CRANFIELD UNIVERSITY

GURKAN YESILYURT

ASSESSMENT OF THE CONCEPTUAL AND MORALE FACTORS ON THE OUTCOME OF CONFLICTS

CRANFIELD DEFENCE AND SECURITY

LEADERSHIP AND MANAGEMENT

PhD

Academic Year: 2023 - 2024

Supervisor: Dr. Iftikhar Zaidi

Associate Supervisor: Dr.Irfan Ansari

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This thesis is submitted in partial fulfilment of the requirements for the degree of Enter degree

***(NB. This section can be removed if the award of the degree is based solely on examination of the thesis)***

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ABSTRACT

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GLOSSARY OF TERMS AND ACRONYMS

EXPLANATION OF TERMS

|  |  |
| --- | --- |
| Battle: | Struggle by the main force for real victory in war, waged with all available strength (Clausewitz, 1989, p. 248). |
| Conflict: | Dialectical pushing and pulling, the giving and taking, the process of finding the balance between powers (Rummel, 1976, pp. 238). |
| Military Theory | Study of military affairs and its findings in the form of concepts, categories, propositions, laws, and theorem(Lider, 1983, p. 1). |
| Social Conflict: | Confrontation of social powers in a form of violence (fighting, beating, warring etc.) to coerce another’s will (Rummel, 1976, pp. 237–244). |
| Strategy: | Strategy is dynamic, logical, and conceptual, pitted at every stage against an active, intelligent, and opposing mind set, applying instruments of power for creating moral and physical effects to advance policy ends (Working definition of Zaidi, 2009; 2020). |
| Violent Conflict: | Interaction between two or more identifiable groups or organizations of which at least one uses force against the other, resulting in deaths, injuries, and intimidation It is a more general term than war or armed conflict (Brecke, 1997, p. 433). |
| War: | Act of policy, and a true political instrument, a political intercourse, carried on with other means to impose our will on the enemy (Clausewitz, 1989, pp. 75–87). |
|  |  |

LIST OF ACRONYMS AND ABBREVIATIONS

|  |  |
| --- | --- |
| BDD | British Defence Doctrine |
| COFM | Correlation of Forces and Means |
| FM | Field Manual |
| IT | Information Technology |
| ML | Machine Learning |
| NLP | Natural Language Processing |
| OLI | Operational Lethality Indexes |
| QJM | Quantified Judgement Model |
| USA | United States of America |

# INTRODUCTION

## Introduction

As one of grand theories of social order, notion of conflict commonly explained by coercion or the threat of coercion to resolve issues (Hardin, 2008, p. 38). Definitions of conflict differs according to the ontological position. Marx treats the subject from socio-economic point of view and states that the *surplus value,* which is created by the labourers, by no means should be owned by the capitalist and defines conflict as a social struggle between the working class and the capitalists for the control of the means of production and the sharing of wealth (2008, pp. 315, 384). Huntington’s perspective points to conflicts between groups of different civilizations (1996, p. 13). Schelling (1980, p. 5) takes a rational perspective and assumes conflict as inevitable and analyses behaviour to maximise the gains, and he treats conflict situations as bargaining events based on the principles of game theory of economics. Rummel’s behavioural approach (1975, p. 40) sees conflict as complex situation of overlapping goals where forces in any situation are pointing opposite directions and study the causes of conflict in order to produce solutions for prevention.

Applications of these perspectives on the real life differed also like the theoretical stances. Clausewitz arguably sits on both rational and behavioural side. His definition of war as a continuation of politics with other means (1989, p. 87) puts him on the rational side as he sees war as a one of bargaining options to optimize gains (Reiter, 2003, pp. 27–28). On the other side Clausewitz also emphasizes behavioural aspects in war when he sees the war on the realm of human social existence rather than science (1989, p. 149).

There is also wide array of explanations on forms of conflict. Brecke’s taxonomy of conflicts (1997, pp. 438–439, 1999, p. 1) lists 145 types of armed conflicts and treats war as a *violent conflict.* Rummel summarizes inner-personal and social conflicts and provides an explanation of international level conflict (1975, pp. 40, 59). Clausewitz analyses war as one form of conflict (1989, p. 149). Dubois and his colleagues give all forms of conflict from massive destruction of civil populace to interpersonal conflict (1997, p. 17) in which war is one form of this spectrum.

War, as being one form of conflict is also studied and analysed extensively since it is of vital importance to both human lives. Sun Tzu states that war is a matter of life or death for the state (1971, p. 63) while Machiavelli points out that war is the prince’s most important matter to keep the state live (2008, p. 50). This vital feature of the war makes it an important topic of analysis in all ages (Frankel, 2021, sec. War). Some treat the phenomena to explore the ways to end or minimize the risk of war (Rummel, 1975, p. 4), while others approach the subject to excel at warfighting (Machiavelli, 2005, p. xiii).

Argument of shift of the nature of warfare to a more mobile and independent one in Napoleonic Wars (Gat, 2001, p. 269; Paret, 1986, p. 106) coincides with development of war theories. Clausewitz (1989, p. 2) and Jomini (2008, p. xxiii) has theories of war on their own from this period. Clausewitz emphasizes the psychological factors in war in constructivist approach and argues that main aim needs to be render enemy powerless with destroying its forces while Jomini updates rational approach of 18th century and schematize the Napoleon’s rationale of operations (Gat, 2001, p. 270; Hart, 1991, p. 340). Hart’s theory of warfare has come from strategy perspective to bring about the battle under the most advantageous circumstances, to the point to produce a decision without any serious fighting rather than crushing enemy forces (1991, pp. 327–328).

After almost a century, models of war were started to emerge either to understand the war process or predict the outcome of future wars. Among the reasons for developing a model by not being satisfied with the theory of war is to explain better the process of war as it become more complicated by weapon systems and other technological developments (Dupuy, 1987, p. 82), and to assist decision makers on planning of operations (Reach et al., 2020, p. xi).

Among others, Lanchester tried to shed light on the relationship between force strength and outcome of the wars with integrating capabilities of air force which he names *forth arm* by mathematical models of force attrition (1916, Chapter 5). Dupuy’s’ Quantified Judgement Model tried to quantify combat variables including non-materials one to compare with the results (1979, pp. 40–57). Biddle added force employment factor to these models and explained the success in wars with mediating effect of this on the physical components (2006, pp. 73–77). Soviet model of war expressed itself in Correlation of Forces and Means which is “objective indicator of the combat power of opposing sides, which allows for a determination of the degree of superiority of one of the sides over the other (Reach et al., 2020, p. 16).” UK Defence Doctrine has its own model in which combat power is explained in three dimensions; physical, conceptual, and moral factors(UK Ministry of Defence, 2001).

Common and unique features of these theories and models are presented in Table-1.

Common and Unique Features of Theories and Models of War

|  | **Theoretical Framework** | **Physical Factors** | **Conceptual Factors** | **Moral Factors** | **Strategy** |
| --- | --- | --- | --- | --- | --- |
| Sun Tzu  (1971) | Appraising the war in terms of five fundamental factors and seven considerations. | * Force Strength * Weather * Terrain * Training and execution | * Doctrine | * Moral influence of ruler and commander * Harmony with people * Commander qualities * Justness on reward and punishments | Creates victory. |
| Machiavelli  (2005) | Inferences from Roman and Greek experience. | * Greater number (man and arm) * Training | * Doctrine * Order of the army | * Discipline * Spirit * Confidence * Captain qualities | *Partito* (policy, accumulated patterns in warfare). |
| Jomini  (2008) | Theory of war based on inductions from Napoleon’s way of warfare. | * Proportions and quality of the troops. * Wisdom in plan | * Order of the battle | * Unity in leading cadre * Cause of the action * Enthusiasm * Morale of the armies * Military spirit of nation * Qualities for general | Directs armies to the decisive points, influences results of the battles. |
| Clausewitz  (1989) | Theory of the war based on absolute-limited war approach and paradoxical trinity[[1]](#footnote-1) supported by historical experiences. | * Numerical superiority in overwhelming levels (main determinant of victory) | * Method and routine | * Will power * Skill of the commander * Experience * Courage of the troops * Patriotic spirit | Determinant of victorious, with deciding, time, place, and the force of the engagement. |
| Moltke  (1993) | Contributor to the modern theory rather than creating a full-fledge modern system or model. | * Numerical superiority (offset by leadership and obstacles) * Fire superiority | * *Lehre* (teachings, like separated armies, concentration) * Doctrine is dogmatic. * Combat leadership | * Moral superiority (precondition of victory) * Will | System of expedients, decided according to particularities of situation. |
| Lanchester  (1916) | Linear and N-square law[[2]](#footnote-2) of force attrition model[[3]](#footnote-3) | * Fighting strength (numeric and value) * Weapon efficiency * Training | * Principle of concentration | Morale is treated as equal. | Compelling opponent to divide its forces (weakness of divided forces) |
| Soviet  COFM  (Reach et al., 2020) | Superiority - military balance between two opponents at the global, regional, and local levels. | * *Boevye potentsialy* (combat potentials of weapons and units) * Level of training | * Resiliency of command and control | * Will to fight | Asymmetric strategy may offset advantages of the stronger side. |
| Liddle Hart  (1991) | Using military history to form up a theory in an inductive approach. | * Space to force ratio | * Strategic effects (dislocation and paralysis) |  | Indirect approach creates dislocation and paralysis effects. |
| Dupuy  (1979, 1987) | Creator of Quantified Judgement Model[[4]](#footnote-4) | * Force Strength * Weapon, terrain, weather, air superiority, posture, and training effects | * Time and space * Momentum * Intelligence * Initiative | * Leadership * Combat experience |  |
| BDD  (2001) | Combat power is a sum of physical, conceptual and moral factors. | * Manpower and collective performance * Equipment * Sustainability * Readiness | * Principles of war * Doctrine | * Moral Cohesion Motivation * Leadership | Reflection of both what UK’s Armed Forces will do and how will they do it. |
| USA Doctrine  Combat power elements  (US Department of Army, 2017) | Combat power is analysed in eight elements. | * Force strength * Movement, manoeuvre, and fires * Sustainment * Protection | * Information * Intelligence | * Leadership * Mission command |  |
| Biddle  (2006) | Combining historiography with theory, case method, statistical analysis, and simulation experimentation. | * Material factors | Force employment interacts with other factors to produce battle outcome. | * Morale * Combat motivation * Leadership |  |
| Will to Fight  (Connable et al., 2018) | Will to Fight Model  Literature review, coding, interview, case study, simulation |  |  | * 29 factors and 61 subfactors |  |

Table ‑ Theory and Model of War

## Background

Theories and models of war have enabled to produce main categories of determinants to explain the process and outcome of battle, war, and conflicts. The first one of these is the physical component which constitutes the means to fighting. There is a widespread agreement on its relevance although there are different ways in measuring the effect of it to the overall outcome (Biddle, 2006, p. 21; Clausewitz, 1989, p. 194; Jomini, 2008, p. 136; Lanchester, 1916, p. 42; Tzu, 1971, p. 79; UK Ministry of Defence, 2001, pp. 4–5).

Physical determinants areanalysed extensively due to its measurable nature. Sun Tzu expresses specifically the required force to wage a war and he prescribes force ratios and possible results (i.e., when five times his strength attack him) (1971, pp. 63–80). Clausewitz argues that superiority in numerical sense is important and when it reaches to the overwhelming levels, then it becomes main determinant of victory (1989, p. 194). Jomini, when listing the elements to be victorious in war, mentions superiority in proportions and quality of the troops, with the understanding that although superiority may increase the chances of success in war, but it does not gain battles (2008, p. 28, 136). Lanchester models on explaining force strength also uses number of troops and effectiveness of the weapons, especially the air force uses physical factors as input to determine the victorious side (1916, p. 42). Dupuy force strength value, with which he compares the belligerents is coming from number of personal, effectiveness of weapon (OL**I** value), environmental and operational variables and these are all physical factors (1979, pp. 19–105).

Second category of factors is related with conceptual factors. Sun Tzu claims that these are strategy and doctrine, and they create the victory (1971, pp. 63, 100). In the same manner Clausewitz’s main determinant of being victorious is strategy, not force ratio, with deciding, time, place, and the force of the engagement (1989, p. 194). Jomini too stresses strategy, by directing armies to the decisive points, influences results of the battles (2008, p. 136). Liddell Hart argues that it is more important to produce a favourable decision by perfection of strategy by indirect approach and to get strategic effects like dislocation (1991, p. 324). BDD sees these factors as thought processes, or more specifically, as principles of the war and the doctrine that provide the coherent intellectual basis for the provision and employment of armed forces (2001, Chapter 4, 2011, pp. 4–4). Biddle argues that doctrine and tactics by which forces are used in combat - he names as force employment - shapes role of physical factors and often predetermines winners and losers (2006, p. Preface). Some other scholars analyse decision making processes before war as the determinant factor of its outcome. This decision might be taken by utilizing different decision-making models; rationally (Allison & Zelikow, 1999), incrementally (Lindblom, 1959), or with adopting strategic incremental approach (Zaidi, 2021).

Moral factors are another major group of factors that affect the outcome of wars. Napoleon, perhaps the first name that comes to mind when it comes to moral factors, puts forward an ambitious thesis: “In war, three quarters turns on morale; the balance of manpower counts only for the remaining quarter” (Partington, 1996, p. 489). Sun Tzu names morale and rightness of commander as fundamental factors of war (1971, p. 63). Clausewitz extracts attention to the notion of will as constituent of power of resistance (1989, p. 77) and he names skill of the commander, experience, courage, patriotic spirit as principle moral elements and says these are among the most important in the war (1989, p. 186). He further argues that moral factors largely determine the course of war (Clausewitz, 1989, p. 177). Jomini estimates the influence of moral by factor two (2008, p. 260). Dupuy lists leadership, training, morale, logistics as non-material factors of the battle (1979, pp. 37–38). The BDD defines the moral component as getting people to fight and this necessitates motivation, leadership, and management (2001, 4-3). Morale, cohesion, motivation, discipline, esprit de corps, leadership, ideology, and culture is associated and explained within the framework of *will to fight* concept, which explains motivation as individual and sometimes group or organizational drivers of will to fight (Connable et al., 2018, p. 7-10). While this report defines culture as transmitted behaviours, habits, and beliefs of groups of people (n.d., p. 7), Gat, analysing evolving nature of military thought historically, argues that cultural differences is a dominant factor which has been overlooked (2001, p. 3).

Leadership and management are treated extensively in the moral factors. While Clausewitz emphasizes leader features like skill, courage, and intelligence (1989, p. 186) in a behaviour approach (Yukl & Gardner, 2020, p. 33) it was Moltke’s conceptualization transformed leadership approach on the battlefield with his *notion of command* which necessitates acting independently within overall intent and objective in order not to lose initiative (1993, p. 131). Rothenberg claims that this approach is mostly called as *Auftragstaktik* meaning “mission-command” (1993, p. xi). This approach is treated in the leadership literature as distributed leadership (Kakabadse et al., 2008; Spillane, 2006). US and UK doctrine adopted this approach nearly a century after as *Air and Land Battle* (USA Department of the Army, 1976, p. 3) and *Manoeuvres Approach* (UK Ministry of Defence, 2001, p. 3) respectively. Investigation on the role of leadership in the outcome of militarized conflict suggests higher-quality leaders do generate better outcomes on the battlefield (Arnold et al., 2015, p. 1).

Taken together, literature emphasizes, strategy, doctrine, training, and principles of war as conceptual factors, and leadership, culture, skill of the commander, experience, courage, and patriotic skill as moral factors. Zaidi, with equation of strategy tries to capture combat variables related with all these three components (e.g., uncertainty, friction, chance, moral component, leadership, and information) in which ends are rendered as a function of ways and means (Zaidi, 2014).

## Aim and Objectives

Against this background this research will examine the nature and degree to which conceptual and moral factors affect the outcome of battle, war, and conflict. To this end, the aim of this research is to integrate conceptual and morale factors on the outcome of battles, wars, and conflicts. In order to achieve this aim, two objectives are identified:

* identify the nature and the degree to which conceptual and moral factors affect the outcomes of the battles, wars, and conflicts; and
* explore to what extent these factors impact, and enable, the physical component.

## Problem Analysis

Since conceptual and morale factors are tended to be kept as constant or neglected due to their qualitative nature (Clausewitz, 1989, p. 134; Dupuy, 1979, p. 30; Lanchester, 1916, p. 47) rigorous, and systematic academic treatment stayed limited so far. Theoretical approaches and way of thinking on the determinants on the outcome of battles and wars so far includes mainly physical factors.

Since models are explicit representation of *part* of the reality (Pidd, 2009, p. 10), current models of identifying the determinants of the outcome of the wars, although useful, assessed to be insufficient by not reflecting major part of the reality with the exclusion of conceptual and morale factors. The need to integrate conceptual and morale factors to the model or theory of war is well stated by Biddle (2006, p. Preface), Clausewitz (1989, pp. 134–137), Lancaster (1916, p. 23), and Dupuy (1979, p. 34) but their effects couldn’t have been analysed in a robust manner so far.

That’s why current models have difficulty in explaining outcomes of numerically and technologically inferior forces defeated their opponents like Germans at the Battle of France in WW2 or withdrawal of US-led international force from Afghanistan. Germans arguably would never attack to France in the beginning of WW2 if they were to use current mathematically developed models. Current models cannot explain almost 20 years of efforts of US-led Allied troops inability to deliver security in Afghanistan. These considerations and examples prove that there is a problem in those tools way of representing reality.

### Problem Statement

Current literature and doctrine (as stated explicitly in the British Defence Doctrine- 2003) identifies three components of fighting power: the physical, the conceptual and the moral factors. Current decision support models do not effectively include conceptual and morale factors and are therefore insufficient to explain outcomes of a battle, war, or conflict.

### Considerations

The literature so far presents models for predicting the outcome of the wars composed of based on quantifiable determinants. Gartner alludes to this point with Morgenthau’s approach of realist view of war as a scale that balances bundles of pre-war capabilities (1998, p. 252). Lancaster’s models only take number of troops and the weapon effectiveness as input and excludes training, morale, leadership, and other qualitative factors of fighting strength since, he says, these cannot be put into the equations, and he assumes these factors are equal on both sides (Lanchester, 1916, p. 47). Kirkpatrick detected that while Lancaster’s models were valid in some historical contexts such as in American Civil War, in other scenarios where warfare dominated by technology, they are potentially misleading (2021, p. 43).

Dupuy’s models are evaluating material factors much more detail than Lancaster (It includes OLI values for all weapons and platforms, operational and environmental variables as well). Ciano argues that his combat effectiveness value (CEV) which combines non-material factors in a group is the most controversial and erroneous part of his models since this value is either determined generally (ex. German CEV value is 1.2 of Allied Powers in WWI in western front) or if there is inconsistent result, related factor (such as surprise) is added afterwards to CEV to calibrate the model to give correct value (1988, p. 31). Another weak point of Dupuy’s model, which he himself states, is the subjective selection of the non-material factors which is included to the model in the beginning of the analysis only if evaluators of the models decide to do so (1979, p. 39). Biddle’s model includes further one non-material factor (force employment) of major qualitative features to the current models.

These major models in this field fails to explain significant events like USA withdrawal from Afghanistan, Battle of France in WW2, Battle of Jena and Auerstedt where numerically inferior French troops inflicted heavy losses on Prussian army, or Vietnam War. USA withdrew from Afghanistan after nearly two decades of campaign and Taliban regained control over the country although Afghan Government Forces and its main supporter USA has numerical and technological superiority. Malkasian argues that the thing that enable Taliban to do this was their fight for Islam and the cultural values enshrined in Afghan identity like resistance to occupation (2021, pp. 4–5). Current models cannot explain this withdrawal without taking into consideration of non-material factors.

For the Battle of France in WW II, the whole front is broken by General Guderian corps with only three Panzer Divisions and Motorized Infantry elements, opposed by France forces of 10 Divisions at Ardennes. British Expeditionary Forces dislocated to Dunkirk and French forces dislocated (Hart, 1991, p. 6) to south of France where they were ineffective throughout the war. Inferior by all predictions or force ratios in this decisive point, superior tactic of strategic penetration by independent armoured force combined with effective leadership enabled these victory (Aitken et al., 1994, pt. 1; Hart, 1974, p. 71).

## Theoretical Approach

Clausewitz’s conceptualization of the war and the manner he presents the importance of the numbers seems to be basic to understanding the roots of the problem in the current models. In order to understand real war, Clausewitz analyses the absolute war, like Isaac Newton, who conceptualized the relative motion theories to understand the true motions of the individual bodies in the space (Harper, 2005, p. 592). Clausewitz’s perfect world of the war is absolute war, in which human factors, politics, and elite interests are taken away and each side pushes toward the extremes (extreme use of force, disarming the opponent, maximum exertion of strength) to win the war (1989, pp. 75-77). Then he describes the modifications to this absolutism and says extreme use of force and maximum exertion of the strength is restricted by the limits of the human nature which in turn reduces the power of resistance (1989, pp. 78–89). Prospects of future events, political considerations, and possibility of the peace also prevents sides from employing all available forces (Clausewitz, 1989, pp. 75–80).

Clausewitz’s approach of success on the battlefield is then attributed to the superior numbers only in this absolute mean of the war, when human factors, leadership, morale, will, determination is taken away from analysis. This constitutes his mechanical way of predicting the outcome of the battle. Then he qualifies this by saying that if superior numbers reach to the point of overwhelming, it will counterbalance all other contributing circumstances (strategy, morale and etc.), and that’s why he suggests that bringing as many troops as possible into the engagement at the decisive point as the first principle of strategy (Clausewitz, 1989, 194-195).

This conceptualization is adopted by USA military (Lynch, 2003, p. xxxii), and they postulated six times strength over enemy to attack (USA Department of the Army, 1976, pp. 3–4). Since USA military planners attributed the victory in the WWII to overwhelming numbers (Herbert, 1988, p. 99), they continue to think overwhelming combat force would yield the success (USA Joint Chief of Staff, 2020, pp. IV–33). Vietnam, Korea, Afghanistan, Libya, and Iraq cases have demonstrated flaws in this way of thinking. These predictive models that suggested these campaigns will reach their strategic objectives. In each of these cases they have been successful in achieving the initial war aims. But hey could not attain total victory in the end.

## Thesis Statement

Contemporary predictive models of Force Strength Model (Lanchester, 1916), Quantified Judgement Model (Dupuy, 1979), and Modern System of Force Employment (Biddle, 2006) do not sufficiently consider the conceptual and moral components of combat capability and fighting power and are thus insufficient for a representative indication of outcomes battles, wars, or conflicts, leading to inaccurate decision making at the planning stage. In order to analyse the statement following questions will be answered:

* What are moral and conceptual factors, how have they impacted outcomes of wars and conflicts and to what extent do contemporary prediction models treat the impact of these factors on outcomes of conflicts?
* To what extent do moral and conceptual factors impact outcomes and can these elements be integrated into quantitative and qualitative modelling for more sophisticated predictions?
* How can scholarship and practitioners utilize this new knowledge to inform analysis and development of strategy, policy, and decision making?

## Positioning

Current research positioning is to look at war from strategy, leadership, and morale perspectives and their effects on the battle, war, and conflict outcomes.

The research will use the literature that includes the evaluations of war theories on combat factors (Sun Tzu’s *Art of War*, Clausewitz’s *On War*, Machiavelli’s *The Prince,* *Art of War*, and etc.), models and doctrines developed in the light of these evaluations (Dupuy’s QJM, Lancaster’s Linear and N-square law, Biddle’s Modern System of Force Employment, UK British Defence Doctrine, USA Joint Publications), and previous academic research in this field.

## Methodology, Research Methods

This research will use *sequential mixed method* research design, with qualitative methodology preceding the quantitative one in supporting role (QUAL-->quan) within grounded theory research framework as outlined by Bryman (2016, pp. 572–584, 638–639) to answer research questions on relationship between moral and conceptual factors and outcome of battles, wars, and conflicts. Figure-1 explains the main steps of the research.

Grounded theory approach treats theory as something that emerges out of collection and analysis of data (Bryman, 2016, p. 381). So, in the first phase content analysis on text documents of primary and secondary sources will be used to generate themes from data by examining the patterns in data. These patterns will be examined by key indicators of themes (Bryman, 2016, p. 573). Machine Learning unsupervised text classification technique of content analysis will be used to search *co-occurrence of the words* in documents to uncover themes within a corpus (Nelson, 2020, p. 16). Pattern recognition is used by the key academics in identifying pre-conflict situations to develop an early warning for political situations that may end up with conflict by correlational, sequential, and conjunctural models (Brecke, 1998, pp. 31–37).

Indicators of themes will be identified from literature, like indicators of morale (spirit, will, leadership, professional pride, honour, courage, and perseverance) as explained by Clausewitz (1989, pp. 184–193), or indicators of leadership (*mission command*, in contemporary nomenclature “distributed leadership”) as explained by Moltke (1993, p. 34).

In addition to content analysis, expert interviews will be executed to check the validity of content analysis. This method will allow to interpret data to better inform theory. Combination of content analysis and interview will enable to move between the computational analysis, and interpretive readings of the texts to refine the analysis.

In the second part of research, Natural Language Processing (NLP) will be used to reliably test the validity of the inductively identified patterns in the text (Nelson, 2020, p. 9). This step search whether target indicators are steadily co-located with predictor indicators within the new documents the one that is not used in the content analysis.

Diagram, timeline

Description automatically generated

Figure‑ Research Methods Considerations

## Limitations and Scope

Physical factors that influence the outcome of wars will be explained in general to put the research into context. It is not intended to identify all elements affecting the course of the events in war. Individual and social conflicts will not be subject of this research. Legal issues are also out of scope of the research.

## Research Value

This research will fill the gap of lack of rigorious model to explain the determinants of the outcome of battle, war, and conflicts in a comprehensive manner with combination of robust methodology and power of the artificial intelligence. Latest state of the art language representation techniques will be used to extract relationships between determinants of the battle, war, and conflicts and their outcome.

## Research Ethics

Data honesty will be provided by selecting indicators (named entities) of the themes by unsupervised text classification. Analysis of the themes will be made by relation extraction models of language representation techniques of NLP. These approaches will enable to prevent biases.

## Layout of the Research

In chapter one concept of conflict, notion of battle and war as a form of conflict is discussed. Problem statement, thesis, and research questions are presented. Research methodology and ethical issues are addressed.

In chapter two literature will be examined to understand the nature of the problem and to identify the gap. Research questions will guide literature review. As a result of this chapter theoretical framework will be obtained.

In chapter three research methodology, techniques for data collection and analysis will be explained.

Chapter four will be allocated to the data analysis with content analysis, execution of expert interviews, and NLP process. In chapter five conceptual framework of the research and refined theory will be discussed.

In the final chapter conclusions and recommendations of the research will be presented.

# LITERATURE REVIEW

# CHAPTER TITLE (USE HEADING 1)

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APPENDICES

Whilst Heading 1 to Heading 6 can be used to number headings in the main body of the thesis, Heading styles 7–9 have been modified specifically for lettered appendix headings with Heading 7 having the ‘Appendix’ prefix as shown below.

Appendix Title (Use Heading 7)

Appendix Section (Use Heading 8)

Appendix Subsection (Use Heading 9)

Creating captions in Appendices

If you have chosen to include chapter numbers in your captions then follow the instructions given here to apply the same format to the captions in your appendices. This section explains how to caption the figures and tables in your Appendices, assuming that Heading 7 is numbered “Appendix A” and that the Figures and Tables are going to be labelled ‘Figure A-1’, ‘Figure A-2’, ‘Table B-1’ etc.

You will have to create new, separate labels that look like the ‘Figure’ and ‘Table’ labels you used in the main body of your thesis.

1. Select the **References** tab on the Ribbon then click on **Insert Caption**
2. Click **New Label**. Type **Figure\_Apx** then click **OK**
3. You now have two labels for figures, called **Figure** and **Figure\_Apx**
4. Repeat for table captions.
5. In the **Caption** box, type your caption text
6. Click **Numbering**. Tick **Include chapter numbering** and choose **Heading 7** from the drop-down list of styles and click **OK** twice
7. Your caption should look something like this:

**Figure\_Apx A‑1 This is the caption text for a Figure in the Appendix**

1. Delete the extraneous ‘\_Apx’ from the caption label so it reads:  
   **Figure A‑1 This is the caption text for a Figure in the Appendix**  
   **TIP:** Instead of deleting each ‘\_Apx’ individually use **Find & Replace** to modify all the labels at once.

Creating Lists of Figures and Tables for Appendices

This template already includes a List of Figures and a List of Tables, however you will have to create two new lists for the ‘Figure\_Apx’ and the ‘Table\_Apx’ labels.

1. Place the insertion point on a blank row after the existing List of Figures
2. Select the **Insert Table of Figures** command on the **References** tab of the Ribbon
3. Set the **Caption Label** box to ‘**Figure\_Apx**’ and click **OK**  
   **Note:** Word will put a single blank line between the original and new lists preventing it from appearing as one seamless list. However if you select the blank paragraph between the tables you can hide it by opening the Font dialog box from the Home tab and selecting **Hidden**.
4. Click after the List of Tables and repeat for the Caption Label ‘Table\_Apx’

# Bibliography

**There are no sources in the current document.**

1. Comprising violence (concerns people), play of chance and probability (concerns commander and army), and subordination to policy concerns only the government. [↑](#footnote-ref-1)
2. Where fighting strength is defined as the square of the numerical strength multiplied by the fighting value of the individual units. [↑](#footnote-ref-2)
3. The number of men knocked out per unit time will be directly proportional to the numerical strength of the opposing force. [↑](#footnote-ref-3)
4. Combat power is calculated from the equation of P = S x OE x Q, where: S is force strength (weapons and personnel), OE = environmental factors, Q is quality of troops. [↑](#footnote-ref-4)