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Military theory and the concept of Jointness

A study of connection

Do the theories of Sun Tzu include the Concept of Jointness?

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Table of contents

Abstract.....	3
1. Introduction	4
1.1 Background.....	5
1.2. Purpose.....	7
1.3. Question.....	8
1.4. Hypothesis	8
1.5. Definition and Limitations	11
1.6 Structure of the research.....	15
2. Theoretical Framework	16
2.1 Theories in use	16
2.2 Theories	16
2.3 Discussion.....	19
3. Operational Model.....	21
3.1 Study.....	21
3.2 Application	22
3.3 Description of data and collection method	23
4. Analysis of Sun Tzu and the basic elements and functions	25
4.1 Effect.....	25
4.2 Mobility.....	26
4.3 Protection.....	28
4.4 Endurance.....	29
4.5 Intelligence.....	30
4.6 Command and Control	32
4.7 Analytical Framework of basic elements and functions.....	33
5. Analysis of Sun Tzu and elements and functions as combined	35
5.1 Chapter 1. Laying Plans.....	35
5.2 Chapter 2. Waging War.	35
5.3 Chapter 3. Attack by Stratagem.....	35
5.4 Chapter 4. Tactical Dispositions.....	36
5.5 Chapter 5. Energy.....	36
5.6 Chapter 6. Weak Points and Strong.....	36
5.7 Chapter 7. Manoeuvring	36
5.8 Chapter 8. Variation in Tactics.....	37
5.9 Chapter 9. The army on the March.	37
5.10 Chapter 10. Terrain.....	37
5.11 Chapter 11. The Nine Situations.....	37
5.12 Chapter 12. The Attack by Fire	38
5.13 Chapter 13. The Use of Spies.....	38
5.14 Analytical framework of combined basic elements and functions.	38
6. Conclusions	40
7. List of References	43

UNCLASSIFIED

Figure 1: Main Analytical Framework.....	9
Figure 2: Observations of basic elements and functions.....	10
Figure 3: Observations of combined basic elements and functions.	10
Figure 4: The context of the basic elements and functions	19
Figure 5: Examining chapters 1-13. Including basic elements and functions.	22
Figure 6: Examining chapter 1-13. Combining basic elements and functions.	23
Figure 7: The including of Jointness.	23

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Abstract

As development rushes in the military affairs, the concept of Jointness is heading for the future. Different visions of different Armed Forces are at hand and they are often dealing with the question of Jointness. The debate is ongoing but the considering of the concept and contain is sometimes inadequate. There is a need for broadening the discussion.

I have in this paper tried to link the discussion of Jointness to the military theory. By that I mean the acknowledged theorists that are in use in military education. In this paper, it is the theories of Sun Tzu that are to be examined.

The question in use, is if the theories of Sun Tzu include the concept of Jointness? The reason for examining Sun Tzu, as representing military theory, is that the look back is vital for the foundation of the concept as well as for the development into the future.

In order to do the research, the concept of Jointness has to be defined. My definition is gathered abilities, which is founded on the view of different components that are working or functioning together. This expresses ability to act and since the abilities are more than one, they are gathered.

The result of the research is that the theories of Sun Tzu do include the concept of Jointness.

To be able to examine the theories and to reach the answer I have used a Theoretical Framework which includes an exploring theory to be able to test the theories of Sun Tzu. This exploring theory is divided into basic elements and functions of warfare. The elements and functions stress a gathered ability together

The method that I use is a qualitative document analysis and the application is done in two steps. At first there is an examination, regarding if the theories of Sun Tzu include the basic elements and functions? After this there is an examination if the theories of Sun Tzu include combined basic elements and functions. As the basic elements and functions represent abilities, they are as combined, gathered abilities and such as this they constitute the concept of Jointness.

This means that the result of the research is strongly dependent on the definition of Jointness. My claim is not though that my definition is the right one, but it is used in this research. It is an opposite pole of the traditional definition of Jointness as different services of the Armed Forces, who are working together. The reason is, as mentioned above, to broader the discussion.

With this research there is a possible incitement for further discussion.

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1. Introduction

1.1 Background

Just after midnight between the 5th and 6th of June 1944, the first pathfinders from the 101st and 82nd airborne division of the U.S. troops dropped down in Normandy¹. Other pathfinders of the British 6th airborne division followed them up, but in another and close by area of the forthcoming invasion, which was to take place in the Bay of the Seine between Caen and Cherbourg.² One hour after the pathfinders have landed the main parts of the airborne divisions were dropped in a total of 18000 men. The airborne divisions had the task to siege important junctions, bridges, etc and to destroy vital German defence systems. Another task that they had was to secure the flanks of the landing area.³ This was the beginning of operation Overlord or D-Day, as it is most often referred to.

A few hours after the airborne landings the warships of the allied fleet started their targeting upon the shores of Normandy and beyond. At the same time the allied air force attacked simultaneously to increase the nature of the attack and to widening the number of targets. All of the bombardment was a support for the landing forces that now headed for five landing beaches. The Americans for the beaches of Omaha and Utah and the British led coalition for the beaches of Juno, Sword and Gold. It was an impressing number of equipment and men that were used. The fleet itself consisted of about five thousand⁴ ships of variety. The allies managed to conquer the beaches, build up beachheads and to close up with the airborne divisions at different strongholds and positions beyond the shores. Before and through the invasion there was a great concern of the outcome within the allied command.⁵ The D-Day had been postponed due to the weather and the 6th of June was not of perfect conditions but as close as it could get. Upon this, casualties were expected to be high and there were always the risk of the invasion to be halted. The fighting was hard and severe at many places but as a hole the fighting went on smoother than expected.

The general opinion among the German armed forces was that the invasion would take place further east. The smaller straight of the English Cannel at Calais and its surroundings seemed more suitable^{6 7} The reason for that was that the channel was smaller and the allied air cover would be easier to maintain. Additional reasons were the supposable need for a big harbour and the fact that Calais was closer to Germany⁸. That meant that the main part of the German divisions and reserves was not deployed in the area of

¹ The Longest Day, page 105.

² Strategy, page 294.

³ Ibid, page 294.

⁴ The Longest Day, page 90.

⁵ Ibid, page 60-62.

⁶ På andra sidan kullen, page 293.

⁷ Tredje Rikets uppgång och fall, fjärde delen, page 154.

⁸ På andra sidan kullen, page 292-294.

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Normandy, but instead they were east of the Seine⁹. On the night where the airborne landings took place it was considered as a decoy for the main invasion and was not taken seriously by the German command in the western front¹⁰ as well as by the German Armed Forces High Command¹¹. The general alarm went off during the night but still with the assumption that it was not the real invasion. That affected the alarm chain and not all of the German forces were alarmed. And since the major reserves were under the command of the high command, they were not released until late in the afternoon on the 6th of June. By that time it was too late to halt the invasion.

The overwhelming effect by the firepower and the raids by airborne forces, commandos and the resistance in France was a key factor of the allied success. The fortifications of the Germans were not sufficient and reserves for reinforcement were affected both night and day. Since the allied troops lacked protection in a physical way, the effect of firepower and other resources were the way of protection.

With an almost total superiority in the air and at sea, the allies had an unimpeded freedom of movement. The Germans did all in their power to affect this but the preparations and the resources was not enough. As an example, the number of mines was predestined to a rate of fifty million¹² along the northern coast of France, but the actual fact of figures was about six million.

No one can launch such a large invasion without considering the logistic need for the operation. The importance of the logistic part of the invasion was large and deeply considered. The endurance of the attacking allied forces was of outermost importance to not be halted on the beachheads but to be able to continue the attack. The allied command set up no less than three logistic headquarters of which one was only in technical service alone¹³. One of the most decisive points, were the capacity to land in the necessities to ensure the endurance of such a large invasion force. The allies sorted that out by manufacturing two artificial harbours, called "Mulberries"¹⁴, which were towed over the English Channel and posted outside of the beachheads. They were to be in use until a major harbour was captured. This was a big surprise for the Germans who thought the allies would attack where there was a harbour.

The planning and execution of such a big operation as the landing in Normandy was very complex. It made great demands on the Command and Control. It takes skill to coordinate the airborne landings and the commando raids with the French resistance at the initial phase and then the air strikes and sea bombardment with the actual landing on the beaches. A small example of it, in the whole of the invasion, was the landing on one part of Omaha beach. At 6:25 am-amphibious tanks were to swim onto the beach

⁹ Strategy, page 296.

¹⁰ OB West, Oberbefehlshaber West.

¹¹ OKW, Oberkommando der Wehrmacht.

¹² På andra sidan kullen, page 300.

¹³ Militär ledning, page 220.

¹⁴ The Longest Day, page 55.

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and take up firing positions at the water's edge and cover the assault. At 6:30 am (H-hour)-more tanks being landed directly on the shore. At 6:31 am-the assault troops to swarm the beach. At 6:33 am-underwater demolition of obstacles and at 7 am with a six minutes interval, five assault waves¹⁵. This calls for accurate planning.

The D-Day and other landings made by the allies in the Second World War are often used as an example of a joint operation including army, navy and the air force. The meaning of Jointness is referred to the mixture of the different services and how they together form a joint concept. That may be so but do it stand alone as an explanation of Jointness? I think that it is much more comprehensive and profound. One way of exploring Jointness is maybe to consider how different basic elements and functions can be combined. As I further on in the paper will use some basic elements and functions of warfare, I will explain this briefly by saying that the elements and functions are different abilities one by one and as combined they are gathered abilities of warfare.

The use of the concept of Jointness is under steady development. It is even used in the title in the most influencing doctrine of the western world, namely the Allied Joint Doctrine (Allied Joint Publication-AJP 01(B) used by the NATO and PfP (Partnership for Peace). There is for the moment a rapid development in military affairs and the use of high technology is of significant meaning and since a doctrine is linked to development it will most certainly be changed. The whole of it is defined as Revolution in Military Affairs (RMA). The main thought is that the information age and the technology has opened a whole new arena of conducting war. One of the major things that are included in this is the Network Centric Warfare (NCW). This warfare is based on accurate information, which is shared among the forces that belongs to the system, and available and suitable effect¹⁶. This is maybe a development of Jointness but it also raises a lot of questions about the conduct. Not least in the area of Command and Control and manoeuvre warfare¹⁷.

The outcome of the D-Day has been the object of many authors, historians and of course, military officers studying for many years. The work done on evaluating this has been of significance and it is not my aim to rewrite the history in a small introduction of this paper. That is also since the aim is not to write about the D-Day but to refer to Jointness. That one could point out is the failure of command and control on the German side due to the fact that the intelligence reports were not accurate and not treated in the right way. The coordination of troops lacked the necessary measures to halt the invasion and throw the allies back to sea. One could say that the capacities of the German armed forces were not optimised. Maybe there was a lack of Jointness?

¹⁵ The Longest Day, page 194.

¹⁶ Militärstrategisk doktrin, page 123.

¹⁷ Manövertänkande, page 264-265.

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1.2. Purpose

Since the development of warfare is of a rapid nature, as mentioned in the background above, the use of the concept of Jointness is as well. Jointness is a living concept and a key word that is used in different doctrines and as a tool of conducting warfare. Therefore there is a need for a depth and a foundation for the concept as we move onward towards the future. It has to be discussed and considered. The meaning of Jointness can be decisive in the future progress.

The aim of this paper is to examine if Jointness can be traceable in military theory and in this case in the theories of Sun Tzu? This is interesting because it is a fact that the progress of the concept of Jointness is at hand and it is starting to move on increasingly faster. But as something is under progress there is also a need, for the ones who are in the progress, to know about the possible origin for a better understanding. With a better understanding and a theoretical foundation the chances for further development and a possible better outcome improves.

To look back is vital in this case because it is difficult and sometimes impossible to make a scientific research about the future. But with the help of the past it is easier to substantiate the work being done on the future Jointness.

1.3. Question

Do the theories of Sun Tzu include the concept of Jointness?

1.4. Hypothesis

The hypothesis of this paper is of a correlative kind. It stresses that there is relationship or connection between Jointness and the theories of Sun Tzu. The hypothesis is as follows:

Jointness, as basic elements and functions of warfare, can be found in the theories of Sun Tzu!

The sub hypotheses are:

There are different basic elements and functions of warfare in the theories of Sun Tzu!

There are combining of two or more basic elements and functions of warfare in the theories of Sun Tzu!

This leaves us with an analytical framework where Sun Tzu is the analysis unit and where the variables are represented by the thirteen different chapters in the assembled works by Sun Tzu. This means, that the number of variables are many but since they are separated from each other, in the work by Sun

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Tzu, and handling different principles of warfare, they cannot be examined as only one variable. I have chosen not to mix the different chapters in Art of War by Sun Tzu. The reason for that is that if I mix them and take parts from one chapter and put them together with other parts from other chapters, I would probably be able to conclude that there are Jointness to be found. In that way this would be to be dishonest to the theories of Sun Tzu and would also mean that I change the meaning of them.

The values of the variables are:

1. Include basic elements and functions.
2. Gathered basic elements and functions as combined in every chapter.

Figure 1: Main Analytical Framework.

Sun Tzu as analytical unit.

Variables	Value of Variable Include	Value of Variable Combined
Chapter 1. Laying Plans.		
Chapter 2. Waging War.		
Chapter 3. Attack by Stratagem.		
Chapter 4. Tactical Dispositions.		
Chapter 5. Energy.		
Chapter 6. Weak Points and Strong.		
Chapter 7. Manoeuvring.		
Chapter 8. Variation in Tactics.		
Chapter 9. The Army on the March.		
Chapter 10. Terrain.		
Chapter 11. The Nine Situations.		
Chapter 12. The Attack by Fire.		
Chapter 13. The Use of Spies.		

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In able to collect the observations in the two different values of the variables, the analytical framework has to be exploited. In the way that chapter four includes the number of basic elements and functions and in chapter 5 includes the combinations. The framework is as follows:

Figure 2: Observations of basic elements and functions.

	Effect	Mobility	Protection	Endurance	Intelligence	Command and Control
Chapter 1. Laying Plans.						
Chapter 2. Waging War.						
Chapter 3. Attack by Stratagem.						
Chapter 4. Tactical Dispositions.						
Chapter 5. Energy.						
Chapter 6. Weak Points and Strong.						
Chapter 7. Manoeuvring.						
Chapter 8. Variation in Tactics.						
Chapter 9. The Army on the March.						
Chapter 10. Terrain.						
Chapter 11. The Nine Situations.						
Chapter 12. The Attack by Fire.						
Chapter 13. The Use of Spies.						

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Figure 3: Observations of combined basic elements and functions.

	Ch 1. Laying Plans.	Ch 2. Waging War.	Ch 3. Attack by Strata- gem.	Ch 4. Tactical Dispo- sitions.	Ch 5. Energy .	Ch 6. Weak Points and Strong.	Ch 7. Mano- euving
Effect							
Mobility							
Protection							
Endurance							
Intelligence							
Command and Control							
	Ch 8. Variation in Tactics.	Ch 9. The Army on the March.	Ch 10. Terrain.	Ch 11. The Nine Sit.	Ch 12. The Attack by Fire.	Ch 13. The Use of Spies	
Effect							
Mobility							
Protection							
Endurance							
Intelligence							
Command and Control							

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1.5. Definition and Limitations

The question in use, in the paper is, *if the theories of Sun Tzu include the concept of Jointness?* The main hypothesis is that, *Jointness, as basic elements and functions of warfare, can be found in the theories of Sun Tzu!* The sub-hypotheses in the paper are:

1. *There are different basic elements and functions of warfare in the theories of Sun Tzu!*
2. *There are combining of two or more basic elements and functions of warfare in the theories of Sun Tzu!*

That leaves us with some key concepts that has to be defined and limited. The concepts are:

- Jointness
- Basic elements and functions
- Include
- Military theory
- Theories of Sun Tzu
- Sun Tzu

Traditionally the concept of Jointness is defined in different fighting services that are working and supporting each other. By combining the Navy, Army and the Air force and recently also Special Forces and PsyOps¹⁸, you are able to reach a concept of Jointness. The staffs are consisting of officers from the different services¹⁹ with the special knowledge of their specific service. This is mentioned in the AJP-01 (B)²⁰, the doctrine used by NATO, where the command structure is described, as a usual comprise. The doctrine focuses on land, sea and air operations and the combination. Similar to that is the Danish doctrine²¹, used in the higher staff course, which describe the command structure in the same way. The name of the doctrine in itself tells us that the joint concept is about different services that are working together. This is in my opinion a narrow thinking on how to define the concept. Note that this is a way of listing and organize different capacities. By using the elements of sea land and air and the information area, there are platforms built to manage the different environments. These platforms are usually designed as a ship, aircraft or for instance a tank. The discussion about Jointness is very often limited to the different services of the armed forces and their relationship. This is rather a question about organizing them than anything else. Tradition an inherit makes a large impact since one can argue that if a

¹⁸ Psychological Operations.

¹⁹ AJP-01(B), Chapter 1, Section 5, 0122b.

²⁰ Ibid.

²¹ HODVOPS, Håndbog om doktrin for vaernsfaelles operatione.

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platform that were able to function in every environment would eliminate that discussion. So what is Jointness then? The dictionary²² states that another word for jointness is common or mutual. This means that the word states a community and a link between different things or a kinship. Another point of view regarding Jointness is that *“Jointness is not created by doctrine, joint or otherwise. It is brought about by people, good and bad. Like most things in life, it is created more successfully by a higher proportion of good people well trained in their service capabilities and how to employ them”*²³. Lawrence B. Wilkerson writes this in an article²⁴ and his opinion of Jointness is that it is the skill of the personnel who are working together with the aim of achieving a goal. He means that by understanding what others can bring to the scene of the battle and trusting them well there is a foundation for the concept of Jointness. Wilkerson expresses this in the mentioned article as *“Trust and understanding are derived from service competence. That is the only foundation on which genuine Jointness can be built”*²⁵. This is interesting to note that he is writing about the personnel rather than services. But he cannot drop the services completely. In that way he is traditional in his thinking. But he also stresses a more philosophical angle by arguing that *“Jointness is not greater than the sum of its parts-it is at best the sum of its parts”*²⁶. This is a broader definition and opens up for filling the gap with other explanations. This relates to my definition below.

The definition used in this paper is a gathering of abilities. I have chosen to define it in that way because in my view there are different components that are working or functioning together. Regardless if it is a ship with its personnel or an aircraft with its personnel, they express the ability to do something. If these abilities are gathered they can interact and support each other. A gathered ability is token of Jointness.

Additional help in defining Jointness is the theory of basic elements and functions that are expressed in the Swedish Military Strategic Doctrine²⁷. Even though relating to manoeuvre warfare they are together abilities that are needed in the conduct of warfare.²⁸

The definition of Jointness is complicated and it is an ongoing debate. As seen in the little discussion above there is different ways of defining and there are several other ways to define it. One could easily make several researches on the definition of Jointness. That is not the aim though. My aim is not to establish my definition but it is used in this research.

²² Norstedts Stora Engelska Ordbok, engelsk-svensk/svensk-engelsk.

²³ What exactly is Jointness.

²⁴ Colonel Lawrence B. Wilkerson is the former deputy director of the Marine Corps War College in USA.

²⁵ What exactly is Jointness?

²⁶ Ibid.

²⁷ Militärstrategisk doktrin.

²⁸ The theory is explained in chapter 2.

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Basic elements and functions are being defined and limited under the theories in use. Chapter 2, item 2.1.

The next concept that has to be defined and limited is the concept of include. In the dictionary²⁹ it is explained as contain, cover or comprise.

The fourth concept is military theory. One could argue that military theory is everything written about conducting warfare and that is a problem with defining the concept. Is it doctrines? Is it documented training or maybe war experiences? In order to shorten things up, the military theory used in this paper is acknowledged and in use theory studies in many military academies. As an example of that are the Swedish, Norwegian and the Danish academies. Military theories as of scientific recognition are Sun Tzu, Clausewitz, Jomini etc.

The theories of Sun Tzu will be defined and limited in Chapter 2, item 2.1.

The last key concept of the paper is Sun Tzu. During archaeological excavations, in the Shandong Province in China, back in 1972 a version of the text in the *Art of War*³⁰ was found. It could be dated to 134-118 B.C. Of the things that were possible to render one could establish that the work consisted of thirteen chapters and that the text corresponded with the versions of today. About the man behind the creation there is of little knowledge. He is supposed to have lived around 2500 B.C. and served under the king of Wu as a military commander. It is debated^{31 32 33} if he was a historical person but the theories of the war conduct in the *Art of War*, has been found in descriptions of battles in the Chinese history³⁴

The limitation in time is related to the different translations of Sun Tzu that has been made in modern time. The first translation in the paper is made in 1910³⁵ and the last one in 1999³⁶.

The paper is addressed to people with a military background or knowledge. Therefore different military terms are not defined. Where there is an abbreviation in the text it will be explained and then forthcoming be used without explanation.

It is a strictly military use of Jointness that is in focus. This means that Jointness in other possible areas like politically and grand strategically is not

²⁹ WordFinder, Rabén Prismas Stora Engelska Ordbok engelsk-svensk/svensk-engelsk.

³⁰ This is the assembled theories of Sun Tzu. There is no existing book made by Sun Tzu since it is dated 2500 B.C. There have been a number of decipherments and translations through the centuries and they have all together in the end formed the Art of War.

³¹ The Art of War, page 6.

³² SUN TZU THE ART OF WAR, page 1.

³³ THE ART OF WAR BY SUN TZU, page 3.

³⁴ Sun Zis Krigskonst, page 10-11.

³⁵ Sun Tzu on the Art of War.

³⁶ Sun Zis Krigskonst.

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under discussion or treated and if it is so, it is just strictly to explain military operations in a context. The paper focuses on the operational and tactical level. The strategic level is as above, only a tool of explanation if needed.

It is almost 2500 years ago that Sun Tzu was active. Since then there have been an escalating development in technologies and for the last hundred years it has exploded. As we now move into the 21st century, the progresses on techniques do not seem to decrease. This is of course a main variable of the conduct of warfare and the technical inventions are closely linked to the ability. The latest innovation is the Network Centric Warfare. This warfare is built on information technique with the aim of getting effect from any part that is connected into a network. It is used to give a common view of the situation and use the most suitable weapon for a target. This is in a way a concept of Jointness but the debate regarding this has just started³⁷. Network Centric Warfare is not included in my research but is worth mentioning for the common knowledge and as an appetizer for the reader to enter more deeply.

Most certainly there can be other origins and complementariness to the concept of Jointness, than the well-known and acknowledged theorists, such as military doctrines, war experiences, training etc. This paper is not though examining the number of variables that can explain the concept of Jointness. The aim with this paper is strictly to find out if there is a possible link between Sun Tzu, as representing acknowledged theorists, and the use of Jointness. Other variables and explanations have to be examined in other works.

1.6 Structure of the research

By way of introduction there will be an examining if the basic elements and functions, who are used in the exploring theory, are to be found in the theories of Sun Tzu.

Subsequently the research will continue to look at the possible combination of the basic elements and functions. This means by pair or more.

Finally there will be a summary of the analysis and the main question to be concluded.

³⁷ Item 1.1 Background.

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2. Theoretical Framework

2.1 Theories in use

In this paper I will use one theory to examine another in order to test the contain of Jointness. According to my main hypothesis there is Jointness to be found among the work³⁸ of Sun Tzu. To be able to find that out, I am using another theory as a tool for the research. The theory treats the basic elements and functions and it origins from the Swedish Military Strategic Doctrine³⁹. Since I am analysing the theories of Sun Tzu later on in the forthcoming chapters I have chosen to briefly explain Sun Tzu under this item. This means that the focus under this item will be the theory that I use as a tool. The reason for that is to increase the transparent view of the paper.

2.2 Theories

The theories of Sun Tzu are gathered in *The Art of War*. They are divided into thirteen chapters and they are general principles of conducting war. I will use the translation of Lionel Giles⁴⁰ to title the different chapters. As this is a brief of the contain of each chapter

The first chapter is about “Laying plans”. Sun Tzu describes different elements of planning and the use of them in warfare. By combining this with shrewdness and adjustment, a better result is gained.

The second chapter is called “Waging War”. It describes the overall picture of the state in terms of war. The gathered assets of the state have to be in mind in the planning. Waging war is costly and a balance has to be achieved.

The third chapter is “Attack by Stratagem” and is about attacks on the enemy. It is vital to identify the right time and right opportunity for the attack to increase the possibility of victory.

“Tactical Dispositions” is chapter four. The main topic is unconquerability and how to gain it and the focus lays on how to defeat the enemy and how to avoid defeating.

In chapter five “Energy”, the focus lays on the power of a skilled force that are using the strength of unity and good planning. This, in combination with surprise, will increase the opportunities in warfare.

Chapter six is about the importance of identifying weaknesses and strengths within the enemy as well as in our selves. The main thing is to cover ones own

³⁸ *The Art of War*. Note that this is the translated name of the book and is used by every author in this study.

³⁹ Militärstrategisk doktrin.

⁴⁰ Sun Tzu on the Art of War.

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weaknesses and exploit the enemy ditto and to use the strengths that is available. The chapter is called “Weak Points and Strong”.

Chapter seven is about how to manoeuvre and when. The topic is to handle marches, battle array and how to control the troops. The chapter is called “Manoeuvring”.

“Variation in Tactics” which deals with principals of warfare and the importance of knowing them, is the main topic of chapter eight. When understanding the benefit of the principal’s one can say that one master the conduct of war.

The ninth chapter is called “The Army on the March”. The main topic is about manoeuvring the armed force into suitable terrain and how to use it for the best outcome.

“Terrain” is the name of the tenth chapter. It describes how the terrain supports the use of warfare and the vital need of including terrain in the planning.

Territory is defined into nine different types and approaches of the same. It is about how to act in a certain defined territory. The eleventh chapter is called “The Nine Situations”.

The twelfth chapter is called “The Attack by Fire” and treats how to attack with fire and the desired effect.

The thirteenth chapter and last one, is concerning “The Use of Spies” which is the name of the chapter as well. The chapter settle the need and importance of intelligence. There is different intelligence for different tasks.

The other theory, the exploring one, is based on basic elements and functions in warfare. It is taken from the Swedish Military Strategic Doctrine⁴¹ and defines them as follows:

- Effect
- Mobility
- Protection
- Intelligence
- Endurance
- Command and Control

To be able to influence the opponent in a conflict one has to have at ones disposal the means and resources. To gain effect on the enemy, regardless if

⁴¹ Militärstrategisk doktrin, page 76, 77, 129,130.

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it is on land, air, sea, underwater or in the information arena, the resources have to be adaptable. Rightly adjusted effect can be of geographical precision, but also suitable for the target that has to be engaged, which means the type of effect. The composition of the effect has to be coordinated in different time-perspectives. Adjusted effect has a positive influence on the overall ability to the use of resources.⁴²

In order to deliver effect at the right place and time, there is a need for mobility. Through mobility, military forces can be moved from one place to another to be able to solve the assigned mission. In that way forces can form and make a main effort with most effect. Mobility is also a condition for the possibility to protect oneself from the enemy action.⁴³

Protection is vital for the resources. Through protection there is a possibility to maintain the freedom of action. The measures of protection should be active, like decoy or movement, as well as passive, like physical protection, stealth technique and camouflage. The element of protection also includes a psychological dimension. To maintain a good morale among the military forces, strengthen them and gives a strong protection against the enemy will to break the stand of continuing fighting.⁴⁴

In all kinds of conflicts there is a need for relevant, reliable and up-to-date information. That as a way of how to decide where, when and in what kind of countermeasures the effect will rely on. The purpose of the element of intelligence is to give the best environment for decision-making according to action. Intelligence consists of treated and evaluated information about the opponent and the theatre of operation. This includes environment and the civil situation. The information is a needed support for the other elements. With this, comes the fact that the mission-oriented command is given better opportunities to work.⁴⁵

The effect, mobility and protection can only be functioning if there is a support by logistics. The object is endurance. Operations have a need for a direct, fast and flexible support. The requirement is based on the type of mission, operation area and the distinctive character of the armed forces.⁴⁶

Finally, the elements above have to be coordinated and adjusted. Therefore there is the need for Command and Control, which constitute the last element. Command and Control have the object of coordination of human acting and different resources to gain effect. In the right time and place, there will be the right effect.⁴⁷

⁴² Militärstrategisk doktrin, page 76, 129.

⁴³ Ibid, page 76.

⁴⁴ Ibid, page 76.

⁴⁵ Ibid, page 76-77.

⁴⁶ Ibid, page 77, 130.

⁴⁷ Ibid, page 77, 129.

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In a broader perspective, the different elements work together. The elements and basic functions work together as shown in the model⁴⁸ below:

Figure 4: The context of the basic elements and functions

↓

The condition to coordinate the basic elements and the other basic functions	Command and Control
Basic elements of combat	Effect, Mobility and Protection
Other basic functions	Intelligence, Endurance

The theory is related to manoeuvre warfare but I will extend the theory and use it as a description of Jointness. That is possible due to the fact that the theory describes every element and function as a gathering of abilities. In the different elements and functions there are a collection of means to discharge the warfare.

2.3 Discussion

As I use *The Art of War* by Sun Tzu, there is a need to explain the so-called theory in a more penetrative way. Sun Tzu does not consist of one single easily followed theory. Instead there are many fragments and theses on general principles of conducting war. This is a problem when you are examining many of the acknowledged theorists. In military theory a considerable number of the books consist of collected principles. This is not so hard to consider since warfare is complicated and consists of different things. Therefore it is better to use the word theories in the case of Sun Tzu, because plural it is. In *The Art of War* it is dealing with a number of situations or conditions and the theories take them on one by one. They are serving as guidance and they can be read apart from each other.

The use of the theories in modern education in many different military academies vouches for the quality and recognition. The fact that the theories have survived for such a long time and still attract to recurrent translations and new readers, verifies that fact.

The theories of Sun Tzu are not exact as we would say in our age of time. They are not easy to understand and they are including possibilities to different interpretations. In that way one could consider and define them as philosophical, which leaves us with a huge number of varieties. This makes it even more thrilling and exciting to enter them more deeply.

My assumption is that other acknowledged military theories can include the concept of Jointness. The reason for not examining them are of course the limitation of the paper and the fact that they are more modern and my aim is

⁴⁸ Militärstrategisk doktrin, page 77.

UNCLASSIFIED

to look further back in history. The reason for that is to make it possible for further studies with a historical base.

The same philosophical approach one can attend when there is a discussion about the exploring theory in this paper. The basic elements and functions are not precise, even though they are defined and used in a combination. They also, as the theories of Sun Tzu, provide room for interpretation. Regarding the exploring theory one can say that it is not precise. It is of course the fact that the elements and functions used in the theory are in themselves a result of military theories and war experiences but it is not the elements and functions that are to be examined. They are only used as a tool in the examining.

The theory is in use in the higher staff courses in the Swedish Armed Forces. This means that the theory has been tested in exercises⁴⁹ and in the education. The theory is under development and discussed among people of the academy. It has not though been the case of exploring Jointness, as I will do in this research. This means that the theory is looked upon in a new way but the content is not changed.

Even though the theory is presented in a higher military strategic context in the Swedish Military Strategic Doctrine, they are originally written in the operational and tactical context. The benefit of that is that the theory is applicable on the strategic and operational level as well as the tactical⁵⁰.

As mentioned above, both of the theories can be approached in a philosophical way. They are open for interpretations, which are a benefit for discussions and development of the theories but could also be a slight problem in the way that they can be modified to suit conclusions of a research. This problem requires that my descriptions of the theories are to be held on to through the research. This is my way of trying to overcome this problem.

⁴⁹ Manövertänkande, page 75.

⁵⁰ Manövertänkande, page 76.

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3. Operational Model

3.1 Study

The study is a single case study with a non-experimental design. It is the theories of Sun Tzu that are to be examined. This means that the validity of the research can be of a high level but the reliability of generalization that the military theory as a whole is the origin of the concept of Jointness, is not possible. What is possible though is to find out if one part of the military theory can be one of the origins.

The study is of a mixture between the inductive and the deductive methodology. Inductive in the way that Jointness, as a phenomenon is the reason for the research. It is reasoning from the phenomena to a possible source but the main methodology is deductive in the way to find out the inclusive of Jointness in the theories of Sun Tzu.

It is mainly a qualitative research with a document analysis as the main tool. Jointness as a word does not exist in the theories of Sun Tzu, so the theories have to be deciphered. There are streaks of a quantitative research in the analytical framework according to the measure of observations in chapter four and five. They are used as interpreting the text and are not used in the way of counting observations, arranged on a scale in order to get figures of the observation. That is another type of research, which demands another type of question.

It is difficult and even some times unnecessary to draw exact lines of separation between the two techniques because they are often used together and they are aimed at the same thing, namely the logical way of explaining a scientific problem.⁵¹

Other weaknesses of the study are that, as mentioned in the introduction, experiences from war campaigns and doctrines are not included. These are of course a vital part of development of any concept of modern warfare. It is though the military theory that is in focus. Further one can argue that the signification of technology is excluded. I am aware of this and I have chosen to exclude it because of the question at hand. The theories of Sun Tzu are not explaining the need for technology only the use of it and in the text only in small range. Technology as a vital part of Jointness has to be examined in another research. Also, the society changes and the cultural variables and the variables that might come from the overall progress are not taken in consideration. My interpretation is another thing that can be criticized. Since I am living in modern time and as an officer, I am of course influenced by the flow of different debates, including the concept of Jointness. This is a reason for using one theory to look into another.

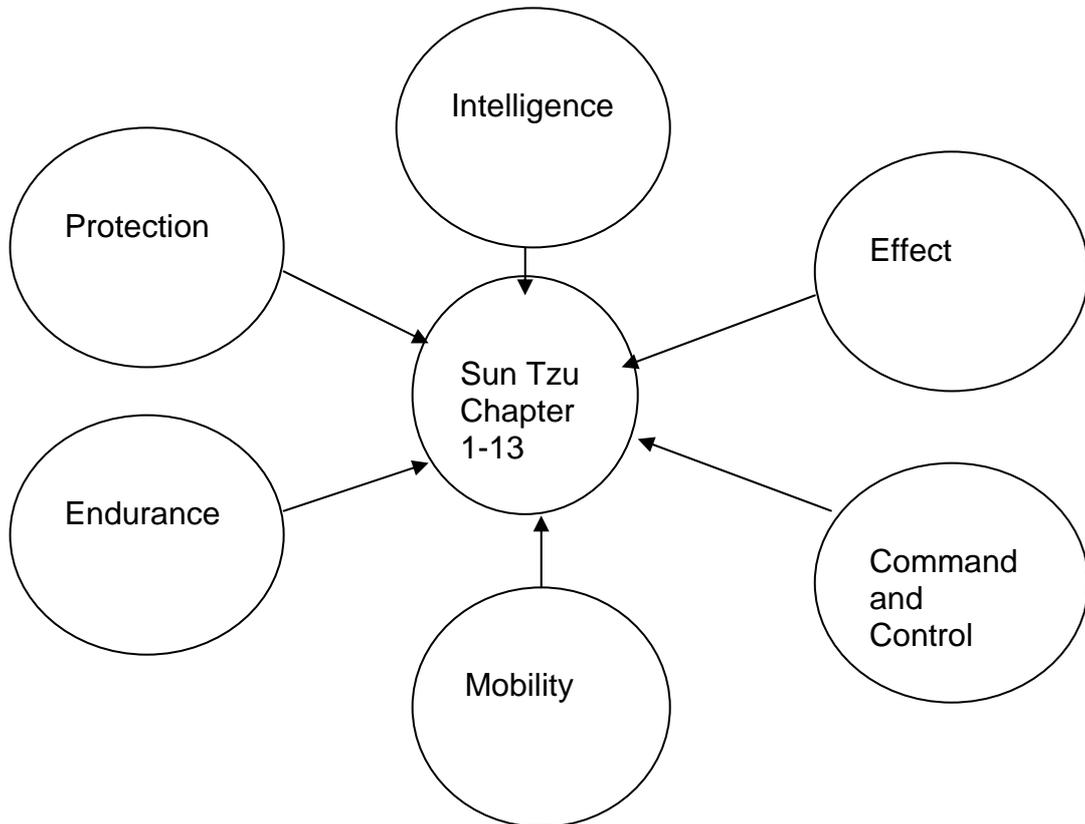
⁵¹ Att fråga och att svara, En introduktion till statsvetenskaplig metod, page 45-47.

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3.2 Application

To start with, the possible basic elements and functions in the theories of Sun Tzu are examined one by one in chapter four. The exploring theory is being compared with the content. Every chapter in the *Art of War* is being examined one after another.

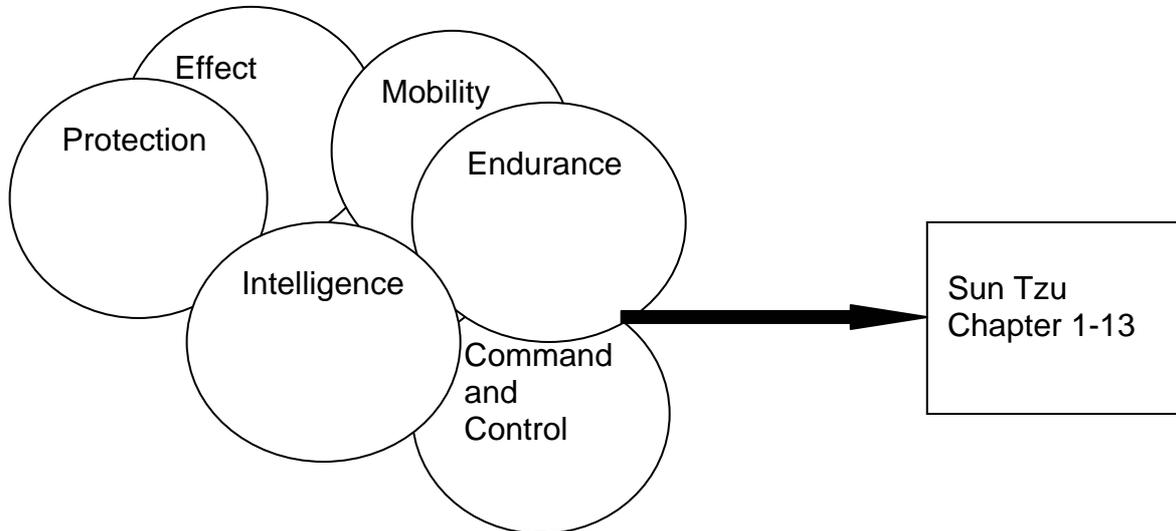
Figure 5: Examining chapters 1-13. Including basic elements and functions.



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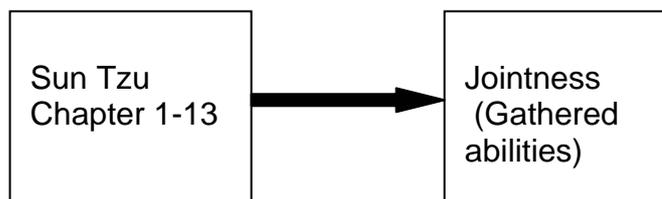
Subsequently in chapter five, the elements and functions of the exploring theory, combined as a whole or parts of them, examines the theories of Sun Tzu. This is also done chapter by chapter.

Figure 6: Examining chapter 1-13. Combining basic elements and functions.



Finally there is discussion with the help of the observations in chapter four and five of Sun Tzu and the contains of Jointness(gathered abilities).

Figure 7: The including of Jointness.



3.3 Description of data and collection method

The empirical material in the paper is written text. It is both in English and in Swedish and therefore I have been using lexicons⁵² to translate if necessary and also to correct the orthography when needed.

In chapter one I have used a variety of books and sources of the Internet to first of all give a background and then to define the key concepts.

In chapter two I have used the Swedish Military Strategic Doctrine⁵³ to form the theory in use of the research. Also here there are some complementary texts to fulfil the theory for a better comprehension. Further in chapter two as

⁵² WordFinder and Norstedts Stora Engelska Ordbok.

⁵³ Militärstrategisk doktrin.

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well as in four and five there are different translations⁵⁴ of Sun Tzu and the *Art of War* that are in use. This is a problem for the research that the origin of Sun Tzu is in Chinese. Translations can be of difference from the original and some things maybe will fall out, but in order to try to cover this, the translations are separated in time and from different countries. Additionally in the chapter there is of course the use of the theory, chosen from the Swedish Military Strategic Doctrine.

The collection of data is through textbooks that are collected from different libraries and books of my own that have been brought to me through my military service. Internet is another source that has been used to collect further material regarding this paper.

If one look into the accumulative science regarding Sun Tzu and the concept of Jointness, there is very less to find in books and on the Internet. In my search for sources I have found out that the use of Sun Tzu is mostly as quotations and not as a study of the kind of this paper. The few things that I have found are regarding Revolution in Military Affairs (RMA) and in those cases it is mostly referred to the benefit of being on top of the information^{55 56}⁵⁷. The accumulative contribution of this paper is instead to conform to the ongoing development of Jointness and the need for scientific based decisions on the progress. The concept of Jointness is under discussion and development, not least in military doctrines. A good example of that are the US Joint Vision 2010 and Joint Vision 2020⁵⁸, who are focusing on this.

⁵⁴ See List of References.

⁵⁵ Information Warfare, The Acme of Skill and Means Other than War.

⁵⁶ Building Castles on Sand, Underestimating the Tide of Information Operations.

⁵⁷ Battlefield of the Future, 21st Century Warfare Issues.

⁵⁸ U.S. Department of Defence.

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4. Analysis of Sun Tzu and the basic elements and functions

4.1 Effect

Basic element and function

To be able to influence the opponent in a conflict one has to have at ones disposal the means and resources. To gain effect on the enemy, regardless if it is on land, air, sea, underwater or in the information arena, the resources have to be adaptable. Rightly adjusted effect can be of geographical precision, but also suitable for the target that has to be engaged, which means the type of effect. The composition of the effect has to be coordinated in different time-perspectives. Adjusted effect has a positive influence on the overall ability to the use of resources.⁵⁹

To optimise the effect of one owns resources it is vital to seize every moment in doing so. Capturing of the enemy weapons and equipment is not so common these days, probably because of the technological gap we have seen during the last conflicts. But during the World War II, this was ordinary. Sun Tzu write about this regarding platforms and he concludes that banners are to switched out and they are to be incorporated in the own formations⁶⁰. The purpose is raising the effect.

By using the effect of the gathered resources in the wrong way, there is a risk that the campaign will fail. For instance, by using light armoured vehicles against tanks only ends up in disaster. In the *Art of War*, this is firmly said and noticed. *“The rule is, not to besiege walled cities if it can possibly be avoided”⁶¹* and *“The general, unable to control his irritation, will launch his men to assault like swarming ants, with the result that one-third of his men are slain, while the town still remains untaken. Such are the disastrous effects of a siege”⁶²*.

“When the strike of a hawk breaks the body of its prey, it is because of timing”⁶³. This means that you have to get the right effect to be able to seize the moment. If there is a gap in the enemy line and you are about to exploit it, the need for the accurate effect can be decisive.

To know the quality of the effect are important. To engage is also to seek an opportunity to be victorious. In order not to fail there are *“roads which must not be taken, forces which must not be attacked, cities which should not be besieged, positions which should not be contested”⁶⁴*

To help to gain the highest effect, one can manoeuvre into a right position. The effect is not vital if it is not used. As an example of this are the writings in

⁵⁹ Exploring theory, Chapter 2 Theoretical Framework.

⁶⁰ Sun Zis Krigskonst, Chapter 2, page 21.

⁶¹ Sun Tzu on the Art of War, Chapter 3, item 4.

⁶² Ibid, Chapter 3, item 5.

⁶³ SUN TZU THE ART OF WAR, Chapter 5, page 92.

⁶⁴ The Art of War, Chapter 8, page 41.

UNCLASSIFIED

chapter nine where Sun Tzu tells us that there is a need for open range of sight⁶⁵.

When the quality of your effect is at a high level, you are able to deliver a surprise and a main effort. If you are doing a raid into the enemy territory with high quality effect you are surer of the outcome when you are engaged. There is a risk of waiting for the right moment because you can find yourself deep into enemy territory with a long way back of fighting. This is not a problem though if you are superior in firepower. Sun Tzu writes: *“At the critical moment, the leader acts like one who has climbed up a height and then kicks away the ladder behind him. He carries his men deep into hostile territory before he shows his hand”*⁶⁶

*“There are five ways of attacking with fire. The first is to burn soldiers in their camp; the second is to burn stores; the third is to burn baggage trains; the fourth is to burn arsenals and magazines; the fifth is to hurl dropping fire among the enemy. In order to carry out an attack with fire, we must have means available; the material for raising fire should always be kept in readiness”*⁶⁷. There are different ways of attacking, with different means and the quality and skill should be at a high level.

4.2 Mobility

Basic element and function

*In order to deliver effect at the right place and time, there is a need for mobility. Through mobility, military forces can be moved from one place to another to be able to solve the assigned mission. In that way forces can form and make a main effort with most effect. Mobility is also a condition for the possibility to protect oneself from the enemy action.*⁶⁸

Sun Tzu declares that one has to have in mind the weather and the terrain when planning. By weather he means cold, heat, seasons and conditions of light and by terrain he means distance, topography, space and changeability.⁶⁹ All of these conditions have an influence on the ability to move. This is regardless of what the armed force consists of.

*“If you outnumber the enemy by ten to one, surround them; by five to one, attack them; by two to one, divide them. If you are equally matched, take the offensive. If the enemy forces are slightly stronger, prepare for defence; if vastly superior, retreat”*⁷⁰ One can notice the need for manoeuvring in order to follow the description. This need in combat situations is vital if it's going to work to deliver effect at the right time and place.

⁶⁵ Sun Zis Krigskonst, Chapter 9, page 97.

⁶⁶ Sun Tzu on The Art of War, Chapter 11, item 38.

⁶⁷ THE ART OF WAR BY SUN TZU, Chapter 12, page 73, 75.

⁶⁸ Exploring theory, Chapter 2 Theoretical Framework.

⁶⁹ Sun Zis Krigskonst, Chapter 1, p 5.

⁷⁰ The Art of War, Chapter 3, p 18.

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In chapter four about how to defeat and not to be defeated it is stressed that the skilled defender uses the terrain to hide and the skilled attacker uses it for manoeuvring⁷¹.

“Whoever is first in the field and awaits the coming of the enemy will be fresh for the fight; whoever is second in the field has to hasten to battle will arrive exhausted”⁷² and “Appear at points that the enemy must hasten to defend; march swiftly to places where you are not expected”⁷³. I regard this as with a highly mobile force and the measures of fieldwork for the mobility this can be achieved.

In order to make changes in the war campaign, Sun Tzu writes about some principals. He emphasises that one have to be in control of the mobility in that way that you should explore the speed and pace slow when needed⁷⁴. He concludes with the saying that one has to be mobile as the thunderbolt.

In chapter nine, Sun Tzu accentuates the need for conducting the marches. This means that the mobility is considered in the planning according to the environmental conditions. As an example he writes *“In crossing salt-marshes, your sole concern should be to get over them quickly”⁷⁵.*

“Ground may be classified according to its nature as accessible, entrapping, indecisive, constricted, precipitous and distant”⁷⁶. In warfare, certain terrain demands certain mobility. This is what Sun Tzu writes about in this quotation. By the classification the need for mobility will rise.

The speed on the battleground is vital. Not least in our time with its technological achievements. Sun Tzu claims that the speed is decisive in war. One have to explore the slowly ness of the enemy by using unforeseen roads and the attack when the enemy is not ready⁷⁷

In attacking with fire there is a need to follow it up. The way to do that is dependent on the mobility to do so. Are my means enough to involve my self into the crucial position? In the chapter of fire attacks, Sun Tzu writes: *“When the force of the flames has reached its height, follow it up with an attack, if that is practicable; if not, stay where you are”⁷⁸*

⁷¹ Sun Zis Krigskonst, Chapter 4, page 37.

⁷² THE ART OF WAR BY SUN TZU, Chapter 6, page 25.

⁷³ Ibid.

⁷⁴ Sun Zis Krigskonst, Chapter 7, page 79.

⁷⁵ Sun Tzu on the Art of War, Chapter 9, item 7.

⁷⁶ SUN TZU THE ART OF WAR, Chapter 10, page 124.

⁷⁷ Sun Tzu on the Art of War, Chapter 11, item 19.

⁷⁸ THE ART OF WAR BY SUN TZU, Chapter 12, page 75.

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4.3 Protection

Basic element and function

*Protection is vital for the resources. Through protection there is a possibility to maintain the freedom of action. The measures of protection should be active, like decoy or movement, as well as passive, like physical protection, stealth technique and camouflage. The element of protection also includes a psychological dimension. To maintain a good morale among the military forces, strengthen them and gives a strong protection against the enemy will to break the stand of continuing fighting.*⁷⁹

*“All warfare is based in deception. Hence, when able to attack, we must seem unable; when using our forces, we must seem inactive; when we are near, we must make the enemy believe we are far away; when far away, we must make the enemy believe we are near”*⁸⁰. Sun Tzu is using decoy and movement.

In chapter three, Sun Tzu stresses the fact that it is better to win a battle without fighting⁸¹ than the reverse. A higher level of protection in combat is hard to find.

To know the enemy is of significance regarding protection. It is useful to know his skill and equipment in order to not lose a battle. This is mentioned in the seventh chapter in the following way: *“Do not attack when enemy banners indicate that their troops are in good order and condition. Do not give chase when their movements show that they are well organised. Vary your plans according to the circumstances”*⁸².

When manoeuvring on the battlefield one uses the terrain to gain effect and mobility but also protection. Certain places are to be left alone due to the fact that the enemy can be of favourable positions. Likewise is the opposite situation when we are in hold of a position that gives us protection to act on the battlefield. Sun Tzu is telling us that there are six types of terrain and they all put on various demands including protection⁸³.

Development of the skill to make war has to be attended. By using the gained knowledge on the battlefield one can also raise the level of protection in the way that mistakes are not made once again. This is concluded in: *“Unhappy is the fate of one who tries to win his battles and succeed in his attacks without cultivating the spirit of enterprise; for the result is waste of time and general stagnation”*⁸⁴

Protection is a necessity for the battle. With the use of available information one can protect the forces by, for instance, keeping them away, not to engage

⁷⁹ Exploring theory, Chapter 2 Theoretical Framework.

⁸⁰ THE ART OF WAR BY SUN TZU, Chapter 1, page 11.

⁸¹ Sun Zis Krigskonst, Chapter 3, page 25.

⁸² The Art of War, chapter 7, page 38.

⁸³ Sun Zis Krigskonst, Chapter 10, page 117,119.

⁸⁴ Sun Tzu on the Art of War, Chapter 12, item 15.

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or manage to reach the area of the battle without casualties. In chapter thirteen the value of information is at hand. *“Whether the object be to crush an army, to storm a city, or to assassinate an individual, it is always necessary to begin by finding out the names of the attendants, the aides-de-camp, and door-keepers and sentries of the general in command”*⁸⁵.

There are several observations regarding the psychology and morale in the theories of Sun Tzu.

In chapter one it is the moral cause that are being stressed. If the cause, which you fight for, is just and noble the soldiers and the commanders will unite and pay the highest price, to sacrifice their lives. Sun Tzu calls this *“The moral law”*⁸⁶

*“When you engage in actual fighting, if victory is long in coming, the men’s weapons will grow dull and their ardour will be dampened”*⁸⁷.

Morale is also heightened by information of what the task consists of and this is vital. If the force are aware of what is happening the will to fight will increase. Sun Tzu writes: *“Are the place and time for the battle known, the army will manage to march a thousand Chinese miles to the battleground”*⁸⁸.

The morale is also dependent on the health of the force. Therefore there is a need to make sure that no sickness and epidemic diseases find growth. Sun Tzu is aware of that when he stresses in the ninth chapter: *“If you are careful of your men, and camp on hard ground, the army will be free from disease of every kind, and this will spell victory”*⁸⁹. As well as the health the nourishment and rest are as important. When well fed and taken care of the troops will generate moral and strength⁹⁰

4.4 Endurance

Basic element and function

*The effect, mobility and protection can only be functioning if there is a support by logistics. The object is endurance. Operations have a need for a direct, fast and flexible support. The requirement is based on the type of mission, operation area and the distinctive character of the armed forces.*⁹¹

The organisation and the equipment of the force are decisive planning objects when one talks about endurance. The procurement and use of the resources are vital.⁹²

⁸⁵ Sun Tzu on the Art of War, chapter 13, item 20.

⁸⁶ Sun Tzu on the Art of War, Chapter 1, item 4.

⁸⁷ THE ART OF WAR BY SUN TZU, Chapter 2, page 12.

⁸⁸ Sun Zis Krigskonst, Chapter 6, page 65.

⁸⁹ Sun Tzu on the Art of War, Chapter 9, item 12.

⁹⁰ Sun Zis Krigskonst, Chapter 11, page 139.

⁹¹ Exploring theory, Chapter 2, Theoretical Framework.

⁹² Sun Zis Krigskonst, Chapter 1, page 5.

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The needed funds for waging war must be secured before the campaign starts. The endurance of the troops is depending on the existence of this but also the fact that when the campaign starts there is a need for economy of force. To waste the resources in unnecessary battles can be fatal. In chapter two it is written: *“If you lay siege to a town, you will exhaust your strength, and if the campaign is protracted, the resources of the state will not be equal to the strain”*⁹³.

Try to find ways to win the battle without engaging in costly battles. In chapter three we are guided not to attack cities with an encircling wall. If you do that the endurance will suffer due to the amount of preparations. It takes time and the cost in lives as well as in equipment is high.⁹⁴

Without maintaining the endurance the force will loose. *“We may take it then that an army without its baggage-train is lost; without provisions it is lost; without bases of supply it is lost”*⁹⁵

If you do not have the means to supply and feed the troops you have to get it anyway. Sun Tzu writes: *“Plunder the rich areas, so that the soldier can get fed”*⁹⁶.

In chapter twelve, Sun Tzu says that it is important to strike at the enemy endurance. If the enemy is deprived of its assets the will and ability to conduct war will decrease. The statement is: *“Fighting with fire may take five forms: (1) Burning men, (2) Burning stores, (3) Burning baggage trains, (4) Burning arsenals, (5) Destroying supply routes”*⁹⁷

With the information from intelligence sources the need for endurance can be more specific. It is costly for the state to be on alert and if it is not needed one can use economy of force.⁹⁸

4.5 Intelligence

Basic element and function

In all kinds of conflicts there is a need for relevant, reliable and up-to-date information. That as a way of how to decide where, when and in what kind of countermeasures the effect will rely on. The purpose of the element of intelligence is to give the best environment for decision-making according to action. Intelligence consists of treated and evaluated information about the opponent and the theatre of operation. This includes environment and the civil situation. The information is a needed support for the other elements. With

⁹³ THE ART OF WAR BY SUN TZU, Chapter 2, page 12-13.

⁹⁴ Sun Zis Krigskonst, Chapter 3, page 27.

⁹⁵ Sun Tzu on the Art of War, Chapter 7, item 11.

⁹⁶ Sun Zis Krigskonst, Chapter 11, page 139.

⁹⁷ The Art of War, Chapter 12, page 71.

⁹⁸ Sun Zis Krigskonst, Chapter 13, page 167.

UNCLASSIFIED

*this, comes the fact that the mission-oriented command is given better opportunities to work.*⁹⁹

In order to surprise the enemy there is a need for knowing where he is, where he is prepared and, if possible, to know how much he knows about you. In the planning of the battle Sun Tzu emphasise the benefit of attacking where he is not prepared and appear where not expected¹⁰⁰.

*“Hence the saying: If you know the enemy and know yourself, you need not fear the result of a hundred battles. If you know yourself but not the enemy, for every victory gained you will also suffer a defeat. If you know neither the enemy nor yourself, you will succumb in every battle”*¹⁰¹. Intelligence matters! Sun Tzu says: “Spies are a most important element in war, because upon them depends an army’s ability to move”¹⁰²

The skilled force uses the knowledge of the enemy and of ourselves. Sun Tzu is saying that this is the way of dominating the faith of the enemy¹⁰³.

Once again Sun Tzu stresses the need for knowledge in chapter seven. He writes: *“We cannot enter into alliances until we are acquainted with the designs of our neighbours. We are not fit to lead an army on the march unless we are familiar with the face of the country-its mountains and forests, its pitfalls and precipices, its marshes and swamps. We shall be unable to turn natural advantage to account unless we make use of local guides”*¹⁰⁴.

During marches there is need for information, not only if the road is passable but also if the enemy can affect the formation of the troops. The intelligence on the battlefield is in that way essential. The many dangers have to be examined. The force that is in favour of the intelligence has a great advantage. Sun Tzu writes: *“If in the neighbourhood of your camp there should be any hilly country, ponds surrounded by aquatic grass, hollow basins filled with reeds, or woods with thick undergrowth, they must be carefully routed out and searched; for these are places where men in ambush or insidious spies are likely to be lurking”*¹⁰⁵.

With incurrent intelligence the general will use the wrong force at the wrong time. This in combination with the terrain is disastrous¹⁰⁶

In fire attacks there is a need for knowing what kind of attack one should launch. The conditions have to be examined and suitable for the attack¹⁰⁷

⁹⁹ Exploring theory, Chapter 2, Theoretical Framework.

¹⁰⁰ Sun Zis Krigskonst, Chapter 1, page 11.

¹⁰¹ Sun Tzu on the Art of War, Chapter 3, item 18.

¹⁰² THE ART OF WAR BY SUN TZU, Chapter 13, page 82.

¹⁰³ Sun Zis Krigskonst, Chapter 6, page 59.

¹⁰⁴ Sun Tzu on the Art of War, Chapter 7, item 12-14.

¹⁰⁵ THE ART OF WAR BY SUN TZU, Chapter 9, page 43-44.

¹⁰⁶ Sun Zis Krigskonst, Chapter 10, page 121.

¹⁰⁷ Sun Zis Krigskonst, Chapter 12, page 159.

UNCLASSIFIED

4.6 Command and Control

Basic element and function

*Finally, the elements above have to be coordinated and adjusted. Therefore there is the need for Command and Control, which constitute the last element. Command and Control have the object of coordination of human acting and different resources to gain effect. In the right time and place, there will be the right effect.*¹⁰⁸

Every chapter in the theories deals with the basic element and function of command and control. The theories are guidance for the commander to conduct warfare and it is not surprising that command and control is present all the way. In this case there are so many observations that it is impossible to include them in the analysis.

There is one thing though that is to be mentioned in this item. That is the fifth chapter which says: *“There are not more than five musical notes, yet the combinations of these five give raise to more melodies than can ever be heard. There are not more than five primary colours, yet in combination they produce more hews than can ever be seen. There are not more than five cardinal tastes-sour, acrid, salt, sweet, bitter-yet combinations of them yield more flavours that can ever be tasted”*¹⁰⁹. This quote emphasizes the difficulties of being the commander.

¹⁰⁸ Exploring theory, Chapter 2, Theoretical Framework.

¹⁰⁹ THE ART OF WAR BY SUN TZU, Chapter 5, page 22

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4.7 Analytical Framework of basic elements and functions.

There are different basic elements and functions of warfare in the theories of Sun Tzu!

Figure 2: Observations of basic elements and functions.

	Effect	Mobility	Protection	Endurance	Intelligence	Command and Control
Chapter 1. Laying Plans.	NIL	X	X	X	X	X
Chapter 2. Waging War.	X	NIL	X	X	NIL	X
Chapter 3. Attack by Stratagem.	X	X	X	X	X	X
Chapter 4. Tactical Dispositions.	NIL	X	NIL	NIL	NIL	X
Chapter 5. Energy.	X	NIL	NIL	NIL	NIL	X
Chapter 6. Weak Points and Strong.	NIL	X	X	NIL	X	X
Chapter 7. Manoeuvring.	NIL	X	X	X	X	X
Chapter 8. Variation in Tactics.	X	NIL	NIL	NIL	NIL	X
Chapter 9. The Army on the March.	X	X	X	NIL	X	X
Chapter 10. Terrain.	NIL	X	X	NIL	X	X
Chapter 11. The Nine Situations.	X	X	X	X	NIL	X
Chapter 12. The Attack by Fire.	X	X	X	X	X	X
Chapter 13. The Use of Spies.	NIL	NIL	X	X	X	X

The answer of the sub hypothesis is that the theories of Sun Tzu do include the basic elements and functions of warfare.

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Effect is observed in only half of the chapters. It seems like Sun Tzu is regarding effect as included in most of his theories. He is not precise in this matter and he is not mentioning so much about it. He seems to be taking for granted, that if someone follows the path of war, he has at ones disposal the means for effect. Mobility is a vital part of the theories. This, one can say because of the number of observations regarding manoeuvring. To be in the right position in the battlefield is of significance. Protection is not mentioned as a word but the summary of the accurate planning provides it. Furthermore there is a considerable amount of the gain of high moral among the force. Endurance is interesting because it is not emphasized within the forces of our own but surely on the enemy side. When Sun Tzu is dealing with attacks by fire, four out of five ways of attacking is aimed at the enemy endurance. Sun Tzu's statement regarding intelligence is clear and easy to understand. Without the proper intelligence the battle can be lost. Command and Control aim at controlling the energy and the power of the force. It is, as mentioned above, present in all the chapters.

Chapters of significance, since every chapter is including basic elements and functions, are the ones who indicate few observations and the ones that are consisting of observations of all basic elements and functions. The ones with few observations are chapter four, five and eight. Chapter four is about, on how to defeat the enemy and not to be defeated. There are only two basic elements and functions present in the chapter. Chapter five is about the strength of unity and good planning. It makes sense though that it only consists of Effect and Command and Control. The aim of the chapter is unity and planning. The unity symbolizes of the main effort made by the effect. Chapter eight is about principals of warfare. Also here there are the same elements and functions as in chapter five. The description falls into hand.

The two chapters who are consisting of all the basic elements and functions are focusing on the decisive blow. They are both dealing with the attack and for that every element and function has to work together.

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5. Analysis of Sun Tzu and elements and functions as combined

5.1 Chapter 1. Laying Plans.

“The art of war, then. Is governed by five constant factors, to be taken into account in one’s deliberations, when seeking to determine the conditions obtaining in the field. These are: The Moral Law, Heaven, Earth, The Commander, Method and discipline.”¹¹⁰

In these sentences Sun Tzu combines Mobility, Protection, Endurance, Intelligence and Command and Control.

Mobility is found inside the Heaven and Earth, this by using the terrain in the right way and be aware of the weather conditions. Protection can be found in the Moral Law in the way that the psychological fact has to be present as fighting for a just and noble cause. Endurance is present in the Method and discipline. With the right organisation the Endurance will sustain. To be aware of the conditions is Intelligence. The Commander represents Command and Control.

5.2 Chapter 2. Waging War.

“In the operations of war, where there are in the field a thousand swift chariots, ten thousand heavy chariots and a hundred thousand mail-clad soldiers, with provisions enough to carry them a thousand miles, the expenditure at home and at the front, including entertainment of guests, small items such as glue and paint, and sums spent on chariots and armour, will reach the total of a thousand ounces of silver per day. Such is the cost of raising an army of a hundred thousand men”¹¹¹.

In this chapter there are a combination of Effect, as the different services are mentioned as wagons, soldiers etc. Armour is providing protection. Endurance, as the need of support for the whole force and finally, Command and Control to coordinate.

5.3 Chapter 3. Attack by Stratagem.

“He will win who knows when to fight and when to not fight, He will win who knows how to handle both superior and inferior forces. He will win whose army is animated by the same spirit throughout all its ranks. He will win who, prepared himself, waits to take the enemy unprepared. He will win who has a military capacity and is not interfered with by the sovereign”¹¹².

This is combining of all of the basic elements and functions. Adjusting the Effect to superior and inferior forces. Mobility to move to a suitable position

¹¹⁰ Sun Tzu on the Art of War, Chapter 1, item 3-4.

¹¹¹ THE ART OF WAR BY SUN TZU, Chapter 2, page 12.

¹¹² THE ART OF WAR BY SUN TZU, Chapter 3, page 17-18.

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where one can await the enemy. The spirit is the key to the protection and the knowledge of when to fight is relating to the Intelligence. With no interference of the Command and Control there is a large opportunity of doing well.

5.4 Chapter 4. Tactical Dispositions.

“Hence the skilful fighter puts himself into a position that makes defeat impossible and does not miss the moment for defeating the enemy”¹¹³.

The Command and Control handles the Mobility.

5.5 Chapter 5. Energy.

“When he utilizes combined energy, his fighting men become as it were like unto rolling logs or stones. For it is the nature of a log or stone to remain motionless on level ground, and to move when on a slope; if four-cornered, to come to a standstill, but if round-shaped, to go rolling down”¹¹⁴.

By coordinating the Effect the Command and Control is capable of using the force as a summary of power.

5.6 Chapter 6. Weak Points and Strong.

“If the enemy is taking his ease, he can harass him; if well supplied with food, he can starve him out; if quietly encamped, he can force him to move. Appear at points, which the enemy must hasten to defend; march swiftly to places where you are not expected. An army may march great distances without distress; if it marches through country where the enemy is not. You can be sure of succeeding in your attacks if you only attack places, which are undefended. You can ensure the safety of your defense if you hold positions that cannot be attacked”¹¹⁵.

Mobility is present as an element of surprise. Protection is gained through the right manoeuvring which in turn is the result of the Intelligence. In order to exploit the weaknesses the Command and Control have to be on top of it.

5.7 Chapter 7. Manoeuvring

“In war, practice dissimulation and you will succeed. Move only if there is a real advantage to be gained. Whether to concentrate or to divide your troops must be decided by circumstances. Let your rapidity be that of the wind, your compactness that of the forest. In raiding and plundering be like fire, in immovability like a mountain. Let your plans be dark and impenetrable as night, and when you move, fall like a thunderbolt”¹¹⁶.

¹¹³ Ibid, Chapter 4, page 20.

¹¹⁴ Sun Tzu on the Art of War, chapter 5, item 22.

¹¹⁵ Ibid, Chapter 6, item 4-7.

¹¹⁶ THE ART OF WAR BY SUN TZU, Chapter 7, page 32.

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The easy manoeuvring has to be supported by all the elements and functions. Effect is not mentioned but the chapter concentrates on the movements to better positions.

5.8 Chapter 8. Variation in Tactics.

“There are roads that must not be followed, towns that must not be besieged. There are armies that must not be attacked, positions that must not be contested, commands of the sovereign that must not be obeyed”¹¹⁷.

This chapter focus on planning but the planners are in a need of Effect to be able to vary.

5.9 Chapter 9. The army on the March.

“If the enemy’s troops march up angrily and remain facing ours for a long time without either joining battle or removing demands, the situation is one that requires great vigilance and circumspection”¹¹⁸.

An army on the march is a vulnerable army. By using the gathered abilities one can be able to break a deadlock and take action. By combining the elements there are an incitement of success. Endurance is left out in the chapter but I regard it as present within the gathered abilities. Without spending resources one can claim that they have no been used.

5.10 Chapter 10. Terrain.

“Hence the experienced soldier, once in motion, is never bewildered: once he has broken camp he is never at loss. Hence the saying: If you know your enemy and know yourself, your victory will not stand in doubt; if you know Heaven and know Earth, you make your victory complete”¹¹⁹.

The soldier is mobile and protected by the bewilder ness. With the help of Intelligence one knows the enemy and by the help of Endurance oneself. The Command and Control seize the moment by the help of the terrain.

5.11 Chapter 11. The Nine Situations.

“On dispersive ground, therefore, fight not. On facile ground, halt not. On contentious ground, attack not. On open ground, do not try to block the enemy’s way. On ground of intersecting highways, join hands with your allies. On serious ground, gather in plunder. In difficult ground, keep steadily on the

¹¹⁷ Ibid, Chapter 8, page 38.

¹¹⁸ THE ART OF WAR BY SUN TZU, Chapter 9, page 48.

¹¹⁹ Sun Tzu on the Art of War, Chapter 10, item 30-31.

UNCLASSIFIED

*march. On hemmed-in ground, resort to stratagem. On desperate ground, fight*¹²⁰.

In order to gain the full effect on different territories there are combined elements and functions to meet them all.

5.12 Chapter 12. The Attack by Fire

*“There are five ways of attacking with fire. The first is to burn soldiers in their camp; the second is to burn stores; the third is to burn baggage trains; the fourth is to burn arsenals and magazines; the fifth is to hurl dropping fire among the enemy. In order to carry out an attack with fire, we must have means available; the material for raising fire should always be kept in readiness”*¹²¹.

All of the abilities are gathered in this chapter. By using fire you get the effect. To launch the fire from the suitable position you need Mobility. In able to follow the attack you need Protection. To deliver the right effect you need endurance. To know where you should aim your fire you need Intelligence. To coordinate the attack you need a sufficient Command and Control.

5.13 Chapter 13. The Use of Spies.

*“Whether the object be to crush an army, to storm a city, or to assassinate an individual, it is always necessary to begin by finding out the names of the attendants, the aides-de-camp, and door-keepers and sentries of the general in command. Our spies must be commissioned to ascertain these.”*¹²²

Protection, Endurance, Command and Control and of course Intelligence is observed in this chapter. To be able to conduct an operation in a safe way there is a need for the information. By relevant information the endurance can be guided in the right direction.

5.14 Analytical framework of combined basic elements and functions.

There are combining of two or more basic elements and functions of warfare in the theories of Sun Tzu!

¹²⁰ THE ART OF WAR BY SUN TZU, Chapter 11, page 58.

¹²¹ THE ART OF WAR BY SUN TZU, Chapter 12, page 73, 75.

¹²² Ibid, Chapter 13, page 81.

UNCLASSIFIED

Figure 3: Observations of combined basic elements and functions.

	Ch 1. Laying Plans.	Ch 2. Waging War.	Ch 3. Attack by Strata- gem.	Ch 4. Tactical Dispo- sitions.	Ch 5. Energy	Ch 6. Weak Points and Strong	Ch 7. Mano- euving
Effect		X	X		X		
Mobility	X		X	X		X	X
Protection	X	X	X			X	X
Endurance	X	X	X				X
Intelligence	X		X			X	X
Command and Control	X	X	X	X	X	X	X
	Ch 8. Variation in Tactics.	Ch 9. The Army on the March.	Ch 10. Terrain	Ch 11. The Nine Sit.	Ch 12. The Attack by Fire	Ch 13. The Use of Spies.	
Effect	X	X		X	X		
Mobility		X	X	X	X		
Protection		X	X	X	X	X	
Endurance		X		X	X	X	
Intelligence			X		X	X	
Command and Control	X	X	X	X	X	X	

The answer of the sub hypothesis is that there is combining of two or more basic elements and functions of warfare in the theories of Sun Tzu.

That one has to remember when examining the Analytical Framework is that the result is related to the interpretation of the theories. It is possible that another interpretation would have reached another result.

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6. Conclusions

Do the theories of Sun Tzu include the concept of Jointness?

The answer is yes, they do!

As seen in the Main Analytical Framework below, there are abilities included in every chapter of the theories of Sun Tzu. The concept of Jointness as gathered abilities is also present.

Figure 1: Main Analytical Framework.

Sun Tzu as analytical unit.

Variables	Value of Variable Include	Value of Variable Combined
Chapter 1. Laying Plans.	Mobility, Protection, Endurance Intelligence Command and Control	Mobility, Protection, Endurance Intelligence Command and Control
Chapter 2. Waging War.	Effect, Protection, Endurance, Command and Control	Effect, Protection, Endurance, Command and Control
Chapter 3. Attack by Stratagem.	All	All
Chapter 4. Tactical Dispositions.	Mobility, Command and Control	Mobility, Command and Control
Chapter 5. Energy.	Effect, Command and Control	Effect, Command and Control
Chapter 6. Weak Points and Strong.	Mobility, Protection, Intelligence, Command and Control	Mobility, Protection, Intelligence, Command and Control
Chapter 7. Manoeuvring.	Mobility, Protection, Endurance, Intelligence, Command and Control	Mobility, Protection, Endurance, Intelligence, Command and Control
Chapter 8. Variation in Tactics.	Effect, Command and Control	Effect, Command and Control
Chapter 9. The Army on the	Effect, Mobility, Protection,	Effect, Mobility, Protection,

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March.	Intelligence, Command and Control	Intelligence, Command and Control
Chapter 10. Terrain.	Mobility, Protection, Intelligence, Command and Control	Mobility, Protection, Intelligence, Command and Control
Chapter 11. The Nine Situations.	Effect, Mobility, Protection, Endurance, Command and Control	Effect, Mobility, Protection, Endurance, Command and Control
Chapter 12. The Attack by Fire.	All	All
Chapter 13. The Use of Spies.	Protection, Endurance, Intelligence, Command and Control	Protection, Endurance, Intelligence, Command and Control

By examining the Main Analytical Framework one can notice that the basic elements and functions are not present in every chapter, nor is the combination of them. There are more combinations than presented but there is a limitation of this paper and the aim was not to find out how many combinations there are. Instead it was to investigate if there were combinations.

The result of the research shows that there is alternative ways of thinking on the concept of Jointness. By approaching Jointness in a way of defining it, this research opens for further research on the subject. With the result, one can say that the military theory can be used in the development of Jointness but there is a need for further research on the matter. This paper is just one angle and approach. Sun Tzu and other acknowledged theorists can and should be examined to broader the discussion.

The theories that I have used in the research are, as mentioned earlier, philosophical in their nature. They present opportunities to look at a question and a problem in many different ways representing a variety of angles. They can be used for discussion and debate and they are in my opinion adjustable.

One has to remember that the result of the research is related to my definition of Jointness. Even so, I am more and more convinced that Jointness is a way of thinking, rather than platforms that are working together. By collecting some general principles of warfare one can apply them on a research. I am certain of the fact that there are probably other principles that can be of use. It is just a matter of daring.

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There are a lot of opinions about Jointness. What it is and what it contains?
This is of course a problem because it is essential that the understanding and use of it be of a common understanding for the development in the future. I do not claim that my definition is the right one, but my contribution to the discussion is the result of this research.

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