CRANFIELD UNIVERSITY

GURKAN YESILYURT

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

CRANFIELD DEFENCE AND SECURITY

LEADERSHIP AND MANAGEMENT

PhD

Academic Year: 2021 - 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

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ABSTRACT

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ACKNOWLEDGEMENTS

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TABLE OF CONTENTS

[ABSTRACT i](#_Toc98240056)

[ACKNOWLEDGEMENTS ii](#_Toc98240057)

[LIST OF FIGURES v](#_Toc98240058)

[LIST OF TABLES vi](#_Toc98240059)

[LIST OF EQUATIONS vii](#_Toc98240060)

[LIST OF ABBREVIATIONS viii](#_Toc98240061)

[1 INTRODUCTION 1](#_Toc98240062)

[1.1 Introduction 1](#_Toc98240063)

[1.2 Background 2](#_Toc98240064)

[1.3 Problem Analysis 5](#_Toc98240065)

[1.3.1 Considerations 5](#_Toc98240066)

[1.3.2 Theoretical Approach to the Problem 6](#_Toc98240067)

[1.3.3 Problem Definition 7](#_Toc98240068)

[1.3.4 Problem Statement 8](#_Toc98240069)

[1.4 Aim and Objectives 8](#_Toc98240070)

[1.4.1 Aim: 8](#_Toc98240071)

[1.4.2 Objectives: 8](#_Toc98240072)

[1.5 Scope 9](#_Toc98240073)

[1.6 Research Value 9](#_Toc98240074)

[1.7 Positioning 9](#_Toc98240075)

[1.8 Research Questions 10](#_Toc98240076)

[1.8.1 Research Question 1: 10](#_Toc98240077)

[1.8.2 Research Question 2: 10](#_Toc98240078)

[1.8.3 Research Question 3: 10](#_Toc98240079)

[1.9 Thesis 10](#_Toc98240080)

[1.10 Concepts and Variable 10](#_Toc98240081)

[1.11 Methodology, Research Methods 11](#_Toc98240082)

[1.11.1 Methodology Considerations 11](#_Toc98240083)

[1.11.2 Research Methods 11](#_Toc98240084)

[1.12 Research Ethics 12](#_Toc98240085)

[1.13 Layout of the Research 12](#_Toc98240086)

[2 LITERATURE REVIEW 14](#_Toc98240087)

[2.1 14](#_Toc98240088)

[2.1.1 Subsection Heading (use Heading 3) 14](#_Toc98240089)

[3 CHAPTER TITLE (USE HEADING 1) 15](#_Toc98240090)

[3.1 Section Heading (use Heading 2) 15](#_Toc98240091)

[3.1.1 Subsection Heading (use Heading 3) 15](#_Toc98240092)

[4 CHAPTER TITLE (USE HEADING 1) 16](#_Toc98240093)

[4.1 Section Heading (use Heading 2) 16](#_Toc98240094)

[4.1.1 Subsection Heading (use Heading 3) 16](#_Toc98240095)

[5 CHAPTER TITLE (USE HEADING 1) 17](#_Toc98240096)

[5.1 Section Heading (use Heading 2) 17](#_Toc98240097)

[5.1.1 Subsection Heading (use Heading 3) 17](#_Toc98240098)

[6 CHAPTER TITLE (USE HEADING 1) 18](#_Toc98240099)

[6.1 Section Heading (use Heading 2) 18](#_Toc98240100)

[6.1.1 Subsection Heading (use Heading 3) 18](#_Toc98240101)

[7 CHAPTER TITLE (USE HEADING 1) 19](#_Toc98240102)

[7.1 Section Heading (use Heading 2) 19](#_Toc98240103)

[7.1.1 Subsection Heading (use Heading 3) 19](#_Toc98240104)

[8 CHAPTER TITLE (USE HEADING 1) 20](#_Toc98240105)

[8.1 Section Heading (use Heading 2) 20](#_Toc98240106)

[8.1.1 Subsection Heading (use Heading 3) 20](#_Toc98240107)

[9 CHAPTER TITLE (USE HEADING 1) 21](#_Toc98240108)

[9.1 Section Heading (use Heading 2) 21](#_Toc98240109)

[9.1.1 Subsection Heading (use Heading 3) 21](#_Toc98240110)

[REFERENCES 22](#_Toc98240111)

[BIBLIOGRAPHY 25](#_Toc98240112)

[Primary Sources 25](#_Toc98240113)

[Secondary Sources 25](#_Toc98240114)

[APPENDICES 29](#_Toc98240115)

# LIST OF FIGURES

**No table of figures entries found.**

LIST OF TABLES

**No table of figures entries found.**

LIST OF EQUATIONS

**No table of figures entries found.**

LIST OF ABBREVIATIONS

|  |  |
| --- | --- |
| IT | Information Technology |
| QJM | Quantified Judgement Model |
| OLI | Operational Lethality Indexes |
| BDD | British Defence Doctrine |
| USA JP | United States Joint Publication |

# INTRODUCTION

## Introduction

The notion of the conflict and its forms is studied extensively to understand the main causes and to provide plausible solutions. Clausewitz argues that conflict is a trial of moral and physical forces through the medium of physical force (1989, p. 127). Rummel takes similar view and sees conflict as pushing and pulling, the process of finding the balance between powers (1976, Chapter 26) and argues that human beings’ nature and needs are the basic reasons of the social conflicts (1977, Chapter 2). 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 only 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 takes another perspective and points to the conflicts between groups from differing civilizations (1996, p. 13).

Since conflict is the process of powers meeting and balancing (Rummel, 1976, Chapter 26), it has levels and forms. For Rummel conflict has four levels; sources (like existence of slaves and the master in a certain society), dispositions of the sources (like slaves wish to be free), situation (if slavery is illegal slaves might protest), and manifestation which is real conflict (slaves struggle to be free) (1976, Chapter 26). This whole process in the end yields a new balance.

When conflict reaches to the level of manifestation, we observe it with multiple forms (Clausewitz, 1989, p. 149; Dubois et al., 1997, p. 17; Rummel, 1979, p. 23). Rummel observes conflict in a baby cry as well as in a struggle between slave and master in a society (1976, Chapter 26). Dubois and his colleagues give all forms of conflict from massive destruction of civil populace to interpersonal conflict (1997, p. 17).

War, as being one form of conflict is also studied and analysed extensively since it is of vital importance to both human life as a matter of life or death and to state as being a road to survival or ruin (Tzu, 1971, p. 63). It has of special importance to statesmen that Machiavelli points out that war is the prince’s most important matter to keep the state live (Machiavelli, 2008, p. 50).

This vital feature of the war makes it an important topic of analysis in all ages (Frankel, 2021, sec. War). Clausewitz sees war as being part of human beings’ social existence (1989, p. 149), and he defines it as clash of opposing mindset and says it is a social activity between actors with a will of their own and with hostile feelings and intentions and emotions (Clausewitz, 1989, p. 76). Some academics treat the phenomena to explore the ways to ending or minimizing the risk of war (Rummel, 1979, p. 22), while some others analyse the subject in order to excel at war fighting (Machiavelli, 2005, p. xiii). There is another category of effort which tries to build models either to understand the nature of war or predict the outcome of future wars. Among others, Lanchester tried to shed light on the relationship between force strength and outcome of the wars by mathematical models of force attrition (Lanchester, 1916, Chapter 5). Dupuy’s’ Quantified Judgement Model tried to quantify combat variables to predict theoretical result of any engagement (Dupuy, 1979, pp. 40–57).

These social and mathematical perspectives of war have concentrated on certain components to explain the process and outcome of wars. 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; Lanchester, 1916, p. 42; Tzu, 1971, p. 79; UK Ministry of Defence, 2001, pp. 4–5). Conceptual component that requires know-how on executing the fighting (Biddle, 2006, p. 73; UK Ministry of Defence, 2001, pp. 4–1). Another group of factors is discussed under the morale component (Clausewitz, 1989, p. 137; Tzu, 1971, p. 63; UK Ministry of Defence, 2001, pp. 4–3).

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 is assessed to be needed. In this research, the factors affecting the outcome of wars will be examined from the perspective of conceptual and morale factors.

## Background

War as a continuation of politics (Clausewitz, 1989, p. 87), is a policy decision which by its nature guides strategy (Howlett & Mukherjee, 2014, p. 65, Zaidi, 2018), in turn becomes the main determinant of the war outcome (Clausewitz, 1989, p. 194; Tzu, 1971, p. 100). This policy decision is generally taken by utilizing different decision-making models; either rationally (Allison & Zelikow, 1999), or incrementally (Lindblom, 1959), or with adopting strategic incremental approach (Zaidi, 2021).

Once it has been decided the prospect of war is further shaped by multiple and complex interplay of factors. Physical variables as determinants of outcome of wars is analysed extensively due to its measurable nature. Sun Tzu’s two of five factors (weather and terrain) to evaluate war decision deals with these variables (1971, pp. 63–71). He ponders about the main requirements to wage in terms of physical quantities (like one thousand four-horse chariots and etc.)(Tzu, 1971, p. 72). Clausewitz also emphasizes the role of physical quantities and states that if superiority of numbers reaches to the overwhelming levels, then becomes main determinant of victory (1989, p. 194). He alludes to total means of an army as a constituent part of power of resistance which is needed to be matched to overcome enemy (Clausewitz, 1989, p. 77). 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 (OLI values), environmental and operational variables and these are all physical factors (1979, pp. 19–105).

Second group of factors that analysed in terms of effects on the outcome of the war deals with intellectual undertakings. Sun Tzu clearly states that strategy creates the victory (1971, p. 100) and he names doctrine as one part of fundamental factors that effects the outcome of wars (1971, p. 63). In the same manner Clausewitz argues that main determinant of being victorious is strategy, not force ratio, with deciding, time, place, and the force of the engagement (1989, p. 194). Biddle later adds doctrine as moderating factor to preponderance of numbers and technology (2006, pp. 29–77). BDD identifies conceptual component as thought processes to develop the ability to fight and contains principles of the war and the doctrine supported by strategy (2001, Chapter 4). USA JP 5-0 recognizes doctrine as part of combat efficiency (2020, pp. III–60) and put it in operational design planning considerations (2020, pp. IV–20).

Morale factors is another major group of factors that effects the outcome of wars. 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 another 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), while Dupuy lists leadership, training, morale, and logistics as non-material factors of the battle (1979, pp. 37–38). Connable and his colleagues associated morale, cohesion, and discipline with the *will to fight* and they provided a way to assess the level of morale of troops for military planners (2018, p. 10). BDD defines moral component as persuading the people to fight and this necessitates motivation, leadership, and management (2001, Chapter 4). USA JP states will to fight, leadership, morale, and decision as intangible force planning consideration in operational design(2020, pp. IV–20).

The factors discussed so far alongside with other essential variables of the war environment like uncertainty, friction, and chance has been factored into *equation of strategy*, in which ends are rendered as a function of ways and means (Zaidi, 2014).

## Aim and Objectives

Against this background this research will analyse the effects of the conceptual and morale factors on the outcome of the war by elaborating the equation of strategy of Zaidi (2014). This approach is not challenging the utility of current models but will complement them to *explore* other qualitative factors to add new information to the literature.

### Aim:

This research will aim to *explore* effects of conceptual and morale factors on the outcome of wars.

### Objectives:

In order to achieve this aim, this research identifies two objectives.

* To examine the effect of decision-making models on the course of war.
* To *explore* the nature and the degree of the effects of conceptual and morale on the outcome of wars.
* To *explore* what extent does battle influence the outcome of war.

## Problem Analysis

### Problem Definition and Problem Statement

Theoretical approaches and way of thinking on the determinants on the outcome of wars so far includes mainly physical factors. Conceptual and morale factors either assumed to be equal or not represented within the models due to their unquantifiable nature.

Since models are representation of the reality (Pidd, 2009, p. 10), current models of identifying the determinants of the outcome of the wars assessed to be insufficient by not reflecting major part of the reality with the exclusion of conceptual and morale factors. Current models are useful in assessing the results of *battles* where tactical and quantifiable factors are dominant and intellectual factors are reduced to minimum (Clausewitz, 1989, p. 178). On the other hand, assessment of war necessitates to evaluate conceptual and morale factors because as Clausewitz puts it strength of will to make an important decision in strategy than in tactics (1989, p. 178).

That’s why current models cannot explain outcomes of numerically and technologically inferior forces defeats their opponents. Germans would never attack to France in WW2 if they were to use current mathematically developed models. Current models including Biddle (because his main argument was force employment, the one Americans is excellent at) would have said Taliban can never triumph in Afghanistan. These considerations and examples prove that there is a clear problem in those tools way of representing reality.

Against this background, problem definition for this research is defined as *current models in assessing outcome of wars are basically using physical factors as determinants, and this is not reflecting reality and insufficient to explain major wars.*

### Considerations

The literature so far presents models for predicting the outcome of the battle composed of based on quantifiable determinants. 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 Lancester’s models were valid in some historical contexts such as in Americal Civil War, in other scenarious where warfare dominated by technology they are potentially misleading (2021, p. 43).

Dupuy’s models are evaluating material factors much more detail than Lancaster (OLI values for all weapons and platforms, operational and environmental variables as well). 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 (Ciano, 1988, p. 31). Another weak point of Dupuy’s model is the subjective selectness of the non-material factors which is included to the model in the beginning of the analysis only if evaluators of the models detect any discrepancy (Dupuy, 1979, p. 39). Biddle’s model includes only one non-material factor (force employment) of major qualitative features which is laid down in the literature.

These major models in this field fails to explain significant events like USA withdrawal from Afghanistan, Battle of France in WW2, or major battles in Vietnam War. For the USA withdrawal from Afghanistan, world’s biggest military spender, $778 billion in 2020 (Sipri, 2021, para. 5), USA, has had to withdraw 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 make Taliban powerful was their fight for Islam and the cultural values enshrined in Afghan identity like resistance to occupation (2021, pp. 4–5). Current models including Biddle’s one (because his main argument was force employment, the one Americans is excellent at), 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, against France forces of 10 Divisions at Ardennes and dislocated BEF forces to Dunkirk and French forces to south of the country 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 to the Problem

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. 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. Realities, prospects of future events, political considerations, and possibility of the peace also prevents sides from employing all available forces. In reality opponents use their physical and moral forces in this limited sense (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.). 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, 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.

## Research Questions

### Research Question 1:

What are conceptual and morale factors that effects the outcome of wars?

### Research Question 2:

How much conceptual and morale factors *affect the variation* of the outcome of wars?

### Research Question 3:

To what extent do conceptual and morale factors *mediate* the effects of physical factors?

## 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.

## Research Value

This research is expected to provide contribution to literature *new knowledge* by analysing the effects of conceptual and morale factors on the outcome of the wars in inductive approach.

## Positioning

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

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, 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 strategy, with qualitative methodology preceding the quantitative one in supporting role (QUAL-->quan) as outlined by Bryman (2016, pp. 638–639).

In the first qualitative research grounded theory approach will be utilized to generate theory, since the literature indicates no models for assessing the conceptual and morale factors on the outcome of wars. Once theory about relationship between these factors and outcome of war is generated with a new model through grounded theory, case study analysis (like Vietnam War, the US involvement in Afghanistan, and etc.) will be implemented to assess the robustness of the model.

## Research Ethics

## Layout of the Research

In this chapter (Chapter one) the general context has been set up. Questions has been so far responded with regard to what will be studied, why this research is being conducted, and how it will be conducted. Aim, objectives, questions, value, and limitations of the research has been articulated.

In Chapter two current literature will be summarized to explain what kind of approaches and models are being used so far.

In Chapter three theoretical framework will be presented to explain the factors effecting the outcome of the battle (variables) and their relationships, data collection and analysis methods.

In Chapter four how the research was carried out will be explained.

In Chapter five qualitative model will be tested quantitatively.

# LITERATURE REVIEW

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# CHAPTER TITLE (USE HEADING 1)

## Section Heading (use Heading 2)

### Subsection Heading (use Heading 3)

# CHAPTER TITLE (USE HEADING 1)

## Section Heading (use Heading 2)

### Subsection Heading (use Heading 3)

# CHAPTER TITLE (USE HEADING 1)

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### Subsection Heading (use Heading 3)

# CHAPTER TITLE (USE HEADING 1)

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## Section Heading (use Heading 2)

### Subsection Heading (use Heading 3)

# CHAPTER TITLE (USE HEADING 1)

## Section Heading (use Heading 2)

### Subsection Heading (use Heading 3)

# CHAPTER TITLE (USE HEADING 1)

## Section Heading (use Heading 2)

### Subsection Heading (use Heading 3)

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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**  
   Repeat for table captions.
4. In the **Caption** box, type your caption text
5. Click **Numbering**. Tick **Include chapter numbering** and choose **Heading 7** from the drop-down list of styles and click **OK** twice
6. 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’