynet.com/jfc-boney-fuller-wacko-genius-of-armored-warfare.htm).

Even though Fuller was left disappointed by his fellow officers, the Boer War did give him important practical experience. Fuller was given command of a company of South Africans and engaged several times in firefights, recon missions and prison raids for the regular army units. This gave Fuller the tactical education he lacked, and instilled in him two ideas that would become trademark for Fuller's military thinking: 1) mobility is all-important, and 2) deep-penetrating attacks are more effective than full frontal assaults (ibid).

Fuller continuously challenged his superiors and questioned the validity of conventional wisdom. This made him unpopular in the military establishment, and when World War I broke out he was assigned as a minor General Staff officer. Fuller was clearly disappointed by this, and wanted to serve in France. His wish was finally met when he – in 1915 – told his superior – Brigadier General H.J. du Cane – what he thought of him and his work. Cane retorted: "If that is what you think, I will have you sent to France" (Trythall 1977: 34). Fuller achieved his objective and was posted as GSO 3 to VII Corps, where he assisted in the planning of operations; however, the stalemate on the Western front made operations rare and limited to patrolling and suicidal frontal assaults. Before the war, Fuller had great belief in the penetrating effect of artillery along with infantry assaults. However, Fuller discovered that the preliminary artillery barrages were ineffective, because the halt in the barrages before the infantry charge meant that the enemy could reorganize and hold back the infantry. In order to solve this, Fuller proposed an increased deployment of machine guns that could take over as soon as the artillery barrages stopped (Trythall 1977).

Fuller's big break came in October 1916, when Fuller was appointed to the newly established Heavy Branch of the Machine Gun Corps – the Tank Corps. His first operation involving tanks came in April 1917 at the Battle of Arras. The battle failed to produce a significant result, due to the fact that the tanks were used against Fuller's advice. Fuller had argued for a mass attack of a group of tanks, but unfortunately, the tanks where split up into small groups in order to support the infantry (ibid).

In November 1917, the Battle of Cambrai began, and Fuller would play a crucial role on the development of the operations. After the Battle of Messines, Fuller wrote an article called "Projected Bases of the Tactical Employment of Tanks in 1918", which became the framework for the Cambrai offensive (Trythall 1977). Fuller was occupied with mobility and the time factor, and how tanks could be used in order to weaken the enemy's moral. He believed that tanks could be used in order to pave the way for a major offensive; the tanks would be supported by both low-flying airplanes and artillery (Reid 1987). Even though his ideas were central to the planning of Cambrai, Fuller disassociated himself from the actual execution of the plan, as he believed that too few tanks had been made available to form a reserve force: "To fight without a reserve is similar to playing cards without capital –it is sheer gambling" (Reid 1987: 46). However, the initial stages of the battle did show how effective the use of tanks in combination with airplanes and artillery could be, and this must have had an encouraging effect on Fuller.

The lack of reserves meant that the Battle of Cambrai left the British forces losing to a steady German defense. The fact that the Germans were able to regroup to a new defensive position after the initial attack meant that the tanks were left vulnerable to artillery; however, Fuller was convinced that future warfare would be dominated by tanks:"…that mechanical warfare is going to supersede muscular warfare…The tank today carries forward the riflemen of the future….we should forthwith prepare to raise the mechanical army we shall require" (Trythall 1977: 54).

Fuller's most famous contribution to the preparation of a mechanical army is "Plan 1919". Fuller believed that a decisive blow to the enemy's command centre should be the priority of the tanks on the battlefield. Fuller stated that "the potential strength of a body of men lies in its organization; consequently, if we can destroy this organization, we shall have gained our object…The brains of an army are its staff – Army, Corps and Divisional Headquarters" (Reid 1987: 49). "Plan 1919" was never used during WWI, and it is questionable if the plan would have worked; not because the plan itself was flawed, but because it was too ahead of its time. It relied on technology that as of 1918 was too young and immature (Reid 1987).

WWI ended without the implementation of "Plan 1919". During the 1920s Fuller became increasingly frustrated with the military and his inability to influence the development and reformation of the military. Fuller's last position in the British Army was when he was sent to India on a fact finding mission. In 1933, Fuller retired as a major general (Trythall 1977).

Fuller became increasingly involved in the British Union of Fascists during the 1930s, and in April 1939 he even attended Hitler's 50th birthday. Even though most members of the British Union of Fascists were arrested during World War II, Fuller managed to avoid being arrested. It is believed that Prime Minister Churchill held a protective hand over him, meaning that he was able to spend his time as a journalist (Reid 1987).

WWII would see many of Fuller's ideas exemplified, and he managed to repair his image after the war as a military historian. He died at the age of 88 in 1966.

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Chapter 3

Conceptual Framework

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3.1 Power Definition in International Relations

International relations are in many ways the study of power; this is especially true for realism. Power has been at the center of discussions of international relations from Thucydides to the present day. Traditionally, the study of international relations depicted a conflict between states with different interests, and the driving force in the conflict is military power. States sought to maximize their power in order to balance against the power capabilities of competing states. States were sorted into categories based on their military capabilities: small powers, great powers, and super powers. The concept of power usually included population, territory, wealth, armies and navies. This was called the "elements of national power" approach. (Baldwin 2012). However, even though power is central for understanding international relations – and politics in general – the power discussion has failed to generate a common discussion. Scholars disagree on both the role of power and the nature of power. According to Hans J. Morgenthau, power is one of the most controversial problems of the political science, and Robert Gilpin argues that the concept of power is one of the most troublesome in the I.R. field. Gilpin believes that the disagreement on the nature of power is an embarrassment to political scientists (ibid).

Robert A. Dahl suggested that most definitions of power share a common notion of actor A causing – or forcing – actor B to do something that actor B otherwise would not have done. Baldwin agrees that this definition enjoys widespread acceptability (ibid).

3.1.1 Power as a Resource

The "elements of national power" approach sees power as a resource for the state to use in order to obtain national interests. As mentioned earlier, these elements may be military resources, economic wealth, population size or territorial size. According to Baldwin, this approach has several problems. One is that power resources are treated as power itself (Baldwin 2012). This means that a state's population size in itself serves as a means of influencing other states. Or that military power can influence other states, even though the

military forces are not deployed. Additionally, Baldwin argues that a huge nuclear weapons program – even though it represents a massive military capability – might not have any influence in small conflicts (ibid). The fact that the United States has approximately 5000 nuclear warheads (http://www.armscontrol.org/factsheets/Nuclearweaponswhohaswhat) serves them little in the fight against Taliban or Al Qaeda. Baldwin argues that the power as resource debate tends to analyze a good hand in card games, without specifying what card game is actually played. Baldwin states that in order to fully analyze a state's power, one must also look at the state's interests: "If one wants to estimate the potential power of Guatemala, it helps to know, nay, it is imperative to know whether it concerns a border dispute with El Salvador or a trade agreement with the United States" (Baldwin 2012: 6).

Power resources can be compared with raw materials (Baldwin 2012). A large population is not in itself a military power resource, if the government is unable to equip and train them adequately. At the same time, a large population doesn't constitute an economic power resource, if the population is too poor to take part in the economy.

In the context of this thesis, military resources must be used accordingly and effectively in order for it to be a useful military capability. In this sense, military theory can enhance the military capabilities of a state by giving advice on how military resources should be used. This will be important later, when the thesis turns to presenting and analyzing Fuller's view on military theory and military power.

3.1.2 The Relational Power Approach

The "elements of national power" approach was challenged during the last half of the 20th century by the relational power approach. The relational power approach believed in causation between the power of actor A and the behavior of actor B. Behavior can be defined as beliefs, attitudes, preferences, opinions, expectations, emotions and/or predispositions to act. While the "elements of national power" approach defines power as a property, the relational power approach sees power as a "potential relationship between two or more actors" (Baldwin 2012: 3). According to Baldwin, this new approach constituted a revolution in power analysis. Dahl attributed the "considerable improvement in the clarity" of power concepts to the relational power approach (Baldwin 2012).

The "elements of national power" approach defines power as material resources, such as military capabilities, or as national resources, broadly defined as economy, population and territory. The relational power approach defines power in terms of dimensions. These dimensions are:

- Scope: The scope of actor A's power is defined by how actor B's behavior is affected. Norway's ability to influence another country in terms of development or climate issues is bigger than its ability to affect it militarily.

- Domain: Domain refers to how many actors state A can affect with its power. In this sense, a country may have a big regional influence, but little or no influence in other parts of the world. Russia's domain is believed to be smaller than that of the Soviet Union.

- Weight: Weight deals with the probability of successfully influencing other states. This dimension is also called reliability of influence.

- Costs: The costs for state A in influencing state B is relevant in order to assess the power of state A. The less costly it is for state A to influence state B, the more powerful state A is in relations to state B.

- Means: Means is a way of categorizing the different ways of exercising power. Baldwin argues for four different means:
    - Symbolic means: Symbolic means refer to normative symbols or ideals. State A can use its influence in order to spread certain ideals or norms by discourse, propaganda, framing, or narratives.
    - Economic means: A state can use its economic influence to restrict trade to a certain country, or deny it access to foreign markets.
    - Military means: Military means is the most common way of analyzing power in international relations, and constitutes both actual and threatened military force.
    - Diplomatic means: Constitutes a wide array of practices, such as representation or negotiations (Baldwin 2012).

3.2 Realism and Definitions of Power

This section will focus on power in realism, since realism in many ways is the theory of power in international relations. Brian C. Schmidt argues that the concept of power is hugely influenced by the work of realist scholars. E.H. Carr criticized the early international relations scholars of the interwar period of neglecting the role of power (Schmidt 2005). However, even though realism is the study of power, there are several definitions of power among the realists. Some argue that power is best analyzed in terms the "elements of national power" approach, while others think that the relational power definition is best suited to analyze power and international relations. Some – like John Mearsheimer – believe that power is an end, while others – such as Kenneth Waltz – believe that power is only a means to an end (Schmidt 2005).

Classical realists believe that states are continuously locked in a struggle for power. They believe that this is due to the human nature: "The drive to amass power and dominate others is held by classical realists to be a fundamental aspect of human nature" (Schmidt 2005: 527). Therefore, conflicts are rooted in the flawed nature of humanity; the aggressive nature of statesmen or domestic political structures awarding self-serving behaviors is often the cause of conflict between states (Williams 2008).

Structural realism – most known for Kenneth Waltz' classic "Theory of International Politics" – argues that human nature is not the driving force in international politics, but that the anarchy of the international political system is. While classical realism argues that war is a product of humanity's flawed nature, neorealism omits the human variable and looks to the international political system in order to explain war. Waltz held an agnostic view of explaining state behavior. State behavior might be a product of competition among them; therefore the "fittest" states will survive, while those who fail to act according to their best interests are selected out of the system. Waltz also argued that state behavior could be a result of socialization, as states can choose to follow norms because it serves their interests, or because the norms become internalized. Waltz' purpose was to explain how the structure of the international system produces certain outcomes, and why seemingly different actors produce the same outcome. The object of study is therefore the structure of the international system, and the distribution of power determines the outcomes of international relations. Waltz argued that a multipolar system is less stable than a bipolar system, and that hegemony is unlikely (Williams 2008).

3.2.1 Defensive structural realism:

Defensive structural realism differs from structural realism in three aspects: defensive structural realism relies solely on rational choice to explain state behavior, nuancing the balance mechanics by introducing the offence-defense balance as variable, and that states support the status quo and balancing. The balance of threat theory by Stephen Walt is one of the most famous variants of defensive structural realism: "in anarchy, states form alliances to protect themselves. Their conduct is determined by the threats they perceive and the power of others is merely one element in their calculation" (Williams 2008: 21). Accordingly states do not only balance against power distributions, but also against perceived threats.

Because balancing is pervasive, Walt concludes that revisionist and aggressive behavior is self-defeating, and "status quo states can take a relatively sanguine view of threats…In a balancing world, policies that convey restraint and benevolence are best" (ibid). However, in order to explain why expansionist behavior occurs, defensive structural realism must look to domestic-level factors, or argue that extreme security dilemma dynamics make states behave as if they were revisionist. John Herz argued that defensive actions and capabilities are often misinterpreted as being aggressive, and steps taken to ensure safety are perceived as threats by other states. This leads to a spiraling effect where states mutually raise their military capabilities.

Defensive structural realism argues that states should pursue the *right* amount of power, as power in itself is not the end but safety. In a world where overly ambitious states are balanced against, the rational choice is to have the right amount of power.

3.2.2 Offensive structural realism:

Offensive structural realism disagrees with the defensive structural realist prescription that states only seek the appropriate amount of power. John Mearsheimer's "The Tragedy of Great Power Politics" argues that states face an uncertain international environment in which any state might use its power to harm another. Therefore, relative power capabilities become the overriding goal for states, as power results in enhanced security. Mearsheimer makes five assumptions about the international political system: the system is anarchic, great powers possess some offensive military capabilities, states can never be certain about other states' intentions, survival is the primary goal of great powers, and great powers are rational actors. Based on these assumptions, Mearsheimer argues that states want as much power as possible,

consequentially seeking regional hegemony. This is possible due to carefully timed revisionist actions, buckpassing by political competitors and information symmetry.

Mearsheimer argues that states are rational and sophisticated power maximizers that try "to figure out when to raise and when to fold" (Williams 2008: 23). In order to gain resources, states resort to war, blackmail, baiting states into making war on each other while standing aside, and engaging in competitors in long and costly conflicts.

Mearsheimer provides a structural explanation of great power war, suggesting that "the main causes…are located in the architecture of the international system. What matters most is the number of great powers and how much power each controls" (Williams 2008: 24). Great power wars are least likely in bipolarity, where the system only contains two great powers, because there are fewer potential conflict dyads; imbalances of power are much less likely; and miscalculations leading to failures of deterrence are less common. While multipolarity is, in general, more war prone than bipolarity, some multipolar power configurations are more dangerous than others. Great power wars are most likely when multipolar systems are unbalanced; that is, when there is a marked difference in capabilities between the first and second states in the system, such that the most powerful possesses the means to bid for hegemony.

3.2.3 Neoclassical realism:

Neoclassical realism stands as the opposite of the anti-reductionist structural realist approach. Neoclassical realism argues that state behavior is dependent on domestically derived preferences. The neoclassical realist perspective argues that domestic structure and institutions, ideology and ambitions are influential in state behavior. One version of neoclassical realism is the balance of interests' theory. States rationally decide on foreign policies depending on a combination of power and interests. Additionally, some writers argue that a domestic "transmission belt" acts as a mediator between the structure of international system and a state's capacity to exchange national capabilities into real power. They insist that state characteristics and leaders' views of how power should be used intervene between structural constraints and behavior. Accordingly, they also investigate domestic political features, such as the abilities of foreign policy-makers to extract resources for the pursuit of foreign policy goals (Lobell, Ripsman, Taliaferro 2010). While most political realist theories

predict that states will balance against threatening competitors, either by building their own arms or by making alliances, Schweller argues that at review of the historical records demonstrates that, contra this prediction, states often underbalance (Schweller 2006).

In their book "Neoclassical Realism, the State, and Foreign Policy", Ripsman, Taliaferro and Lobell argue that future neoclassical realist research should look at how effectively states translate basic material and human resources into military power at strategic, operational, and tactical level (Lobell, Ripsman, Taliaferro 2010). This would mean an attempt to look at how developments of military doctrines are affected by structural variables. In "The Sources of Military Doctrine", Barry Posen studies the relationship between distribution of power in the international political system and the development of military doctrines in the interwar-period. According to Posen, the balance of power theory managed to explain how Germany, France and Britain developed their military doctrines better than organizational theory. Posen argued that according to organizational theory, military organizations would not allow outside interference in the formulation of military doctrines; therefore, military doctrines become less integrated with the grand strategy of the state (Posen 1984). The balance of power theory shows that politician interfere with the development of military doctrines, when the balance of power is shifting against them. In this sense, considerations of realpolitik trump organizational factors (Posen 1984).

In the context of neoclassical realism, Posen's research on military doctrines and the balance of power theory becomes an attempt to show how domestic variables and structural variables relate to each other, and help us understand how power resources are accessed by political leaders in order to serve the interests of the state. Consequently, military power is not an easy accessible resource like many realists argue; military power must be conceptualized in military doctrines in order for it to be an effective policy tool.

3.3 Military Theory

Theories are interrelated ideas and coherent groups of propositions concerning patterns, concepts, processes, relationships, or events. In natural sciences theories are related to general laws, as the explanandum is regarded as "occurrences of universal certainty" (Berg, Lune 2012: 19). In social sciences theories are concerned with phenomena that seemingly reoccur; a social science theory points to the patterns of which the phenomena occur and explain the

relationship between them. Theories in social sciences can be defined as: "a system of logical statements or propositions that explain the relationship between two or more objects, concepts, phenomena, or characteristics of humans – what are sometimes called variables" (Berg, Lune 2012: 20). Theories may also represent an attempt to classify and organize events, describe events, or predict future events. Additionally, theories can be described as the teaching about the *truth* of a subject (Vego 2011). In *The Science of War* Major Harald Høiback defines theory as: "systemization of knowledge derived from experiences, with the intention of obtaining a degree of understanding that can explain or predict events" (Høiback, 2012: 55).

Theories are made up of concepts, or abstract elements that represent objects, properties, or features of objects, processes, or phenomenon. Concepts communicate ideas, perspectives or explanations of generalizations (Berg, Lune 2012). Conceptualizing is a way of perceiving the world as a number of classes, categories or abstract representations in order to simplify. A theory connects concepts in order to explain their relationship and their effects on each other.

Military theory can be defined as a comprehensive analysis of the aspects of warfare, both its patterns and inner structure (Vego 2011). Military theories can roughly be divided into two categories: theories of the application of force and theories concerning war as a phenomenon. Theories that focus on the application of force can focus on both the application of military resources on the battlefield, but they can also focus on planning and utilizing national powers in order to achieve national goals (Vego 2011). In this sense, military theory covers both tactical dispositions and strategic thinking. However, regardless of the level of abstraction, military theory is applicable as long as we talk about "a trial of moral and physical forces through the medium of the latter" (Høiback 2012: 34).

Military theories can also be divided into the specific types of warfare that they aim to describe. In this sense, military theory might focus on traditional warfare, insurgency, counterinsurgency, terrorism, support of foreign policy and peace operations. Additionally, military theories on land, air, and naval warfare intend to explain the characteristics and nature of war in their respective physical medium (Vego 2011).

According to Høiback, military theory has been occupied with answering four questions: 1) what is war? 2) How to win wars? 3) How to prepare for war? 4) How to avoid war? Question 1 and 4 is generally a modern phenomenon, while question 2 and 3 are considered the main pillars of classic military theory (Høiback 2012). In order to answer these questions, both

inductive and deductive methods have been applied. Induction is to extract general assumptions from specific observations, while deduction produces knowledge by reasoning from general assumptions in order to reach certain conclusions. The inductive method is connected to historical studies, while deduction is linked with logic and axiomatic systems. Additionally, induction is related to qualitative research, while deduction is related to quantitative research. (Høiback 2012). Høiback argues that a quantitative approach might be best when involved in technical or tactical questions; however, he insists that a qualitative approach is best suited for political, strategic and ethical matters. The challenge is to understand when to use the quantitative method and when to use a qualitative method (Høiback 2012). Military science can be organized in the following way:

	Quantitative	Qualitative
Induction	Operational Analysis	Military History
Deduction	Game Theory	Axiomatic Systems

Military history is most commonly used in order to construct military theories (Høiback 2012). Wars are potentially an existential threat, and one should aspire to learn from past wars. However, there are several epistemological challenges related to studying history, and Sir Michael Howard pointed out that: "the lessons of history are never clear. Clio is like the Delphic oracle: it is only in retrospect, and usually too late, that we can understand what she was trying to say" (Høiback 2012: 61). The problem is to know how past experiences are relevant in order to understand the present and predict future events.

Axiomatic systems are a set of premises – or an axiom - that hold to be self-evident, and if you accept these premises to be true, then a conclusion logically follows. The point of axiomatic systems is that they become the foundation for deduction that can be applied to events and scenarios covered by the premises. In military theory, axiomatic systems are evident in both the Marxist and the Quranic concepts of war. Basil Liddell Hart also based his military theory on axiomatic systems – self-evident premises that are impossible to verify (Høiback 2012). As we shall see later in the thesis, Fuller also base his military theory on an axiomatic system called The Threefold Order.

The purpose of military theory is to understand and explain war and the use of force, in order to make military power a more effective and appropriate policy tool. A scientific approach to the study of war is believed to accumulate true knowledge and discover a recipe for winning future wars. However, the nature of war makes it difficult to develop a precise science, begging the question of the need for military theory. Former American officer Ralph Peters argued that: "pragmatism is at the heart of America's cultural and economic success, and it long remained the key to our military success. When we began to theorize, we began to lose. In the military context, theory is a killer. Theory kills both actively and passively" (Høiback 2012: 69). Peters argues that military theory stands in the way of a pragmatic view on war that has proved to be successful in the past. Høiback argues that military theory contains banalities and is carriers of hidden agendas. However, there are several reasons for why military theory is useful. Reflecting on the use of force – both in normative and descriptive – is valuable in itself, even if it doesn't result in an accurate military science. However, it is better to have a degree of knowledge before deciding on important actions, than to make decisions based on no foundation at all. In this sense, military theory can carve out knowledge based on historical experiences or act as a critique on commonsensical notions. Additionally, military theory can provide policy makers and military theorists with – if not better answers – better questions: "Nothing can provide policymakers with the right answers to the challenges that confront them. But history suggests the questions they should ask" (Høiback 2012: 71). Military theory can also serve to provide us with a common basis for framing our experiences, which leads to a more accurate discourse and sharing of knowledge. Additionally, it can provide military leaders and political leaders with a context for debate and discussions regarding military force (Høiback 2012).

3.3.1 Military Theory as the Politician's Guide

Sir Julian Corbett argued that the main reason for the mistrust against military theory comes from a tendency to expect too much from it: "Theory is, in fact, a question of education and deliberation and not of execution at all" (Høiback 2012: 76). Military theory should be used to stimulate both practical experience *and* contemplation on war. According to Corbett, military theory "can assists a capable man to acquire a broad outlook whereby he may be the surer his plan shall cover all the ground, and whereby he may with greater rapidity and certainty seize all the factors of a sudden situation" and "awake in every brain the same process of thought" (ibid). However, the most important thing about military theory is its ability to create a common ground for understanding the application of military force between the military and

their political leaders (Høiback 2011). Military theory gives politicians – with no or little war experience – an opportunity to discuss on an intellectual level the uses of military power, and it can make it easier for military leaders to explain how a certain political goal may be achieved through the use of force: "It is important to underscore that that even if the dialogue between the civilian leadership and the officers is unequal, in the sense that politicians have the right to make the final decisions, it is important that this unequal dialogue does not degenerate into a political monologue or a dialogue of the deaf" (Høiback 2011: 64). Military theory can act as a lubricant in the civil-military relations, and increase awareness of the potential capabilities of military force.

3.4 War: Science or an Art?

Is war a science or an art? Can war be reduced to a number of principles and then taught to anyone in order to produce good officers? Or is warfare so chaotic and fluctuating that the success on the battlefield is subject to the naturally gifted general? This section will present two of the leading proponents of war as science or an art.

3.4.1 Antoine-Henri Jomini

During the Enlightenment, military theory developed into an independent academic discipline, and Antoine-Henri Jomini stands out as the first to develop a comprehensive science of war. Høiback argues that Jomini created a Kuhnian paradigm, by ending the age of military polymaths: "Personal combat experience in itself no longer qualified as science. Military theorizing became an undertaking of experts who wrote for military students and graduates of the military academies and staff colleges that had opened in the 1770s. As curriculum for military students, Jomini's *The Art of War* was outstanding" (Høiback 2007: 50). Jomini volunteered in the French Army in 1789 as a staff member, and was later given a staff commission. He a served a while as chief of staff, but his confronting nature led to frictions with the other officers. However, he was promoted to brigadier general, and continued his career as a staff officer in the army. After being arrested a short period for, Jomini was forced out of the French Army, and he spent the remainder of his active career in

the Russian Army
(http://www.clausewitz.com/readings/Bassford/Jomini/JOMINIX.htm#JOMINI).

Jomini was influenced by the dominant scientific views of his time, and especially by the Newtonian scientific ideas (Vego 2011). Jomini's first publication – *Traité de grande tactique* – came in 1803 and was continuously revised and edited until the 1850s. His most famous work is *Summary of the Art of War.* Jomini's work was partly influenced by his need for promoting himself and a quest for an audience. Jomini concerned himself with geometry of formations, strategic lines and key points and the advantage of interior lines. However, Jomini's practical experience comes through in his choice of topics, such as logistics and sea power (http://www.clausewitz.com/readings/Bassford/Jomini/JOMINIX.htm#JOMINI).

Jomini believed that war – like any other natural of social phenomena – could be studied systematically. The systematic study of war should uncover universal rules and principles, and produce theories with mathematical certainty. However, he also accepted the fact that war is always changing, and that a theory of war had to be implemented "through the general genius" (Vego 2011: 4). According to Jomini, a theory of war – however accurate and "true" it might be – must be correctly applied by the general in order to succeed: "…I will repeat what I was the first to announce: -'that war is not an exact science, but a drama full of passion; that the moral qualities, the talents, the executive foresight and ability, the greatness of character, of the leaders, and the impulses, sympathies, and passions of the masses, have a great influence upon it'" (Jomini 1992: 344). But Jomini adds: "I may be permitted also, after having written the detailed history of thirty campaigns and assisted in person in twelve of the most celebrated of them, to declare that I have not found a single case where these principles, correctly applied, did not lead to success" (ibid). Jomini believed that the abilities of the general and that of the soldiers he commands indeed play a role, but if Jomini's principles are followed success will be obtained.

As we have seen, Jomini's view on war is not unique; the notion that the conduct of war can be reduced to the application of theory was not a new idea. However, what made Jomini stand out among his peers, was the comprehensiveness of his work: "[It] is doubtful whether a more methodical and comprehensive guide to the mechanics of military operations has ever been written. Military academics teaching the complicated craft of war would find Clausewitz a bewildering guide for busy young officers; but Jomini's *Précis* provide a ready-made outline for the staff courses which the development of nineteenth-century warfare was making

increasingly necessary for the armies of Europe and North America" (Howard 1975: 13). A reason for Jomini's systematic theory of war was the fact that he limited the research and clearly defined the boundaries of warfare. In consequence, Jomini excluded all variables that were not able to study scientifically, resulting in the exclusion of the human element of warfare. This meant that Jomini could formulate his theory without having to consider the unknowns of human behavior; however, it also meant that his work took on a mechanic perspective of war, and if the general applies Jomini's principles success on the battlefield would be ensured.

3.4.2 Carl von Clausewitz

A common misconception about Clausewitz – especially in contrast to Jomini – is that he was against making the study of war scientific. In fact, Clausewitz agreed with Jomini that warfare should be subjected to the strictest form of studying possible. However, unlike Jomini, Clausewitz believed that the human factor should be incorporated into the creation of theory. Christopher Otero argues that Clausewitz' approach – influenced by the 18th century Romanticism – was a reaction against the norms and practices of the previous age. Clausewitz' work must also be interpreted as descriptive, while Jomini was prescriptive (Otero 2011).

While Jomini argued that incorporating the human factor into theory would make it unscientific, Clausewitz embraced the human factor as the key characteristics of war: "It is really astonishing to find people who waste their time on such efforts, when one bears in mind that precisely that which is the most important in war and strategy, namely the great particularly, peculiarity, and local circumstances, escape these abstractions and scientific systems" (quoted in Høiback 2012: 97). Clausewitz aimed at narrowing the gap between theory and practice. A theory of war that doesn't consider the human element won't be able to say anything useful about the nature of war and won't have a practical value for a general.

Jomini's attempt to exclude any subject that was irrelevant to the actual conduct of war meant that he also excluded politics from his writings. Clausewitz understood the relationship between politics and war, and was therefore more focused on what war can do and how it should be used to reach political objectives. In essence, military theory should give politicians with limited knowledge of war an understanding of what military forces can and cannot do

(Høiback 2012). Clausewitz' focus on war as a political, economic and psychological contest makes his work more strategically oriented than Jomini (Otero 2011).

Carl von Clausewitz believed that the primary objective of theory is to show how things are related to each other, and to separate the important elements from the unimportant. By doing this, theory can be used as a way of clarifying ideas and concepts and enhance the understanding between different views (Vego 2011). Clausewitz also believed that theory cannot provide us with rules or prescriptions for how to act; what theory should do is to stimulate for systematic thinking about a phenomenon. In this case, military theory should make generals reflect on the nature of war as a concept, and separate the important aspects of war from the unimportant aspects. This leads to a more systematic approach to reflecting on war (ibid).

Clausewitz is best understood when one examines the political and military events of his era. Clausewitz was influenced by the philosophical and scientific debates of the Enlightenment, but also the Napoleonic Wars. Clausewitz was influenced by the idealistic philosophy of Immanuel Kant. Like Kant, Clausewitz rejected absolutist knowledge and relied on testing competing views through criticism in order to determine its value (Otero 2011). This approach led to a dialectical form, where Clausewitz would first introduce an argument and then analytically pick it apart, juxtapose it to other arguments, and then end up determining its true value.

Clausewitz was skeptical about reducing warfare to a number of rules or principles; he believed that war was too chaotic and too complex, and this makes it impossible to define the limitations of values necessary to build rules and principles: "As we have seen the conduct of war branches out in almost all directions and has no definite limits; while any system, any model has the finite nature of a synthesis. An irreconcilable conflict exists between this type of theory and actual practice" (Vego 2011: 5). Clausewitz talks about the conflict between the abstract nature of theory – of ideal types – and reality. Because theory requires firmly defined concepts, they cannot fathom the complex nature of war, therefore reducing the usefulness and prescriptive function of theory. Clausewitz believed that the friction in the operational environment makes war uncertain. Therefore, Clausewitz highlighted the role of the Commander: "the powers of Commander to analyze discern and synthesize courses of action that were appropriate within the uncertainty of operational environment" (Otero 2011: 5).

According to Clausewitz, the most important objective of military theory is to enhance the mental capabilities of the general. In the absence of experience, military theory can provide the general with theoretical experience which will make it easier to build intuition and mental models (Høiback 2012). Harald Høiback calls this "the Copernican Revolution" in military theory (Høiback 2012). Traditionally, the role of military theory is to make warfare more effective; that military theory has a practical value that can be applied directly to the battlefield. Clausewitz argued that military theory should act as a tool in order to draw lessons from past experiences. Military theory should organize facts according to their values, thus making the learning process more efficient.

Chapter 4

Fuller's Science of War

4.1 Fuller's View on Science

In *The Reformation of War*, Fuller defined science as "co-ordinated knowledge, facts arranged according to their values, or to put it more briefly still and to quote Thomas Huxley, science is 'organized common sense…the rarest of all senses'" (Fuller 1923: 25). Fuller maintains this view in *Foundations of the Science of War*, further quoting Thomas Huxley in order to describe the meaning of science: "Wherever there is the slightest possibility for the human mind to *know*, there is a legitimate problems of science" and "The subject of science is the human universe; that is to say, everything that is, or has been, or may be related to man" (Fuller 1993: 26). Fuller's definition of science is therefore coordinated knowledge about *any* subject that we are able to know something about. Based on this assumption, two questions arise: what can we know and how do we obtain this knowledge?

According to Fuller, the ultimate source of knowledge is relative. For Fuller, the world is constantly moving from a position of rest to activity and back to rest again. Fuller argues that all things that we perceive move in this way; they are a result of this movement between extremes. But we do not perceive these extreme poles; we only see the relationship between their differences. According to Fuller, this forms the basis of our understanding of the world: "For a thing to exist within the limits of our consciousness, which is the relationship between the ego and the non-ego, it must possess two opposite poles or extremities. Both these poles are in themselves incomprehensible, for the only factors which the mind can grasp are the relationships between their differences" (Fuller 1993: 48-49). Fuller argues that we perceive the world in terms of relative changes between two extremes: "Thus, if I am represented by A and the universe by B, the relationship between myself and the universe is subjectively +AB, and objectively –BA. A does not exist apart from B, neither does B exist apart from A, nor can their relationships exist apart from either, since all three exist as a trinity in unity, and it is this trinity which enables us to know. Knowledge is, in fact, based on the universal inference of a threefold order – this is my *cogito ergo sum*" (Fuller 1993: 49).

According to Fuller, knowledge is based on our ability to infer chains of causation: "When some event happens again and again, we infer that it will happen yet again, and this inference, when we have discovered the reason why it happens, we call knowledge; or, if we are not certain of the reason, we assume that it will happen again, and this assumption we call belief" (Fuller 1993: 49) and "The human mind deals with change – changes of motion in an ever changing present, and the terminals in themselves remain unknowable. The world as it appears to us is, therefore, but a reflection of the world as it is in itself, and, as absolute knowledge of the world is not vouchsafed to our reason, consequently all our knowledge is but relative true, as true when compare to the Absolute as my reflection in a mirror is true when compared to myself" (Fuller 1993: 50-51). Fuller believes that all knowledge is based on past experiences, and all knowledge about the future is based inferences. Fuller strongly believed in reason and deduction, and by studying the past we should be able to predict the future. Fuller's objective was to provide the politician or general with a system of sorting out knowledge according to their values. This axiomatic system would make it possible to act according to the true values of war – values that are universal and stable – instead of copying the wars of the past. Imitation – Fuller believed – is the reason for military failure: "The dangers of war experiences are to be sought in their novelty and vividness; they are apt to obsess and unbalanced mind and leave it spellbound….In war nothing is more dangerous than jumping to conclusions on isolated actions, or of basing a theory on a single success or failure. What proves a success in one set of conditions may well prove the greatest failures if these conditions be slightly shuffled…Again we arrive at the necessity for some system which will enable us to correct our thoughts and discover the true meaning of events and experiences" (Fuller 1993: 53). Because war is shaped by circumstances, a science of war cannot be inductive alone; it must be based on general assumptions about the true nature of war, and must therefore be based on deduction: "In our study of war the deductive method will also help us because we are confronted by innumerable facts the causes of which are generally unknown. Also it will help us, as it will enable us to make full use of our imagination – and this is essential in a science which is not an exact one, and which is interwoven so closely with the human element" (Fuller 1993: 45). Fuller believed that war was too complicated to be studied using induction: "In many subjects there exists too many alternatives for us to arrive at one universal…"(ibid). For Fuller, the method of science is based on a process of analysis, synthesis, and hypothesis: "We first observe; next we build up a hypothesis on the facts of our observation; then we deduce the consequences of our

hypothesis and test these consequences by an analysis of phenomena; lastly we verify our results, and if no exception can be found to them we call them a law" (Fuller 1993: 46-47).

According to Fuller, science is defined by the method applied by the researcher, and not "in the virtue of the things with which it is concerned" (Fuller 1993: 36). By this, Fuller meant that any phenomena could be studied scientifically, because the scientific element lies in how the subject is approached. In this sense, strictly obeying a method in the search for knowledge is scientific work, implying that social science is indeed a science.

Knowledge about war is found in the past. According to Fuller, the study of war is the study of great drama. Indeed, wars are dramatic episodes in human history. However, Fuller believed that we must look beyond the "terrible and impassioned drama" to discover the true value of war. Only then can a science of war be made (Fuller 1993).

In *The Reformation of War*, Fuller argued that war is a human activity (Fuller 1923). In *Foundations of the Science of War*, he wrote: "…it is beyond any question that war, like any other human activities, may be examined scientifically…" (Fuller 1993: 36). Even though Fuller argued that we are able to predict the future based on past experiences, the science of war cannot be an exact science: "I realize full well that, whatever science of war we develop, it cannot be an exact science. War is primarily concerned with human acts; every fact is a new fact, nevertheless it is related to an old one of somewhat similar type" (Fuller 1993: 37).

The developments in warfare urged the development of a scientific method of applying force. Fuller wanted to create a system of studying war in order to make war a much more effective policy tool. Fuller explains: "Method creates doctrine, and a common doctrine is the cement which holds an army together. Though mud is better than no cement, we want the best cement, and we shall never get it unless we can analyze war scientifically and discover its values. This, then, is the object of my method – to create a workable piece of mental machinery which will enable the student of war to sort out military values. Once these values are known, then can they be used like bricks to build whatever military operation is contemplated. My system, I believe, will enable the student to study the history of war scientifically, and to work out a plan of war scientifically, and create, not only a scientific method of discovery, but also a scientific method of instruction" (Fuller 1993: 35).

Fuller believed that it is possible to formulate a science of war, and disagreed with those who meant that war could only be looked upon as an art. Foch had argued that there can be no

science of war, just as there can be science of poetry, painting or music. Fuller retorted that poetry, painting and music indeed is based on science: "Poetry, painting, and music may be arts, but they are based on the sciences of language, of optics, and of acoustics. True it is possible to be an artist without being a scientist, it is possible to theorize without knowing much, but this does not abrogate science, which, as I shall explain later on, is nothing else than true knowledge in place of haphazard knowledge, logic thinking in place of chaotic thinking, and, ultimately, truth itself in place of falsehood" (Fuller 199: 20).

4.2 Why a Science of War?

"...the more we study the history of war, the more we shall be able to understand war itself"

(Fuller 1975: 15)

The conduct of WWI made Fuller convinced that a scientific approach to war was necessary, because the conduct of wars is a result of political and technological advances. According to Fuller, the WWI was a culmination of a development that had started with the French Revolution.

In "The Conduct of War: 1789 – 1961", Fuller examines how warfare develops along the same line as the society it is a part of. The French Revolution ended a period where warfare was relatively limited in both aim and means. The Peace of Westphalia (1648) – ending the Thirty Years War - ushered in a period influenced by the absolute kings and limited wars (Fuller 1961). Fuller believed that this limitation on warfare was a result of the introduction of standing national armies. Standing armies took a great toll on the national treasury, and therefore large scale battles were mostly avoided. The most skilled general was the one who could maneuver around the battlefield, slowly decreasing the enemy's treasury, and when the enemy was bankrupt peace was negotiated (Fuller 1961).

The political and economic mass participation following the French Revolution changed all this. Additionally, the warfare of Napoleon heavily influenced the aims and means of war.

While the French Revolution changed the political aim of warfare, the Industrial Revolution contributed even further to changing the conduct of war. According to Fuller, the Industrial Revolution had a "cataclysmic impact on peace and war" (Fuller 1961: 71).

When WWI broke out, the great powers of Europe had an outdated view on warfare, and did not appreciate how war had changed.

At the start of the First World War, France and Germany maintained offensive military doctrines. These doctrines were the result of 40 years of a prolific development in military theories, as technological advances created the need for new thoughts. One of the most influential of these theorists was I.S. Bloch. Bloch argued that war is shaped by civilization; and since the civilization was developed from an agricultural to an industrial civilization, war had to take on an industrial nature (Fuller 1985). Fuller argues that even though Bloch's analysis were often incorrect and ridiculed by his peers, his forecast of future wars was accurate: "One reason for this is that he was one of the very few of his generation who fully accepted that the defensive was increasingly becoming the stronger form of war…his systematic study of economics had led him to appreciate that, because civilization had since the days of Clausewitz passed out of the agricultural age and into the industrial one, war, as a political instrument, had been completely changed. In fact, in his opinion, it was now a negative instead of a positive instrument" (Fuller 1961: 120). Even though Bloch's predictions were accurate, Fuller argues that he failed to grasp the advances made with the combustion engine and the telegraph: "These two inventions introduced warlike possibilities which went far beyond anything as yet accomplished by either gun-powder or steam power. The former not only led to a revolution in road transport, and consequently in land warfare, but as it solved the problem of flight it raised war into the third dimension. The latter virtually raised it into the fourth dimension; for to all intents and purposes the wireless transmission of energy annihilated time as well as space. Thus new battlefields were created – the sky and the ether" (Fuller 1985: 296).

The industrialization had profoundly changed the way wars would be fought in the future, and therefore, new ideas had to be devised. However, none of the European powers seemed to grasp the impact of technological advances on warfare. The German Schlieffen Plan was offensive in nature, because the Germans knew that a war between the European powers would mean a war of two fronts. The Schlieffen Plan was formulated in order to deal with the problems of fighting on two fronts simultaneously (Fuller 1961). According to Fuller, cultural factors can explain the French choice of an offensive doctrine: "The theory of 'mass plus velocity', then held by the General Staff, exactly fitted Joffre's bull-like temperament. The offensive was his one and only aim, as it was of his political master, President Fallières, who in 1912, asserted: We are determined to march straight against the enemy without

hesitation…The offensive alone is suited to the temperament of our soldiers" (Fuller 1961: 156). The French plan was based on two assumptions, according to Fuller: " (1) That the Germans would not bring into line reserve formations as well as active ones – which General Michel had said they would – therefore they would not be strong enough simultaneously to advance through Belgium as well as through Lorraine. And (2) that as the French soldier was irresistible in the attack, the sole thing necessary was to deploy the French armies between Mézières and Epinal, move straight forward, smash the German centre – or rather what was assumed to be the centre – and then paralyze the German communications in Lorraine" (Fuller 1961: 156-157).

The initial stages of offensive and mobile warfare soon turned into a stalemate of trench warfare. No one actor was able to penetrate the lines of the enemy, and so the war turned into artillery duels and infantry charges, where very little territory was gained and the loss of life was great (Fuller 1961). It seemed that Bloch's forecasted war was becoming a reality: "The truth is, as Bloch had foreseen, that mass warfare, based on the magazine rifle and machine gun, if not impossible, as he declared it to be, was at best an unremunerative instrument of policy; nowhere could the bullet be escaped, and nowhere could a well-established entrenched system be decisively broken" (Fuller 1961: 167).

The introduction of chlorine gas by the Germans would change the nature of the war, but only on a tactical level. Fuller argues that if the Germans had employed gas in large enough quantities they could have won the war (Fuller 1961). Instead, chlorine gas was only used experimentally in a limited area. Further, the use of gas relied on an element of surprise, and after the first German attack, the Allied could counter with gas masks. Another weakness of gas was its dependence on the wind direction (ibid).

The introduction of tanks was another technological advance. Tanks saw their first participation on 15th September 1916. Even though their initial performance was without effect, they proved to have great potential: "Due to mechanical breakdowns and the difficulties of the cratered and entrenched battlefields few got into action, but those which did showed that, with improved machinery and increased numbers used in mass, instead of in driblets, the stalemate might be broken" (Fuller 1961: 175). In 1917, attacks at Cambrai and Ypres proved how useful tanks could be employed.

However, the Allied lacked the reserves needed to take full advantage of the tactical victories of the tanks. Even though the tanks were successful in smashing through the German lines,

they did not have reserves to fully exploit the situation. Therefore, the war was to be ended by famine and revolution (Fuller 1961).

Fuller shows how warfare is a function of the political, social, and technological advances in society, and this meant that a scientific system was needed in order to understand the true nature of war. Fuller believed that by discovering this nature, it would be possible to prepare for future wars.

Fuller believed that a science of war would act as a bridge between politicians and generals, thus creating a better understanding of how the use of force should be directed in order to pursue national interests. The role of military theory is therefore to tell politicians what military power can do and maybe more important: what it cannot do.

Perceiving a lack of understanding of modern warfare, Fuller made it his aim to formulate a scientific method of applying force. This method would cover both the employment of national power – military, economic and moral power – and, when the military power is deployed, how to scientifically use military forces on the battlefield.

Fuller believed that the lack of understanding the relationship between causes of war and the objects of war meant that military power was wrongly used. During the First World War, Fuller experienced "curious happenings" (Fuller 199: 23). Strategies and war plans were made based on old and outdated "facts" of war: "Many of us partook of strategical black masses and tactical witches' Sabbaths" (ibid). Fuller calls the conduct of war an alchemy, because alchemy is an art without a science: "In alchemy what do we find? A false classification of real facts combined with inconsistent sequences – that is, sequence not deduced by a rational method" Fuller 1996: 23-24). The same is true for the study of war: "true facts have been examined, but their values have not been understood; and it is with these values that I shall deal in this book" (Fuller 1996: 24).

According to Fuller, the study of past generals revealed lack of creative thinking and an obsession with traditions within the military establishment. Some – like Caesar, Alexander and Hannibal – were true masters, but others were mere imitators. In the attempt to copy the wars of the past, soldiers are unable to understand that the conditions of war have changed; therefore, the current wars are fought on the basis of past wars (Fuller 1993). In the "Reformation of War", Fuller states that: "The armies of 1914 were imitators of past methods of warfare, for they had been fed on past battles. Science does not imitate, for science

unravels and creates" (Fuller 1923: 25). Additionally, Fuller argued that politicians are unable to grasp the true utility of force. The combination of the military's obsession with traditions and the pressure from the "uneducated" politicians results in an erroneous use of force, especially in a time when warfare is changing: "the House of Commons is full of such folk. No politician would be considered sane if he told a chemist or an astronomer what to do, but he considers it his right to tell the soldier, sailor, and airman what to do, and even how to do it; and if his words are not based on a true understanding of war they are based on a false understanding, for there can be no middle course" (Fuller 1993: 17).

Fuller, however, did not imply that politicians and the civil society should leave military matters to the military alone. Fuller argued for a stronger political control of the military forces, and believed that a great cause of war is the lack of civil control of the military, or as Fuller wrote: "due to the existence of a hiatus between the mentalities of the nation and its army" (Fuller 1923: 11). Fuller explains: "It frequently arises, however, especially in prosperous nations, that the national will to hunt for wealth is so great that it monopolizes all their efforts, and, consequently, that little thought is given to the maintenance and protection of their wealth through military action. In these circumstances, an army, which should be of the nation, becomes separated from it" (ibid). Fuller underlines the importance of a strong civil presence in the study of war: "To restrict the development of war by divorcing it from civil science is to maintain warfare in its present barbarous and alchemical form. To look upon war as a world force and attempt to utilize it more profitably is surely better" (Fuller 1993: 32).

Fuller argued that politicians should take an active role in the development of their armed forces, because these forces should serve the interests of the nations formulated by the politicians. And in order for politicians to take a constructive role in this development, they need to be educated. Fuller writes in the preface to The Reformation of War "I have not written this book for military monks, but for civilians, who pay for their alchemy and mysteries" (Fuller 1923: xii), and sums up his efforts in the epilogue: "In order to protect our homes and our institutions we must not only protect our army and look upon it as our shield against adversity, but we must determine whether the shield we have is worthy to protect us. In this book I have examined the possibilities of future warfare in order to lead up to this conclusion. I feel that I have written enough to enable any intelligent citizen, after he has studied what I have said, to turn to the army he is paying for in order to maintain the peace

which he enjoys and to say: 'Thou art, or thou art not, found wanting'" (Fuller 1923: 282-283).

According to Fuller, the "lack of science leads to chaos in art" (Fuller 1993: 33). As mentioned earlier, Fuller criticized the study of past generals; not because history has nothing to teach us about war, but because the study itself lacked a scientific approach. Therefore, it is impossible to gather relevant information and formulate general assumptions about war: "The history of war is a great romance, but as yet no true science of war has been written. For long the history of man and his perplexing ways were treated as a story, but in recent years the method of science has been applied to civil history, and today many historical works exist on the social, commercial, religious, and political evolution of nations….Though war is the oldest of arts, no such method has as yet been applied to it (Fuller 1993: 19-20).

In the preface to *The Conduct of War*, Fuller wrote: "The conduct of war, like the practice of medicine, is a an art, and because the aim of the physician and surgeon is to prevent, cure, or alleviate the diseases of the human body, so should the aim of the statesman and soldier be to prevent, cure, or alleviate the wars which inflict the international body. Unfortunately, this has been little appreciated, and while in recent times the art of healing has been place on a scientific footing, the conduct of war has remained in its alchemical stage; worse still, during the present century it has reverted to its barbaric form of destruction and slaughter" (Fuller 1993: 11). Fuller argued that a science of war should be a guideline for politicians and generals, so that they will avoid the wars that *inflict the international body*. By this, Fuller didn't mean that all wars are inherently wrong, and that the role of a scientific model is to eliminate them all together. As Fuller wrote in the preface of *The Reformation of War*: "I intend inquiring into the nature of future warfare, not because I love war or hate war, but because I believe that war is of the inevitable, and that the greatest of all heresies and delusions concerning it is to suppose that the Great War of 1914-1918 is the last of all wars" (Fuller 1923: viii). This is further emphasized in "Foundations of the Science", where Fuller wrote: "From the outset a point I want the reader to realize is, that in this struggle, there is no essential difference between peace and war. The differences are purely relative. The essential is that might, or human energy, 'demands action'; all action is struggle, and 'every action is a conflict', and, as one writer says: 'To put end to conflict is impossible. Life is a conflict. As long as it lasts conflict will endure" (Fuller 1993: 65). What Fuller meant was that if we are not able to understand war, we will continue to use military power in the wrong way. Fuller's

military theory aimed at describing the causes and effects of war, and thus formulating the appropriate objectives of war.

4.3 War: Science or an Art?

Jomini and Clausewitz represent two different views on warfare. While Jomini believed that war could be – not only approached scientifically – conducted scientifically. In consequence, anyone who studied the works of Jomini could become a great general. Clausewitz on the other hand believed that warfare was too chaotic to be conducted from universal principles. However, he did believe that warfare should be approached in a systematic manner, and that military theory served a role of enhancing the general's mental capabilities.

J.F.C. Fuller believed that art and science are complimentary; they are indeed the same. Fuller believed that all arts are based on scientific principles. Poetry, painting, and music are all arts, but also governed by scientific principles. The question is: is it possible to become a musician purely based on the knowledge of acoustics?

Even though Fuller believed in a science of war, he also believed that there is something that cannot be quantified. In military history there are some generals that seem to have been naturally gifted. Fuller names Alexander the Great, Hannibal and Napoleon as examples; these were equipped with a military genius that singlehandedly prompted the progress of warfare (Fuller 1993). According to Fuller, these men were able to see war for what it is, not only copy the tactics of the past. They were men of action and were able to analyze the battlefield swiftly. Fuller believed that this was the result of a highly developed ability to reason. And even though it is impossible to explain how it works, Fuller hoped that the field psychology could shed light on this ability, so that it could be understood.

How does this relate to war as science or an art? According to Fuller, a complete understanding of war and success on the battlefield relies on three things: "The first master of the art of war is experience, the second is reason, and the third, and greatest, is genius" (Fuller 1993: 99). Fuller believed that past experiences provide a basis for future action, and that reason could be obtained by studying and reflecting on the nature of war. However, genius is a talent one is born with; it cannot be cultivated, only recognized in other men (Fuller 1993).

A general equipped with experience and reason – but not genius – can still determine the cause and effect of military force, thus become successful on the battlefield. However, a military genius seems to do this automatically, and further is able to see original ways of formulating strategies and employing force (Fuller 1993). Again, the example of the musician can be used: even though all musicians employ the same note register and keys, only a few seem to be able to arrange the notes in such a way that results in beautiful music.

Considering that Clausewitz believed that military theory did serve its purposes as a tool for learning, Fuller's view on military theory is similar; a general who lacks the genius can still be a good general, if he studies military theory. However, Fuller has more in common with Jomini when it comes to the potential of military theory. While Clausewitz doubted the prescriptive value of military theory, Jomini and Fuller believed that warfare could be conducted according to scientific principles.

Fuller serves as a bridge between Jomini and Clausewitz on the utility of military theory, showing that war indeed can be both a science and an art. Several military scholars believe that the dichotomy of art and science in warfare is a false one; in truth they complement each other. Jim Storr – former infantry officer in the British Army – argues that even though warfare is to some degree constrained by physical laws, it is not useful to assume that warfare is determinable. In the end warfare should be founded on pragmatism and free will. Additionally, warfare is subjected to moral constraint. However, Storr also believes that the study of warfare should be governed by empiricism, rationalism and deduction. (https://www.rusi.org/downloads/assets/JA00115.pdf).

Major Harald Høiback argues that Clausewitz and Jomini should be looked at together, instead of as competitors. Høiback argues that their work provide a synthesis of operational thinking. (http://brage.bibsys.no/xmlui/bitstream/handle/11250/99629/OF_4_2007.pdf?sequence=1). The epistemological model of Jomini provides the novice with problem solving tools, while Clausewitz' model depicts how an expert approaches problems. While a novice would need rules for how to act in certain situations, an expert has built up an intuitive understanding of what needs to be done in order to achieve the same objective (ibid).

Fuller's view on military theory is also influenced by this synthesis. Fuller saw that military geniuses intuitively understood how to apply force without necessarily understanding why it worked; however, he also argued that military theory can teach those who are not naturally

gifted in war to use military force effectively. In this sense, his military theory provides the novice with the rules necessary to be proficient on the battlefield.

4.4 Did Fuller's View on Military Theory Change?

Christopher Bassford is an American military historian. He is most famous for his work on Clausewitz. He is the editor of *The Clausewitz Homepage*, which is an educational portal that focuses on the works of Clausewitz. Bassford concentrates on the heritage of Clausewitz and the relevance of his works today. He has also compared Clausewitz to several military theorists, such as Jomini, Liddel Hart and Fuller. In an article published on *The Clausewitz Homepage* called "J.F.C. Fuller and Basil Liddel Hart", Bassford deals with Fuller and Liddel Hart's attitude towards Clausewitz. Both Fuller and Liddel Hart were influenced by the writings of Clausewitz. Bassford argues that Fuller's view on Clausewitz evolved as he got older; from being rather skeptical towards Clausewitz, he shows a fuller appreciation of the Prussian general in his later writings. According to Bassford, Fuller would use Clausewitz in order to support his own views, but overlook him where he would disagree (http://www.clausewitz.com/readings/Bassford/CIE/Chapter15.htm). Pointing out Fuller's eclectic relationship to Clausewitz, Bassford does raise a valid point. Fuller seemed to have rather ambivalent relationship with Clausewitz. Fuller was no doubt heavily influenced by Clausewitz, and especially his thoughts on war as a political act. In *The Conduct of War,* Fuller contemplates the two world wars, stating that the lack of understanding Clausewitz was a major cause of these wars (Fuller 1993). Additionally, he dedicates a whole chapter to Clausewitz' writings, implying a certain admiration. As he writes in *The Conduct of War*: "…his penetrating analysis of the relationship of war and policy has never been excelled, and is even more important today than when first expounded" (Fuller 1993: 60-61). However, Fuller did disagree with on Clausewitz on one important point: the end result of war being the destruction of the enemy. Fuller believed that the end result of war should be peace. Fuller concludes the chapter on Clausewitz stating: "But of all Clausewitz's blind shots, the blindest was that he never grasped that the true aim of war is peace and not victory; therefore that peace should be the ruling idea of policy, and victory only the means toward its achievement. Nowhere does he consider the influence of violence on eventual peace…"(Fuller 1993: 76).

Fuller would also disagree on Clausewitz' view on military theory; epistemologically, Fuller did have more in common with Jomini. Bassford argues in the article "J.F.C. Fuller and Basil

Liddel Hart" that Fuller's view on war evolved from being a science towards being an art. In the article, he writes: "Most remarkable, perhaps, was Fuller's final surrender on the issue of war as art or science: Clausewitz 'was the first, and remains one of the few, who grasped that war belongs to the province of social life'" (http://www.clausewitz.com/readings/Bassford/CIE/Chapter15.htm). This quote is from the introductory chapter of *The Conduct of War* published in 1961. In the book, Fuller is explaining why he choose to dedicate a whole chapter to Clausewitz, and argues that he was one of the few who understood that war is belongs to the province of social life; that is, war should be studied as a human activity. Bassford argues that Fuller turned away from seeing war as a science, and instead ends up agreeing with Clausewitz on war being an art. The implication of this argument would be that Fuller's view on military theory would be different in his early writings than in *The Conduct of War.* Based on studying Fuller's early work, there is nothing that can support Bassford's argument; Fuller seemed to have a rather consistent view of war as a science, not an art. Even when he formulated his axiomatic system in *The Foundation of the Science of War*, Fuller believed that war belonged in the end to social life: "I realize full well that, whatever science of war we develop, it cannot be an exact science. War is primarily concerned with human acts" (Fuller 1993: 37).

Bassford seems to misunderstand Fuller's view on war and his view on science. When Fuller wrote that war belongs to the province of social life, he doesn't mean that war cannot be studied scientifically. Since Fuller had a positivistic perspective of science, there was no contradiction in saying that wars are of the social province *and* to say that wars can be studied scientifically. In the continuation of the abovementioned quote, Fuller wrote: every fact is a new fact, nevertheless it is related to an old one of a somewhat similar type. In the physical sciences, facts are potentially independent of particular place and time, but in the study of war, as in the study of history, this is not so, since the greatest difficulty is to fix the human element. The spirit of man moves here and there and changes the complexion and value of things, *yet the science of psychology is little by little discovering the hidden machinery of human actions. It is for this reason that I shall so frequently refer to the human element, and it is for this reason that the whole of my theory of war is based on man"* (ibid). Additionally, as mentioned earlier, Fuller believed that science was defined by the method applied, and not the province which the researcher studied. In this sense, everything can be made scientific as long as the method is based on systematic collection of facts. Additionally, Fuller's remark that war is a social event could just as well have been an argument for the analyzing war

according to the Threefold Order. Fuller created a system of analysis derived from the structure of the human, because war reflects the same qualities as the human body does.

Based on the findings of this study, it is fair to say that Fuller did have a rather fixed notion of war as a science. Bassford's argument is most likely due to a misunderstanding of Fuller's definition of science. The quote Bassford provides for his argument is similar to what Fuller wrote in *The Foundation of the Science of War* published nearly 40 years earlier, consequently showing that Fuller never changed his view of war and science.

Chapter 5

The Threefold Order, Power and the Causes of War

5.1 The Threefold Order and National Power

In order to understand Fuller's view on war and the use of force, we must start with his ontological view. Fuller based his system of knowledge a "threefold order". This is a metaphysical perspective on what constitutes the world and our knowledge of it. According to Fuller, the threefold order is found in everything, and only by analyzing this threefold order we can discover the true nature of things (Fuller 1993). The threefold order was first introduced in "The Foundations of the Science of War", but an element of this theory was also included in "Reformation of War".

For Fuller, the world is constantly moving from a position of rest to activity and back to rest again. Fuller argues that all things that we perceive move in this way; they are a result of this movement between extremes. But we do not perceive these extreme poles, we only see the relationship between their differences. According to Fuller, this forms the basis of our understanding of the world: "For a thing to exist within the limits of our consciousness, which is the relationship between the ego and the non-ego, it must possess two opposite poles or extremities. Both these poles are in themselves incomprehensible, for the only factors which the mind can grasp are the relationships between their differences" (Fuller 1993: 48-49). Fuller argues that we perceive the world in terms of relative changes between two extremes: "Thus, if I am represented by A and the universe by B, the relationship between myself and the universe is subjectively +AB, and objectively −BA. A does not exist apart from B, neither does B exist apart from A, nor can their relationships exist apart from either, since all three exist as a trinity in unity, and it is this trinity which enables us to know. Knowledge is, in fact, based on the universal inference of a threefold order – this is my *cogito ergo sum"* (Fuller 1993: 49).

This metaphysical approach to knowledge is further developed; the threefold order is not only a way of perceiving the world, it surrounds us and is present in everything. Fuller believed that the threefold order is the optimal organizational structure: "The threefold order surrounds us at every turn. Not only do we live in a three-dimensional world, but we think three-

dimensionally and our thoughts reflect a threefold order. We sense ourselves as mind, body, and soul, and the world as force moving through space…This threefold order I believe to be the key to the understanding of all things; it is my postulate" (Fuller 1993: 51). Fuller believed that the human body is the archetypal organization. Quoting Protagoras ("Man is the measure of all things" (quoted in Fuller 1993: 54)), Fuller argued that we perceive and create in order to assist and complement our own abilities: "Everything he thinks and does is measured out in proportion to his natural powers; in fact, the world he knows is a radiation of himself" (ibid). According to Fuller, the key to true knowledge is understanding that the world is perceived this way, and then employing the system of threefold order to analyze it.

Based on the human body, Fuller created an organizational system intended to analyze warfare. This system consisted of an object (the body), a consciousness (brain), and a soul (ego). Fuller then went on to analyze the human body by the same threefold order. The body is the *structural* element consisting of bones, muscles and ligaments. It provides the body with stability. The brain *controls* the body and governs the internal organs, in addition to interpreting information from the senses. Lastly, the human body consists of the internal organs, where energy is distributed to the body through the blood. This is the co-operative and maintenance element. Fuller then went on to abstract these qualities into the three basic elements of the threefold order:

- The structure of the body (the element of stability/negative element)
- The control of the body (the element of activity/positive element)
- The maintenance of the body (the element of co-operation/ the relative element)

Because war is a human activity, war is fought according to this structure as well: "I consider it of importance that the threefold nature of man should be realized, since war, like all other human activities, are matters of men and the wills of men in harmony or in opposition. Man is a compound of soul, mind, and body, three modes of force which must be expended, controlled, and maintained in war" (Fuller 1993: 57). The soul, mind, and body give rise to three modes of force:

- The Moral Sphere
- The Mental Sphere
- The Physical Sphere

These spheres provide the human body with the means of activity: "I have now extracted from the organization of man three abstract quantities, or elements – namely, stability, activity and co-operation; and from his nature, three spheres of force – the mental, the moral, and the physical. In these three spheres the elements are ceaselessly at work, spinning as it were the life of the individual" (Fuller 1993: 59). These modes of force are employed in order to maintain three main objectives:

- To protect life (stable element)
- To work or to fight (active element)
- The ability to move (co-operative element)

Again, we see the elements of the threefold order. Fuller argues that these objectives – or needs – are evident in all men: "Whether we examine man as a highly cultured being or as a primitive savage, we find these elements in constant operation through co-operation, always present, and only varying in degree" (ibid). Fuller goes on to argue that these objectives are important for communities as well: "In highly civilized communities work takes many forms, mental as well as physical, altruistic as well as egoistic, but it still remains work. Social rights are evolved from customs, and, to the common eye, a moral right to live is established, and they is safeguarded by the power behind this right as manifested in the law and the police and soldiers behind the law. Thus, if we examine the structure of even the most highly civilized society, we shall find that moral power is based on physical power, just as it is in man. Further still, that moral power is established as a means of economizing physical power, so that human activity is not only expended in safeguarding the individual, but in securing the community, as well as increasing the general prosperity of peace" (ibid). Fuller argued that the modes of force are complimentary and work together in order to maintain the objectives of the organism – whether it is the human body or a society. This is an important point that Fuller makes, as it is directly connected to the use of force in warfare.

From the human body, Fuller turns to the organization of nations. As the human body is the archetypal organization based on the threefold order, nations are built up in the same manner:
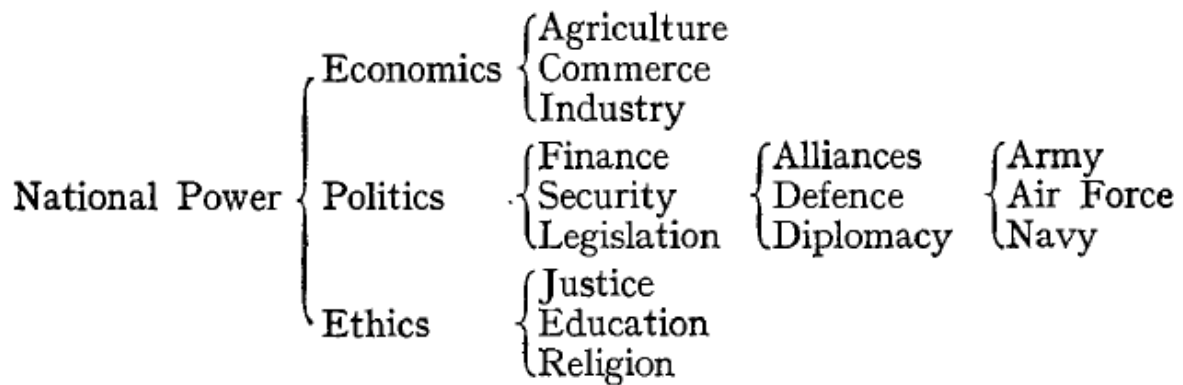
- Protection (stable element)
- Industry (active element)
- Tranquility (co-operative element)

These three elements provide the basis for military power, economic power and ethical power. These powers in sum make up the political forces of a nation. We can see that Fuller's view on power is tightly related to the interests of the nation; therefore, Fuller believed that power was a means to an end, and not an end itself. This becomes more evident when Fuller explains how power can be used differently in order to obtain different objectives.

Fuller argued that military power was the most important, as it is concerned with law and order inside a nation, makes sure that taxes are collected, and making sure that the nation can foster prosperity, as it is safe from outside aggression (Fuller 1993). Further, Fuller argued that it is a direct relationship between prosperous nations and their military forces. This is because the governments' of prosperous nations will make sure that the military forces are given sufficient funding. Therefore, the government becomes the co-operative element in the nation's organizational body, while the armed forces are the stable element and the nation the active element. However, during war-time the elements reverse their role, and the armed forces become the active element, while the nation becomes the base of military action (Fuller 1993).

As we can see, the threefold order is evident in all of Fuller's analysis: "I have now established, or attempted to establish, three leading ideas. The first is that man himself is organized on a threefold order, the second is that he is the product of a threefold force, and the third is that his activities may be summarized in three great divisions. We thus obtain a human instrument charged with power which is expended profitably or unprofitably, according to the object in view and the degree of knowledge possessed in its economy. With a nation it is the same; for the society which man creates is but a development of his threefold organization, nature, and activity in a higher and more complex form" (Fuller 1993: 61). Fuller argued that society is based on the same elements as the human body, but in a society the brain is not represented by one man, but a whole government or cabinet of ministers. This enables the political control of the relationship between the nation's "body" and "soul": "Thus, if the idea of a crowd of men is replaced by that of coordinated national power, this power may be divided into a threefold order. From the national body is derived the economics of the nation, from the national soul it ethics, and from the national mind its politics" (ibid). Fuller

illustrates this threefold order diagrammatically:

National Power
- Economics: Agriculture, Commerce, Industry
- Politics: Finance, Security, Legislation; Alliances, Defence, Diplomacy; Army, Air Force, Navy
- Ethics: Justice, Education, Religion

Since national power is derived from the objectives of the nation (protection, industry and tranquility), it holds that each mode of force should be used according to which objective is being pursued. The fact that national power is based on military, economic and ethical forces, employing force is a highly means-ends activity. This nuance is important in order to understand Fuller's view on the use of force as a political instrument.

5.2 The Causes of War

Since national power is derived from the objectives of the nation, it becomes important to understand the object of war. Fuller insisted on tracing the causes of war: "When the man of science has established a relationship between cause and effect, and has thus given expression to a reason, he is in possession of a fact worth knowing. The soldier, if he aims at working scientifically, must follow suit, and the first fact he must establish is the cause of war; for the cause of war will produce its effect, not only during the war, but in the peace treaty which will follow it. Unless we understand the causes of war, it is unlikely that we shall, from the outset, be able to formulate the object of war, the attaining of which will lead to the effect required" (Fuller 1993: 64). Fuller – being interested in a scientific approach to the use of force – argued that one must first discover the causes of war, if one is to understand what the objective of war should be. Then one will be able to determine how to apply force as a political tool.

Just as Fuller extrapolated the national powers from the human body, he examined the causes of war from the standpoint of the individual: "Fights are the concern of individuals and small groups of people; wars are the concern of nations; yet wars are built up of fights" (ibid).

Fuller argued that the causes of war are derived from the instincts of humanity, and this is evident in the activities of humans: " 'Children do not fight because they are teased, they tease in order to fight', and a little observation will assure us that this is generally true. The same author writes: 'Fighting play, therefore, prepares the young animal, not to attack feebler species which are to serve as his food, nor to resist stronger which covet him as prey, but, above all, to measure himself against other individuals of his own species'; because 'It is to struggle for a female, rather than for food, that the young are being unconsciously rehearsed'" (ibid). Fuller believed that this held true for wars between nations as well, and therefore, formulated not only a military cause for war, but also an economic cause and a biological cause for war. The military cause is rooted in the need for protection against foreign invasion. The economic cause is derived from the need for prosperity and economic growth, while the biological cause comes from "the maintenance of peace" (Fuller 1993). The biological cause is the most difficult to grasp, but Fuller cites William James in order to make his point: "Every up-to-date dictionary should say that "peace" and "war" mean the same thing, now *in posse,* now *in actu.* It may even reasonably be said that the intensely sharp competitive preparation for war by the nation *is the real war*, permanent, unceasing; and that battles are only a sort of public verification of mastery gained during the 'peace' intervals" (Fuller 1993: 65-66). Fuller explains that the biological cause "passes into the ethical cause […] and the same energy which is expended in the establishment of peace is utilized to preserve and to secure it" (Fuller 1993: 65). Therefore, the biological causes can be defined as causes derived from the cultural properties of a nation (religion, ideology, race etc.). Fuller then goes on to explain the different causes of war: "Racial causes are ever present, and yet are difficult to fix. Accepting nations as great groups of individuals, a more pronounced hostility exists between them than between individuals between the individual members of each group…Economic causes are also fundamental. Each nation, like each individual, desires prosperity, and if a nation be strong it will attempt to gain it. In former days plundering was a cause of war, now it is commerce, and the difference is again only one of degree. The acquisition of undeveloped lands in order to obtain raw material, the control of markets where manufactured goods can be profitably sold, and the command of communications, especially those of the sea, to assure the safe passage of war and manufactured materials, are all potent economic causes of war…Possessed of high ethical and economic power, a virile nation very naturally determines to secure itself from either internal or external interference. This search after security is the most potent of the military causes of war. Internally, during peace-time the nation is an entrenched camp. The will of the majority, enforced by the national Government, maintains a

state of peacefulness by force, for this will is backed by military power. Externally – that is, against neighboring or competing nations – this will can only exert its power indirectly by threat of force, and when two nations threaten each other, however amicably, the desire for security leads to the search after strong or unattackable frontiers" (Fuller 1993: 67).

Fuller formulates three causes of war; and these are directly derived from the national powers of the state, which again is derived from the state's objectives or interests. By doing this, Fuller is trying to point out that in order for war to be an effective policy tool, one must first understand why force should be employed; that the foundation of the use of force should be a sound and clearly understood plan and strategy. Therefore, Fuller is not only pointing out the need to successfully plan for war, he also argues that a powerful state is not merely a state with the most hard power resources, but also a state who understands the relationship between the causes of war, the object of war and how to use force appropriately. Fuller explains this in "The Reformation of War": "The true might of a nation is to be sought for not so much in the strength or perfection of its army, which is but the means of materializing this might, but in the health of its spirit, that is its will to preserve itself from dangers internal and external" (Fuller 1923: 17).

While the three causes listed in "The Foundations of the Science of War" were based on the rational use of military force, in "The Reformation of War" Fuller argued that there are two additional causes for war. The first cause is due to lack of power to control policy (Fuller 1923). This means that a country's government lacks the ability to effectively control foreign policies. In other words, domestic variables – whatever they might be – hinder the political leadership from acting according to their interests. Fuller argues that the prime detonator of war is diplomacy. By diplomacy Fuller means political means that "attempts to make good a deficiency of power by an excess of duplicity" (ibid). According to Fuller, diplomacy without actual power is in effect deceit. The use of diplomacy without actual power to back up the policy it tries to achieve leads to the state loosing status among the other states. The first cause of war is due to a lack of power, which leads states to pursue policies that are overly ambitious according to their own powers. The other cause is due to a lack of political unity between the political organisations and the military organisations: "…the second due to the existence of a hiatus between the mentalities of the nation and its army" (Fuller 1923: 11). According to Fuller, this is due to overly ambitious policies by powerful states. The powerful states are led to enhance their power and wealth, thus creating a military organisation that becomes too powerful and monopolizes all the state's efforts: "and consequently, that little

thought is given to the maintenance and protection of their wealth through military action. In these circumstances, an army, which should be of the nation, becomes separated from it" (ibid). The danger is that powerful states will become too ambitious in their pursuit of national interests. In these circumstances, the military tends to take over the process of shaping policies, thus monopolizing all the efforts of the state. This, according to Fuller, is a barbaric army. Not because its way of fighting seems inhumane or primitive, but because the political aspect of warfare becomes secondary; the mind is separated from the body and this leads to a primitive outlook on warfare (Fuller 1923).

Fuller's view on power resembles the neoclassical realist approach. Fuller believed that – even though power is a resource - the true nature of power is found when trying to utilize it in order to obtain specific goals. Therefore, the developments of effective doctrines become essential in order to be a powerful state. Consequently - in an International Relations context – this prompts the study of not only how much power a state has, but also how effective it is in using that power. In this sense, Fuller's view on power is not a purely a "power as resource" approach, but also a mixture of the relational power approach.

5.3 The Object of War

Fuller argued for the scientific use of force, and argued that there is causation between the causes of and the objects of war. Tracing war back to the military, economic and ethical causes, he then went on to describe the objects of war. Fuller argued that the military, economic and ethical causes of war in the end derive from the discontent with the existing conditions of peace. However, determining whether this discontent comes from a security, economic or ethical source is vital, as it will determine the object of the war: "As the policy of a virile nation is to enforce its will on its antagonist, the sooner it can do so the less commercial capital it will expend, and the less disorganization of existing markets, whether in its own hands or in those of its enemies or allies, will result. In wars originating in economic causes the object is not kill, wound, or plunder the enemy, but simply to persuade him, by both moral and physical pressure, that acceptance of this policy will in the end prove more profitable than its refusal; for to kill, wound, and plunder is to destroy or debilitate a future buyer – it is, in fact, a direct attack on the competitive impulse which is the foundation of prosperity. From wars arising from military causes, frontier security etc., it is much the same. The object is to remove the military threat with as little injury to the hostile nation as is

compatible with its attainment. In wars arising from ethical causes, such as the loss of independence, of ideal, or of religious freedom, unfortunately it is otherwise, for the objective aimed at is intangible; it is not a frontier or a market, but an idea; hence it happens that the most ferocious of all wars are civil wars and wars originating from religious causes" (Fuller 1993: 69-70). By sorting out the different objectives of war, we can now see that the national powers are linked to their respective object and should be used appropriately. Fuller lists the three objects of war diagrammatically:
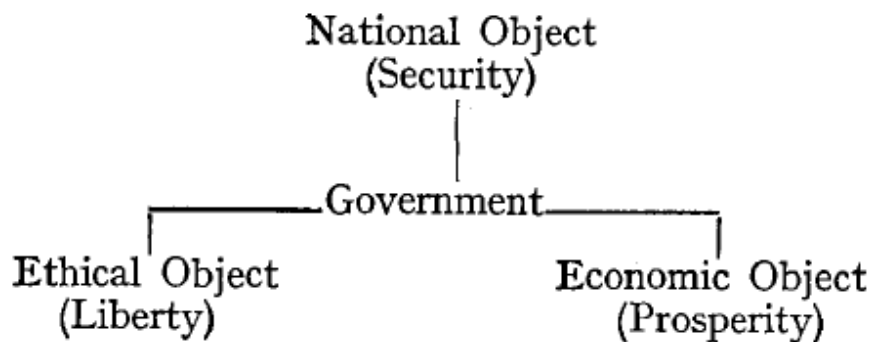
- The National object in war is to win the will of the people. This is because all efforts in war relies on the will and character of the population: "…in great national crises such as war, the character of a people assumes its full and inherent form, and manifests as the light and leader of the nation…consequently it is during great wars – struggles for existence – that character attains its most tangible form, and reveals itself in the will to win or to accept defeat" (Fuller 1993: 70). Fuller meant powers should be used to target the people's will to fight, and then the nation's government will automatically have to accept defeat. When the war is over and the peace is negotiated, Fuller warned that the peace treaty should not be too strict: "for to compel a beaten foe to agree to terms which cannot be fulfilled is to sow the seeds of a war which one day will be declared in order to cancel the contract. Thus the national object is a better peace, and the means of attaining it is the conquest of the will of the hostile nation" (Fuller 1993: 71). Fuller's view on peace treaties is influenced by his views of the Versailles Treaty which he criticized intensely during the interwar-period. The national object is therefore founded on replacing one policy with another, one which both sides of the conflict can accept.
- The Ethical object "is the enhancement of the national character – to increase its prestige, not only in the opinion of the enemy, but in that of all other nations" (Fuller 1993: 71-72). Fuller argues that wars can be compared to a game; it has its rules that

the opponents should adhere to. However, whereas there is a referee in a game, in war there is no referee to judge the actions of the opponents. The only referee is the "conscience of the combatants themselves as influenced by the ethical opinion of neutral States" (Fuller 1993: 72). Fuller argues that states should fight cleanly: "Though in wars of all types there is no belt which may not be hit below, nevertheless a wise fighter will think twice before hitting below a certain moral line, because the material advantage accruing may be cancelled out by the ethical loss resulting" (ibid).

- The Economic object is surviving with profit, and if "this objective is to be attained in a full degree, then the peace which follows a war must at least be as prosperous as the peace which preceded it, for prosperity is the material dividend of victory" (Fuller 1993: 73). According to Fuller, accumulated wealth is "the sinews of war", and enables nations to go to war and continue fighting as long as its industrial strength enables it to. Therefore, the enemy's industrial strength should be targeted. However, Fuller does not prescribe the total annihilation of the enemy's industry, because the real object of war is a better peace: "the economic object in war does not only consist of destroying the enemy's strength, but in destroying it with profit" (Fuller 1993: 74).

The national, economic and ethical causes make up the political object, and Fuller believed that political power should be directed to pursue these objects in war. A government's task is to formulate policies that maintain these objectives in a cohesive war effort. Therefore, policy formulation is a result of national, economic and ethical variables. However, Fuller pointed out that policy is also influenced by the fact that nations exist in a political system, and therefore, the formulation of policy will be a result of both domestic and external variables: "Domestic policy, *per se*, is the national purpose derived from the correlation of all the qualities and quantities which go to build up the national, ethical, and economic objects, but it never can be considered *per se*, since each nation is part of the world, and today, on account of the interfusion of ideals and of wealth, not only a national but an international part…We no longer live in the period of isolated national shocks, but of ceaseless international repercussions. Thus we find that domestic policy must, in its turn, be correlated with the policies of all other nations – hostile, neutral, and friendly – and that out of this grand correlationship springs foreign policy" (Fuller 1993: 75). Fuller argues that foreign policy is a result of both domestic and international variables, much like the neoclassical realist perspective.

Fuller argues that in its abstract form warfare is like any other political process, and that the ability to wage war is a means of allowing for this process to happen: "Power to wage war should, therefore, be looked upon as a creative force, and not merely as an insurance against calamity" (ibid). In the context of making a better peace, war is a process where the political order should be rearranged to accommodate the interests of the states in the international system. This is because the peace treaty that follows the war should address the causes of the war, and this becomes more evident when we know that Fuller believed that the most fundamental cause of war is the discontent with the existing conditions of peace. However, Fuller argued that this view of war was not appreciated in his time: "Today this outlook on war scarcely exists, and, in my opinion, it will never exist until a science of war has been established, by which the conception of war may be correlated with our conceptions of all other human activities" (ibid). Therefore, Fuller formulated several maxims for those who wield political power. These maxims were conceived in cases where war should "attain better, or to ensure against worse, conditions, then the loss of life and capital is compensated for, not by military success, but by the attainment of this object through military effort" (Fuller 1993: 76). Fuller goes on to point out that war should always be a means to an end, and this end should be to "safeguard a policy the aim of which is to maintain national liberty and prosperity" (ibid).

- A military victory is not in itself equivalent to success in war: "What is equivalent to success is a more prosperous peace following the war, and though this condition may seldom be attainable, yet it constitutes an ideal worth striving after" (ibid).
- A war, to be economical, must enforce acceptance of the policy under dispute with the least possible harm to commercial prosperity:"…from this it follows that there exists a theoretical limit of expenditure, on exceeding which military success ceases to be on the balance profitable" (Fuller 1993: 77).
- A military decision, to be economical, must attain more profitable result than the depreciation of capital due to its attainment: "From this it follows that unless each operation contributes to the final victory, in proportion to its cost, it shortens the time available and diminishes the value of eventual victory, or hastens defeat" (ibid).

Fuller starts out with a metaphysical assumption about the world we perceive and the way we gain knowledge of it. In his view, the threefold order exists in all things, and this order exists in the human body as well. Since Fuller believed that we perceive and create the world around us based on the fact that we are a result of the threefold order, the societies we create are also

based on this order. Therefore, Fuller is able to analyze the individual parts of a society, and formulate its objectives and its national powers. He concludes that the human body and a nation built up by the same elements: a stable, an active and a co-operative element. Further, since war is human activity, war takes on the same form, and Fuller analyzes warfare in the manner.

5.4 War and Peace: The Influence of the Versailles Treaty

Fuller believed that power should be used as a creative force upon the international political system – or the international political order. According to Fuller, war is like any other political process, and in this process the political problems should be addressed properly in order to make a better international political system. Fuller argued that the underlining cause of war – either they be military, economic, or ethical – are a discontent with the existing conditions of peace.

In "The Reformation of War" Fuller developed his metaphysical view on war according to the threefold order. According to Fuller, war and peace are two sides of the same coin. The threefold order tells us that everything moves from stability to activity; Fuller argued that peace and war move in the same manner.

Fuller traces the origin of war back to a state of inertia; inertia is understood as a metaphysical dimension: "I will postulate that we do start with inertia, the unknowable; then, let us picture to ourselves, how we cannot say, that an activity is begotten within it – this activity is war, whatever may be its complexion, for it will produce within inertia, a vibration, a disruption, a tearing and rending asunder. Henceforth, we have a duality – tendencies towards rest and tendencies towards activity, stability and mobility, a clash between these two in the ether, in matter and in life" (Fuller 1923: 7). This seems rather esoteric and mystical, and indeed it is. Fuller argues that war as a natural phenomenon resides somewhere in the inertia as an elemental force. However, if we look past this mysticism we discover a rather interesting argument (and possibly fundamental for understanding Fuller in general): war as part of a duality. According to Fuller, in the inertia of stability and rest war is activity and mobility. But what then constitutes rest and stability? According to Fuller, the answer is peace; war and peace are the same – there are conceptual twins, to sides of the same coin: "Thus has the roar of war deafened the uttermost limits of eternity before the stars twinkled or the sun shone,

and, as far as the human mind can fathom, is likely to resound through these abysmal depths until the universal blankness of inaction covers the infinite with its pall of perfect peace" (ibid).

According to Fuller, war is a Darwinian mechanism for bettering the human kind. For even though humans desire peace and rest, the nature of things is war and survival. In this environment only the strong will prosper: "Though the desire of man is peace, the law of life is war; the fittest, mentally or bodily, survive, and the less fit supply them with food, labor and service" (ibid). This is the Darwinian version of the Melian dialogue. Fuller was hugely influenced by Social Imperialism and Darwinism; consequently Fuller understood war as a means to create order and hierarchy (Reid 1987).

The consequence of this argument is that war will continue to exist until a more fundamental peace is obtained. According to Fuller, the only lasting peace can that which is honorable: "Peace without honor is degradation, and as a noble woman safeguards her honour, and will even sacrifice her life to maintain it in order to keep the family clean, and as a man will give his life to protect her and her children, so will an upright nation, because of its honour, not only protect but sacrifice itself for a righteous cause. All may be lost save honour, for without honour mankind ceases to be human" (Fuller 1923: 281).

The key to using force is to create a condition where the following peace process can accommodate the different interests of the actors and create a lasting and stable peace. For this, Fuller believed, we need a scientific approach to using force. We need a scientific system of analyzing the causes of war; and when the causes are identified we can determine the objectives of the war, and consequently how the force should be directed. This was what Fuller hoped to achieve when he created the threefold order.

The reason for Fuller's focus on the peace process and the need for a different appreciation of the use of force, was because of his view on the Versailles Treaty. Fuller was huge critique of the Versailles Treaty, saying it did not address the root causes of WWI. Criticism of the Versailles Treaty is to be found all over his work – in works written right after WWI and at the end of his life; he never seemed to stop criticizing the treaty or the actors involved in writing it. The end of World War II further fueled his criticism towards how wars and peace were obtained.

In the prologue to "The Reformation of War", Fuller writes: "Today we stand at the parting of the ways, behind us lingers an old-world conception rooted in the events symbolized by '1815'. In front of us is cast the shadow of a new era which, in its time, will be symbolized by '1918'" (Fuller 1923: 5). Fuller argued that the future would be determined by the outcome of the Versailles Treaty, because it established a certain political environment with winners and losers. In "The Conduct of War" he calls the Versailles Treaty the "Carthaginian Peace", implying that the peace was too harsh on Germany (Fuller 1961).

In "The Foundations of the Science of War", Fuller continues his criticism: "The Great War cost us nearly one million dead, and it was concluded by a series of peace treaties which reek with future wars, yet if we went to war to-day, we should do so with an equipment in several respects inferior to what we had in November 1918. What, then, have we learnt from this great upheaval? That war is such an unpleasant subject that the sooner we forget it the better; and, to make peace with its reason, the nation chloroforms its intelligence by inhaling catchwords and meaningless maxims such as "the war to end all war" and "the abolition of war", when such absurdities can only end common sense" (Fuller 1993: 29-30).

Chapter 6

Conclusion

This thesis set out to answer two questions: 1) how did Fuller view military theory, and 2) how does Fuller's view on military power compare to the power definitions of the realist school of International Relations theory. In order to answer these questions, the thesis has employed historicism and hermeneutics as the methodology. In addition, the thesis combined two different approaches to sources: the source-oriented and the problem-oriented approach. The source-oriented approach is based on extracting data from the sources that are of interests of the researcher. The researcher defines a general area of interest, and lets the sources steer the research in a certain direction. The problem-oriented approach allows the research question to determine what sources should be gathered and studied.

In retrospect, the researcher believes that a purely source-oriented approach would have been better, because it might have freed up more time discussing the actual material. However, a certain degree of the problem-oriented approach was helpful, because it allowed for a more purposeful extraction of relevant material from the sources.

Fuller had experienced the lack of understanding of war, thus leading to the misconduct of WWI – and eventually WWII. Fuller believed that one should learn from past wars in order to prepare for the next; however, he warned about the danger of learning the wrong things. Fuller argued that simply copying the techniques of past wars would not lead to an improvement in future wars. The only way to learn from history is to understand the true nature of war. This was Fuller's foundation for developing a military theory. He devised a system of analysis based on the threefold order: an axiomatic system that he extrapolated the elements of force, the causes of war and the objects of war. Fuller believed that the threefold order could be used in order to analyze any military event from the past, or it could be used in order to prepare for future wars.

Fuller's view on military theory was consistent throughout his career; he believed in the progress of science and believed that science would make warfare more effective and ordered. Even though he agreed with Clausewitz that some elements of war are impossible to quantify, he believed that warfare could be made into a science.

Fuller's military science was based on the systematic collection of knowledge of past wars. In order to systematically collect this knowledge, Fuller set out to discover the elements of war, its causes and its objectives.

Fuller set out to make warfare understandable for those who in the end controlled the military: namely the politicians. Fuller believed that continuous scrutiny of the armed forces was vital to the interests of the state, and therefore politicians should have knowledge about the true nature of war and the use of force. The threefold order was designed to make it easier for civilians with little or no experience in military matters to judge whether or not the military was able to pursue the national objectives. Additionally, the threefold order could tell politicians how to apply force, consequently making the application of power more effective.

Fuller's view on military power compared to I.R. theory resembles the neoclassical realist approach, where power must be "harnessed" through the development of doctrines and strategies. Fuller believed that the true power of a state is evident in its ability to safeguard itself from internal and external threats.

Even though Fuller aspired to make warfare more understandable, his metaphysical approach to warfare meant that he was met with ridicule and skepticism. Additionally, the threefold order is complicated and difficult to understand without studying it in full.

Chapter 7

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