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EFFECTS BASED WARFARE: THE SUM OF PREVIOUS EXPERIENCE?

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EFFECTS BASED WARFARE:
THE SUM OF PREVIOUS EXPERIENCE?

ABSTRACT

Effects Based Warfare (EBW) describes a novel Western conceptual approach to warfare within which the effects that accrue during war are consistent with, and limited to, those effects envisaged during the planning process. EBW covers action at every level of warfare. It embraces any activity that seeks to influence allies, adversaries, and neutrals, and it demands coherent aftermath planning. Further, it demands inputs from all government departments rather than solely from military sources. EBW is therefore an holistic, pan-governmental construct.

The aim of this thesis is to determine whether EBW is an original model of warfare or merely the sum of previous experiences. To resolve this matter the dissertation covers five broad areas: *Understanding EBW*, which outlines the context for EBW and describes the contemporary Effects Paradigm from first principles; *American Origins*, which looks at US inputs to the model, combining detailed historical approach with recent doctrinal developments; *UK Origins*, the UK input to EBW, which analyses a series of groundbreaking governmental papers issued between 1999 and 2004; *Operational Case Studies*, a set of four discrete historical case studies which from an EBW perspective involve increasing levels of complexity (this adds substance to the conceptual elements of the thesis); and *Time for Change? The Early 21st Century* which analyses the strategic tapestry of the early 21st Century, delving into matters ranging from the impact of globalisation upon the wider security environment to increasing influence of the media and the re-emergence of humanitarianism.

In support of the above aim this thesis seeks to prove three fundamental contentions. First, the extant Western approach to warfare is the product of a previous era - the Cold War and its immediate aftermath - which has failed to develop sufficiently to meet the unique demands of the 21st Century. Hence it is ill-equipped to deliver enduring international security today. Second, an alternative approach began to coalesce shortly after the collapse of the Berlin Wall. This was due initially to the efforts of various US doctrinal theorists, but after their initial mark was made, the baton subsequently picked up by the UK. Indeed within 5 years of this happening, a viable if immature effects paradigm had emerged. Third, whilst the mantra that 'wars have always been conducted for effect' may true, at least at the strategic level, within the context of EBW it is irrelevant; because as this thesis will show, the issue at stake is not whether effects occur *per se* - which is a given - but the degree to which cause and effect are considered by planners throughout the full depth of warfare.

CONTENTS

CHAPTER FOUR: OPERATIONAL CASE STUDIES

CHAPTER FIVE: TIME FOR CHANGE? THE EARLY 21ST CENTURY

GLOSSARY

CoG.....Centre of Gravity

DfID.....Department for International Development

EBA.....Effects Based Approach

EBAO.....Effects Based Approach to Operations

EBO.....Effects Based Operations

EBW.....Effects Based Warfare

FCO.....Foreign and Commonwealth Office

JDCC.....Joint Doctrine and Concepts Centre

NCC.....Network Centric Capability

NCW.....Network Centric Warfare

NEC.....Network Enabled Capability

NVA.....North Vietnamese Army

OFT.....Office of Force Transformation

OODA.....Observe, Orientate, Decide, Act

OSD.....Office of the Secretary of Defence

PCRU.....Post Conflict Reconstruction Unit

SAC.....Strategic Air Command

SDR.....Strategic Defence Review

TRADOC.....Training and Doctrinal Command

WMD.....Weapons of Mass Destruction

LIST OF ILLUSTRATIONS

INTRODUCTION

This introduction comprises 6 sections: Aims and Objectives; Methodology; Literature and Source Review; Definitions; and, to set the scene for the opening chapter, a brief discussion of the Origins of EBW.

AIMS AND OBJECTIVES

The aim of this thesis is to assess whether EBW merits recognition as an original model of warfare, or whether it is the sum of previous experience. Its critics believe it to be the latter and they suspect that although it promises much, in practise it will deliver no more than the current paradigm. Naturally its supporters take an opposing stance, believing that EBW has both codified and formalised the best of the current model of warfare, and that it has also added a new dimension to warfare: that of delivering physical and cognitive effects across the full spectrum of conflict including the aftermath. In seeking to resolve this debate, the aim of this thesis is supported by the following objectives:

1) **Describe The West's Extant Approach To Warfare.**

   a) Highlight changing threats since the collapse of the Berlin Wall.

   b) Discuss the suitability of West's extant model of warfare to meet the new challenges.

2) **Describe The Contemporary EBW Paradigm.**

   a) Outline Foucault's contention that that each new era produces its own unique mindset of thought.

   b) Discuss differences in interpretation regarding the politics / war dynamic.

   c) Explain 'effects and outcomes'.

   d) Explain the centrality of 'winning the peace' within the EBW Paradigm.

3) **Assess The US Input To The Modern EBW Paradigm.**

   a) Discuss the roots of modern US operational level doctrine.

   b) Explain the significance of America's remote strategic roots.

   c) Explain the significance of the Vietnam Experience.

   d) Establish how early TRADOC work led to a subsequent reappraisal of doctrine.

   e) Discuss America's wider approach to warfare / battle.

4) **Assess The UK Input To The Modern EBW Paradigm.**

   a) Explain the significance of these inputs and outline the timescale involved.

   b) Test the UK model for completeness.

5) **Analyse Four Unrelated Case Studies Of Differing Complexity And From Different Periods.**

   a) Use historical evidence to add to the conceptual elements of this thesis.

   b) Use studies as frameworks for analysis to allow pertinent EBW themes to be identified.

6) **Describe the Strategic Realities of the Early 21st Century.**

   a) Discuss the rise of globalisation; the media; and the resurgence of humanitarianism.

   b) Discuss the cultural dimension, including rationality and the cognitive domain.

   c) Discuss the 21st Century aftermath.

   e) Discuss the utility of planning warfighting and post-warfighting activities separately (current model of warfare) or together (EBW aspiration).

Finally, it is neither desirable nor indeed feasible to cover every aspect of warfare within this thesis, hence three sets of factors fall outside its scope. First, pre-Manoeuvre Warfare does not feature other than to illustrate specific EBW themes. So, for example, Operation Chastise was selected as an Case Study because it shows how even a straightforward 'one-off' operation can generate second and third order strategic, operational, tactical *and* psychological effects. Similarly, Counter-Insurgency does not feature as such, yet two examples (the British experience in Malaya, and Magsaysay's methodology for countering the Hukbalahaps) are included because they illustrate perfectly the EBW mindset. Second, the tone and approach of this thesis are unashamedly Anglo-American. This is deliberate, and it reflects the incontrovertible fact that the modern EBW paradigm is an Anglo-American construct. Of course, in time its use might permeate throughout NATO, the EU and perhaps even the UN; but if this happens it will be because NATO procedures generally mirror those of the US, and the EU follows NATO. It will not be because each participating nation inputted to its development. Third, the thesis makes no attempt to compare the American 'way of war' with that of the British. Such a comparison is certainly possible, and it would no doubt make for a worthy dissertation in its own right. But it would be inappropriate within this thesis because it would widen the focus unacceptably, and thus risk the thesis being pulled in two directions. Moreover, comparing American and British 'ways' has little to do with EBW *per se*. Both countries played their role in EBW's development, but as we shall see, they did so at different times and in different ways. With this in mind, this thesis seeks to unearth what the EBW paradigm comprises, who contributed what, and when the key events occurred.

METHODOLOGY

The study opens with an explanation of the West's current approach to warfare, which for want of an official title the author has termed 'the Manoeuvrist Paradigm'. Covering this ground is necessary in order that like may be compared with like: the current model with EBW. That said, much of the old model is subsumed within EBW. Therefore attention focuses on key differences, such as the current model's quest for speedy results versus EBW's desire for holistic aftermath planning. This section is followed by an appraisal of the context for EBW, which - on the back of Foucault's claim that each new era produces its own unique mindset of thought, its 'episteme' [1] - suggests that not all military developments are evolutionary. This opens the possibility that EBW could be an original construct, or at least contain sufficient original elements to merit accreditation as one. The focus then shifts to a brief discussion of the politics / war dynamic. This shows that there is more than one way to view this rather intricate relationship: either as associated or disassociated activities. This is a key area of discussion, and the thesis contends that EBW supports the former view whilst the current model supports the latter. Indeed so central is this theme to the topic in general that it recurs throughout much of this thesis. The first chapter finishes by outlining the Effects Paradigm from first principles, in an attempt to demystify the model and to clarify any fundamental misunderstandings.

Chapter 2 analyses American inputs to the model. It takes a broad historical approach, and it contends that whilst the early high visibility inputs to EBW date from around the 1991 Gulf War, America's past is as relevant as more recent developments. Beginning with America's catharsis in the wake of Vietnam, this chapter establishes that significant doctrinal changes occurred within a short period of time, and that these changes were both deliberate and fundamental. This adds credibility to Foucault's epistemic model, and in doing so it reaffirms the possibility that EBW could indeed encapsulate more than previous experience. This vital background provides the context to undertake a meaningful assessment of how EBW evolved out of Manoeuvre Warfare. Next, the focus shifts to whether there is 'A Uniquely American Way of War'. Using Russell Weigley's *The American Way of War* as its anchor, this section considers America's wider approach to warfare. It asks whether current US doctrine is governed as much by America's remote past as by more recent developments. This analysis prompts a key question: does an American way of war exist, or does America instead have a way of battle - a less mature (and hence less effective) paradigm for addressing conflict? The chapter concludes with an overview of American input to the modern effects paradigm. Using Colin S Gray's *Strategy in the Nuclear Age: The United States 1945-1991* as a counter to Weigley's work, this section analyses the roots of America's wider strategic culture. It then considers the impact of highly influential US doctrinal theorists - John Boyd, John Warden and Dave Deptula – before ending with a brief overview of how Network Centric Warfare (NCW), the US variant of Network Enabled Capability (NEC), links to EBW.

Chapter 3 assesses the UK input to EBW. It achieves this by analysing a series of governmental papers. This approach reveals that EBW development increased with each successive paper and that by the time the final paper was written - just five years after the original one - EBW had coalesced around the concept of EBA, an holistic approach to warfare unique to the UK. Analysis begins with 'The Origins of EBA', which assesses through an effects lens the 1999 UK Government White Paper *Modernising Government*. This made explicit the government's aspiration that departments should work more

[1] Chapter 1, page 20.

closely together, which - although not known at the time - was a precondition for EBA. Next is a review of the *New Chapter to the 1998 Strategic Defence Review*, an important work as it stated that future military options would henceforth be framed in terms of desired effects. The next section, 'Network Centric Capability (NCC)', shows how an effects model was predicated with a robust network at its core. Focus then shifts to 'EBA Consolidation', which started in July 2002 with the issue of a supporting adjunct to the *New Chapter*. This added detail to five previously identified strategic effects. Next is a brief review of *Delivering Security in a Changing World*, which used the term 'effects based operations and planning' for the first time. By way of concluding, the chapter seeks evidence to demonstrate the completeness or otherwise of the UK model today. Surprisingly, it discovers that the UK government has yet to develop an overarching national philosophy applicable to all government departments.

Chapter 4 adds substance to the conceptual elements of the thesis by analysing four discrete historical case studies: Operation Chastise, the Dambusters raid of 16/17 May 1943; Operation Black Buck, the Vulcan bombing raids conducted against Port Stanley airfield from 1 May to 12 June 1982; Operation Allied Force in Kosovo, NATO's final act of warfare in the 20th Century; and Operation Phantom Fury, the coalition forces' 2004 assault on Fallujah. These studies are viewed retrospectively, mindful that some details that are known know today were not known at the time, and that attitudes and culture change constantly, hence today's interpretation of events may differ significantly from those in the past. The studies are scrutinised in increasing detail, with each one serving as a springboard for analysing the next study. The purpose of the chapter is to use these studies as frameworks for analysis so that pertinent EBW themes may be identified.

Chapter 5 is entitled "Time for Change: The early 21st Century". This appraisal is the *raison d'être* of the thesis, as it contends that whilst threats have changed significantly since the collapse of the Berlin Wall, the West's model of warfare has failed to adapt accordingly. Rather than focusing on purely military issues, it analyses the broad strategic tapestry of the early 21st Century, considering matters such as the impact of globalisation on the wider security environment and the influence of the media. Noting that in some cases today's military challenges are markedly different from their predecessors, it accepts that the West's armed forces have adapted with great skill and no small amount of effort, but it asks whether this accomplishment fully addresses the wider security concerns. Having determined that the answer is 'no' it suggests that in this new era, several traditional factors need to be better understood, such as understanding culture and rationality - both of which feature within EBW in a way that is sought within the current model of warfare. It concludes with a brief discussion on 'The 21st Century Aftermath'. This builds on previous discussions, noting that in the wake of Iraq and Afghanistan, the aftermath of warfare now needs to be considered as never before. This matter is analysed in some detail, together with the related issue of whether warfighting and post-warfighting activities should be planned separately (as happens at present) or together (an EBW requirement).

Two further considerations apply regarding methodology. First, the thesis covers the period up to and including July 2005. No new material has been added since that time due to the extraordinarily rapid pace of change in the wake of the Iraq and Afghanistan conflicts. Second, although this thesis makes no attempt to 'sell' EBW, nonetheless it delves into areas which in the normal manner of historical research might ordinarily remain undisturbed. This approach is deliberate; indeed given the context within which EBW emerged, it is essential. Understanding the new strategic realities is as important as

understanding the extant American approach. In similar vein, understanding America's remote past is no less important than analysing the UK Government's early White Papers. even though they make no mention of EBW *per se*.

LITERATURE AND SOURCE REVIEW

Most of the literature and sources referred to throughout this thesis have been drawn from the following pools: governmental, academic, military, media, the internet, and some highly influential individuals. Equal weight has been given to all. Those featuring in the bibliography have informed this work in some way, but not all have been drawn upon for direct attribution. Sources mentioned below were particularly relevant. They are presented here in abridged form. Full details are in the bibliography.

Chapter 1 'Understanding EBW' focuses on the Manoeuvrist Paradigm, Manoeuvre Warfare and the Manoeuvrist Approach. Literature ranges from the UK's high level Joint Doctrine Publication 0-01, Edition 6, *UK Glossary of Joint and Multinational Terms and Definitions*, to the operational level Joint Warfare Publications 0-01 and 5-00, *British Defence Doctrine (Second Edition)* and *Joint Operations Planning* respectively. US Army Field Manual 100-5, *FM 100-5 Operations*, adds a useful American perspective. Section Two, 'The Context for EBW', is predicated upon Foucault's epistemes as outlined in *The Order of Things: An Archaeology of the Human Science*. Given the aim of the thesis, knowledge of this is essential albeit Foucault's book plays no role after introducing the concept. The 'Politics / War Dynamic' draws upon Sun Tzu's *The Art of War*, the *Selected Military Writings of Mao Tse-Tung* and Clausewitz's *On War* in equal measure. together with interpretation of the latter by Christopher Bassford in *John Keegan and the Grand Tradition of Trashing Clausewitz*, and by Michael Handel in *Masters of War: Classical Strategic Thought*. Much of the 'Contemporary Effects Paradigm' material came from the author, who informed manuals on the subject during its earliest stages while serving as a campaigning specialist at the UK's Higher Command and Staff Course, Shrivenham. For 'Effects and Outcomes' three primary sources were indispensable: Donald Lowe and Simon Ng's *Effects-Based Operations: Language. Meaning And The Effects-Based Approach*; Ed Smith's *Effects Based Operations: Applying Network Centric Warfare in Peace, Crisis, and War*; and US Joint Forces Command White Paper Version 1.0, *A Concept Framework for Effects Based Operations*. For matters relating to the aftermath, Barry Posen's *The War for Kosovo: Serbia Political-Military Strategy* proved extremely helpful. 'Winning the Peace' was compiled from several media reports. Whilst all of the sources mentioned above provided useful collateral, the gist of the much of chapter flowed from discussions and interviews held with several influential military officers at Shrivenham, and in particular General Rupert Smith.

Chapter 2. American Origins, owes much to Russell F Weigley's *The American Way of War: A History of United States Military Strategy and Policy*. This set the tone for examining America's remote past to see how it might have influenced modern American military strategists. Weigley's work was counterbalanced by Colin S Gray's *Strategy in the Nuclear age: the United States, 1945-1991* and by Martin H Halperin's *Contemporary Military Strategy*. Robert M Citino's excellent *Blitzkrieg To Desert Storm: The Evolution of Operational Warfare* supported Halperin's work, and was unrivalled as a source for considering 'The Roots of Modern US Operational Level Doctrine'. Regarding America's period of introspection following Vietnam, Dr Henry Kissinger's personal insights during two informal discussions were irreplaceable. The Vietnamese perspective

was provided by Ngo Vinh Long in the form of two essays: *Vietnam's Revolutionary Tradition* and *The Franco-Vietnamese War 1945-1954: Origins of US Involvement*, which together with General Vo Nguyen Giap's *The Political and Military Line of Our Party*, featured in *Vietnam and America: The Most Comprehensive Documented History of the Vietnam War*. Indeed this large collection of primary source essays proved to be invaluable. Mao Tse-Tung's *Yu Chi Chan, Guerrilla Warfare* shed further light on this matter, as (unexpectedly, given its title) did Major-General John Kiszely's *The British Army and Approaches to Warfare since 1945*. This was particularly useful in considering the role and influence of Robert S. McNamara. Reflecting on this very aspect many years later, McNamara and Brian Vandemar's *In Retrospect: The Tragedy And Lessons Of Vietnam* amplified numerous areas pertinent to EBW. William Lind's *Some Doctrinal Questions for the US Army* was another key work; this, together with Major Paul H. Herbert's *Deciding what has to be done: General William E. DePuy and the 1976 Edition of FM 100-5, Operations* provided much useful background. Turning to the 'US Input to The Modern Effects Paradigm', David Fadok's *John Boyd and John Warden: Air Power's Quest for Strategic Paralysis* provided in-depth analysis of the enduring influence those two airmen. Major General David Deptula's first hand accounts *Effects-Based Operations: A US Perspective* and Effects *Based Operations: Change in the Nature of Warfare* were used extensively, both to clarify points of detail regarding Operation Desert Storm, and to make sense of some of the earliest inputs to EBW.

Numerous HM Government or government-derived primary sources underpinned Chapter 3, UK Origins. In addition to those outlined under 'Methodology', the July 2004 pamphlet entitled *Delivering Security in a Changing World - Future Capabilities* was another key source, particularly regarding Network Enabled Capability (NEC).

Primary sources for Chapter 4, the Operational Case Studies, included several retrospective discussions with General Rupert Smith regarding Kosovo. The author served as an Air Force Advisor to General Smith in Bosnia, and in this capacity he worked alongside Major Milos Strankovic, the principal UN translator for General Rose and later General Smith. Stankovic's written account[2] proved invaluable. So too did *Kosovo Lessons From the Crisis*,[3] an official UK Government publication listing the factors most likely to have been influential in securing Milosevic's capitulation. Turning to Fallujah, numerous first hand media reports were used - indeed these were the only relevant primary sources of significance available at the time. The Falklands example was informed at the tactical level by discussions with numerous veterans, most notably Major General Sir Julian Thompson, the former commander of Task Group 317.1, who on two occasions co-chaired with the author formal discussions on this subject amongst military officers. His unique perspective was supplemented by Admiral Sandy Woodward's excellent personal account of the campaign.[4] For Operation Chastise the internet provided the necessary facts and figures. In this capacity it was no less authoritative than the sources mentioned above.

Chapter 5 'Warfare in the Early 21st Century' is largely conceptual. Here the primary sources range from a Hans Blix presentation and subsequent 'fireside chat' at Oxford

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[2] Stankovic, Milos, *Trusted Mole: A Soldier's Journey into Bosnia's Heart of Darkness*, London, Harper Collins, 2000, p 275.

[3] *Kosovo Lessons From the Crisis*, Presented to Parliament by the Secretary of State for Defence by Command of Her Majesty, UK MOD, June 2000, Cm 4724.

[4] One Hundred Days: The *Memoirs of the Falklands Battle Group Commander*, London, Harper Collins, 1992.

University in 2004 on the subject of Iraq, to Ludendorff's *The Coming War* and Mao Tse-Tung's *Unrehearsed Talks and Letters:1956-71*.[5] The latter added weight to key observations made by David G Marr, the first Vietnamese-speaking US Marine sent to Vietnam,[6] on the utility of cultural awareness, and to Paul K Davis's analysis of human behaviour during the Cuban Missile Crisis.[7] Interviews with Dr Karen Carr, Director of Future Systems at BAe Human Resources, proved invaluable in making this section relevant for the 21st Century. Secondary sources were similarly fruitful; for example Milosevic's claim, widely reported in the media, that NATO was "not willing to sacrifice lives to achieve our surrender. But we are willing to die to defend our rights as an independent sovereign nation"[8] provided a unique and highly pertinent insight regarding his mindset - and therefore to his cognitive domain - at that time. and. During the analysis of the aftermath of war in the 21st Century, the internet had no peer; the testimony of those involved in Iraq's aftermath planning proved crucial in understanding how this complex matter is currently addressed.

DEFINITIONS

EBW

There is no commonly agreed definition of EBW. This is surprising, and in common with many matters concerning EBW, it seems to mean different things to different people. In essence it *covers action at every level of warfare, and it embraces any activity that seeks to influence allies, adversaries, and neutrals*.[9] Rudimentary though this explanation might be, as a working definition it fulfils the requirements of this thesis. In fact it covers three broad areas. First, there is *action at every level of warfare*. This makes EBW most unusual. Indeed apart from Total War - wherein all national assets may be called upon in the pursuit of strategic survival - other models of warfare tend to focus on battle rather than on warfare in its wider sense. Consequently defeating the enemy's military, normally as swiftly as possible, routinely assumes primacy over setting the conditions for enduring peace: a difficult enough task in itself, but all the more so when it is undertaken mindful of cultural and religious sensitivities.

All models of warfare accept that actions at one level can, on occasion, affect the other levels. However, EBW does not allow any single level of warfare to become marginalised within the wider planning process. So whereas the focus in Manoeuvre Warfare is at the joint operational level - and during the warfighting stage it shifts largely between this and the tactical level - EBW establishes linkages across the full spectrum of warfare.

The second thread within the definition is that EBW *embraces any activity*. Because other models focus on the fighting phase, activity is usually directed against the sources from which the enemy derives its strength: normally its military forces. Yet EBW embraces all activities, be they economic, diplomatic, governmental (or even non-

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[5] Mao Tse-Tung, *Unrehearsed Talks and Letters: 1956-71*, Ed Stuart R. Schram, London, 1974, p 128.
[6] David G Marr, The Rise and Fall of "Counterinsurgency": 1961-1964, in Vietnam and America: The Most Comprehensive Documented History of the Vietnam War, Gettleman, Marvin E; Franklin, Jane; Young, Marilyn B; and Franklin, Bruce (Eds), Grove Press, New York, 1995.
[7] Paul K Davis, *Effects-Based Operations, A Grand Challenge for the Analytical Community*, RAND, Santa Monica, California, 2001.
[8] Interview with Milosevic, *United Press International*, April 30, 1999.
[9] Author's definition.

governmental) and it places considerable importance on harmonising these different strands. Consequently EBW requires all organs of government to work together, with a common understanding, in pursuit of identical objectives.

The third thread concerns the target audience: *to influence allies, adversaries, and neutrals*. Most paradigms focus on the enemy at the expense of considering the consequences of their actions on allies and neutrals. These effects may be positive or negative, temporary or permanent, physical or psychological - the list of permutations is vast. However, if any of these effects are marginalised, the victor's status within the international community can be damaged long after the war is over. EBW seeks to minimise, if not eradicate, this marginalisation.

There is much within this working definition to suggest that some elements of EBW are original and therefore unique. Nonetheless, EBW does not claim to encompass everything pre-EBW. However, as might naturally be expected, it does take into account the enduring lessons of warfare that have been gleaned by previous generations.

EBA

In most EBW literature - and in almost all non-UK literature - the term EBA normally exists only in the title, and in this capacity it serves primarily to introduce EBO (see below) to the reader. The UK's stance is unique, however. According to Air Vice-Marshal Iain MacNicoll, Director General of the UK's Joint Doctrine and Concepts Centre, EBA is "the co-ordinated application of capabilities, drawn from the three instruments of Power in order to achieve a desired strategic aim".[10] The three instruments of Power are diplomatic, economic and military means. The UK is unusual in defining EBA, and even more unusual in declaring that EBA, a subset of EBW, covers activity at the pan-governmental level. Within the UK paradigm, the level below EBA is EBO.

EBAO

The US paradigm differs from that of the UK, with the term 'Effects Based Approach to Operations' (EBAO) beginning to gain currency. This is not a universally accepted term, even within the US, probably because the paradigm is still immature. Nonetheless, it is included here for completeness. According to the United States Joint Forces Command, EBAO comprises "actions designed to bring about a desired result by integrating military actions with those of other instruments of national power".[11] It adds that "EBAO is an evolving idea that has been characterized as 'an effects-based approach to joint operations' and as 'effects-based thinking' in the application of operational art and design".[12] Within EBAO, the planning and conduct of operations move away from a predominantly "force-oriented, military-on-military approach to one that facilitates the application of all elements of national power (Diplomatic, Information, Military and Economic, or DIME) against the interdependent systems (Political, Military, Economic, Social, Information and Infrastructure, or PMESII) that comprise the operational

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[10] *The UK Approach to the Planning, Execution and Assessment of Effects-Based Operations*, Joint Doctrine and Concepts Centre presentation given by Air Vice-Marshal Iain MacNicoll, undated. Available in full at http://www.defence.gov.au/strategy/fwc/documents/ebo_mcnicoll.pdf

[11] *Effects Based Approach to Operations*, United States Joint Forces Command website, undated. http://www.jfcom.mil/about/fact_ebo.htm

[12] Ibid.

environment".[13] It may thus be seen that EBAO is similar to EBA - in that it integrates all instruments of national power (albeit the US recognizes four instruments whereas the UK only recognizes three) - but it differs from EBA in that it is concerned solely with the operational environment. For the purposes of this thesis EBAO may be assumed to be broadly equivalent to EBO, Consequently, in the interests of clarity it is not considered further as a stand-alone strand within this work.

EBO

In contrast to EBW and EBA, there is no shortage of definitions for EBO. The US *Joint Forces Command Glossary* defines it as "a process of obtaining a desired strategic outcome or 'effect' on the enemy, through the synergistic, multiplicative, and cumulative application of the wide range of military and non-military capabilities at the tactical, operational and strategic levels".[14] The UK JDCC's more prosaic definition is: "the co-ordinated application of military and non-military agents to acknowledge specific effects on adversaries, allies and neutrals to obtain a desired objective".[15] Unlike the US definition, the UK version does not view EBO as a process, but rather as a mindset. Moreover, whereas the US definition focuses exclusively on the enemy, the UK version includes friendly forces and neutral players. These are significant differences, and if left unharmonised they could potentially interfere with coalition planning. These are not the only definitions that exist, however. Indeed there are many others. For balance, a further three are included below. They broaden the concept, albeit at a risk of introducing yet more confusion; because they too do not fully support each other. They are:

Paul K Davis, in *Effects-Based Operations, A Grand Challenge for the Analytical Community*: "Operations conceived and planned in a systems framework that considers the full range of direct, indirect and cascading effects - effects that may, with different degrees of probability, be achieved by the application of military, diplomatic, psychological, and economic instruments".[16]

Ed Smith, in *Effects Based Operations, Applying Network Centric Warfare in Peace, Crisis and War*: "Effects Based Operations are coordinated sets of actions directed at shaping the behaviour of friends, foes, and neutrals in peace, crisis and war".[17]

Mann, Enderby and Searle, in *Thinking Effects, Effects Based Methodology for Joint Operations*: "Actions taken against enemy systems designed to achieve specific effects that contribute directly to desired military and political outcomes".[18]

There can be no doubt that from a definitional perspective, confusion abounds. In fact this very observation was made in July 2003 by the US Defence Science Board Task Force on Discriminate Use of Force, which noted that EBO definitions were generally

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[13] Ibid.
[14] http://www.jfcom.mil/about/glossary.htm#E
[15] May 2004 definition.
[16] Paul K Davis, *Effects-Based Operations, A Grand Challenge for the Analytical Community*, RAND, Santa Monica, California, 2001, p xiii.
[17] Edward R Smith, *Effects Based Operations: Applying Network Centric Warfare in Peace, Crisis and War*, CCRP Information Age Transformation Series, Nov 2002, p xiv.
[18] Colonel Edward C Mann, Lieutenant Colonel Gary Endersby, and Thomas R Searle, *Thinking Effects: Effects-Based Methodology for Joint Operations*, Air University Press, Maxwell AFB, Alabama, Oct 2002, p 96.

underpinned by three factors: efficiency, comprehensiveness or speed. After considerable deliberation, in an effort to bring clarity to the topic they produced their own definition: "the systematic and explicit attempt (in planning and executing a campaign with competing objectives) to assess for and adapt to the effects from kinetic and other actions. This includes military and non-military effects, desired and undesired effects, and expected and unanticipated effects".[19]

When the above definitions are tabulated, the differences between them become readily apparent:

	1	2	3	4	5	6	7	8	9
US Joint Forces Command	✓	✓	✓						
JDCC			✓		✓	✓			
Davis			✓	✓			✓		
Smith					✓	✓			
Mann et al	✓			✓					
US DSB TF on Discriminate Use of Force			✓	✓				✓	✓

Figure 1 - Table of EBO Definitions

1. Seek Strategic Outcomes or Objectives.
2. Occur at the Strategic, Tactical and Operational Levels.
3. Use Military and non-Military Means.
4. Within a Systems Framework.
5. Shape Behaviour / Influence Will.
6. Include adversaries, neutrals, friendly forces.
7. Different levels of effect included.
8. Different types of effect included.
9. Unanticipated or negative effects included.

This table highlights not only EBO's relative immaturity, but the fact that whilst it has many facets, no single definition captures it perfectly. Moreover, each of the above definitions could also apply to EBW - and this is a surprising and potentially confusing

[19] *Report of the Defence Science Board Task Force on Discriminate Use of Force*, July 2003. Office of the Under Secretary of Defence For Acquisition, Technology, and Logistics, Washington, D.C. 20301-3140. p 2.

revelation. With this in mind, for the purposes of this thesis EBW and EBO are treated as two halves of the same coin.

Effects

For US Joint Forces Command an effect is "the physical, functional, or psychological outcome, event, or consequence that results from specific military or non-military actions".[20] JDCC defines effects as "the physical or cognitive consequence(s) at any level within the Strategic Environment of one or more military or non-military actions".[21] Smith believes that "an effect is a result or impact created by the application of military or other power";[22] whilst Mann, Enderby and Searle deem effects to be "a full range of outcomes, events, or consequences that result from a specific action".[23] Clearly there is some confusion here too, although in this case the confusion is limited to points of detail.

The key conclusion from all of the above is that neither EBW nor EBO focus exclusively on the enemy, or on their military forces, or on physical results alone. The cognitive dimension also looms large. At times it can be the dominant dimension, at least in planning terms. Note that the words 'physical damage' and 'kinetic effect' are absent from all of the above definitions. This makes EBW very different from the West's current model of warfare, the Manoeuvrist Paradigm.

The Manoeuvrist Paradigm

The term 'Manoeuvrist Paradigm' exists only in this thesis. It has been coined by the author to describe *the West's wider approach to warfare following the collapse of the Warsaw Pact*. Therefore it describes a construct that already exists. The name is almost an irrelevance, and it should not be allowed to detract from the overall thrust of this thesis. However, it was chosen because it reflects the profound influence of the Manoeuvrist Approach - an operational level legacy of the 1970s, still in vogue today - upon the West's extant model of warfare. This point is important because a fundamental contention within this thesis is that the West's extant approach to warfare is outmoded, and consequently ill-suited to meet the unique demands of the 21st Century.

It is difficult to define precisely what the Western approach is. Nowhere is the current model (named or otherwise) articulated in any meaningful sense in modern doctrine. Occasionally it is possible to stumble across some points of detail concerning its inner workings, but these are usually viewed from the perspective of strategy and / or politics. Consequently those who seek a more complete picture must look elsewhere. However, when they do so they soon realise that the Western model of warfare, poorly defined though it is, would appear not to have changed significantly since the 1980s. Of course individual forces have reconfigured in recognition that the world is no longer balanced by two superpowers, hence capabilities have changed, as have platforms, technology, force ratios, and the like. It is also true that the West is now configured for expeditionary warfare, unlike the static forces of just two decades ago. But the *fundamental model of warfare* remains much the same now as it was then. In other words, the Western approach to warfare - as opposed to battle - has ossified.

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[20] www.jtfcom.
[21] JDCC Paper *The UK Military View of Effects - Definitions and Relationships*, undated.
[22] Smith, Op Cit, p 111.
[23] Mann, Endersby, and Searle, Op Cit, p 96.

At the operational level, Manoeuvre Warfare ("the application of Manoeuvrist thinking to warfighting")[24] remains the favoured model for winning battles. But it is not a true way of warfare. Rather, it is a way of *battle* that seeks to shock and paralyse the enemy, destroying his cohesion and leaving him puzzled as well as defeated in the process. It takes no heed of the aftermath. Indeed it is not required to do so within the wider model of warfare. Were this not the case, it is unlikely that Western soldiers would be in Iraq today - for far longer than those in power thought would be the case - yet the end is still not in sight. *Ipso facto* the West's approach to warfare (as opposed to winning battles) cannot possibly be optimised to meet current conditions, specifically the unique needs of the 21st Century.

The Manoeuvrist Paradigm builds upon the current operational model and adds to it the UK's three instruments of power: diplomatic, economic and military. This amalgam is naturally subservient to the political and strategic dimensions, thus acknowledging that Western militaries carry out Manoeuvre Warfare under the guidance of their political masters (who also oversee the diplomatic and economic strands). This, then, is the 'Manoeuvrist Paradigm'. One important additional point of note, however, is that whilst it purports to be an holistic approach to warfare (recently evidenced by the West's justification for its involvement in Kosovo in 1999[25] and in Iraq in 2003),[26] the author contends that this is not the case. This assertion underpins this thesis.

ORIGINS OF EBW

The evolution of EBW as a coherent, holistic model of warfare occurred over several years, and it would therefore be foolhardy to attempt to tie its origin to a particular date. Certainly the paradigm did not exist prior to 1991 Gulf War, yet by July 2002 the UK Government's *New Chapter to the 1998 Strategic Defence Review* spoke of framing military options as desired effects, rather than defining them in capability or platform-centric terms. This watershed document initiated considerable intellectual effort in the UK, and this - in combination with pivotal precursor work by a small number of US Gulf War planners just over a decade earlier - resulted in the current paradigm.

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[24] Joint Warfare Publication 0-01, *British Defence Doctrine (Second Edition)*. October 2001.

[25] Speaking at the Chicago Economic Club in April 1999, Blair unveiled his "Doctrine of the International Community" which included how and when and whether to intervene in the affairs of other nations. He offered the following: "I think we need to bear in mind five major considerations. First, are we sure of our case? War is an imperfect instrument for righting humanitarian distress: but armed force is sometimes the only means of dealing with dictators. Second, have we exhausted all diplomatic options? We should always give peace every chance, as we have in the case of Kosovo. Third, on the basis of a practical assessment of the situation, are there military operations we can sensibly and prudently undertake? Fourth, are we prepared for the long term? In the past we talked too much of exit strategies. But having made a commitment we cannot simply walk away once the fight is over; better to stay with moderate numbers of troops than return for repeat performances with large numbers. And finally, do we have national interests involved? The mass expulsion of ethnic Albanians from Kosovo demanded the notice of the rest of the world. But it does make a difference that this is taking place in such a combustible part of Europe. I am not suggesting that these are absolute tests. But they are the kind of issues we need to think about in deciding in the future when and whether we will intervene". This captures the essence of Blair's wider approach to warfare and hence the Manoeuvrist Paradigm. For a complete text of the speech see http://www.pbs.org/newshour/bb/international/jan-june99/blair_doctrine4-23.html

[26] Bush declared that any action against Iraq would be "consistent" with "necessary actions" against terrorists following the September 11, 2001 terrorist attacks against the United States. His linkage of Iraq to international terrorism (and vice versa) demonstrates an holistic approach to warfare. See http://www.cnn.com/2003/ALLPOLITICS/03/19/sprj.irq.bush/index.html

Yet even this simplistic explanation warrants caution, as many of the underlying concepts have been around for generations. But successive models do not mirror their predecessors - indeed if they did, warfare would stagnate and clearly this is not the case. Some changes are swift and obvious, particularly if they are driven by technological improvements such as the English longbow or the Maxim machine gun. At other times, however, warfare evolves slowly and barely perceptibly. Evolution can be so slow on occasions that hindsight might be needed to make sense of the minutiae. One such example was the British response to insurgency in Malaya between 1948 and 1960, and it is widely acknowledged that the operational mindset at the end of the campaign bore little resemblance to that at the beginning. The question remains as to whether EBW falls into this mould.

It is important to note that those involved in the early stages of EBW were seeking merely to fine-tune various operational level points of detail. It was never their intention to contribute to a new model of warfare; indeed the very notion would have appeared absurd at the time, as it was almost universally believed by the military that the model in use delivered all that was required of it - and moreover, it achieved this remarkably swiftly. This perception was demonstrably bolstered by the speed with which Kuwait was liberated. At some point, however, this fine-tuning reached critical mass in terms of the number of practitioners who were articulating deliverables in terms of desired *effects* rather than *capabilities*. Once this happened the die was cast. Momentum for embracing the lexicon of effects increased commensurately, and the stage was set for the effects model to be fleshed out and formalised.

It is also important to note that whilst the early work of US practitioners predated this event, the same applies (albeit to a lesser extent) in the UK. The lead unquestionably lay with the US, with the UK tentatively exploring the nascent effects ideology some years later. However, it was inevitable that the UK would follow, as its military relationship with the US was - and indeed remains - particularly close. This is due in equal measure to the high number of exchange appointments between these two countries, their close collaboration in all matters of doctrine, and the fact that the US and UK routinely fight together against common enemies - and hence share as common an approach to warfighting as their size and relative capabilities allow.[27] Against this background, the migration of 'effects thinking' from the US to the UK was simply a matter of time.

In seeking to identify the key personalities behind EBW, the work of John Warden and Dave Deptula (both of whom were involved in planning the air element of the 1991 Gulf War) was hugely influential. To give an indication of the pre-effects mentality of the time, in February 1991 the Iraq Target Planning Cell received a report from the Central Command Intelligence Staff on the progress of the air campaign against electricity targets. This stated that not all the individual targets had been destroyed or damaged to the specific percentage, hence the objective had not been met. Yet - as Deptula pithily observed at the time - *the electrical system was not operating in Baghdad*. Hence the effect that the planners sought had been delivered. Nonetheless, the prevailing culture demanded that those targets be attacked repeatedly until the extant damage criteria had been met. The difference in approach between these two mindsets is vast. And whereas

[27] During the Gulf War the author served on an Exchange Programme with the US Navy and US Marines Corps. These comments are based on observations made by the author and many exchange personal serving at the time.

the pre-Deptula model had humanitarian implications after the warfighting stage was over. Deptula's vision preserved the capability to generate power after the event - and thus save lives in the immediate aftermath of the war. This example captures the essence of EBW. Those who opine that wars have always been conducted for effect would do well to study it.

But it would also be wrong to credit Deptula with ownership of the modern effects paradigm. He capitalised on the work of others, most obviously John Warden, the originator of a concentric model of warfare, and John Boyd, the originator of the 'OODA' loop. Yet each of these airmen benefited from the unbroken tradition of a uniquely American approach to warfare, and their heritage - which inevitably shaped them - had its role to play. Further, significant though these airmen were, they did not create the current EBW model. Indeed it took over a decade for the model to be formalised, and during this period the UK contribution was significant. Indeed the language of effects first appeared in the July 2002 *New Chapter to the 1998 Strategic Defence Review*, and subsequent publications developed and refined the model at a rapid rate. Much of the work behind the *New Chapter* is still classified - it was, after all, formulated in response to the terrorist attacks of 9/11 - so it is difficult to know exactly when the UK embraced the effects model. But what is incontrovertible is that the UK government had been working hard since 1999 to promote an atmosphere in which *outcomes* as opposed to *process* would form a central pillar of pan-governmental business. And whilst this early work did not lead instantly to a UK effects model, it was highly influential as it demanded that all departments, working closely together, should consider how best to articulate outcomes. One of the key by-products of this work was the emergence of a mindset which, fortuitously or otherwise, dovetailed neatly with the work on effects that was taking place in the US.

In sum, EBW's origin cannot be tied to a specific date. The model took at least a decade to develop, and consequently no a single point of origin is identified within this thesis. Instead, acknowledgement is made of the diverse influences which together resulted in the model.

CHAPTER 1:
UNDERSTANDING THE CONTEMPORARY EBW PARADIGM

"Shallow men believe in luck.
Strong men believe in cause and effect".

Ralph Waldo Emerson

INTRODUCTION

This thesis contends that the Manoeuvrist Paradigm is outmoded and consequently ill-suited to meet the unique demands of the 21st Century. With this in mind, the first section outlines 'The Manoeuvrist Paradigm', the West's current approach to warfare.
A working understanding of the current model is necessary because it provides a point of departure which allows the reader to understand firstly, the context within which EBW emerged, and secondly, specific points of detail which EBW seeks to address. This describes in outline the Manoeuvrist Approach, and notes that whilst the model has to date served the West reasonable well, it is unlikely to do so in the future. One of the reasons for this is the Manoeuvrist Imperative of the 'here and now', which places undue emphasis on resolving the warfighting phase as swiftly as possible. This approach has lead to a mindset wherein planners are seduced by the imperative of near-term gains, hence planning routinely focuses on the near-term rather than on the aftermath. The consequences of this mindset are self-evident, and to comprehend them one need look no further than contemporary events on Iraq and Afghanistan, the opening wars of the new century. Hence the need for a brief overview of the Manoeuvrist Paradigm - because there is little point in winning wars quickly if the outcome involves many years of winning the aftermath slowly.

Attention then shifts to understanding 'The Context for EBW'. This begins by questioning whether the new paradigm is revolutionary or evolutionary - an epistemic or a doctrinal development. This is vital ground given that the aim of the thesis is to assess whether EBW merits recognition as an original model of warfare, or whether it is the sum of previous experiences. This is followed by a brief but necessary discussion on the politics/ war dynamic, which compares the linear model of warfare (wherein peace and war are disassociated activities) with the holistic approach (wherein war is continuation of political intercourse). EBW favours the latter approach, whereas the Manoeuvrist Paradigm favours the former. This is a significant difference, and understanding it is vital if one is to comprehend the mindset that underpins EBW.

The next section focuses on 'The Contemporary Effects Paradigm'. This describes the process of envisaging first, second and third order effects, and notes the importance of considering all of these from the perspectives of the friend, the foe and the neutral alike. Exploring the notion that wars have always been done for effect, it asks whether the effects that accrue during war have always been consistent with, and limited to, the effects that were envisaged during the planning process - this being the central core of EBW. The focus then shifts to a discussion of effects and outcomes, noting that the positive primary effect of an action can, at times, be negated by the subsequent second and third order effects, which - paradoxically - may endure for far longer than the original

effect. The section concludes with a discussion on the importance or otherwise of 'winning the peace'.

THE MANOEUVRIST PARADIGM

There is no such term as the Manoeuvrist Paradigm, at least in official circles. The author has coined the term in order to describe *the West's wider approach to warfare following the collapse of the Warsaw Pact*. The construct clearly exists, as is evidenced today by ongoing operations in Iraq and Afghanistan, but it appears never to have been named - hence the need for the author to proffer one. The name itself is almost an irrelevance, and it should not detract from the overall thrust of this thesis, which is to assess whether EBW is an original model of warfare, or merely the sum of previous experiences. The name reflects the profound influence of the Manoeuvrist Approach (an operational legacy of the 1970s) upon the West's extant model of warfare. This is significant, because one of the contentions within the thesis is that the West's current approach to warfare is outmoded and therefore ill-suited to meet the unique demands of the 21st Century. Further, the term 'Manoeuvrist Paradigm' covers not just the West's military approach at the operational level - Manoeuvre Warfare and its attendant technological bells and whistles - but also the West's political input to that approach. Together these two strands make up the Manoeuvrist Paradigm.

Three premises underpin this section. First, warfare is not just military business. Second, it should never be divorced from the wider strategic environment. And third, at all times the Western model is subservient to political requirements. These topics are detailed elsewhere in this thesis[28] so they are not recounted here. Nonetheless, they provide a lens for analysing the Manoeuvrist Paradigm in detail, and assessing its relationship to the wider strategic environment.

Two further points also need to be considered, however. First, the UK and US approaches to warfare differ occasionally in points of detail. This does not affect the current model of warfare but as we shall see, it could affect the efficacy of EBW. Second, during coalition operations the bigger player invariably provides the framework that the smaller players follow.[29] This has certainly been the case in recent US / UK operations. However, for the purposes of this thesis the Manoeuvrist Paradigm may be considered to be a combination of US and UK doctrine rather than the product of one country.

Manoeuvre Warfare and the Manoeuvrist Approach

The Manoeuvrist model is a relatively new form of warfare. It was devised to counter a grossly disproportionate threat from the Warsaw Pact. Consequently it was a product of a bi-polar world in which the weight of numbers stood firmly against the West[30] and

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[28] The politics / war dynamic has been explained previously. The UK's answer to tightening the politics / war relationship, EBA, is in the next chapter.

[29] One obvious exception to this was the UNPROFOR / NATO partnership in Bosnia. NATO provided the airpower, and this included US aircraft, but there were no US soldiers on the ground. It was sometimes the case that NATO commanders wished to do something over Bosnia that UNPROFOR would not sanction. Source: author / UNPROFOR Air Operations Co-Ordination Centre, Sarajevo, 1994-95).

[30] For example, in the mid-1980s the Warsaw Pact had 42 500 Main Battle Tanks whereas NATO had only 13 000. Similar imbalances were evident in Armoured Personnel Carriers and Infantry Fighting Vehicles (78 800 against 30 000); anti-tank guided weapon launchers (24 300 against 8100); tactical aircraft (7240

Mutual Assured Destruction was a distinct, if unlikely, possibility. Manoeuvrist thinking was the logical response to the strategic realities of the period.

Manoeuvre Warfare is defined as "the application of Manoeuvrist thinking to warfighting".[31] This thinking - the Manoeuvrist Approach - seeks to shatter "the enemy's overall cohesion and will to fight, rather than his materiel".[32] It achieves this through a "warfighting philosophy...to defeat the enemy by shattering his moral and physical cohesion".[33] Thus it shifts the focus away from attrition, albeit attrition always remains a factor; indeed depending upon the situation it may even be the predominant factor, but it does not set the overall tone of the campaign.[34]

From the UK perspective four key elements fall out of the Manoeuvrist Approach. They are: to *shape* the environment; to *attack* the enemy's will and cohesion; to *protect* the cohesion of the force; and to *exploit* the situation, either by direct or indirect means.[35] These tasks are achieved by applying strength against vulnerability. Within the overall operational design process, tempo, momentum, surprise, simultaneity and deception complement each other to generate a picture of defeat within the enemy's mind. The US perspective is similar to the above, with commanders aspiring to "...strike the enemy with powerful blows from unexpected directions or dimensions, and to press the fight to the end. Deception, special operations, manipulation of the electromagnetic spectrum, firepower, and maneuver [sic] all converge to confuse, demoralize, and destroy the opponent".[36]

What is clear from this is that the emphasis is firmly on the enemy. Often, effects on friendly and neutral players do not enter the equation. And whilst destruction might or might not be a key element - or at least, it is no more important than the UK's remaining elements - the aftermath barely gets a mention. Thus the commander has free rein (more or less) to do as he sees fit to *win the warfighting stage*.

Of course he might be required to 'set the conditions for peace' or achieve some other similarly worded but equally nebulous task, but there again he might not. As ever, his mission will focus on the warfighting stage, and if his actions result in outcomes that later impact on the aftermath, so be it; this will be a problem for someone else. Having said that, if the commander does his job correctly and renders ineffective the enemy's military force, it is difficult to conceive of an outcome that will be unsatisfactory to the victor: trying second guess or pre-empt outcomes that occur after the war is outwith the commander's terms of reference. Winning the warfighting stage is what he is paid to do. This in essence is the Manoeuvrist Paradigm.

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against 2975); and artillery and mortars (31 500 against 10 750). See Citino, Robert M, *Blitzkrieg to Desert Storm: The Evolution of Operational Warfare*, University Press of Kansas, Kansas, 2004, p 233 - 235.

[31] Joint Warfare Publication 0-01, *British Defence Doctrine (Second Edition)*, October 2001.

[32] *UK Glossary of Joint and Multinational Terms and Definitions*, Joint Doctrine Publication 0-01, Edition 6, May 2004

[33] Ibid.

[34] Annihilation, although seldom mentioned these days, is another factor. Attrition and annihilation differ not in the ends that are desired, but in the way in which they are delivered. The former takes a gradual approach (Verdun during World War One) whilst the latter seeks rapid victory (the Battle of Midway). Add to these the strategy of exhaustion, in which a foe is worn down psychologically as well as materially, and the dangers of oversimplifying these factors becomes evident.

[35] See Joint Warfare Publication 5-00, *Joint Operations Planning*, March 2004 Edition, p 2-1, and Joint Warfare Publication 0-01, Op Cit, p 3-5.

[36] *US Army Field Manual 100-5 (FM 100-5 Operations)*, Department of the Army, June 1993, p 2-2.

To date it has served the US and the UK remarkably well, and indeed it, more than any other conceptual approach, has largely been responsible for the West's operational successes of the late 20th Century. Bolstered by robust Operational Design and the Estimate Process - the military methodology for planning campaigns at the operational and tactical levels - it forms the backbone of the West's extant warfighting mindset.

But this does not of itself guarantee its suitability to meet the unique demands of the 21st Century. Times have changed significantly since the model first appeared. There are no longer two superpowers. Moreover, in most potential warfighting scenarios, military capability now favours the West. And whereas during the Cold War the aftermath counted for little, these days it matters a great deal. Indeed during the last decade and a half the currency of warfare has changed significantly, yet the Manoeuvrist Paradigm has stagnated. This is because it is generally believed to be flexible enough to meet all exigencies. In many cases it is - but there are exceptions. For example, setting the conditions for an aftermath acceptable to the international community can conflict with the Manoeuvrist requirement to conduct the war as quickly as possible. At times these two objectives are clearly incompatible.

An equivalent example from the world of business might be a takeover bid. In war, one country takes over another. In business, one company takes over another. This process involves many negotiations, with each one setting the conditions for the next. The imperative for speed during war is equivalent to reducing the number of meetings between opposing factions during a business takeover. The end result will be that the company is taken over regardless - but a swift, poorly negotiated takeover is unlikely to be as successful as one that is more carefully balanced. The end result of the takeover is a given, and the means are known in advance. But what is important in this context is the 'how' - the *way* in which the takeover is conducted. In the business world, if a company wishes to do a second, or a third, or a fourth takeover, the ways of the previous takeovers will be at the forefront of other companies' minds - and not just that of the company being taken over. Companies that do 'good' takeovers are invariably regarded better by their peers than companies that do 'poor' takeovers. The same applies to war and to its protagonists.

Returning to the Manoeuvrist Paradigm, the problem of balancing speed on the battlefield against eventual outcome is invariably resolved by sacrificing aftermath planning for swift success. However, by its very nature this approach is not a way of warfare. It is a way of *battle*. It follows, therefore, that the Manoeuvrist Paradigm is a way of battle rather than a way of warfare.

The Manoeuvrist Imperative of the 'Here and Now'.

Time compression is a feature of modern war. As noted above, the Manoeuvrist Paradigm aspires towards instant answers, even when there is no obvious imperative to do so. One of the by-products of this relentless quest for speed is the desire to achieve results as quickly as possible. This point is worth developing further, because the quest for speed underpins the model. Indeed US Army Field Manual 100-5 (FM 100-5) states that "The Army must be capable of achieving decisive victory".[37] Implicit within this

[37] *FM 100-5*, p 1-5.

definition is the requirement to win quickly.[38] The UK takes a different approach, stressing tempo rather than speed.[39] It defines tempo as "...the rhythm or rate of activity of operations relative to the adversary".[40] What matters within the UK's approach is not speed *per se*, but acting quicker than the enemy can act. This is fundamentally different from the US approach, but this is of little consequence, because - as was previously mentioned - by dint of its size the UK approach plays second fiddle to that of the Americans during coalition operations.

Consequently the West expects to win wars quickly. Yet winning quickly does not necessarily equate to winning optimally. Indeed there is little point in winning wars quickly if the outcome involves many years of winning the aftermath slowly.

Momentum, speed and tempo are the levers that commanders use to deliver swift success on the battlefield. Planners select targets that deliver swift, high impact results. Thus the targeting process drifts towards a physical focus, because it is a lot easier to assess results achieved against physical targets than it is to assess them against conceptual or cognitive targets. The fact that destruction of bridges, radar sites, and tanks are typical images of the modern battlefield is no accident, because they can be measured with relative ease, and within this model visible results carry considerable weighting. Clearly, measuring the will of an enemy leader or population is an altogether slower and more complex matter.

One by-product of the current approach is that planners are routinely seduced by the desire to secure near-term gains, even though they know that operational effects are rarely immediate, and indeed that strategic effects can take significantly longer to achieve. The effects of attacking a bridge or a radar site are usually quantified in terms of the level of physical damage that accrues. Were they destroyed or not? Were the key nodes associated with them damaged or not? If the answers are 'no' then they will be revisited later that day if the targeting cycle allows it, or possibly on the next day - or perhaps even the day after that - until the required levels of damage have been attained. This was a classic features of 20th Century warfare.

Yet within this mindset a key part of the warfighting equation is absent - because effects are never limited to the physical dimension. Blowing up bridges and radar sites invariably generates wider effects within the cognitive domain, and at times these secondary effects can outweigh the plusses associated with the initial physical effects. Moreover, secondary and tertiary effects influence different people in different ways. Downstream effects may make little difference to the winning side but they can drastically impact upon the losing side. Further, they can place intolerable constraints on agencies concerned with post-conflict rebuilding, engaged in activities such as the delivery of food or medical aid.

When this happens, the affected agencies are quick to query the military's warfighting methodology. They ask why bridges that were so vital to post-conflict reconstruction needed to be blown up. If there was no alternative, so be it. But if a different solution could have achieved the effects that the military sought, they will be far from satisfied. The military's reaction to this is usually to dismiss it as an irrelevance, as the military had

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[38] Ibid.
[39] *Joint Warfare Publication 5-00*, Op Cit, p 2-3.
[40] Ibid.

a job to do and the clock was ticking. Every hour squandered was an hour that could have been used to better advantage on the battlefield.
Yet these agencies have the legitimate right to pose these questions - indeed it is their moral duty to do so. The Human Rights Watch, for example, seeks "...to prevent discrimination, to uphold political freedom, *to protect people from inhumane conduct in wartime* [author's emphasis] and to bring offenders to justice".[41] This dimension of warfare, wherein external agencies draw attention to acts that can appear difficult to justify depending on one's perspective, is likely to expand. Consequently the military will need to take it into account in the future. For reasons previously mentioned, the Manoeuvrist Paradigm is not well placed to do this.

THE CONTEXT FOR EBW

Episteme or Doctrine?

In 1966, in a controversial best seller entitled *The Order of Things*,[42] the post-modern philosopher Michel Foucault challenged conventional wisdom regarding evolution. He opined that life did not always evolve predictably and logically, but rather that on occasion, sudden and unexpected changes also took place. Delving deeper into the theoretical aspects of human knowledge, he concluded that each new era produced its own unique mindset of thought. This he labelled its *episteme*. Foucault's work split the academic community. Ultimately, however, he was never able to prove his findings.[43] Nonetheless, despite many attempts to disprove him, he was never debunked conclusively. With this caveat in mind, it is appropriate to consider whether EBW is an original model of warfare - an episteme - or merely part of ongoing evolution.

No historian or soldier would doubt that the episteme of Napoleonic warfare has passed. During the last 200 years or so, warfare has changed fundamentally; even if the defining hallmarks of exceptional field commanders have generally remained the same. Warfare has become mechanised in almost every form. Soldiers no longer march to their objectives in columns. These days they would rather kill their opponents well beyond visual range - and ideally when they least expect it - than invite them to take the first shot face-to-face as famously happened at Fontenoy in 1745. In short, warfare has progressed immeasurably since that time. But the same is also true of more recent epistemes: that of trench warfare in 1914-1918; America's experience in Vietnam; the Cold War; and, perhaps surprisingly, even the recent immediate post-Cold War period. These individual models of warfare, which were so highly valued at the time, are possibly less relevant to today's commanders than those of, say, Thermopylae, Agincourt, or Culloden. Indeed from a doctrinal viewpoint they are demonstrably less relevant than the oft-quoted works of theorists such as Sun Tsu and Clausewitz.

Epistemes and doctrines are not the same thing. Doctrine has an enduring quality. It distils lessons from the past specifically so that those same lessons do not need constantly to be relearned. The author of *War: A Matter of Principles* notes that doctrine is bound to the inescapable fact that "in almost every endeavour there are certain rules or principles laid down to guide exponents of a particular activity. Usually these rules are the result of

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[41] See http://www.hrw.org/about.
[42] Foucault, Michel, *The Order of Things: An Archaeology of the Human Science*, Vintage Books, New York, tr 1994.
[43] Source: Dr Uwe Steinhoff, Oxford Leverhulme Programme on the Changing Character of War, January 2005.

many years of experience and observation".[44] Half a world away, and at a different time, Mao Tse-Tung echoed the same view, even though his language was somewhat more colourful: "All military laws and military theories which are in the nature of principles are the experience of past wars summed up by people in former days, paid for in blood, which are the heritage of past wars".[45] Many doctrinal tenets - such as surprise, maintenance of morale, concentration of force, and sustainability - would have been as recognisable to Alexander the Great as to Henry V, to Nelson and to Montgomery. They apply equally today. In contrast, however, by their very nature epistemes are limited in time. Consequently the difference between doctrines and epistemes is a fundamental one.

The UK's current episteme is that of the Manoeuvrist Approach. Many people believe this to be the UK's doctrine, but this is demonstrably not the case. Rather, the Manoeuvrist Approach is a mindset, and a relatively recent one at that. Certainly it did not formally exist in either of the world wars, yet it was in being in the West in the 1970s. Indeed in the UK's latest doctrinal publications *Joint Warfare Publication 3-00 (Second Edition)* and *Joint Warfare Publication 5-00*, both published in March 2004, it features almost in passing. The former document includes it in order to justify specific functions at the operational level;[46] whilst the latter publication affords it but one dedicated paragraph.[47] And *British Defence Doctrine (Second Edition)*, the pinnacle of the UK's hierarchy of joint doctrine publications, published in October 2001, covers the Manoeuvrist Approach in only two brief paragraphs.[48] Given that countless paragraphs written about contemporary UK doctrine, this anomaly makes sense only if the Manoeuvrist Approach is recognised for what it is: a way of thinking - a subset, as it were, of operational art - as opposed to a key doctrinal tenet. This explains in part why one commander will focus on the physical domain whilst another will attack the cognitive domain, even though both might have read, and put into practice, the same doctrine. Accordingly, it is helpful to view doctrine as one strand in the planning equation, and operational art as another strand. They make excellent bedfellows - but they are not inextricably bound to each other.

The Politics / War Dynamic

Before proceeding further it is necessary to ponder briefly on what is arguably the core requirement of EBW: the need for common understanding of the politics / war dynamic. There are many interpretations of this complex and intricate relationship, and EBW is predicated upon all who participate in it subscribing to a common view. The same cannot be said of the Manoeuvrist Paradigm, however; as we shall see.

For some, the relationship between politics and war is one of substitution. Politics (or policy, but for this illustration we may assume that they are one and the same)[49] stops, war takes its place, war then stops, and politics resumes - and so *ad infinitum*. If politics and war were lengths of rope, each section would be separate. They would meet only at the

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[44] David Evans, Ed, *War: A Matter of Principles*, Aerospace Centre, Australia, 2000, p 1.
[45] Mao Tse-Tung, *Selected Military Writings*, Foreign Languages Press, Peking, 1966, p 87.
[46] Joint Warfare Publiction 3-00 (Second Edition), *Joint Operations Execution*, March 2004, p 1-13 para 125.
[47] Joint Warfare Publication 5-00, Op Cit, p 2-1.
[48] Joint Warfare Publication 0-01, Op Cit, p 3-5.
[49] Limited space prevents further discussion of the politics / policy debate, or the differentiation between politics and policy. For further detail see Christopher Bassford's 'John Keegan and the Grand Tradition of Trashing Clausewitz', *War and History*, Vol 1, Number 3, November 1994.

nexus between peace and war, where they would be tied together in order to make the rope longer. Peace would be on one side of the knot, and war on the other side. If one could place one's hand on this rope - taking care to avoid the many knots that run along its length - one would grasp either a politics section or a war section. Both sections could not be grasped concurrently, because by definition peace and war cannot exist at the same time; nor indeed can they occur in the same piece of space. Adherents of this mindset - and there are many - believe that the relationship between war and politics is linear and sequential, much as in this illustration about the rope.

History offers many examples that support this notion. These range from the seemingly inconsequential - such as ritualistic tribal conflicts - to the outbreak of both World Wars. Indeed it is difficult to find a war that does not appear to fit this framework. If a doctrinal mentor is required to reinforce the point, Clausewitz is likely to be cited through his oft-misquoted: "war is merely the continuation of politics by other means",[50] Usually the emphasis is firmly on the word 'other'. In this model, one means of securing national objectives - politics - fails, so an alternative means - war - is used instead. The logic behind this argument is straightforward and appealing, and this school of thought has many adherents.

But there is another way of viewing this complex relationship, using Clausewitz's same phrase, but this time through an alternative translation: "we see, therefore, that war is not merely an act of policy but a true political instrument, a continuation of political intercourse, carried on with other means". Here the emphasis is placed not on 'other' but on 'continuation'.[51] Far from being a substitute for politics, war is now a political instrument or a tool; and a particularly blunt one at that. And whilst it takes its place alongside the other tools such as trade, diplomacy, and cultural influence, it can never replace them.

The difference between these two models is stark. Yet the second framework alone is consistent with Clausewitz 's claim that "war cannot be divorced from political life, and whenever this occurs in our thinking about war...we are left with something pointless and without sense".[52] The first framework is simple, logical and easy to understand - but it lacks continuity and coherence; whereas the second model, which is equally simple, does not share these shortcomings. Sun Tzu famously opined that "to subdue the enemy without fighting is the acme of skill".[53] This, perhaps his most famous pronouncement, leaves no room for doubt that within his philosophy peace and war are a part of the same ongoing process.[54]

In similar vein, Mao Tse-Tung opined that:

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[50] Clausewitz, Carl von. *On War*, Ed./trans. Michael Howard and Peter Paret. Princeton, Princeton University Press, 1976, p 87.

[51] There are two ways to interpret this phrase. Clausewitz is usually cited as in the first example. However, his word for continuation - *fortsetzung*, literally 'setting forth' - does not imply that the nature of politics changes when it spills into war. Rather, Clausewitz believed that war *is* politics, but with the added element of violence. Bassford, Op Cit.

[52] See Michael Handel, *Masters of War: Classical Strategic Thought*, Frank Cass, London, 1992, p 35.

[53] Sun Tzu, *The Art of War*, p.77, in Sawyer, Ralph D, (tr) *The Seven Military Classics of Ancient China*. Westview Press, Oxford, 1993.

[54] Michael Handel,, Op Cit, p34.

> "Provided he is modest and willing to learn, an experienced military man will be able to familiarise himself with all other conditions related to the war, such as politics... such a military man will have a better grasp in directing a war or an operation and will be more likely to win victories".[55]

Whilst EBW uses the non-linear model of warfare as its baseline, the same does not hold true for the Manoeuvrist Paradigm, which is predicated upon linear warfare. This is a significant difference between these two models, and understanding this is vital if one is to comprehend the mindset that underpins EBW.

THE CONTEMPORARY EFFECTS PARADIGM

Effects Based Warfare is not new - indeed the reverse is true: 'effects thinking' has influenced human decisions for millennia. In the normal course of events this occurs naturally and intuitively. Consciously or otherwise, pondering effects underpins every action we undertake, be it trivial or substantive, singular or plural, immediate or long-term. In fact it is impossible to embark upon a course of action without considering at least some of the effects that will accrue as a result of our decisions. This process applies at both the individual and the group level, and it is evident throughout our personal and professional lives.

To illustrate the point, this thesis will generate effects simply by being read. Some will be transitory and inconsequential; others will be more enduring. Reader A might agree with it completely, whilst Reader B might only agree with it in part - and Reader C might not agree with it at all. It might generate discussion for some people in the near term, but inform the work of others in several years to come. Alternatively, none of these things might happen. There is no way of knowing which effects will be generated. But effects of some sort will undoubtedly take place.

EBW seeks to frame this mindset within a political and military context, taking into account the strategic realities of the day. Consequently it is a holistic model of warfare. Further, it demands the application of analytical rigour at levels that are not always evident in the West's current warfighting methodology. Paradoxically, it is because of this very characteristic that some in the military prefer not to unlock Pandora's effects box until they have no choice in the matter.

The modern effects paradigm builds upon previous models of warfare, but it differs in that *it seeks to ensure that the effects that accrue during war are consistent with, and limited to, those effects envisaged during the planning process.* Understanding this mindset and its rationale is relatively straightforward. Understanding the minutiae, however, takes time and no small amount of dedication.

To illustrate the process let us consider the second paragraph in this section, which was constructed to exemplify some of the key elements within EBW. After a brief opening sentence it spelled out two different types of effect: temporary and permanent. It then outlined some possible effects, most of which fall within the cognitive domain. Some of these were positive, others were negative. However, in both cases it was apparent that

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[55] Mao Tse-Tung, Op Cit, p 87.

further outcomes might accrue in due course. In this example none of the effects were physical, but had they been so, they would either have been positive or negative - depending on one's point of view. The paragraph concluded with the blunt admission that specific effects could not be predicted. The following schematic illustrates these considerations.

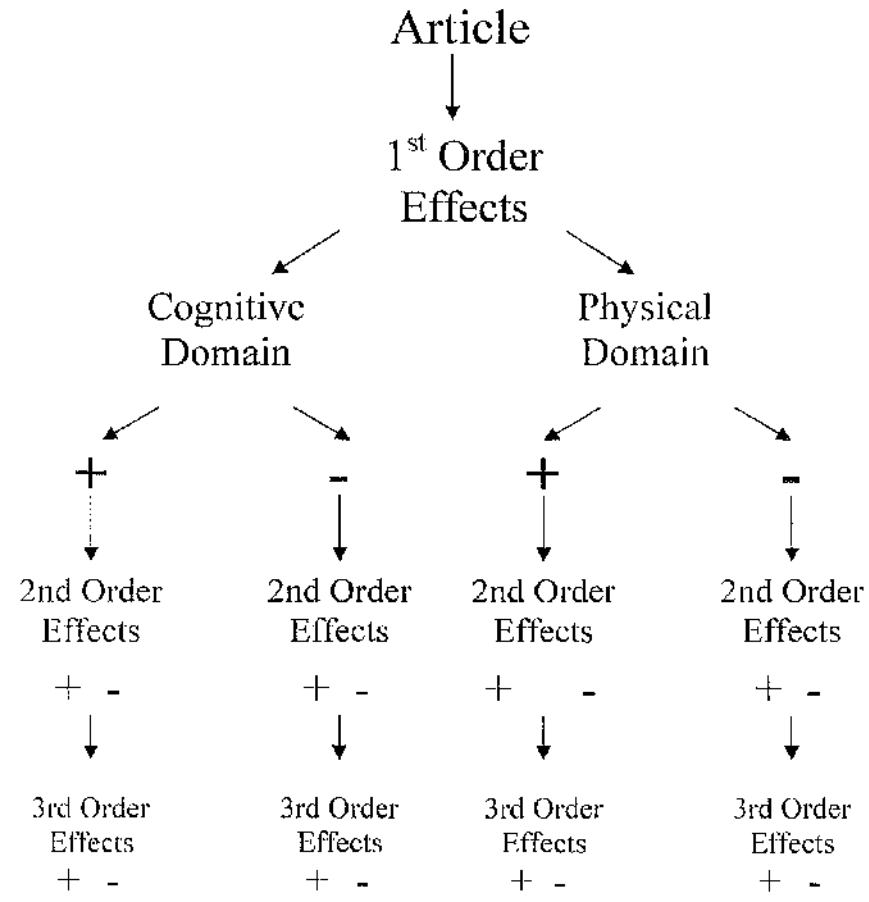

Figure 2

Some effects are intentional, but clearly others can only be guessed at. These have been omitted from the schematic in order to simplify matters at this stage. Second and third order effects, such as discussion with colleagues and informing work in years to come. might yield further outcomes in due course. Of course there is no way of knowing whether these effects will be positive or negative, as context is likely to play a role. The resultant product is an over-simplified diagram which details a possible 'effects web' which falls out of the paragraph under consideration. Clearly if a fuller and more accurate diagram is needed, more linkages will be needed. Certain effects will apply to some readers but not to others, so additional linkages might represent these different groups of people. Further linkages would represent their different moods as well as the contexts within which they have read, and then subsequently discussed, this work. However, what we have no way of knowing at the moment is whether these groups will be positive (friendly) or negative (and therefore hostile)? Nor do we know how many individuals within these groups will privately be supportive or dismissive. What if the main body of

the group is positive, but a particularly strong character is negative - will everyone agree with him? Or could the rank gradient be a factor? Might the senior person impose his will on the remainder of the group regardless of their individual roles and inputs? Not one of these questions can be answered until the culture and ethos of each group is understood. Yet even this understanding will not necessarily present the whole picture, because the way information is interpreted varies with changing circumstances. Therefore experience levels also need to be taken into account. Moreover, credence is more likely to be granted to those who speak with authority (which in the military means those who have been there, seen that, done that, and wear the medals) than those who are ignorant of the subject.

It soon becomes apparent that even a very simple scenario can lead to an effects schematic that is too unwieldy to be of any practical use. Add to this the fog and friction of modern combat, and the appeal of such schematics diminishes by an order of magnitude. Nonetheless, establishing clear linkages between cause and effect is precisely what EBW strives to achieve.[56]

Effects and Outcomes

Few would disagree that wars have always been conducted to achieve effects of one sort or another. Yet paradoxically this very deduction has prompted many to dismiss the utility of the contemporary effects model outright. Some sceptics consider EBW to be little more than an exercise in semantics. They believe that at the end of this process the UK will do much as it has always done, except next time around it might adopt a new lexicon - the language of effects - in order to give the illusion of substantive progress. Such sentiments are widespread within the military. But this does not make valid.

In fact they miss the mark by some distance, because *the effects that are sought when wars are planned are not necessarily delivered when wars are fought.* So whilst it is true that wars have always been fought for effect, it is equally true that effects are not always delivered as originally envisaged. At times this anomaly can confer unexpected advantages to commanders in the field, but it is equally likely to work against them. Indeed the more one ponders on this basic issue, the more one realises that conceptualising warfare in terms of delivering specific effects - *and only those effects* - is anything but a semantic exercise.

To complicate this matter further, it is also true that effects generated at the tactical level can lead to unintended consequences at the operational and strategic levels. In the worst case these secondary effects can be the polar opposite to those originally sought. The Abu Ghraib prison debacle in 2004 exemplifies this phenomenon,[57] as do all instances of

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[56] A comprehensive effects taxonomy may be found at Donald Lowe and Simon Ng's *Effects-Based Operations: Language, Meaning And The Effects-Based Approach*, available on the internet at www.au.af.mil/au/awc/awcgate/ccrp/ebo_language.pdf. See also Smith, E, *Effects Based Operations: Applying Network Centric Warfare in Peace, Crisis, and War*, Center for Advance Concepts and Technology, DOD Command and Control Research Program, November 2002; and US Joint Forces Command White Paper Version 1.0, *A Concept Framework for Effects Based Operations*, October 2001.

[57] The Abu Ghraib photo scandal broke in 2004 and is widely documented. For an authoritative report on allegations of the alleged subsequent cover-up see Newsweek [www.msnbc.msn.com/id/5092776 /site/newsweek]. A comprehensive description of routine dealings is at www.guardian.co.uk/Iraq/Story /0,2763, 1308346,00.html

collateral damage, 'blue on blue' engagements, acts of barbarism and so on.[58] This has always been a feature of warfare, and the following example illustrates the point.
In 1609, while mapping remote parts of Eastern Canada, the French explorer Samuel Champlain befriended the Huron Indians. After a late afternoon encounter between some Hurons and an Iroquois party, it was agreed that these two groups would confront each other formally after daybreak. As the Iroquois approached, Champlain emerged unexpectedly from behind a tree; this was the Iroquois' first glimpse of a European. As they stood dumbstruck just a few feet from him, he slowly aimed his arquebus at two of the most prominent individuals and shot them, thereby killing two Iroquois chiefs.[59] Consequently the Hurons won the day, and clearly Champlain delivered the primary effect that he had intended. However, what he really sought was the pacification of local tribes. In this matter he was singularly unsuccessful; indeed this act precipitated an immediate and bitter outbreak of hostilities between the Iroquois and the French that lasted for the next 150 years. The efficacy of Champlain's primary effect is beyond question. But it is also true that his unintended consequences yielded results that he would rather have avoided. In fact it is difficult to imagine him doing something more destructive in the longer term than he managed to achieve on that fateful day.

Returning to the present day, tanks have been used to dislodge snipers from minarets in Fallujah, and aircraft have bombed important buildings whose occupants refused to yield to troops on the ground. One is left to ponder on how future historians will judge the wider effects of these tactical actions when viewed against the strategic effects that were originally sought. The capture of Fallujah in 2005 by US forces offers much food for thought in this respect, and it is included it as a brief case study in chapter *.

The following is also worthy of note. Exactly one year after the US transferred sovereignty to the Iraqi people (28 June 2005) the Independent newspaper ran the following headline story entitled 'Iraq: A Bloody Mess':

> "A year ago the supposed handover of power by the US occupation authority to an Iraqi interim government led by Iyad Allawi was billed as a turning point in the violent history of post-Saddam Iraq. It has turned out to be no such thing. Most of Iraq is today a bloody no-man's land beset by ruthless insurgents, savage bandit gangs, trigger-happy US patrols and marauding government forces".[60]

Within two weeks of this report, Allawi warned that Iraq faced civil war: "The problem is that the Americans have no vision and no clear policy on how to go about in Iraq...we will most certainly slip into a civil war. We are practically in stage one of a civil war as we speak".[61] He has predicted dire consequences for Europe, America and the Middle East if the crisis in Iraq is not swiftly resolved. This was clearly not the aftermath originally sought when Saddam Hussein was removed from power. The aftermath of warfare in the early 21st Century is considered in more detail in Chapter *.

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[58] The My Lai massacre in Vietnam - in which up to 500 civilians of all ages are alleged to have been killed in cold blood by US personnel - is one of the most infamous examples of this phenomenon.
[59] Accounts vary. According to some reports he fatally wounded a third chief.
See www.samueldechamplain.com
[60] http://news.independent.co.uk/world/middle_east/story.jsp?story=650186
[61] Allawi: 'This is the Start of Civil War', *The Times*, July 10, 2005.

An earlier footnote mentioned that George Galloway MP perhaps best exemplified the school of thought which linked war in Iraq with the London bombings. Clare Short, the former International Development Secretary, also believed that the war in Iraq was partly to blame for the London bombings. This view is shared by the independent research organisation Chatham House, which concluded that there is 'no doubt' that the involvement of British forces in Iraq and Afghanistan enhanced propaganda, recruitment and fund-raising for al-Qaeda, and made Britain a more likely target for terrorists.[62] Former Liberal Democrat leader Charles Kennedy also supports this view.[63] Those who opine that wars have always been conducted for effects, and that there is little to be gained from formalising the process of 'effects thinking' would do well to reflect upon this.

Of course none of this is new. Indeed just under a quarter of a century ago, Professor Lawrence Martin made this very point when he stated that "beyond doubt, armed force is a dangerous tool, a two-edged sword, as likely to cut a careless master as his intended victim".[64] Many models of warfare take this curious phenomenon into account. However, unlike EBW they do not acknowledge the full range of potential outcomes that accompany individual actions on the battlefield. Rather, they focus on delivering first order effects, mindful that downstream effects might or might not occur along the way. Critically, they avoid teasing out the detail of these second and third order effects - even though such detail can prove pivotal to the success of the wider strategic endstate.

It used to be the case that peace, no matter how unsatisfactory, generally followed war.[65] However, after the Gulf War of 1991 the idea of 'finishing the job properly' came very visibly to the forefront of public consciousness. What made this case particularly unusual was the fact that the aftermath was deemed to be unsatisfactory by the victors rather solely than by the vanquished. Indeed for reasons that are not immediately apparent, the early wars of the 21st Century have yielded less satisfactory outcomes than their forebears, at least in aftermath terms. In *The War for Kosovo: Serbia Political-Military Strategy*, Barry Posen notes that:[66]

> "...the war with Serbia fits into a rough pattern that the Unites States and the rest of the world have encountered too frequently in the last decade. In Somalia, Rwanda, post-Desert Storm Iraq, Bosnia, and now Kosovo, four factors, singly or in combination, have eroded and sometimes entirely thwarted Western aspirations".

These factors are: first, that political movements motivated by strong national, ethnic or clan identities can take significant punishment. Second, such movements are morally

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[62] Ibid, 17 July.
[63] Ibid, 13 July.
[64] Laurence Martin, The Reith Lectures 1981, in *The Two-Edged Sword*. Weidenfeld and Nicolson. London. 1982.
[65] As ever, exceptions spring to mind, such as the Crusades and the Hundred Years' war. But even here the logic applies. The Crusades began as a reaction to the fact that "a pagan race had overcome the Christians and with horrible cruelty had devastated everything almost to the walls of Constantinople" in 1074. It ended ignominiously some two hundred years later with the realisation that the Mongol and Mameluke armies had by now increased to such a size that the Christian forces could not beat them. In the case of the Hundred Years' War there were many truces, but the underlying hostilities continued until the war ended in 1451. Sources: http://www.fordham.edu/halsall/sbook1k.html#General and Bibliothèque Nationale de France (tr. Available at www.bnf.fr/enluminures/texte/atx2_02.htm).
[66] Posen, B. 'The War for Kosovo: Serbia Political-Military Strategy', *International Security*, Spring 2000, Vol 24, No 4, p 83.

capable of great violence. Third, the leaders of these movements, be they political or military, have great organisational skills that can lead to unexpected success. Fourth, military skills abroad can be extremely well developed and can generate asymmetric success. Posen notes that these factors:

> "...may not always permit local people to evade or overcome the sheer material advantages that the United States or other Western powers can bring to bear. They can, however, often turn the carefully crafted peace plans, coercive diplomacy, and limited operations of outside powers into nasty back-alley fights. Political and humanitarian goals turn out to be much more difficult to achieve than anyone expected. The opposition in these affairs is ruthless, resilient, and resourceful, and ought to be taken more seriously".[67]

These factors can apply as much during the aftermath as they do during the warfighting phase itself. But several other factors are also evident. For example, in the current era of quick, expeditionary wars, one side will routinely expect to suffer much more than the other side. It might lose its infrastructure, electricity, transportation nodes, and perhaps its fuel supplies for a limited time. It will certainly suffer civilian casualties, and its near-term viability might even be brought into question. Moreover it could face the spectre of a truly dismal aftermath. Yet during this same period, the opposing side might continue in its daily life much as it did before the war commenced. This imbalance of suffering is another dominant feature of early 21st Century warfare.

In the case of Afghanistan and Iraq, neither aftermath unfolded as expected. Three sets of factors account for this. The first set - Posen's considerations - are largely outwith the control of the West. The second set concerns actions and behaviour that the West has some control over, such as politics, diplomacy, trade, and the conduct of war on the battlefield. The third set concerns today's strategic environment, which is dealt with in detail in Chapter 5.

At various times in the past the military has been set objectives by politicians and left to get on with the job in hand. What mattered at the time was that victory was delivered on the battlefield, as this would lead to the defeat of the enemy and therefore overall victory. Political interference invariably occurred to a small degree, but during the warfighting phase military power was often disassociated from politics.

But this approach no longer works. Military power must at all times take the wider political and strategic situation into account. Actions on today's battlefields shape the aftermath in ways not previously seen. Battlefields used to be the province of the military. Today, however, they are often the province of the military and civilians in equal measure; indeed the modern battlefield is as likely to be a city as countryside. This is not to suggest that set piece battles will never be seen again, but it makes the point that we are more likely to see another Fallujah than another Verdun.

Winning the Peace

One of EBW's central tenets is that war must be followed by meaningful peace. Consequently EBW seeks to deliver much more than winning wars on favourable terms, laudable though that objective is. In contrast with the Manoeuvrist Paradigm, which aims

[67] Ibid, p 83, 84.

to win wars but does not necessarily plan for the aftermaths, EBW aims to win the peace from the outset. The warfighting element is unlikely ever to disappear, of course, and consequently those who seek a utopian ideology cannot turn to EBW for succour. Attrition and violence will routinely continue to play their part in warfare - indeed at times they are highly likely to be its predominant feature. That said, EBW is predicated upon taking the underlying causes of conflict into account, and in so doing, planning for the aftermath before the first bullet is fired.

To illustrate the importance of this, consider the recent invasion of Iraq. The endstate called for the removal of Saddam Hussein, a task that was met in full. Yet the aftermath – insurrection, with a very real possibility of civil war in due course - was not considered by the invasion planners. Within the EBW model this outcome would have been far less likely, because the holistic aspect of the model demands that planning looks beyond the immediate objectives (such as the removal of a dictator). It thus considers the aftermath at the earliest stages of planning. By doing this it *starts to deliver the preconditions for the aftermath long before the first bullet is fired.* Mindful of Clausewitz's caution that "in war the result is never final...the defeated state often considers the outcome merely as a transitory evil, for which a remedy may still be found in political conditions at some later date",[68] under EBW the warfighting and aftermath stages are viewed as two halves of the same coin.

To illustrate the point, it is worth considering President Bush's 1 May 2003 declaration of "mission accomplished" from the deck of the USS Abraham Lincoln. His words left no doubt that strategic victory had been achieved. However, it is now very clear (and indeed some people suggested this at the time)[69] that what had actually been delivered were tactical and operational level victories: the defeat of Saddam Hussein's armed forces, and the ousting of Saddam Hussein from power. The real strategic prizes - an Iraq free from intimidation, and enhanced security in the Middle East - were nowhere to be seen.

Moreover, the international terrorist threat has in all probability broadened as a result of events in Iraq. In the wake of terrorist activity in London on 7 July 2005, several UK politicians suggested that these attacks were intrinsically linked to the invasion of Iraq.[70] Ayman al-Zawahiri, a prominent member of Al Qaeda, released a videotape in August 2005 that gave precisely this impression.[71] This illustration shows that the West's current model of warfare pays scant attention linking today's endstates (such as the removal of Saddam Hussein) with the fulfilment of longer term outcomes (such as international and regional security). However, within this context an additional and important consideration is that in Iraq the number of US military killed between the end of the warfighting stage ("mission accomplished") and its second anniversary was *ten times greater than occurred during the warfighting stage itself* (nearly 1500 as opposed to 139 war fatalities). This

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[68] Clausewitz. Op Cit, p.80.

[69] According to Joe Nye, dean of Harvard's Kennedy School of Government, the Bush administration "...had a plan, which turned out to be a pretty good plan, for winning the war, but they had no plan for winning the peace". Moreover "...by succumbing to hubris, mission accomplished, we did it all ourselves, no problem...yeah, we won the war, but we lost the peace". Source: *CBS News*, April 30, 2004

[70] This school of thought is perhaps best exemplified by George Galloway MP, but he is not alone. After the London bombings he declared that "We argued...that the attacks on Afghanistan and Iraq would increase the threat of terrorist attack in Britain. Tragically Londoners have now paid the price of the government ignoring such warnings". See Galloway: 'Bombing Price of Iraq', *The Times*, 8 July 2005.

[71] Source: Michael Evans, *The Times*, August 5, 2005. Whether al-Zawahiri is telling the truth is another matter.

happened despite coalition forces delivering in full the endstates they had been set. Winning the peace matters. It always has done, of course, but the fact that EBW considers matters holistically sets it apart from its predecessor.

CONCLUSION

In asking whether EBW merits recognition as an original model of warfare, this chapter has revealed a number of significant conclusions. These fall into 3 broad groups: those concerning the Manoeuvrist Paradigm; those concerning the wider context within which EBW emerged; and those relating to the EBW paradigm itself.

The current Western model of warfare includes the military approach at the operational level, Manoeuvre Warfare, as well as the political input to that approach. Together these two strands comprise the Manoeuvrist Paradigm, a legacy of the 1970s, in which speed and flexibility on the battlefield acted as a force multiplier to offset the West's numerical disadvantage vis à vis the Warsaw Pact. To date this approach has served the West well, but in the early 21st Century this is no longer be the case due to two significant flaws. The first is that modern wars of choice bear little resemblance to the General War scenario upon which the Manoeuvrist model was predicated. And whilst the political strand is essential in all forms of war, in modern wars of choice it is likely to be more dynamic and wide-ranging than it would have been during General War - national survival in the face of overwhelming odds - and one of the potential aftermath scenarios, nuclear holocaust, was ever-present in this equation. However, the West's current wars of choice bear no resemblance to the Cold War scenario. Perhaps the real surprise is not so much that the Manoeuvrist Paradigm is ill-suited to meet the unique demands of the 21st Century, but that the West has been so loyal to it since the demise of the Warsaw Pact.

The second flaw stems from the fact that the Manoeuvrist Paradigm was predicated upon securing swift success on the battlefield, when the problem of balancing eventual outcome against tempo during the warfighting stage was less of a factor during the Cold War than at present. Today's demand is for aftermaths that are acceptable in equal measure both to the victor and to the international community. This was most certainly not the case during the Cold War.

Turning to the wider context of EBW's emergence, the debate concerning episteme or evolution seems likely to continue for some time. Tempting though it may be to dismiss its significance, the fact remains that the challenges of today do not mirror those of the past. Foucault contends that each new era produces its own unique mindset of thought. This, together with the fact that although EBW shares much of its heritage with the Manoeuvrist Paradigm, it nonetheless has original elements, begs the following questions: is EBW is a sudden and unexpected change, and if so, why? These topics are dealt with in chapters 2 and 3.

A further conclusion that arises out of this chapter is that whilst the modern effects paradigm builds upon previous models of warfare, it differs from its predecessors in that *it seeks to ensure that the effects that accrue during war are consistent with, and limited to, those effects envisaged during the planning process.* Clearly this has not always been the case. And whilst it remains to be seen whether EBW ever delivers as it envisages, there can be no doubt that it is broader in scope and ambition than the Manoeuvrist Paradigm ever was.

Regarding EBW itself, no tool or mechanism yet exists, or seems likely to exist, that will predict accurately the full range of effects associated with individual actions. The span of possibilities is simply too great for this to become reality. Indeed the simplified effects schematic at Figure 2 hints at the difficulties involved in trying to meet this aspiration. Thus the appeal of the paradigm needs to be balanced against the likely outcome of success. Against this background the possibility exists that the EBW model is flawed in this critical respect. One the other hand, the fact that it might not deliver at 100% efficiency does not mean that it should not be developed further, as presumably it is preferable to use a model that delivers to X% efficiency rather than one that delivers to X% minus, which - based on current events in Iraq and Afghanistan - is what the Manoeuvrist Paradigm is producing at present.

CHAPTER 2: AMERICAN ORIGINS

"We find ourselves at the gates of an important epoch...
when spirit moves forward in a leap, transcends its previous shape
and takes on a new one... [those] who oppose it impotently, cling to the past".

Georg Hegel (1770-1831)

INTRODUCTION

It is difficult to gauge with accuracy when EBW's conceptual underpinnings were first mooted in America. Certainly it owes much to its predecessors, and indeed many of its key tenets would have been as familiar to Alexander the Great or to George S Patton as they are to modern generals. However, some elements are relatively recent. The underlying theme of this thesis is to determine whether EBW merits recognition as an original model of warfare, and central to this question is America's contribution, consciously or otherwise, to the effects paradigm. With this in mind, this chapter analyses the US input to the modern paradigm. It does this by balancing recent American thinking at the operational and tactical levels against America's wider historical approach to warfare. This methodology was deemed most likely to unearth an audit trail - if indeed one existed - that linked US thinking to the contemporary EBW model.

The first section, an analysis of 'The Roots of Modern US Operational Level Doctrine', fills two purposes: it establishes when modern effects thinking first coalesced within the US, and it provides the context necessary to undertake a meaningful assessment of how EBW evolved out of Manoeuvre Warfare. Using lessons from Vietnam as its point of departure, it considers the DePuy era of the US Army's Training and Doctrine Command (TRADOC). It then analyses the quest for the alternative strategies that followed. It concludes with a brief analysis of one of America's most energetic and influential doctrinal periods: the era of General Don Starry. Next, the focus shifts to whether there is 'A Uniquely American Way of War'. Using Russell Weigley's *The American Way of War* as its anchor, this section considers America's wider approach to warfare. It asks whether current US doctrine is governed as much by America's remote past as by more recent developments. This analysis prompts a key question: does an American way of war exist, or does America merely have a way of battle - a less mature (and hence less effective) paradigm for addressing conflict? Antulio J Echevarria II's *Towards an American Way of War* helps to unlock this question by considering relevant experiences from Iraq and Afghanistan.

The chapter concludes with an overview of American input to the modern effects paradigm. Using Colin S Gray's *Strategy in the Nuclear Age: The United States 1945-1991* as a counterpoint to Weigley's work, this section analyses the roots of America's wider strategic culture. Next it considers the impact of three recent, and highly influential, US doctrinal theorists: John Boyd, John Warden and Dave Deptula. It ends with a brief overview of how Network Centric Warfare (NCW), the US variant of Network Enabled Capability (NEC), links to EBW.

THE ROOTS OF MODERN US OPERATIONAL LEVEL DOCTRINE

Today's Western military doctrines are predicated upon 'jointness', wherein at least two branches of the Armed Forces participate together in activities, operations, and, if required, organisational structures. A single military commander routinely exercises operational command and control of the forces that have been placed at his disposal. Yet this construct is a relatively recent development. For much of the Cold War it was not the model of choice, although there were some exceptions. For example, in the case of the UK, the joint model proved singularly effective during the Falklands Conflict of 1982.

Within the US, 'jointness' began to crystallise around the concept of Air / Land battle, the progeny of two land warfare developments which occurred in the second half of the 20th Century. The first and most visible of these arose out of America's experience in Vietnam, and the subsequent period of introspection. This produced many insightful albeit at times bittersweet lessons. The second development was largely theoretical in nature, but it was no less instrumental in redefining the American, and ultimately the NATO, approach to warfare in the 1980s. This was a radical re-evaluation of Warsaw Pact options for invading Europe, and the development of counter-strategies to negate this threat.

Lessons from Vietnam

One of the key questions that arose out of Vietnam asked how a world superpower with unprecedented resources and military capabilities could have been defeated by a Third World country with an apparently third-rate army. Certainly the amount of ordnance expended by the Americans in Vietnam was vast. Between 1965 and 1972 the US dropped more than two million tons of bombs in central Vietnam alone;[72] this equates to the total number of bombs dropped on all fronts in World War Two. In addition, hundreds of thousands of tons of chemicals were dispersed, and nearly a further three million tons of high explosives were delivered via artillery strikes.[73] According to Robert M Citino, author of *Blitzkrieg to Desert Storm: The Evolution of Operational Warfare*, there was never an army in the history of the world that could move faster or generate more firepower than US forces in Vietnam.[74] America lost the war for many reasons, but it did not lose due to a lack of firepower.

For North Vietnamese Army (NVA) General Vo Nguyen Giap, the NVA's leading military theoretician, the primary reason for America's failure stemmed from the fact that neither they, nor indeed the French - whom they replaced - truly understood the nature of

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[72] The generally infertile area between the Red River Delta in the north and the Mekong River Delta in the south. Source: Ngo Vinh Long, *Vietnam's Revolutionary Tradition*, in *Vietnam and America: The Most Comprehensive Documented History of the Vietnam War*, Gettleman, Marvin E, Franklin, Jane. Young, Marilyn B, and Franklin, Bruce (Eds), Grove Press, New York, 1995.
[73] Ibid.
[74] Robert M Citino, *Blitzkrieg to Desert Storm: The Evolution of Operational Warfare*, University Press of Kansas, 2004,p 237.

the war in which they were engaged.[75] Both countries made the same fatal error of believing that each time the North Vietnamese shifted to conventional warfare:

> "...this somehow signalled the failure of peoples war, which these foreign strategists equated with guerrilla war...[whereas] the appearance of large, well-equipped units engaging in conventional offensives does not indicate that guerrilla war has failed but just the opposite: it has succeeded enough to launch the next stage".[76]

By January 1975 the NVA was the fifth largest army in the world. This it achieved in spite of suffering huge numbers of casualties over many years.[77] Therefore, although considered third-rate by conventional Western standards, it was far from insignificant as a viable military force. But what is really striking about Giap's observation is that by the time America's first hostile act occurred in Vietnam, Giap had been patiently explaining, in print, the theory and practice of peoples' war in Vietnam for over three decades.[78] Moreover anyone familiar with Mao Tse-Tung's works not need have read Giap at all, as Mao too had been explaining the process in some detail since the 1930's.[79] More recently, Che Guevara had written about the theoretical aspects of insurgency from first principles, covering subjects that ranged from the need to understand strategy from the guerrillas' perspective, to the requirement to understand enemy manpower, mobility, popular support, weapons and leadership.[80] Each of these factors was a key issue in Vietnam.

In fact Giap's words did not go unheeded. General William C Westmoreland, the US four star military commander in Vietnam from June 1964 until shortly after the 1968 Tet offensive, read at least some of his works. He also studied the French defeat closely.[81] Together these complementary sources informed his decision to devise a strategy of "...bleeding them [the NVA] until Hanoi wakes up to the fact that they have bled their country to the point of natural disaster for generations".[82] He duly presided over a build-up of US forces from 16 000 in 1964 to 470 000 in 1967. Speaking in New York City that April, he noted that "...the end is not in sight...in effect we are fighting a war of

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[75] General Vo Nguyen Giap, *The political and Military Line of Our Party*, in *Vietnam and America*, Op Cit, p 193. The significance of the French misunderstanding is that the Americans took over the model that the French had been using.

[76] Ibid.

[77] http://www.vietnamwar.com/Timeline69-75.htm

[78] American involvement in Vietnam began in October 1945, with Washington providing credits to Paris to help France purchase seventy five US troop transports. Shortly afterwards, weaponry was made available "with the understanding that a substantial part could be used for the military campaign in Indochina". By 1953/54 America was financing 78% of the cost of the French Indochina war. See Ngo Vinh Long, *The Franco-Vietnamese War 1945-1954: Origins of US Involvement*, in *Vietnam and America*, Op Cit, p 34 and 35.

[79] For example: "The strategy of guerrilla warfare is manifestly unlike that employed in orthodox operations... there is in guerrilla warfare no such thing as decisive battle; there is nothing comparable to the fixed, passie defence that characterizes orthodox war. In guerrilla warfare, the transformation of a moving situation into a positional defensive situation never arises...it is improper to compare the two". This was written in 1938. Mao Tse-Tung, *Yu Chi Chan, Guerrilla Warfare*, in *Guerilla Warfare*, Cassell, London, 1961, p 38.

[80] Che Guevara, *Guerrilla Warfare*, Ibid, p 115.

[81] General Vo Nguyen Giap, Op Cit, p 193.

[82] Major-General John Kiszely, *The British Army and Approaches to Warfare since 1945*, in *Military Power: Land Warfare in Theory and Practice*, ed Brian Holden Reid, Frank Cass, London, 1977, p 189.

attrition".[83] Shortly after this speech Westmoreland flew to Washington to ask for more reinforcements. He considered 550 500 to be the minimal essential force and 670 000 to be optimal, albeit even with this larger force he estimated that the war would last for a further three years.

Westmoreland's strategy sought "...superior American force, supported by overwhelming air bombardment and artillery fire, not to seize or hold territory but to kill enemy soldiers in their jungle redoubts".[84] This approach presaged many elements of Manoeuvre Warfare - indeed all its current doctrinal elements were evident in abundance: surprise, tempo, shock, audacity, and a ruthless desire to succeed. That said, in Vietnam attrition reigned supreme, at least from the Americans' perspective, and bodycount became their yardstick of success. This did not in itself negate the Manoeuvrist elements of the campaign, but it certainly undermined them.[85] Reflecting on this aspect of the war many years later, Robert McNamara, the then US Secretary of Defense, stated that:

> "...I had gone by the rule that it is not enough to conceive of an objective and a plan to carry it out; you must monitor the plan to determine whether you are achieving the objective...I was convinced that, while we might not be able to track something as unambiguous as a front line, we could find variables that would indicate our success or failure. So we measured the targets destroyed in the North, the traffic down the Ho Chi Minh Trail, the number of captives, the weapons seized, the enemy body count, and so on...obviously, there are things you cannot quantify: honor [sic] and beauty, for example. But things you can count, you ought to count".[86]

Unfortunately for the Americans, however, this highly structured linear approach suffered from three fundamental problems. First, and most significantly, it was inherently flawed; because according to every metric then in use, America was winning the war - and indeed it continued to do so almost until its end. Indeed even when it was apparent that America was losing, McNamara made the point that "Every quantitative measurement...shows that were winning this war".[87] The lesson was clearly that not only did metrics need to be measurable, but that they needed to be meaningful as well. Clearly this did not happen in Vietnam.

In similar vein, Westmoreland noted that "Despite the final failure of the South Vietnamese, the record of the American military services of never having lost a war is still intact".[88] Unfortunately for those concerned, however, such records do not determine the outcome of wars. This provided another vital lesson: that no matter how great the tactical victories, unless they could be converted to strategic success they served little

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[83] See 'William C. Westmoreland Is Dead at 91; General Led U.S. Troops in Vietnam', *New York Times*, July 19, 2005.
[84] Ibid.
[85] The Manoeuvrist Paradigm recognises the potential need for attrition: witness the emphasis on smashing the Iraqi Republican Guard during both Gulf Wars, Mutla Ridge in 1991, and NATO's attempts to write down Serb armour in 1999.
[86] Robert S. McNamara with Brian Vandemar: 'In Retrospect: The Tragedy And Lessons Of Vietnam'. See http://Archives.Obs-Us.Com/Obs/English?Books?Mcnamara/Ir236.Htm
[87] McNamara in Kiszely, Op Cit, P 189.
[88] New York Times, Op Cit.

purpose. The second problem with McNamara's approach was that only rarely was the US Army able to utilise the full power of its combat capabilities, due to repeated attacks on its cohesion. In this respect the NVA was, perhaps surprisingly, more Manoeuvrist in its thinking than the Americans were, as time and again US forces were drawn into battles for which they were clearly ill-suited.[89] On 23 January 1973, US President Richard M Nixon announced an agreement that would end the war and bring peace with honour.[90] The Vietnam experience is perhaps best summed up by Lieutenant General Paul Van Riper, U.S. Marine Corps (retired), a veteran of both Vietnam and Desert Storm:

> "After Vietnam, the generation I represented went back and said, 'what did we do wrong'? Well, there were those who blamed it on things that weren't responsible - the media, the politicians, the fact we didn't have trained troops. They had a lot of other excuses for what the real problems were. The real problems were we did not have a thorough understanding of war, an intellectual doctrine of foundation for Vietnam. So that's where we went back, and we began to make those kinds of repairs. The difficulty was we understood the tactics. We had the techniques; we had the equipment. What we didn't have was any sort of a campaign plan to pull all of those battles and engagements together into some meaningful whole. And so you fought all of these battles and engagements for nothing. They were simply single events. There was no campaign plan that said, 'this is what we're aiming for' ".[91]

During the subsequent period of introspection, all of these factors - and indeed a great many more - were rigorously analysed. The following catharsis ushered in a period of transformation which, in the 1970s and 1980s, was to materially change America's approach to warfare.

The Impact of TRADOC

One of the first physical manifestations of this catharsis took place in 1973, with the formation of the US Army's Training and Doctrinal Command (TRADOC). Its first commander, General William E DePuy, had commanded the 1st Infantry Division in Vietnam for a year in the mid-1960s. A fierce critic of Westmorland's strategy, he believed that it led to an over-reliance on massive superiority in firepower, particularly from artillery, helicopters, and fighter-bombers.[92] He duly sought to reconsider how best to utilise US firepower on the modern battlefield.

For DePuy, the contemporaneous 1973 Arab-Israeli war signified the end of what he called 'tank and aircraft blitzkrieg'.[93] In July 1976 his findings crystallised into a revision of US Army Field Manual 100-5 (FM 100-5). This version stressed not only the new lethality of battlefield weaponry, but also the importance of the operational level of

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[89] Kiszely, Op Cit.
[90] http://www.vietnamwar.com/Timeline69-75.htm
[91] PBS FRONTLINE interview, 8 July 2004. See www.pbs.org
[92] Major Paul H. Herbert, 'Deciding what has to be done: General William E. DePuy and the 1976 Edition of FM 100-5, Operations', *Combat Studies Institute*, Fort Leavenworth, Kansas, 1988.
[93] Robert M Citino, Op Cit, p 255, 256.

warfare, a construct which hitherto had received scant attention in the US.[94] In addition, FM 100-5 posited a new military response in the event of Warsaw Pact aggression in Europe: that of Active Defence. Within this model, if a land-grab occurred there would be little movement on the part of NATO forces. Instead, the military would focus on key areas of likely breakthrough: the North German Plain, the Fulda Gap in central Germany, and the Hof Gap that bordered East Germany and Czechoslovakia.[95] There would be no reserve forces. Consequently, if breakthroughs occurred, forces in those regions would rush to the affected areas in order to stem the tide.

The Quest for Alternative Strategies

However, not everyone was convinced by DePuy. FM 100-5 proved to be highly divisive, not least because Soviet doctrine placed such heavy emphasis on reserves. For the Soviets, the role of the first echelon forces was primarily to create gaps through which their second echelon forces would subsequently deploy. Critics of FM 100-5 believed that DePuy's emphasis on defence emasculated the UA Army's ability to achieve tempo and agility, hence these vital qualities would become the preserve of the attackers. Within the military, many thought that this reactive rather than proactive approach would inevitably lead to failure. The key issue soon became one of how quickly it would take to lose the next war,[96] and this concern was not limited solely to the military. William S Lind, serving at that time as the legislative aide to Senator Gary Hart, suggested that FM 100-5's approach offered as many advantages to the attacker as it did to the defender. He believed that it indicated the acceptance of a Maginot mentality driven primarily by German desire for forward defence, rather than by pragmatic considerations.

At the opposite end of DePuy's proposal was the option for NATO forces progressively to withdraw to the west until reinforcements arrived from across the Atlantic.[97] Within this model, once the cavalry had arrived the balance of forces in Europe would inevitably alter. In the interim, the key requirement was that NATO must remain viable. If this could be achieved, the new forces could take the battle directly to the Warsaw Pact, who by this time would be hampered by their extended lines of communication. Outwardly there seemed to be no middle ground in this debate. In a bid to break the stalemate, Lind championed a compromise approach which stressed manoeuvre:

> "...manoeuvre is the ultimate tactical, operational and strategic goal while firepower is used primarily to create opportunities for manoeuvre. The primary objective is to break the spirit and will of the opposing high command by creating unexpected and unfavourable opportunities or strategic situations, not to kill enemy troops or destroy enemy equipment".[98]

The Starry Era

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[94] This was not the case in the Soviet Army, with figures such as Tukhachevskii promoting operational thinking well ahead of their Western counterparts.
[95] Ibid, p 233-235
[96] Ibid.
[97] Kiszely, Op Cit, p 190 and 191.
[98] William S Lind, 'Some Doctrinal Questions for the US Army', *Military Review*, Number 3, March 1977, p 54-65.

General Donn Starry succeeded DePuy in 1977, the same year Lind published his findings. Starry had commanded the Armor Centre at Fort Knox, Kentucky, between 1973 and 1976. In this capacity he had helped inform De Puy's revision of FM 100-5. Now, in a climate of increasing (and at times heated) debate, he found himself in the position of challenging this earlier work.[99]

Starry's approach was to assemble an elite corps of military intellectuals to analyse the matter from first principles. His chief writer, Lieutenant Colonel Huba Wass de Czega, was a highly regarded thinker, as indeed were many others on his team. Starry advocated an 'open book' approach within which no doctrinal stone was to be left unturned. Moreover, he places great emphasis on applying lessons from history to the contemporary European strategic panorama. This approach focussed his analysis on how best to negate the impact of Soviet second and third echelon forces before they arrived on the battlefield,[100] this being one of the key weaknesses of FM 100-5. By coincidence, the embryonic concept of Air/Land battle had surfaced immediately prior to Starry's appointment.[101] Starry's work built on this, and his solution - 'seeing deep' - matured into an interdiction model within which land and air forces would work closely together.

Building upon this premise, Starry's focus was twofold: to concentrate on the *extended* (deeper) battlefield, and the *integrated* (air and land) battlefield. To avoid confusing terminology, he chose AirLand Battle as the title for his work, noting that:

> "[The] first step is to formulate what we are trying to do - a vision, for it will then be necessary to assign responsibilities, develop operational concepts and doctrine systems, equipment systems, organizations, training systems and allocate resources in order to implement the vision".[102]

AirLand Battle was formally published in 1981. Its principal thrust was that the US Army was "entering a new dimension of battle which permits the simultaneous engagement of forces throughout the corps and division areas of influence".[103]

The following year saw the republication of FM 100-5. By following four key tenets: initiative, agility, depth and synchronisation, Starry believed that NATO might be able to seize the initiative if attacked by the Warsaw Pact. The enemy would first be checked by an initial assault rather than through active defence, and it would then be counter-attacked simultaneously, and across a wide front, rather than solely in the areas of penetration. A revised FM 100-5 was issued in 1986. It incorporated many campaign planning concepts which are still in use today.

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[99] For more depth on Starry during this period see John L Romjue's 'The Evolution of the Airland Battle Concept', *Air University Review*, May-June 1984.

[100] Typically within the Soviet battle plan only 20% of the assault forces would be in the first echelon. The remaining forces would be launched at Army and Army Group level to strike deep into rear areas. See Colonel Patrick Pengelley's *Air Land Battle: A Hollow Charge?*, Defence Attaché, Number 3, 1983. Soviet force concentration is well explained at General Sir Martin Farndale's 'The Operational Level of Command', *RUSI Journal*, Autumn, 1988, p 23-29.

[101] For further detail see FM 100-5, June 1993, p v.

[102] John L Romjoue, Op Cit.

[103] TRADOC Pamphlet 525-5, *Military Operations: Operational Concepts for the AirLand Battle and Corps Operation*, 25 March 1981, p 21.

Interestingly, at the same very time the UK was addressing similar issues, and with equal vigour. In fact this process had begun in 1971, two years before the formation of TRADOC, when a group of academics at the Royal Military Academy Sandhurst received government funding to form the Soviet Studies Research Centre.[104] The UK's change in mindset was swift. Within a decade, General Sir Nigel Bagnall was advocating "...a less positional, more mobile style of warfare [and] a greater appreciation of the importance of speed in battle procedure".[105] In 1985, as Chief of the General Staff, he oversaw the formation of the first Army-wide doctrine.[106] In the interim, while commanding the NATO Northern Army Group, he instituted an Army Group plan for deployment based on manoeuvre, rather than one in which corps battles were conducted in isolation. By the time he stepped down from this post, manoeuvrist thinking had become a reality within Europe.

A UNIQUELY AMERICAN WAY OF WAR?

In 1973 the American historian Russell Weigley produced a thought-provoking study entitled *The American Way of War*. Believing that there was something about the American approach that made it unique, Weigley reviewed five discrete periods in American history:

- 1775-1815, when America fought with limited resources.
- 1815-1890, in which the still youthful America, having only recently emerged from combat against Great Britain with the status quo ante bellum successfully preserved, set out its policy for deterrence and defence.
- 1890-1941, when America repeatedly undertook warfare outside its homeland.
- 1941-1945, which saw America triumphant on two fronts located at opposite ends of the world.
- 1945-1973: America's atomic legacy.

Weigley concluded that America did indeed have a unique approach to warfare. He based this deduction both on *prima facie* evidence and on the "assumption that what we believe and what we do today is governed at least as much by the habits of mind we formed in the relatively remote past as by what we did and thought yesterday".[107] Although many of the characteristics which Weigley assessed were evident in other national models of warfare, he reasoned that what made the American model different was its overt aggression and directness, coupled with its seemingly visceral desire to achieve decisive and overwhelming victory on the battlefield. Crucially, Weigley observed that "in the Indian wars, the Civil War, and then climactically in World War II, American strategists sought in actuality the object that Clausewitz viewed the ideal type of war, war in the abstract: '...the destruction of the enemy's armed forces, amongst all

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[104] Kiszely, Op Cit, p 198.
[105] Kiszely, Op Cit, p 199. Bagnall is also credited with introducing the British Army to the Operational Level: see John Keeegan at http://www.nmbva.co.uk
[106] Ibid.
[107] Russell F Weigley, *The American Way of War: A History of United States Military Strategy and Policy*, Macmillan, 1973. p xx.

the objects which can be pursued in War, always appears as the one which overrules all others' ".[108]

This is an interesting detail, because prior to 1873 the standard West Point text on warfare was Captain J M Oconnor's translation of S F Gay de Vernon's *Treatise on the Science of War and Fortification*. This, as its title suggests, emphasised the engineering facets of warfare, albeit for balance it included a brief summary of Jomini's strategic precepts. Thus for many years Jomini rather than Clausewitz was America's principal interpreter of Napoleonic strategy. [109] That said, in common with Clausewitz, one of Jomini's key strategic tenets was to maximise force against the decisive point in the theatre of operations, and ideally when the enemy had the inferior part of his strength there.[110] American theorists took this principle to heart - so much so in fact that Weigley deems it one of the classic features of the American way of war.

But whilst in some respects America's operational mindset mirrored those of other nations, at the strategic level it was truly unique. Typically, European nations, with many hundreds of years' experience of bloody conflict behind them, took into account the complex matter of how best to convert military victory into strategic success. But the American model did not do this. Indeed by placing such a heavy emphasis on destroying the enemy's fielded forces, by definition it placed less emphasis on the aftermath of war *per se*. Consequently, planning for the aftermath tended to occur when the warfighting stage was nearing its conclusion.

Weigley identified several highly influential strategic thinkers who shaped the American approach. These included Union General Ulysses S Grant, whose strategy of living off the land during his drive to Jackson, Mississippi, was described by Major General J F C Fuller as one of the boldest steps ever taken in warfare;[111] and the profoundly influential naval historian Alfred Thayer Mahan. So influential were these thinkers for Weigley, that in the 1941-1945 section of his book he attributed success in the European War to the strategic tradition of Grant, and success in the Pacific War largely to that of Mahan. Looking at more recent strategists, Thomas C Schelling featured as another key influence. In *Arms and Influence*, a book considered by Weigley to be the most significant strategic thinkpiece of the 1960s, Schelling's opined that "to seek out and destroy the enemy's military force, to achieve a crushing victory over enemy armies, was still the avowed purpose and central aim of American strategy in both world wars. Military action was thus seen as an alternative to bargaining, not a process of bargaining".[112] For Weigley this captured the essence of the American way of war prior to the advent of nuclear weapons. Weigley broadened this observation by citing Rear Admiral J C Wylie's claim that:

> "War for a nonaggressor nation is actually a near complete collapse of policy. Once war comes, then nearly all pre-war policy is utterly invalid because the setting in which it was designed to function no

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[108] Ibid. Weigley's Clausewitz quotation taken from Carl von Clausewitz, *On War*, tr. Col J J Graham, New York, Barnes and Noble, 1968, p 86.
[109] Ibid, p 82.
[110] Baron de Jomini, *Precis de l'Art de la Guerre*, Paris, 1838, p 173-174 and 472-473; cited at Ibid p 83.
[111] Robert M Citino, Op Cit, p 227.
[112] Thomas C Shelling, *Arms and Influence*, Yale University Press, 1966, p 34.

longer corresponds with the facts of reality. When war comes, we at once move into a radically different world".[113]

A Way of War or a Way of Battle?

At this point it is pertinent to ask whether Weigley's way of war is in fact a way of battle. The difference between these two models is stark. A way of war views the conflict process holistically. This starts *pre*-war with the setting of strategic and operational objectives, and finishes *post*-war when those objectives have been accomplished, and the necessary conditions for peace have been established. In contrast, a way of battle seeks to defeat the enemy militarily, the process being considered complete when the enemy has been defeated on the battlefield. Using these criteria, Schelling's quotation encapsulates perfectly a way of battle.

Indeed this was one of the conclusions proffered in *Toward an American Way of War*, a Strategic Studies Institute monograph that examined Weigley's claims.[114] Drawing attention to Max Boot's *Savage Wars of Peace*, which contends that "many of Americas small wars did not involve the complete overthrow of the enemy",[115] *Toward an American Way of War* suggests that the American way of battle has yet to mature into a recognisable way of war. It notes that even today, the American way tends to "shy away from thinking about the complicated process of turning military triumphs, whether on the scale of major campaigns or small-unit actions, into strategic successes".[116]

Echevarria then quotes retired US Marine General Anthony Zinni's observation that the US military is "becoming more efficient at killing and breaking, but that only wins battles, not wars".[117] Echevarria reinforces the point by suggesting that due consideration is not given to the processes and capabilities needed to convert battlefield success into strategic success: "the recent campaigns in Afghanistan and Iraq...are examples of remarkable military victories [which] have not yet culminated in strategic successes".[118] He adds that much of today's American defence literature emphasises firepower, precision, psychological operations, Special Forces, and jointness, rather than the use of overwhelming force. For Echevarria these characteristics are uncannily similar to the "speed, jointness, knowledge, and precision that reflect today's Office of Force Transformation (OFT) and OSD models of warfare".[119] He then adds grist to the mill by citing Victor Davis Hanson's *Carnage and Culture*, which postulates the existence of a

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[113] J C Wylie, *Military Strategy: A General Theory of Power Control*, Rutgers University Press, 1967, p 80, quoted in Ibid p 476.
[114] See *Toward an American Way of War*, Antulio J Echevarria II, Strategic Studies Institute of the US Army War College, March 2004.
[115] Max Boot, *Savage Wars of Peace: Small Wars and the Rise of American Power*, New York, Basic Books, 2002. This is not the only criticism of Weigley. See also Brian M Linn, 'The American Way of War Revisited', *The Journal of Military History*, Vol 66, No 2, April 2002, pages 501-530.
[116] Echevarria, Op Cit, p vi.
[117] General (Retired) Anthony Zinni, 'How Do We Overhaul The Nation's Defense to Win the Next War?' Presentation to the US Naval Institute, September 4, 2003.
[118] Echevarria, Op Cit, p 13.
[119] Ibid, p vi.

Western, rather than an American, way of warfare,[120] within which "warfare serves as a means of doing what politics cannot".[121]

THE ROOTS OF AMERICA'S STRATEGIC CULTURE

Turning to the roots of American strategic culture, in *Strategy in the Nuclear Age: The United States, 1945-1991* Colin S Gray identifies five key strands:[122]

- *A mastery of logistics*. Gray attributes this to the vast landmass of the USA and the national approach of having to cope with such geography.

- *The Experience of the Moving Frontier*. Conquering the wilderness required technological solutions and pragmatism. This has translated into a love of technology and a concomitant belief that technological solutions will prevail (but see overleaf).

- *Overwhelming size* in all relevant measures of power. This allowed America to conduct two geostrategically distinct wars half a world apart between 1941 and 1945. No other country could have done this.

- *A model of world governance* which follows the precepts of American liberal democracy.

- *Success*: an American aspiration that applies as much to the individual as to the country as a whole.

In noting that the environment exerts a strong influence on American thinking, Gray surmises that "Americans do not wage, or plan to wage, limited war: rather they plan to fight on land, at sea, in the air, or in and for space. The environments largely determine the technologies, the tactics, and the character of the operational goals".[123] He also comments on "the American propensity for reducing strategic problems into manageable

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[120] See Hanson's earlier work *The Western Way of War: The Infantry Battles in Ancient Greece, of the West 1500-1800*. New York, Cambridge University Press, 1996.
[121] Victor Davis Hanson, *Carnage and Culture: Landmark Battles in the Rise of Western Power*. New York, Doubleday, 2001, p 22. Quoted at Ibid, p 3.
[122] Colin S Gray, *Strategy in the Nuclear Age: The United States, 1945-1991*, in *The Making of Strategy-Rulers, States and War*, Ed Williamson Murray, MacGregor Knox, and Alvin Bernstein, Cambridge University Press, 1994, p 590.
[123] Ibid, p 587.

equations.[124] Delving deeper into detail, he identifies seven additional elements of strategic culture which in his view are almost as influential as the previous five:[125]

- *American indifference to history*, which results in minimal baggage and a natural predilection for avoiding sacred cows.

- *An engineering style that owes more to Jomini than to Clausewitz*. It reflects Jomini's obsession "to reduce ... the complex and ambiguous to a few apparently simple procedures". This point amplifies Gray's *Experience of the Moving Frontier* and lends credence to the American conviction that 'know-how' always delivers solutions.

- *Impatience*: a low tolerance for lengthy investment with distant payoffs.

- *Blindness to cultural differences*: the result of US isolation and repeated success against weaker opposition.

- *Continental Weltanschauung*. Because of its size, its historical experience of success, and the impatient temper of its people, the American way of war has been quintessentially continentalist. Americans have favoured the quest for swift victory through the hazards of decisive battle rather than the slower approach of maritime encirclement.

- *Indifference to strategy*. Gray concludes that traditionally it has been the American way to reduce war and strategy to narrow military undertakings, a proclivity as evident in the Gulf in 1991 as it had been in Europe in 1945. Weigley supports this assertion in noting "the American tendency ...to seek refuge in technology from hard problems of strategy and policy".[126]

- *Belated but massive resort to force*. Weigley concurs, citing General George C Marshall's conviction that "a democracy cannot fight a 7 year war".[127]

In melding these with his original five considerations, Gray surmises that:

> "From...Sherman's 1863 observation that 'Madam...war is cruelty...the crueller it is, the sooner it will be over', to the US Navy captain who reflected in 1954 that SAC's war plan would reduce the USSR to a smoking radiating ruin at the end of 2 hours. to the air campaign against Iraq in 1991, the exercise of maximum violence for swift results has been the American way".[128]

Whilst this is a key deduction, it is not universally supported. Indeed in *Contemporary Military Strategy*, Martin H Halperin traces several very different American strategies.[129]

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[124] Ibid, p 588. The original Pentagon references are R-266 (April 1954) and N-2526-AF (June 1988) respectively.
[125] Ibid, p 592-596.
[126] Weighley, Op Cit, p 416.
[127] Ibid, p 5.
[128] Gray, Op Cit, p 603.
[129] Martin H Halperin, *Contemporary Military Strategy*, Faber and Faber, 1972, p 40-52.

These range from Eisenhower's 'New Look' of 1953 to the Kennedy / McNamara era of civil advisors and think tanks; the 1967 reversal of NATO's strategy to take into account Flexible Response; Johnson's 1968 decision partially to halt bombing in Vietnam; the 1969 budget reduction of several billions of dollars; and the Nixon Doctrine of the same year, in which Nixon announced that US forces would no longer deal with subversion and guerrilla warfare. Halperin is supported by Robert M Citino, who states that:

> "At various times in its history and in various places, the United States has emphasised a maritime strategy, a joint (naval-land) strategy, and a nuclear strategy based first on strategic bombers, then one based on a triad of bombers, submarines and Inter Continental Ballistic Missiles. In terms of land operations it has a strong tradition of manoeuver-based warfare dating back to the Revolutionary War and the Mexican War; it has an equally strong tradition of firepower-based attrition war. The country's formative military experience, the Civil War, saw a tremendous amount of both types. In fact, one might argue that it is precisely this flexibility of means that has been the principal characteristic of American war making over the years, rather than rigid adherence to one specific operational doctrine".[130]

Paradoxically, the fact that Weigley's position is not universally accepted strengthens the argument that in order to understand the context behind to US input to EBW. America's remote past must be studied in some detail.

US INPUT TO THE MODERN EFFECTS PARADIGM

Boyd's OODA Loop

Turning to the contemporary model of EBW, USAF Colonel John Boyd might justifiably be thought of as one of its founding fathers. For US Vice President Dick Cheney, his influence was "clearly a factor"[131] in the success of Operation Desert Shield. For General Charles Krulak, Commandant of the US Marine Corps from 1995 to 1999, this praise falls well short of the mark. He dubbed Boyd "the architect of America's victory in the Gulf"[132], and believed that not only did that victory belong to Boyd, but that victory in the future would also belong to him.[133] Boyd's contribution to EBW was significant, even though much of it took place before the current effects paradigm emerged. Boyd noted that during the Korean War, US F-86 Sabres had a vastly superior kill ratio (ten to one) compared to Soviet-built MiG-15s.[134] He concluded that the better visibility of the F-86 allowed US pilots to *observe* their opponents better, *orientate* themselves more quickly, *decide* what to do, and then *act* accordingly. He labelled this process the 'OODA loop'.

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[130] Robert M Citino, Op Cit, p 227. Chapter 7 is particularly informative.
[131] Coram, Robert, *John Boyd: Architect of Modern Warfare.*
http//www.gtalumni.org/StayInformed/magazine/fall02/article3.html
[132] Ibid.
[134] Ibid.
[131] Fadok, David S, *John Boyd and John Warden: Air Power's Quest for Strategic Paralysis.* Air University Press, Maxwell AFB, Alabama, February 1995.

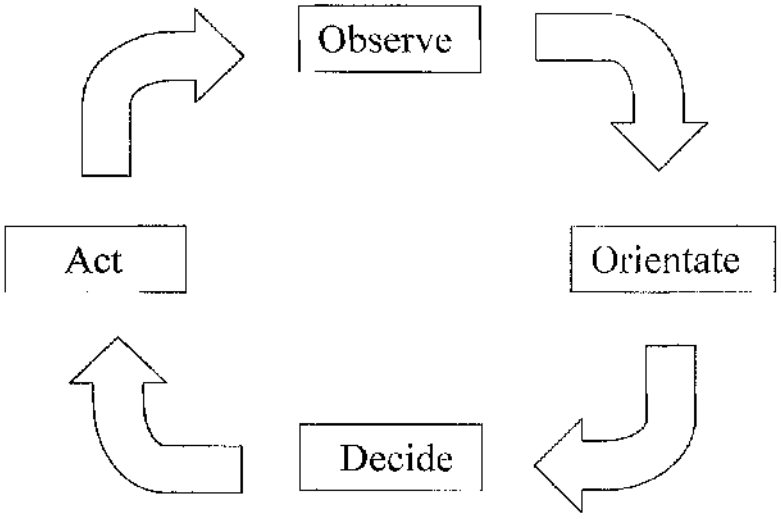

Figure 3 – Boyd's OODA Loop

For Boyd, all rational human behaviour followed this process. Accordingly he applied his findings outside the cockpit, and in doing so he surmised that the enemy could be rendered powerless at any level of warfare by denying him time to cope with a rapidly changing situation. The OODA loop is therefore a relational construct: it can be tightened (made quicker) by reducing friction within one's own processes, or expanded (so that the decision-making process slows down) by increasing friction within the enemy's processes.

From an effects perspective, Boyd's work is significant in that it did not specify physical destruction. Rather, it targeted the enemy's cognitive abilities, and it achieved its ends by exploiting the fourth dimension: time. Colin Gray notes that Boyd's thinking:

> "...can apply to the operational, strategic, and political levels of war, as well as to tactics for aerial dogfights. The OODA loop may appear too humble to merit categorization as a grand theory, but that is what it is. It has an elegant simplicity, an extensive domain of applicability, and contains a high quality of insight about strategic essentials, such that its author well merits honourable mention as an outstanding general theorist of strategy". [135]

It is highly likely that Boyd, a pragmatist by nature, would not have welcomed the label, but nonetheless he merits consideration as one of the founding fathers of the modern effects school.

The Systems Approach: Warden And Deptula

Boyd's work paved the way for the next phase of effects thinking. This took the form of systems framework analysis. In itself this is not a new development; indeed it first emerged in 1917, when Major Lord Tiverton advocated that decisive military, industrial

[135] Colin S Gray, *Modern Strategy*, p 91.

and transportation targets should be selectively bombed from the air.[136] A modern version of this model was used to telling effect during Operation Desert Storm. Credit for this belongs largely to two USAF airmen: Colonel John Warden, one of the architects of the Gulf War air campaign; and Major General David A Deptula. Together they developed a systems approach to targeting which today forms the bedrock of EBW thinking.

Warden viewed adversary states as systems of systems. He represented the systems of state (leadership, system essentials, country infrastructure, population, and fielded forces) pictorially as a series of concentric circles (Figure 4). Leadership is at the centre. surrounded and protected by the remaining rings, which in the normal course of war are attacked from the outside inwards in a predictable sequence. Leadership, the strategic prize, is usually the most difficult ring to access, whilst conversely fielded forces are usually attacked first, as they form the physical barrier to the remaining rings.

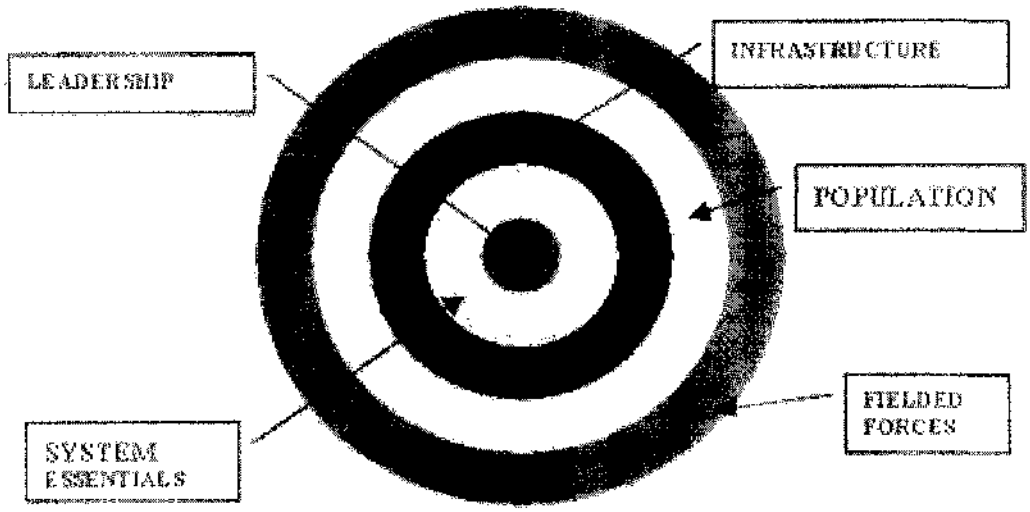

Figure 4 – Warden's Five Ring Model

Warden suggested that by the late 20th Century this 'outside-inwards' view had become redundant due to developments in air power. He postulated that this traditionally linear approach to warfare could now be circumvented, as the most critical - and indeed the most difficult to access - ring of the enemy system, leadership, could now be targeted directly due to improvements in technology and precision. Consequently leadership could now be attacked physically from the outset of the campaign rather than towards its end.[137]

Deptula developed the concept. He concluded that the days of what he called 'sequential warfare' were finally over, and that a new age - of 'parallel warfare' - had emerged. Unlike its predecessor, the new model could achieve effective control over the systems which adversaries relied upon for power and influence: leadership, population, essential

[136] Boog, H, in Cox, Sebastian, ed, *Sir Arthur Harris - Despatch on War Operations*, London, 1995, p xl.
[137] Twelve years later on, Operation Iraqi Freedom commenced with two F-117 strike missions against a senior Iraqi leadership compound in Baghdad, where Saddam Hussein and other top regime leaders were believed to be staying. Had this strike been successful, Iraqi Freedom would clearly have assumed a different course.

industries, transportation and distribution, and forces.[138] Within Deptula's model, each ring could be targeted simultaneously. The advantages of this approach were clear: namely that enemy leadership could now be shocked into strategic paralysis at an early stage of the war, and that fielded forces need not necessarily be attacked in great numbers, if at all. As a result, aircraft which previously would have been assigned against fielded forces could now be assigned to other tasks, such as applying more pressure to enemy leadership. This was a win-win situation. Not only did it capitalise on Boyd's emphasis on time, but it followed every key tenet of Manoeuvre Warfare. This was a defining moment in modern warfare, as from this point onwards timescales could be compressed as never before.

But for its architects there was a sting in the tail. Like Boyd, both Warden and Deptula were airmen; and these developments were viewed as products of air thinking, and therefore air-centric in their outlook. Whilst Warden and Deptula intuitively understood the full significance of their work - the elastication of time within a warfighting context - many non-airmen considered this development as no more than a question of target prioritisation. Consequently they fundamentally misunderstood the leveraging effects that could now be achieved. As Deptula pithily observed:

> "On February 15, 1991 the Iraq target planning cell received a report from the Central Command intelligence staff on the progress of the air campaign in accomplishing the electric target set objectives. The report stated that because all the individual targets...were not destroyed or damaged to a specific percentage...the objective had not been met. In fact, the electrical system was not operating in Baghdad"[139]....

Even though the required effect - no electricity in Baghdad - had been achieved, the prevailing culture demanded that targets be repeatedly attacked until all the extant damage criteria had been met. In this instance Deptula was able to overturn this decision and allocate aircraft to more pressing missions, but only after considerable effort on his part.
Crucially, this intervention was one of the first documented examples of modern EBW in action. It shows that even in the late 20th Century, target allocation was sub-optimal.[140] Deptula continues:

> "The effect desired by the air campaign planners...was not the destruction of each of the electrical sites; it was to stop temporarily the production of electricity in certain areas of Iraq...The determinant of whether to act (with lethal or non-lethal means) to affect an individual site was whether the electrical system was operating in the area of interest, not the level of damage, or lack

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[138] David A Deptula, 'Effects Based Operations: Change in three Nature of Warfare', *Aerospace Education Foundation*, Virginia, 2002, p 6.
[139] David A Deptula, 'Effects Based Operations: A US Perspective', *Aerospace Education Foundation*, Virginia, 2002, p 39.
[140] In Kosovo several targets were attacked repeatedly, in some cases after they had already been reduced to rubble. The intended message to Milosevic was that NATO had the power to attack repeatedly and at will; but this is not necessarily the message Milosevic received. He is equally likely to have assumed that NATO did not know that it had already destroyed those targets, and hence its intelligence was poor. Source: author.

> thereof, to an individual site. During the war some Iraqi plant managers shut down their electrical plants to avoid targeting thereby creating our desired effect without exposing Coalition members to danger, and freeing up air resources for another task - Sun Tzu's dictum fulfilled".[141]

The coalition now had an unprecedented ability to deliver considerable amounts of ordnance very quickly - indeed more targets were attacked during the opening 24 hours of Desert Storm than by the 8th US Army Air Corps in its entirety during the years 1942 and 1943 combined.[142] As a result, coalition forces could deliver effects across the full spectrum of operations in a manner previously deemed impossible. During the first ninety minutes of Desert Storm more than fifty targets were attacked throughout Iraq. These targets involved all levels of the military, from communications nodes and fighter bases in central Iraq, to command leadership bunkers north of Baghdad, communications exchanges inside Baghdad, and interceptor operations centres located as far away as Kuwait.[143] This development heralded a new facet of warfare: the simultaneous application of force (the time dimension); across every level of war (exemplified by the variety of targets attacked); without geographical restraint (the environment). This was parallel warfare in action, with time and space now being exploited in terms of *effects* rather than as media for enabling physical destruction.

One important by-product of this approach was that fewer target sets now needed to be destroyed, and as a consequence less damage might now occur on the ground.[144] Indeed by articulating his intent in terms of effects, Deptula reduced the number of bombs dropped against Iraqi Sector Operations Centres on the first night of the war from eight to two. This action yielded the effects he sought, and at the same time it freed up significant firepower for use against other targets.[145] This was another key step in the development of EBW.

Completing the Circle: The Network

Deptula's operational thinking dovetailed neatly with the US Department of Defense's embryonic vision for Network Centric Warfare (NCW). NCW promised a shift away from attrition-based warfare to a model that was characterised by self-synchronisation (in which forces organise themselves from the bottom up to meet commander's intent) and speed of command (which would be facilitated by Information Superiority).[146] One of the NCW's principal strengths lay in the fact that nations thus configured could articulate their objectives in terms of massing *effects* rather than *forces*.[147] Platforms would still be important, of course, but the temptation to 'bean count' platforms - and their attendant capabilities - would reduce accordingly.

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[141] Deptula, 'Effects Based Operations: A US Perspective', Op Cit.
[142] Ibid, p 38.
[143] Deptula, 'Effects Based Operations: Change in three Nature of Warfare', pages 1 and 5.
[144] For a more in-depth explanation see Crowder, Gary L, 'effects-Based Operations', *Military Technology*, Vol 27, Issue 6, Bonn, June 2003.
[145] For fuller discussion of this and similar planning considerations, see Mann, Endersby and Searle's 'Dominant Effects: Effects-Based Joint Operations', *Aerospace Power Journal*, Maxwell AFB, Fall 2001, Vol 15, Issue 3.
[146] Vice Admiral Arthur K Cebrowski, US Navy and John J Garstka, 'Network-Centric Warfare: Its Origin and Future', *Proceedings*, January 1998.
[147] Ibid.

NCW and its UK equivalent, NEC, share much in common. But they are not identical, and it would be wrong to view them as such. In NCW the network is at the centre of the process, whereas in NEC the network is merely an enabler; so whereas NCW signifies a fundamental shift in outlook - from platform-centric to network-centric warfare - the same holds true to a far lesser extent in NEC. In *Cause or Effect?* Professor Chris Bellamy notes that "...US authorities see EBOs as crucially dependent on Network-Enabled Capability. In other words, what is new is the networking that permits the results of an attack on any target to be predicted and traced throughout the direct, indirect and cascading consequences that follow".[148] He contrasts this with the British attitude to EBOs, which "...stresses the wider aspects of the approach and, inevitably, leads to the conclusion that ...the new aspect which technology facilitates is the application of effects to a wider audience".[149] Another difference between these two models is that NCW will by its very nature depend heavily on state of the art technology, whereas NEC's cost burden will be of a lower order, as less technology is involved.

CONCLUSION

The methodology of balancing recent American thinking at the operational and tactical levels against America's historical approach to warfare has unearthed a long and at times convoluted audit trail of inputs to the EBW model. Some milestones are readily apparent: the contribution of theorists such as Boyd, Warden and Deptula; the pivotal work of TRADOC; and Lind's nudging of the tiller in critical areas. However, other milestones are more obscure: the relevance of DePuy, and MacNamara's flawed (but at the time widely accepted) mindset of body counting. Yet without DePuy there would have been no revision of doctrine under Starry; and without MacNamara, the need for meaningful measurements of effects would not have been so readily apparent. Accordingly, one of the key conclusions of this chapter is that doctrine does not necessarily evolve, as Starry took great pains to start afresh and introduce originality wherever possible. This adds credence to Foucault's claims, and hence it reinforces the possibility that, in similar vein, EBW might also be more than the sum of previous experience.

The language of effects entered the military lexicon during the 1991 Gulf War, and even before the fighting was over the media had begun to use it. Some military objectives were framed in terms of effects, and media reports naturally mimicked this language. In similar vein, the nature of the coalition - and in particular, America's dominant role - was such that the new lexicon was swiftly embraced by coalition partners. This ensured that effects thinking would in due course permeate throughout NATO's military forces, a process that continues to this day.

However, none of these recent events take into account the role of America's remote past. In this regard Weigley's context provides much food for thought. *The American Way of War* leaves little room for doubt that the US desire to seek overwhelming victory on the battlefield was never matched by a concomitant desire to set appropriate conditions for peace. For Weigley, this was a defining feature of the American approach. And whilst Gray and Halperin disagree with him in some areas, ultimately they too strengthen the notion that America's approach to warfare is truly unique. A deeper understanding of America's historical legacy was thus useful in helping to set the context for America's wider contribution to EBW.

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[148] See Bellamy, Chris, 'Cause or Effect', *Defence Director*, Sept 2004, p 5.
[149] Ibid.

A further important feature was unearthed by Eschevarria, who asserts that the American approach to war is, in fact, a way of battle. This insightful revelation suggests that America's traditional view of military action as an *alternative* to bargaining - rather than as a *part of the bargaining process* - is likely to continue unchecked unless conscious efforts are made to change it. Clearly this has implications for EBW, because if no change is forthcoming, future inputs to the model will necessarily be limited in their scope and significance. Indeed it is even possible that some previous inputs might become redundant. If so, it is equally possible that EBW's survival could depend on America's willingness to transform its way of battle into a way of warfare.

CHAPTER 3: UK ORIGINS

"There are 2000 years of experience to tell us that the only thing harder than setting a new idea into the military mind is to get the old one out"

Sir Basil Liddell Hart 1895 - 1970

INTRODUCTION

This chapter assesses the UK input to EBW by analysing a series of governmental papers. This approach reveals that with each successive paper, EBW development increased in some form. By the time the final paper referred to in this thesis was written - just five years after the original one - EBW had coalesced around the concept of EBA, an holistic approach to warfare unique to the UK.

The chapter opens with 'The Origins of EBA', which assesses (from an effects perspective) the 1999 UK Government White Paper *Modernising Government*.[150] This made explicit the government's aspiration that henceforth departments would work more closely together in 'the new electronic information age'. This requirement was a precondition for EBA, as departments which acted in isolation could not support a coherent pan-governmental approach to conflict. Therefore - albeit unknowingly - *Modernising Government* presaged EBA's germination, partly as a result of its emphasis on outcomes rather than on process. Next is a review of the *New Chapter to the 1998 Strategic Defence Review*. Prompted by the terrorist attacks of 9/11, this demanded even more coherence across all government departments. Importantly, it stated that military options would in the future be framed in terms of desired effects: and from this point onwards EBA moved forwards substantively. The next section, 'Network Centric Capability (NCC)', shows how an effects model was predicated with a robust network at

[150] *Modernising Government*, HM Government White Paper, Cm 4310, The Stationery Office, 1999.

its core. Thereafter, 'the network' would be a defining feature of the paradigm. NCC is not analysed further, however, as its development is outside the scope of this thesis.

The chapter then addresses 'EBA Consolidation'. This started in July 2002 with the issue of a supporting adjunct to the *New Chapter*, which added detail to five previously identified strategic effects and showed their linkage to knowledge superiority and downstream effects. This is followed by a brief review of *Delivering Security in a Changing World,*[151] issued in December 2003, which used the term 'effects based operations and planning' for the first time; hence this key paper clarified the government's effects vision. During this period some of the UK's most influential conceptual work took place on the effects model. The chapter ends with a warning, noting that the EBA model is incomplete because the government has yet to develop an overarching national philosophy that applies to all government departments. Consequently, whilst the UK model might appear to be sound conceptually, nonetheless it suffers from an identifiable weakness in process. Paradoxically, this was the very area that the government sought to address in the original Paper. Finally, it should be noted that combined UK / US inputs to EBW are outside the scope of this chapter, as is the operational level model, EBO, a product of US thinking.

THE ORIGINS OF EBA

The mindset which underpins EBA can be traced back to the 1999 UK Government White Paper entitled *Modernising Government*. In the introduction, Jack Cunningham MP stated that:

> "...we need all parts of government to work together better. We need joined-up government. We need integrated government. And we need to make sure that government services are brought forward using the best and most modern techniques...which link in to a range of government Departments and especially electronic information-age services".[152]

His message was frank. If government departments worked better together, government could make life better for everyone. The accrued benefits would apply at all levels, ranging from day to day practices at police stations and local councils at one end of the spectrum, to the delivery of national strategic objectives at the other end. Greater coherence and integration would inevitably ensue, and Britain would thus witness "joined up government in action".[153] *Modernising Government* noted that whilst "many policies are rightly developed and pursued by a single part of government, a focus on outcomes [would] encourage Departments to work together...".[154] Henceforth *outcomes* as opposed to *process* would form a pillar of pan-governmental business, with policy being designed "around shared goals and carefully defined results, not around organisational structures or existing functions".[155]

Government departments were quick to pick up on these messages. The Foreign and Commonwealth Office (FCO) Departmental Report for 2001 noted that "success depends

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[151] *Delivering Security in a Changing World*, Cm 6041-I, The Stationery Office, July 2004.
[152] *Modernising Government*, Intro.
[153] Ibid, Executive Summary.
[154] Ibid, Section 2.
[155] Ibid.

on working closely together with other Government Departments and non-Government actors, both in the UK and abroad".[156] By the time this report was published, the FCO, together with the Department for International Development (DfID) and the MOD, had set up two joint conflict prevention funds: one for Africa, and the other for the rest of the world.[157] Whilst this initiative cannot be traced back directly to *Modernising Government*, nonetheless it occurred shortly afterwards. Given the level of pan-governmental liaison that was taking place at this time, it is extremely unlikely that this work was conducted within a vacuum.

From an effects perspective *Modernising Government* merits scrutiny for three reasons. First, it identified that government departments had not always worked as closely together as they could have done. The Labour Party had noted this weakness prior to its landslide victory in 1997, and it had resolved to tighten the working relationship between departments as soon as possible after the election. Second, the emphasis on *outcomes* signified a fundamental shift in outlook. The full implications of this shift were not appreciated at the time, but they became increasingly evident shortly afterwards. Third, the paper clarified the linkages between strategic planning and outcomes. This soon became one of the central tenets of both the new 'electronic information age' and the 'effects thinking' mindset that followed the report. Accordingly, *Modernising Government* subtly - and almost unnoticed - presaged the effects model of holistic decision-making.

The "New Chapter"

The catalyst for embracing this new methodology took the form of the 9/11 terrorist attacks in New York and Washington. In the aftermath of these attacks the UK Secretary of State for Defence drew up a *New Chapter to the 1998 Strategic Defence Review* (SDR). This work, published in July 2002, analysed the UK's defence posture in light of the revised security situation. It sought to ensure that the government had "...the right concepts, the right capabilities and the right forces to meet the additional challenges we now face".[158] And it made explicit the fact that the MOD was not working in isolation, and that its findings would apply to all government departments.

The *New Chapter* covered four themes. Two in particular contributed directly to the nascent EBA. The first was that "political, diplomatic, humanitarian, economic, financial, intelligence and law enforcement, as well as military, measures" should become more coherent in the future.[159] The second was that military options would henceforth be framed in terms of desired effects, rather than in terms of capabilities or platforms. This was a radical departure from previous practice, and it marked the genesis of the UK's EBA mindset. The *New Chapter* proffered four conclusions, two of which were particularly relevant to EBA:

- "We must aim for 'knowledge superiority' over international terrorists to anticipate their plans and ensure the most effective combination of effects to counter their attacks;

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[156] FCO Departmental Report 2001, Chapter 14.
[157] Ibid.
[158] *The Strategic Defence Review: A New Chapter*, MOD, July 2002, Section 1.
[159] Ibid.

- The main sorts of military effect we can bring to bear are to prevent, deter, coerce, disrupt or destroy our opponents".[160]

Network Centric Capability (NCC)

The first conclusion linked knowledge superiority directly to EBA. In future, knowledge would be garnered through a Network-Centric Capability (NCC) which would "...collect, fuse and disseminate accurate, timely and relevant information with much greater rapidity (sometimes in a matter of only minutes, or even in 'real time') to help provide a common understanding among commanders at all levels".[161] NCC would tie together the disparate elements that were needed to support the delivery of precise and controlled military effects. In order to do this it would comprise three strands: "...sensors (to gather information); a network (to fuse, communicate and exploit the information); and strike assets to deliver military effect".[162] No deadline was set for NCC's implementation, but it soon became clear that the concept might be able to improve operational capability.

But not everyone was convinced. For some, the rapid growth of new acronyms was in itself enough to cause confusion, especially when they were misused: this happened a lot during this early, acronym-rich period. For others, NCC belonged to the realms of science fiction. They viewed it as an aspiration too far, believing that it presupposed advances in technology that would not be achievable for many years.

These concerns were not without precedent. Indeed at that time the UK Army's BOWMAN project was experiencing significant birthing pains. Designed to bring internet-style communications to the battlefield, BOWMAN, like NCC, demanded highly advanced technology. Unlike NCC, however, it needed that technology immediately, and this was proving to be an insurmountable challenge. In July 2001, already some 9 years behind schedule, the £1.9 billion contract was taken away from the original contractors (Archer, led by the BAe Consortium) and awarded to Computing Devices Canada, an arm of US-based General Dynamics.[163] BOWMAN officially entered service in March 2004. The saga continues, however. On 5 January 2005, Brigadier Jamie Balfour, the Army's Director of Infantry, advised his troops that "it is as bad as you've heard. But we have been told that, politically, we have got to make it work. Now you guys will have to go out and find a way of making it work." His briefing concluded with the words "hang on to your cellphones."[164] With this in mind, similar reservations about NCC were not necessarily wholly misplaced.[165]

Mindful of similar criticisms, the *New Chapter* noted that it would be "...less useful to try to measure combat power in crude terms of numbers of platforms and people than in terms of our ability to deliver specific effects, with a robust network at the core, linking

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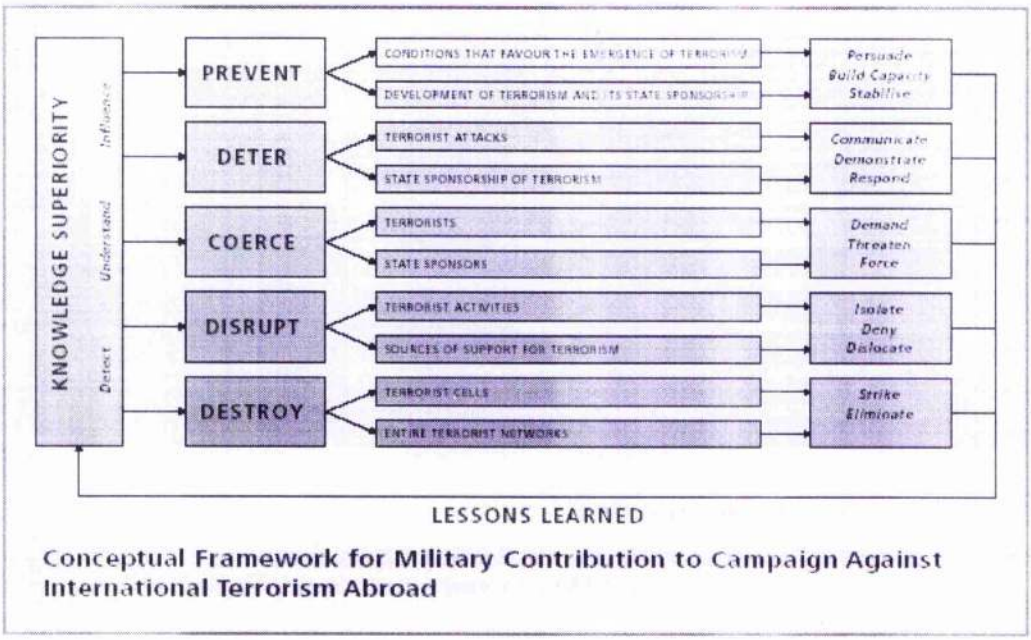
[160] Ibid para 11.
[161] Ibid.
[162] Ibid para 35.
[163] For further detail see www.gdcanada.com/company_info/articles/body_art2001jul20rk8.html
[164] Michael Smith, *The Daily Telegraph*, e-version filed 4 January 2005.
[165] There are many similar examples. The ill-fated Nimrod AEW Mark 3 project was cancelled in December 1986, after £1 billion had been spent on it, when it became apparent that it would never match the capabilities of the far older (and significantly cheaper) Boeing E-3 Sentry AWACS aircraft. For an overview of the difficulties of Smart Procurement see Sir Timothy Garden's 'Ministry of Disasters?', February 2000: www.tgarden.co.uk/writings/articles/2000

key capabilities and enabling force multipliers".[166] This comment reinforced MOD's intent to shift the emphasis away from *platform*-centric warfare towards EBA, and at the same time it confirmed that 'the network' would be a key element within the wider effects paradigm.

NCC was subsequently re-branded Network Enabled Capability (NEC). This remains the extant term. Its outputs are expected to be greater precision in the application of force, and greater rapidity of effect (by shortening the time required to assimilate information, take decisions, and then act upon them). NEC is a complex topic, and it merits study in its own right. And whilst its role within EBA is self-evident, there is not space within this thesis to delve further into matters of detail. However, this ought not detract from the central issue: namely that NEC it is an integral part of EBA.

EBA CONSOLIDATION

In July 2002, a supporting adjunct added detail to the *New Chapter*. Entitled *The Strategic Defence Review: A New Chapter Supporting Information & Analysis*,[167] it highlighted the international terrorist threat in the round, and offered a brief overview of extant UK doctrine and concepts. It also suggested a conceptual framework for a military contribution to "the Campaign Against International Terrorism Abroad",[168] shown below.



Conceptual Framework for Military Contribution to Campaign Against International Terrorism Abroad

Figure 5

[166] *New Chapter*, para 41.
[167] *The Strategic Defence Review: A New Chapter Supporting Information & Analysis*, Cm 5566 Vol II, MOD, July 2002.

This matrix was based on lessons learned as well as on theoretical knowledge, and it served as a foundation for the work that would shortly follow. In particular, it added detail to the five strategic effects originally outlined in the *New Chapter*, and it showed their linkages to knowledge superiority (at the input end of the process) and downstream effects (at the output end). Moreover, it postulated that knowledge superiority comprised three strands: detect (such as the emergence of terrorist organisations); understand (for example, the nature of the threat in terms of value sets); and influence (maintaining public support and sharing knowledge with allies and partners). Its central message was clear, direct and unambiguous: that 'effects thinking' was different from the model it was about to replace, and that it was here to stay.

A further White Paper was published in December 2003. Entitled *Delivering Security in a Changing World*, it stated that the UK would "continue to develop effects based operations and planning, [thereby] maximising the combined contributions of our available capabilities to achieving decisive military effect".[169] Picking up one of the *Modernising Government* threads, it noted that the MOD would "work with other government departments, particularly the Foreign and Commonwealth Office and the Department for International Development, to ensure that military effects-based planning complements wider strategic planning and the cross-government effort on crisis prevention and management".[170] It also noted that:

> "Effects-Based Operations is a new phrase, but it describes an approach to the use of force that is well established - that military force exists to serve political or strategic ends. We need a new way of thinking about this that is more relevant to today's strategic environment. Strategic effects are designed to deliver the military contribution to a wider cross-governmental strategy and are focused on desired outcomes. Our conventional military superiority now allows us more choice in how we deliver the effect we wish to achieve. We have begun to develop our military capabilities so that we can provide as wide as possible a range of options to fulfil operational objectives without necessarily resorting to traditional attritional warfare. Some effects can also be delivered entirely outside the context of active operations, for example through Defence Diplomacy activities as part of long-term conflict prevention".[171]

This statement clarified the effects vision, albeit on the back of two dubious assumptions: that the UK has conventional military superiority (line 8);[172] and that warfare is traditionally attritional (line 13). That said, its wider implications were not lost on non-domestic audiences. In 2004, at a *Command and Control Search and Technology Symposium on The Power of Information Age Concepts and Technologies*, Australia's Defence Science and Technology Organisation noted that EBA:

> "...has implications for operations other than war, and for National and Military strategy. At the strategic level, the effects-based approach is of

[168] Ibid Section 6, p.14.
[169] *Delivering Security in a Changing World*, p.8.
[170] Ibid.
[171] Ibid.
[172] This will undoubtedly be true in some cases, but it might not be true in every case.

> as much relevance to "winning the peace" as it is to winning wars. In fact the effects-based approach is a concept that may impact on National security and National prosperity in profound and challenging ways".[173]

Shortly before this symposium took place, the UK MOD added a further three strategic effects to the original five: stabilise (by setting secure and stable conditions appropriate to subsequent political and economic action); contain (by limiting or restraining the spread, duration or influence of an adversary or crisis); and defeat (by reducing the effectiveness of an adversary so that he is no longer able to conduct combat operations).[174] In March 2004, these were further outlined in Joint Doctrine Publication 01 *Joint Operations*, together with the caveat that "...the 8 strategic effects... are not intended to be exclusive."[175] Thus, rather than being prescriptive, their purpose was twofold: to bring clarity to potential military tasks, and to guide those involved in the planning processes.

In July 2004, a further pamphlet was issued: *Delivering Security in a Changing World - Future Capabilities*. This commented on "...the need to strike the right balance of capabilities for expeditionary operations to meet the demand of our eight strategic effects".[176] Stressing "the importance of the continued transformation of our forces to concentrate on the characteristics of speed, precision, agility, deployability, reach and sustainability",[177] it made it clear that NEC would be at the heart of this transformation: "...Key to this is our ability to exploit the benefits of Network Enabled Capability, precision munitions and the development of effects based planning and operations".[178] The full scope of NEC was revealed as comprising:

> "...the coherent integration of sensors, decision-makers and weapon systems along with support capabilities. NEC will enable us to operate more effectively in the future strategic environment through the more efficient sharing and exploitation of information within the UK Armed Forces and with our coalition partners. This will lead to better situational awareness across the board, facilitating improved decision-making, and bringing to bear the right military capabilities at the right time to achieve the desired military effect. This enhanced capability is about more than equipment; we will exploit the benefits to be obtained from transformed doctrine and training, and optimised command and control structures. The ability to respond more quickly and precisely will act as a force multiplier enabling our forces to achieve the desired effect through a smaller number of more capable linked assets".[179]

This was a timely and useful statement. Less useful, however - at least to those who wished to preserve the scale of the UK's Armed Forces - was the sting in the tail: that because EBA could deliver greater effect, it would need fewer resources to do so.

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[173] Donald Lowe and Simon Ng, *Effects-Based Operations: Language, Meaning And The Effects-Based Approach, 2004 Command and Control Research and Technology Symposium: the Power of Information Age Concepts and Technologies*, p.3.
[174] Joint Doctrine Publication 01, *Joint Operations*, March 2004, MOD, p.1-7 and 1-8.
[175] Ibid.
[176] *Delivering Security in a Changing World -Future Capabilities*, Op Cit.
[177] Ibid.
[178] Ibid.
[179] Ibid Chapter 2, p.5.

Codifying The 'Effects Pyramid'

The next logical step in the formalisation process would have been to define the pinnacle of the effects pyramid - for example, by creating an overarching national philosophy that would apply equally to all governmental departments. EBA would be represented at the next level, converting theory into practice, and below this would be EBO, the military strand, together with its non-military equivalents. These strands could then cascade into their constituent elements: Effects Based Planning, Effects Based Targeting, and so on. This methodology would have resulted in an audit trail tying the top of the pyramid to the bottom, and vice-versa; thus completing the 'effects loop'. Yet, surprisingly, no such codification has taken place. Indeed almost nothing has been written about EBA other than by military sources. Consequently the top two tiers of the effects pyramid comprise a single compressed stratum. This realisation raises four important questions regarding responsibility and process. First, who is responsible for co-ordinating EBA at the governmental level? Second, who is responsible for managing national strategy on a day-to-day basis during conflict? Third, who is responsible for managing the day-to-day strategic effect of stabilising (setting secure and stable conditions appropriate to subsequent political and economic action)? And finally, what mechanism will ensure that the effects process is adhered to by all who are expected to participate? At present there are no answers to these questions. This exposes a fundamental weakness within the paradigm, which, if left untended, has the potential to negate much that has been achieved thus far.

CONCLUSION

Several important conclusions emerge from this study. The first is that EBA is an original, holistic approach to warfare that is unique to the UK. Unlike most earlier models, it was predicated upon the notion of joined up government. This condition did not exist prior to New Labour's election. Had it done so, the new government would not have wasted so much effort on producing White Papers which called for greater coherence at the pan-governmental level. *Modernising Government* was therefore, albeit unwittingly, instrumental in setting the conditions for EBA to take root.

It is also clear that this UK input to EBW began only relatively recently. The same White Paper which called for joined up government also emphasised the need for a coherent approach regarding *outcomes* as opposed to *process*. Tempting as it is to trivialise this shift in outlook, this change was indeed significant; because in seeking how best to articulate outcomes, embracing a lexicon of effects was but a short step away. This step was removed with the publication of the *New Chapter*, which demanded that military options should henceforth be framed in terms of desired effects. Indeed by defining five specific effects at the strategic level - prevent, deter, coerce, disrupt and destroy - the *New Chapter* marked the formal genesis of an effects mindset. From this point onwards, the emergence of UK effects doctrine began in earnest.

Equally noteworthy is the fact that the *New Chapter* linked knowledge superiority to EBA. It did this by stating that EBA could only work if commanders at all levels shared a common understanding. During Total War this might happen as a matter of routine, but at most other times this was simply not the case. NCC would remedy this omission. Hence the new paradigm, with a robust network at its core, sought to deliver *effects* by linking *capabilities* to enabling *activities*. From this point onwards, counting numbers of

platforms - the standard military method of gauging strength - gave way to an approach within which capabilities would deliver effects.

This was a fundamental shift in outlook, and it had profound implications for the UK's armed forces. These only became appreciated in full when the UK found itself engaged simultaneously in Iraq and Afghanistan, and calls of 'overstretch' increased at all levels within the military. By this point, however, the attendant reductions in platform numbers were irreversible. One is left to ponder on the extent to which the desire to embrace EBA's capabilities over the usual measure of platforms played a role in reducing the UK's military forces. If so, this would indeed be ironic, given the *Delivering Security in a Changing World - Future Capabilities* "...need to strike the right balance of capabilities for expeditionary operations to meet the demand of our ...strategic effects".

The July 2002 supporting adjunct to the *New Chapter* was another key document, in that it made clear that EBA was the model of choice, and that it was here to stay. This left no room for doubt among dissenters, and it is no coincidence that during this period the military began vigorously to support the concept. The fact that the military responded to these governmental papers, rather than the government responding to military calls for a new model of warfare, shows that EBA was not driven by the military. This realisation comes as something of a surprise. Within the UK, EBA is one of the few models of warfare that did not stem directly from military sources.

There are two more important conclusions, however. The first was expressed in 2004 by Australia's Defence Science and Technology Organisation, which noted that "the effects-based approach is a concept that may impact on National security and National prosperity in profound and challenging ways". This telling observation hints at the magnitude of the UK's input to EBW. The second conclusion is far more recent: that EBA is unlikely to achieve its potential if flaws are allowed to remain within the model. The fact that no overarching national philosophy applies to all governmental departments - even today - suggests that EBA on paper is likely to be a very different entity to EBA in actuality. If EBA is to succeed, this matter must be addressed. Finessing this requirement could prove to be as significant an input as any which have taken place thus far within the UK.

CHAPTER 4: OPERATIONAL CASE STUDIES

"*The human story does not always unfold like a mathematical calculation on the principle that two and two make four. Sometimes in life they make five or minus three; and sometimes the blackboard topples down in the middle of the sum and leaves the class in disorder and the pedagogue with a black eye*".

Winston Spencer Churchill (1874-1965)

INTRODUCTION

This chapter adds substance to the conceptual elements of the thesis by analysing four historical case studies. From an EBW perspective these involve increasing levels of complexity. They are: Operation Chastise, the Dambusters raid of 16/17 May 1943; Operation Black Buck, the Vulcan bombing raids conducted against Port Stanley airfield from 1 May to 12 June 1982; Operation Allied Force in Kosovo, NATO's final act of warfare in the 20th Century; and Operation Phantom Fury, the coalition forces' 2004 assault on Fallujah. These studies are viewed retrospectively, mindful that some details known today were not known at the time; and that attitudes and culture change constantly, hence today's interpretation of events may differ significantly from those in the past. The studies are scrutinised in increasing detail, with each one serving as a springboard for analysing the next study. The purpose of this section is not to critique these operations *per se*, nor to seek specific weaknesses within the underlying planning methodologies; but rather to use them as frameworks for analysis so that pertinent EBW themes may be identified.

Operations Chastise and Black Buck achieved strategic effects in locations previously considered to be relatively safe from attack. Both examples were predicated upon the use of air power, but it is important to note that in each case the attendant secondary and tertiary effects were not sought purely to make the ongoing air task significantly easier. Indeed these operations were conducted mindful of the potential benefits to all three services. That said, some of the effects that occurred were not as predicted. This realisation highlights a potential flaw within the contemporary EBW model: that despite

best intelligence and cultural awareness, and an unprecedented level of computer power, the effects envisaged during the planning process cannot be guaranteed. These two examples illustrate, using relatively simple scenarios, the linkage between primary, secondary and tertiary effects. They also reveal linkage between the tactical, operational and strategic levels of warfare, showing how effects at one level can impact upon the other levels.

Operation Allied Force is another example of air power in action, but on this occasion the nascent effects model was in place. Nonetheless, despite significant damage on the ground, the picture that emerges in one in which Milosevic clearly failed to understand the nature of the campaign that was being waged against him. He capitulated in just 78 days, but had he understood NATO's abilities and intentions earlier, it is possible that he would have capitulated sooner. Had he done so, the overall level of humanitarian suffering would have reduced accordingly. This stark realisation suggests that Operation Allied Force was not effects-driven.

The focus then shifts to Fallujah. This example was picked because it is the most recent, complete coalition operation conducted to date. Fought against the backdrop of an increasingly mature EBW model, it provides telling insights into how battles are fought in the early part of the 21st Century. In effects terms it therefore heralds a likely way ahead for operations in the immediate future. Unlike the previous three examples, this was truly joint. Consequently it provides a degree of balance to counter any suspicions that the previous air examples might, by their very nature, only reveal partial truths about the utility of EBW.

HISTORICAL CASE STUDIES

OPERATION CHASTISE

Operation Chastise sought to deprive the German arms industry of water supplies in order to cause a "disaster of the first magnitude".[180] Its primary effect was almost instantaneous. Yet the dams were soon repaired, and ultimately the disaster was of a lesser magnitude than had originally been intended. In purely physical terms the Germans recovered from the primary effects of the raid relatively swiftly. But the raid's cognitive effects were more enduring. In Britain the mission received significant and prolonged media coverage, due both to the heady cocktail of its precision and sheer audacity, and to the technical and scientific acumen of 'backroom boffins' such as Barnes Wallis.

The positive morale effects soon spilled into occupied Europe. This was aided by an air-dropped leaflet campaign showing 'before and after' photographs of the Möhne and Eder dams, and explaining the significance of the raid. The underlying message was clear: that although Britain had in fact had little opportunity to fight back thus far, its resolve to prevail in the face of extremely poor odds was beyond question. In modern effects parlance this message targeted six distinct cognitive domains: the British people, Britain's allies, neutrals, the enemy civilian population, enemy military forces, and enemy leadership.

[180] According to Barnes Wallis. See http://www.nationalarchives.gov.uk/dambusters/idea.htm

The effects on German morale were more difficult to quantify, but what was readily apparent was that the psychological effect of the raids permeated all levels of Germany's political, economic, social and military infrastructures. It had been known from the outset that the Germans would need to divert significant manpower to the dams in order to repair them; and indeed after the raid some 20 000 men were transferred from the Atlantic Wall and tasked with completing the job before the autumn rains began. A further 10 000 German troops were also diverted from their primary tasks in order to guard the dams. They were to remain in place throughout the war.[181]

Operation Chastise would probably have taken place whether all these details had been known in advance or not. However, the point of this example is to show that whilst the raids' primary effects were limited in duration, the wider effects lasted throughout the war - and indeed in some cases for many years afterwards. If all of the effects are mapped out, the following structure emerges. *Physical temporary* (first order - breaching the dams: second order - damage to industry; need to rebuild dams; third order - work delayed on Atlantic Wall); *physical permanent* (10 000 guards transferred until the final stages of the war to protect the dams); *cognitive enemy* (vulnerability of dams / high value targets irrespective of location; need to reinforce them for the remainder of the war: British scientific and technical know-how; existence of a new and highly specialised RAF night-time precision capability; British resolve); *cognitive neutral* (same as cognitive enemy); *cognitive friendly* (as above, plus bolster to morale). These were all desirable effects. Of course there were also undesirable effects, the most obvious being crew losses; but these had been considered in advance, and when viewed in terms of plusses versus minuses, the mission was deemed an acceptable risk.

Chastise is best known today for the primary physical effects it achieved. Less well known, however, were the many attendant psychological effects that the planners sought. In the event, the full web of effects was wider than had been anticipated. This is the first key conclusion that emerges from these studies.

OPERATION BLACK BUCK

Moving forwards by four decades, in many respects Operation Black Buck was the Chastise of its day. Vast distances were involved (3900 miles each way); exceptional demands were placed on the participants, with each bombing flight lasting for approximately 16 hours; and many of the associated technological and logistic challenges were unprecedented.[182]

The first raid placed a bomb on the centre of the runway. The primary effect of this was to stop the Argentineans from using the airfield until essential repairs had been carried out. However, the most significant and enduring effects were felt at the strategic and operational levels - and these were all secondary and tertiary effects. At the strategic level, the UK proved that it had the ability to strike deep inside Argentina. This sent a powerful message to the enemy leadership as well as to the Argentine population. For neutrals this mission was tantamount to a UK declaration of war, and this was clearly understood by the international community. Within the UK the raid forced those still uncommitted to 'get off the fence'. Ultimately it generated overwhelming support for the British Prime Minister.

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[181] www.nationalarchives.gov.uk/dambusters/legacy.htm

[182] For a more complete analysis of the raids see http://www.raf.mod.uk/falklands/bb.html

At the operational level, Argentine aircraft were unable to use the airfield in the short term. More importantly, though, the sole Dassault Mirage III squadron based on the Islands was quickly withdrawn to Argentina to protect the mainland. This directly increased the operational freedom of the UK Task Force. Within the UK, the raid bolstered the credibility of the long-range force projection concept, which at that time was still largely unproven.

At the tactical level the raid undermined the morale of the conscripts who experienced it at first hand, for they had no reason to believe that they would not be targeted again in the future (and indeed they were, on another five occasions). This undermining of morale spilled over to other conscripts based on the Islands, and it reinforced the point that what had previously been thought of as something of a jape in Argentina was being treated with the complete sincerity by the British.[183]

The raid also affected the morale of UK forces, but in this case morale was strengthened because it was now clear that Air Power would not be one-sided when the ground fighting began. And the fact that the raid had been unopposed and successful, despite the tremendous difficulties involved in mounting it, gave the RAF the confidence to continue with another five Black Buck missions.

Black Buck was conceived of and executed using an effects mindset, albeit the language of the time did not replicate the effects language of today.[184] An effects schematic for the initial raid is shown below.[185] Effects on the Argentineans are shown in bold; for neutrals they are in italics; and for the UK they are in ordinary typeface. The positive column indicates desired effects from the UK perspective.

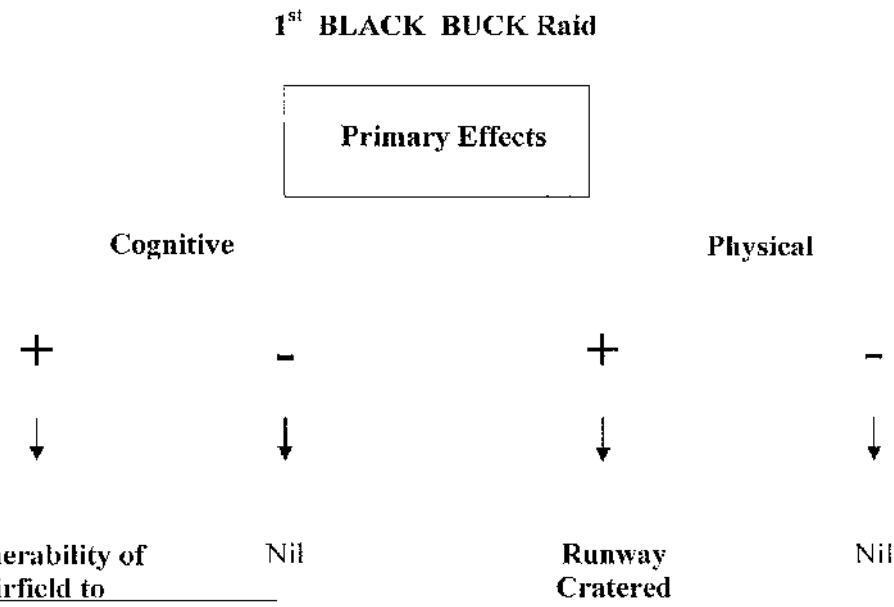

Figure 6 - Black Buck Primary Effects

[183] The author is grateful to numerous Falklands veterans for providing this information.
[184] Readers wishing further detail should read Admiral Sandy Woodward's personal account of the campaign, *One Hundred Days: The Memoirs of the Falklands Battle Group Commander*, London, Harper Collins, 1992, and in particular Chapter 7; and Freedman, Sir Lawrence, *The Official History of the Falkland Islands Campaign Volume One: The Origins of the Falklands War*, Routledge, London, 2005.
[185] This is drawn from many first hand accounts given by officers attending the UK Military's Advanced Command and Staff Course at Shrivenham.

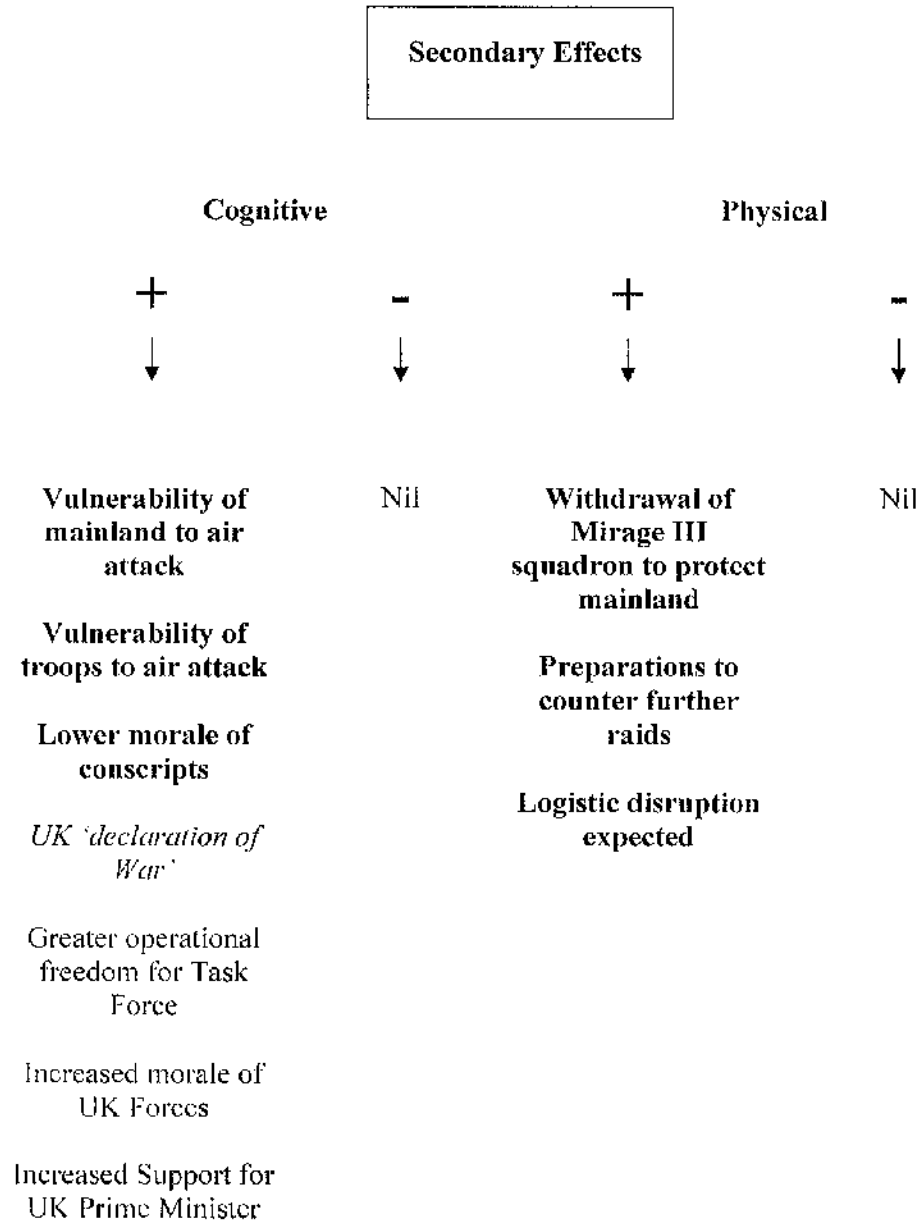

Figure 7 - Black Buck Secondary Effects

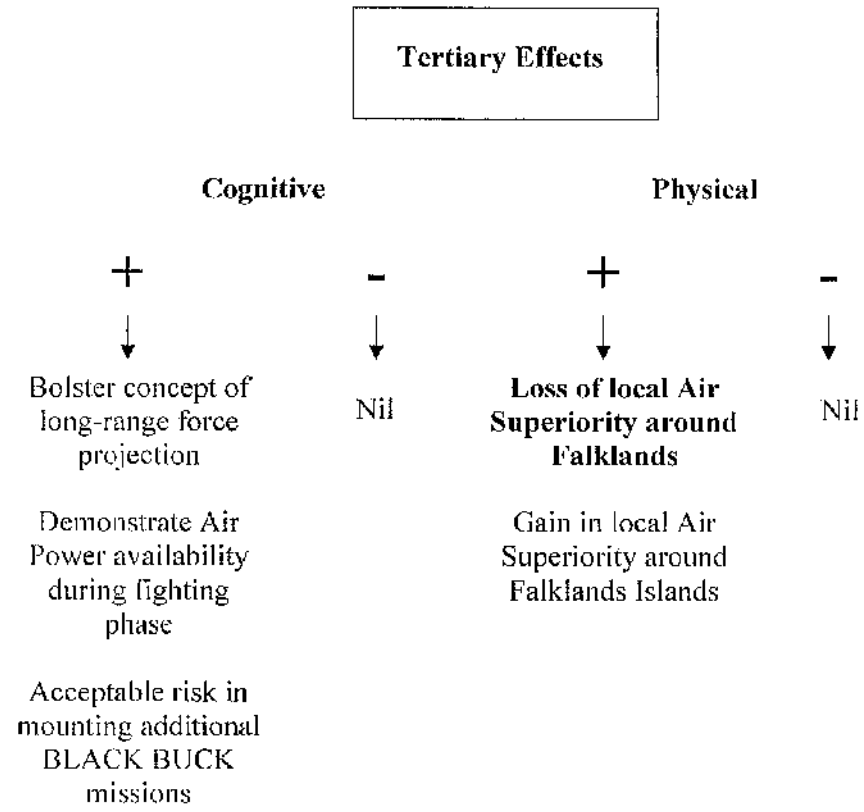

Figure 8 - Black Buck Tertiary Effects

The effects shown above are positive from the UK perspective. Effects that would have benefited the Argentineans would have appeared in the negative columns. However, in this example no negative effects were perceived.

The Black Buck example show how effects cascade into progressively smaller elements. Thus, although individual effects should be assessed on their own merits, it is equally important that the wider effect cascade be assessed as an entity in itself. This step would then allow all relevant findings to be considered in relation to the overall strategic picture. This is the second key conclusion of this chapter.

KOSOVO CASE STUDY: OPERATION ALLIED FORCE

Operation Allied Force, NATO's final act of 20th Century warfare, provides much fertile ground with respect to EBW. For those who claim that military operations have always been fought for effect - and hence there is no requirement to codify effects thinking - this example proves conclusively that whilst there is an element of truth in this assertion, *the effects that are delivered are not necessarily those that were envisaged during planning.* This omission is something that the modern effects paradigm seeks to address.

The military objective declared to the Senate Armed Services Committee on 15 April 1999 by William S. Cohen, the US Secretary of Defence, was to:

> "...degrade and damage the military and security structure that President Milosevic (Yugoslav President) has used to depopulate and destroy the Albanian majority in Kosovo".[186]

Cohen's focus was thus on the physical domain, with particular emphasis on destruction. This was echoed by General Wes Clark, who described the goals of the NATO air campaign as being "to 'disrupt, degrade, devastate, and ultimately destroy' Yugoslav military forces as well as the facilities and infrastructure that supported them".[187] Interestingly, when speaking to the House of Commons on this matter, the UK's Defence Secretary, Geoffrey Robertson, framed his emphasis somewhat differently: "our military objective - our clear, simple military objective - will be to reduce the Serbs' capacity to repress the Albanian population and thus to avert a humanitarian disaster".[188]

Milosevic capitulated to NATO after 78 days of intense air activity, mindful of the increasing potential for a ground invasion. The following statistics, taken at the end of the campaign, reveal how Cohen's military objective was delivered:

- Belgrade was largely without electric power.
- 30% of all military and civilian radio relay networks were damaged.
- 70% of all road and 50% of rail bridges across the Danube were down.
- Petroleum refining facilities were 100% destroyed.
- Explosive production capacity was 50% destroyed or damaged.
- Ammunitions production was 65% destroyed or damaged.
- Aviation and armoured vehicle repair was 70% and 40% respectively destroyed or damaged.

At the end of the campaign, General Henry Shelton, Chairman of the Joint Chiefs of Staff, stated that he did not "...believe that Milosevic ever understood the level of damage that an expertly executed air campaign could achieve".[189] This conclusion begs several key questions, such as: would Milosevic have reacted differently had he understood from the outset the level of damage that he faced? Why was his understanding of NATO's potential so poor - was it a failure on his part or on NATO's? Had he understood NATO's abilities and intent sooner, would he have capitulated sooner - and if so, could the humanitarian suffering that occurred during the later stages of the conflict have been reduced?[190] How would any (or all) of the foregoing have impacted upon the physical,

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[186] Statement of the Honourable William S Cohen. See http://www.fas.org/man/congress/1999/99-04-15cohen.htm (Federation of American Scientists).
[187] Cited in Ivo H, Daalder N and O'Hanlon, ME: *Winning Ugly: NATO's War to Save Kosovo*, Washington, Brookings Institution Press, 2000, p 116.
[188] Ibid.
[189] 'Cohen, Shelton Say NATO's Patience, Precision Paid Off'. http://www.defenselink.mil/news/Jun1999/n06111999_9906113.html
[190] This is particularly relevant in light of Robinson's comment to the House of Commons. The answer of course is 'yes' because Milosevic inflicted suffering in Kosovo throughout the war. During this period nearly one million Kosovar ethnic Albanians were displaced and thousands were killed.

economic and psychological costs of rebuilding Kosovo? And finally, and this is perhaps the key question form an EBW perspective, would the conflict have taken a different course had Milosevic's cognitive domain been better targeted?

Cohen's military objective was couched in terms of damage and degradation. It did not specify 'soft effects' like influence, deterrence, coercion, or persuasion. Considerable damage ensued as the war progressed, and this impacted upon Yugoslavia's military and security structures - its primary targets - exactly as intended. But it also impacted on the wider populace, and it influenced the opinion of neutral parties - although in truth, by this stage of the conflict the depravity of Serbia's conduct had all but alienated most all of Milosevic's external support.[191]

The key question is surely 'what made Milosevic concede'? According to the MOD's *Kosovo Lessons From the Crisis* document, "we will probably never know exactly, but it is clear that the effective application of military pressure was fundamental to the achievement of our objectives. The following factors are likely to have been those most influential:

- The continuing solidarity of the Alliance, and Milosevic's inability to divide the Allies, despite repeated attempts;
- The determination of the international community, including the states of the region and, crucially, Russia, to force him to accept a negotiated solution;
- The continued increase in tempo of the air operations, and the damage and disruption they had caused, and were likely to continue to cause if operations continued, to the command and control and operations of his security forces;
- His indictment by the International Criminal Tribunal for the former Yugoslavia, and the indictment of four other key members of his regime, which would have added to the pressure on him and those around him;
- And the build-up of ground forces in the region, the confirmation at the NATO Summit that all options remained under review, and the suggestions from the UK and other Allies that an opposed ground entry operation could not be ruled out".[192]

All of the above factors bar one were soft effects: *solidarity* of the Alliance; *determination* of the international community; damage and disruption *likely* to ensue; increased *pressure* on Milosevic and those around him; the *build-up of ground forces* (coercion). In other words, not one effect arose out of Cohen's stated military objective. If one assumes that they did not occur fortuitously - and this is not an unreasonable assumption - NATO's underlying planning methodology would appear to be somewhat suspect. Moreover, post-conflict reports make little mention of the Yugoslavian populace applying pressure to Milosevic; yet many of Yugoslavia's elite had considerable financial interests in the industrial and economic targets that NATO was bombing, and it is inconceivable that at least some of these highly influential figures would not have sought actively to prevent the erosion of their powerbases once they realised that NATO intended fully to increase its bombing campaign until Milosevic conceded. Indeed had it chosen to do so, NATO could with relative ease have applied pressure to these key figures; and had this elite group had been persuaded of NATO's intentions early on.

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[191] RAND Research Brief, *Operation Allied Force: Lessons for the Future*, 2001. www.rand.org/publications/RB/RB75

[192] As outlined in Chapter 3 of *Kosovo Lessons From the Crisis*, Presented to Parliament by the Secretary of State for Defence by Command of Her Majesty, UK MOD, June 2000, Cm 4724.

perhaps they would have nudged Milosevic towards conceding early on. In time NATO learned this important lesson, but in the interim many more lives were lost as Milosevic continued his policy of his ethnic cleansing. However, this is not to say that Milosevic's cognitive domain was completely ignored. *Kosovo Lessons From the Crisis* notes that "information was also important in our campaign against Milosevic. In many ways getting our messages across in the broadcast and written media was as crucial as the military campaign".[193]

If one now produced a basic Kosovo effects schematic, and superimposed onto it the statistics listed on the preceding pages, the statistics at page 66 would equate to first order effects. Second order effects would include traffic not reaching its destination; limited access to fuel; disruption to industry; disruption to the populace; and the like. Tertiary effects would includeincreased husbanding of physical resources; disruption to the wider economy; and increasing discontent with - and within - Milosevic's regime. If the factors from *Kosovo Lessons From the Crisis* are added to this, the resulting schematic would show both the cognitive and the physical effects of the campaign.

Of course it is relatively easy to do such an exercise after the event, but the utility of EBW hinges upon its potential to deliver this sort of information *before* the event - in other words, during the planning stages. Whether or not this will ever be achievable in practise is subject to conjecture, but the following real world example suggests that, given the right mindset, it is indeed possible.

In January 1995, General Rupert Smith replaced General Michael Rose at Bosnia High Command (Forward) in Sarajevo. One of Smith's first tasks was to consider how best to target the cognitive domains of Radovan Karadzic and Ratko Mladic, respectively the political and military Bosnian Serb leaders,[194] in order to break the Bosnian Serb Army stranglehold around Sarajevo. Smith and General Mike Ryan, NATO's Air Commander, agreed upon three target sets. It fell to Ryan to select the air defence targets, with Smith, with his better feel for the situation on the ground, selected the remaining targets. One such target was a military facility in the village of Kalinovic, where coincidentally Mladic's parents were buried. This target was attacked repeatedly, with one of Smith's intentions being to show those in the area that Mladic could not protect the bones of his ancestors. To increase the pressure on Mladic still further, Smith kept the Bosniac press abreast of events as they unfolded.

At first sight these actions appear to be somewhat bizarre to the Western mind; yet within Mladic's culture, failure to protect the bones of one's ancestors is seen as being a gross dereliction of duty. In the words of Milos Stankovic, who served as a UN translator for both Rose and Smith:

> "The first thing you've got to understand about the Balkans is that the dead are more important than the living...that's the basis of that particular side of their mentality. They're obsessed with their dead. The logic seems to be that territory belongs to he who is buried there. You'd often hear Mladic or Karadzic banging on about Serb territory and then justifying it by quoting some church and who was buried there...that's one part of the logic. The other is deliberately

[193] Ibid Chapter 6, para 6.22.
[194] Interviews with General Rupert Smith, March 2004 and February 2005.

> generated vindictiveness. Dig up the bodies and scatter the remains about. It was a kind of primitive rape of the dead: to the victor the bones...it became a national sport. In war they just went that one step further and dug up the bodies for good measure".

Tellingly, Stankovic adds that:

> "When Ilidza and Grbavica were ceded to the Muslims...the Serbs just packed up and left, but not before they'd got the heavy plant and cranes in and dug up their nearest and dearest, whom they took with them. That's what I mean about obsession with the dead".[195]

Smith understood this obsession well, and clearly his targeting of Kalinovic was aimed to a large degree at both Mladic's, and his supporters' cognitive domains. If Mladic was unable to protect the bones of his own relatives, what hope would his supporters have of Mladic protecting the bones of their relatives? This is a telling example of EBW in practise, and it indicates the degree of granularity to which EBW can aspire. When considered alongside the statistics culled from the Kosovo example, it presents our third key conclusion: that not only do effects cascade into progressively smaller elements, but that the resultant dynamic needs to be taken fully into account by effects planners. Where the Kosovo example failed in this respect, Smith did not make the same mistake.

FALLUJAH: OPERATION PHANTOM FURY

Fought against the backdrop of an increasingly mature EBW model, the 2004 assault on Fallujah (Operation Phantom Fury, later renamed Operation Al-Fajr - Arabic for 'Dawn' - by the Iraqi Defence Minister)[196] offers unique insights into how battles are conducted by Western militaries in the early part of the 21st Century. Consequently this is a particularly important case study.

The Manoeuvrist Paradigm focuses on shattering enemy cohesion and will, in order to secure military victory in the shortest possible timescale. Longer term negative effects might occur - possibly after the warfighting stage has finished - but if this happens, so be it: the real prize is to secure victory in the here and now. Using this logic, the aftermath of victory is often viewed as an adjunct to the main event. In practise, therefore, it should come as no surprise that it may (and indeed often is) planned separately from the actual warfighting operation.

The assault on Fallujah sought to oust insurgents from the city before Iraq's national elections of January 2005. Prior to the operation, Fallujah's population stood at around 300 000 civilians, between 70% and 90% of whom fled before the operation commenced.[197] The intent was to take the town as quickly as possible. The primary

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[195] Stankovic, Milos, *Trusted Mole: A Soldier's Journey into Bosnia's Heart of Darkness*, London. Harper Collins, 2000. p 275.

[196] This is an interesting point. The US favours naming operations so that one in no doubt as to the purpose of the campaign: Desert Shield to shield Kuwait, Desert Storm to cover the fight to Iraq, and Iraq Freedom to free the people of Iraq. In contrast, names selected by the UK often appear to be meaningless - as indeed is the intention. Operation Granby covered both Desert Shield and Desert Storm, whilst Operation Telic equated to Iraqi Freedom.

[197] http://www.globalsecurity.org/military/ops/oif-phantom-fury-fallujah.htm

effect was to rid the town of insurgents; but note the emphasis on 'town'. This was a lesser objective than eradicating the wider terrorist problem in Iraq.

This approach was questionable from the outset, as it ignored the fact that terrorists operating around Fallujah would naturally coalesce elsewhere if presented with opportunities to do so. In the event, this is precisely what happened. Many terrorists escaped even before the operation commenced[198] with Mosul, a city five times the size of Fallujah, absorbing a substantial influx of terrorists.[199] According to the then head of CENTCOM, General George W. Casey Jr, Abu Musab al-Zarqawi - the leader of the insurgent faction in Fallujah - was believed to have fled the city on 9 November 2004, the day after Phantom Fury commenced.[200]

Looking back on the operation, retired US Marine Corps General Bernard Trainor believed that from a strategic standpoint "Fallujah is not going to be much of a plus at all". He notes that "...we've knocked the hell out of this city, and the only insurgents we really got were the nut-cases and zealots".[201] If he is correct, the city and its inhabitants paid a high price for what *in his view* appears to have been such a shallow victory; in which case, future historians are unlikely to deem Fallujah an example of strategic success. But from the manoeuvrist perspective the operation was entirely successful: the town was taken, and quickly too. Indeed according to contemporary media reports, the operation achieved all that was expected of it.

Let us now consider Fallujah through an effects lens. Among Trainor's insurgents not 'neutralised' at the time were individuals who joined 'the cause' after the event. This pool of unknown size represents one of the unintended effects of Fallujah. There is no way of knowing the precise role or impact of these new insurgents, but nonetheless they added to the equation, not least because they might require 'neutralising' in the months or years to come. One cannot assume that they were all recruited locally, or even in the affected country. This dimension complicates an already challenging conundrum.

In fact even before Phantom Fury commenced, a succession of tactical level actions took place within Fallujah that caused widespread resentment throughout Iraq and also in many other Muslim countries. The wider effects of these acts will never be known, but media footage at the time indicated significant disillusionment with America's approach towards Iraq in the wake of Saddam Hussein's unseating. For example, actions against mosques included a helicopter attack on the Abdel-Aziz al-Samarrai mosque on April 7, 2004[202]; the shelling of Hadret Mohammediya, Fallujah's second largest mosque, on April 15, 2004[203]; the shelling of yet another mosque by thirty 155mm high-explosive howitzer shells on November 9, 2004[204]; and one of the enduring images of the 'Battle for Fallujah', the fatal shooting of a man in a mosque by a U.S. Marine in mid-November 2004. This incident was caught on screen by Kevin Sites of NBC News, who reported to the world that the man who had been shot did not appear to be armed, or even threatening

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[198] This was commented on widely at the time in a variety of media sources.
[199] According to correspondent Patrick Cockburn. As quoted in William S Lind's 'Fallujah: Little Stalingrad', December 22, 2004. See www.antiwar.com/lind/?articleid 4201
[200] Ibid.
[201] Pound Fallujah, Joseph Farah, *Worldnet Daily*, April 6, 2004.
[202] US Bombs Fallujah Mosque; More Than 40 Worshippers Killed, Bassem Mroue and Abdul-Qader Saadi, *Associated Press*, April 7, 2004.
[203] 'Fallujah mosque shelled', *News24.com*, April 15, 2004.
[204] Toby Harnden, *The Daily Telegraph*, November 11, 2004.

in any way. In fact Sites did not see a single weapon inside the mosque other than those that belonged to the marines.

Soon after Sites' report, Fox News reported a reaction that was described at the time as being typical, that of a shopkeeper in Baghdad who witnessed Sites' video imagery shortly after the shooting:

> "...the troops not only violated our mosques with their sins and their boots but they stepped on our brothers' blood...they are criminals and mercenaries. I feel guilty standing here and not doing anything".[205]

Yet the sensitivity of mosques was well known at the time; indeed for this very reason, authorisation to proceed against them routinely took longer than for non-religious targets. Nonetheless, the manoeuvrist imperative for quick results meant that *mosques were always going to be targets, because therein lay the quickest path to securing the military endstate: ridding the town of insurgents.* It comes as some surprise to note that the wider ramifications of targeting mosques were either not fully appreciated at the time, or for reasons that are not yet in the public domain, they were dismissed. Either way, the mosques needed to be isolated. According to the *New York Times* the Muhammadia Mosque held strategic significance because insurgents were using it as a command centre and bunker, and it was also known that other mosques were housing wounded insurgents.[206] That said, physical destruction of mosques was not the only option available to Fallujah's planners.

Let us now consider Fallujah from the perspective of the effects planner. To make sense of this I shall use the Centre of Gravity (CoG) analysis model pioneered by Dr Joe Strange of the Marine Corps War College, Quantico, Virginia,[207] which defines Centres of Gravity as the "primary sources of moral or physical strength, power and resistance".[208] CoGs have critical *capabilities*. These are the abilities that make them a CoG. These abilities have critical *requirements*: the conditions, resources and /or means that make the critical capabilities effective. But CoGs also have deficiencies or weaknesses. These are known as critical *vulnerabilities*.

The objective of the Fallujah operation was to rid the town of insurgents. For the sake of simplicity, the focus - and hence our opponents' CoG - is the insurgents themselves, the "primary source of moral or physical strength, power and resistance" that prevent the mission from being achieved. What makes the insurgents a CoG is their ability to attack coalition forces seemingly at will. This is their critical capability. To do this, however, they need freedom of movement, ammunition, food, local strongholds, and logistics bases. These are their critical requirements. Turning to their vulnerabilities, insurgents are, to paraphrase Mao Tse -Tung, the fishes that swim in the water. Without the water the fishes will die - and in this case the water is the local populace, because without them and their support the insurgents cannot succeed. Neither can they move at will or support themselves logistically if the Americans know their movements and locations. Taking all of this into account, the following CoG analysis emerges:

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[205] 'Military Probes Prisoner Shooting', *Foxnews*, November 17, 2004.
[206] Ibid.
[207] See Dr Joe Strange, *Perspectives On Warfighting Number Four, Second Edition: Centers of Gravity and Critical Vulnerabilities*, Marine Corps University Foundation, Quantico, Virginia, 1996.
[208] Ibid, p 42.

Centre of Gravity: Insurgents	**Critical Capabilities:** Ability to attack US forces at will
Critical Requirements: Freedom of movement, food, Ammunition, local strongholds, bases	**Critical Vulnerabilities:** Popular support

Figure 9 - Fallujah CoG Analysis

This matrix shows that *from an effects perspective* the optimum way to defeat the insurgents is to target their popular support. One could of course target any or all of their critical requirements; but even if everything in the critical requirements column were to be destroyed, those critical requirements could soon be replaced with relative ease. For example, if one stronghold - a mosque - became unusable, another mosque could take its place. But what cannot be replaced, however - at least not with such ease - is the insurgents' popular support.

The next step in the effects process is to map out the effects of each of these options. We have already seen the primary effect of targeting the critical requirements, and noted that in each case these effects would be transient at best. If we now consider second order effects, it is not unreasonable to assume that if destruction occurred to local strongholds and bases, resentment would accrue on the part of the townsfolk; after all, it is they rather than itinerant insurgents who own the real estate. It is not unreasonable to assume, therefore, that lasting damage to this real estate would translate into lasting resentment against those who caused the damage. By extension of this logic, minor damage to property could be expected to result in smaller scale resentment on the part of the owners.

Turning to tertiary effects, with the foregoing in mind it is easy to see how resentment on the part of the townsfolk could easily translate into support for the insurgents. This would be a 'double whammy', however, because not only would the insurgents *gain* support, but the coalition would *lose* it. To compound matters further, there would almost certainly be some additional tertiary effects, such as increased recruitment to the insurgent cause. Experience suggests that the likelihood of this happening increases in proportion to the scale of devastation that occurs and the number of civilians that die during the operation.[209]

Let us now consider the actual outcome. When US Deputy Secretary of State Robert B. Zoellick paid a surprise visit to Fallujah on 13 April 2005, several weeks after democratic elections were held in Iraq, he was strongly advised by US military commanders to stay inside his armoured Humvee due to the prevailing security situation;[210] and when he met with Fallujah's recently elected leaders, he did so in a heavily guarded US Marine enclave rather than more openly in the town.[211] These examples suggest that either the

[209] As previously noted, although up to 90% of the population was estimated to have fled prior to the operation, the city originally numbered 300 000 people. Hence even if only 10% remained *in situ* some 30 000 people would still have been present. This is a sizeable population by any standard.
[210] 'In Fallujah, U.S. Envoy Greeted by Complaints', Glenn Kessler, *Washington Post*, April 14, 2005.
[211] Ibid.

town was *partially* purged of its insurgents, or it was fully purged *but new insurgents subsequently appeared.* Clearly, neither outcomes was desired or predicted.

It would also appear to be the case that some second and third order effects were more lasting than the primary effect from which they stemmed. In the words of Simon Jenkins, reporting in *The Times* on 17 November 2004:

> "...In Vietnam the Americans destroyed the village to save it. In Iraq we destroy the city to save it.... Nothing in Iraq has so illumined the folly of this occupation as the now completed suppression of Fallujah.... As for the repopulation of the city from which 90 per cent of citizens are said to have fled - this will bring back the guerrillas and put the Americans under renewed attack. This is the opposite of what Fallujah was supposed to achieve."

Fallujah was deemed a manoeuvrist success. It was conducted swiftly and effectively, and in general terms it progressed according to plan. It remains to be seen whether Trainor's fears are ever realised, but either way it reveals another key insight: that on occasion, second and third order effects can at times be more important and enduring than the primary effects from which they were derived. Planning for this phenomenon is one of the principal considerations that set apart EBW from its predecessors.

CONCLUSION

This chapter reveals one of the key dilemmas at the heart of EBW, namely that in seeking to tease out ever-increasing amounts of detail, a level of complexity can arise which may render the paradigm unmanageable in practise.

The Chastise example showed that the 'effects web' is, by its very nature, invariably wider - and hence less predictable - than planners anticipate. The broader primary effects associated with the dams raids could be derived with relative ease, but it should be remembered that this operation had limited aims and occurred on a single night. Moreover, British mores at that stage of the war allowed considerable latitude in terms of effects spillover. This may continue to be the case during wars of national survival, but it is unlikely to be a characteristic of warfare in the immediate future. Nonetheless, the first conclusion stands: that during war, the full web of potential effects is likely to be somewhat wider than originally envisaged.

Black Buck hinted at the degree of expansion that is possible within an 'effects web', even in a relatively simple scenario. This phenomenon creates a 'double whammy' in that not only does the web as an entity get larger (and hence more difficult to manage and interpret) but each additional strand produces its own cascade of effects - each of which adds further to the burden. Thus not only does 'cause and effect' need to be pondered for the web as a whole, but also for each discrete area. For a 'one shot' operation such as Chastise this task is challenging enough, but manageable in the right circumstances. However, for an extended operation the task becomes truly daunting. Black Buck comprised 6 missions, yet the web would have changed to some degree with every mission. This is where the real significance of the 'effects web' begins to emerge from a management perspective.

Building upon this theme, the Allied Force example revealed the third key conclusion: that not only do effects cascade into progressively smaller elements, but that the resultant dynamic needs to be taken fully into account by effects planners. However, this is extremely difficult to do - especially when different coalition members view the task through different filters. We saw that Cohen's military objective was couched in terms of damage and degradation, and that it did not specify 'soft effects' such as influence, deterrence, coercion, or persuasion; yet according to the UK's *Kosovo Lessons From the Crisis*, all of the successful factors bar one in the operation were soft effects: solidarity of the Alliance, determination of the international community, damage and disruption likely to ensue, increased pressure on Milosevic and those around him, and coercion. In other words, not one effect arose out of Cohen's stated military objective. This is most revealing, but it suggests little more than the need to plan together and to harmonise objectives - two lessons that are constantly relearned no matter how often they have been captured in the past. In fact the bigger lesson is that the *process* of cascading effects causes a dynamic that needs to be constantly monitored, because an effect that is evolving can impact upon another effect *even though the two effects appear to be unconnected.* One obvious example in this case study would have been the direct psychological targeting of Milosevic's confidants, which if successful might have reduced the need for further physical damage to, say, bridges. Albeit this is a straightforward example, the challenge for EBW practitioners will be to establish relationships where at first sight none seems to exist. Smith made this connection in the case of Kalinovic; not only can it be done, but if EBW is to pass scrutiny it must be done.

The Fallujah example teased out all of the above conclusions within a contemporary setting. In doing so, it expanded the thorny matter of *unintended* effects - actions that mean one thing to one side but can mean something entirely different to the opposing party; and also actions that lead to downstream effects not originally considered by the planners. This lead to our fourth conclusion: that in some cases, second and third order effects can be more important and enduring than the primary effects from which they were derived. In many respects this turns conventional military logic on its head, as practitioners favour quick solutions. Yet if Fallujah reveals anything, it is surely that the quick answer is not necessarily the most effective one, even if the planning is carried out with effects in mind. Perhaps in time the real paradox of Fallujah will be that much of the damage that occurred could have been avoided if the planning had been better directed towards negating the insurgents' support.

It is possible to view these case studies in isolation, but to do so would be to miss the mark by some distance. Individually they allow pertinent EBW themes to be collated. But taken together they present a picture of ever-increasing complexity - and this in itself is a further strand that sets EBW apart from its predecessors.

CHAPTER 5: TIME FOR CHANGE? THE EARLY 21ST CENTURY

"I cannot say whether things will get better if we change;
what I can say is they must change if they are to get better".

Georg Christoph Lichtenberg (1742 - 1799)

INTRODUCTION

This chapter considers some of the challenges that Western militaries face in the early 21st Century. It opens with an overview of *Today's Strategic Realities*, which notes that threats have changed significantly since the collapse of the Berlin Wall. Some of these, such as Al Qaeda, are new. However, others are still evolving - and there is no way of predicting which, or how many, additional threats might emerge in the immediate future. Against this background, this section considers whether the West's extant model of warfare meets today's strategic realities. This is an important question, because as was outlined in Chapter 1, the current model is clearly the product of a bygone era. And whilst in itself this does not mean necessarily that it is outmoded, this question cannot be answered until today's challenges are analysed in some detail. Rather than focusing on purely military issues, however, *Today's Strategic Realities* considers the impact of globalisation on the wider security environment. It then looks at the influence of the ubiquitous media. Attention then turns to the re-emergence of humanitarianism and its implications in terms of security.

The next section covers *Further Challenges*. This accepts that the West's armed forces have adapted since the collapse of the Berlin Wall with great skill and considerable effort. Yet this accomplishment only goes part way towards addressing the wider security concerns. If they are to be addressed comprehensively, an fuller understanding of culture is needed. This includes the need to understand adversaries' cultures as well as one's own and those of allies. Equally, rationality also needs to be understood. This complex topic is explored in some detail because understanding the cognitive domain is a core requirement of EBW. Within this section the rational, analytical and deductive processes play second fiddle to understanding better the human mind. Attention then turns to the topic of behaviour, noting that in shaping it the use of physical force is but one option.

The chapter concludes by considering *The 21st Century Aftermath*. One of the underlying contentions within this thesis is that the aftermath of warfare now needs to be considered as never before. This matter is therefore analysed, alongside the related issue of whether warfighting and post-warfighting activities should be planned separately (as happens at within the current model of warfare) or concurrently (an EBW requirement).

TODAY'S STRATEGIC REALITIES

Now that Western militaries have taken their first tentative steps around the battlefields of the early 21st Century, they are realising how much warfare has changed since the collapse of the Berlin Wall. During the last two decades threats have changed immeasurably. Some are still evolving; others have only recently emerged. Some feature regularly in the media, whereas others are barely mentioned. In the post- 9/11 world, Counter-Terrorism and Counter-Intelligence are now firmly in the ascendant. Moreover, there is fresh impetus to resolve conflicts meaningfully, rather than declaring them 'mission accomplished' as soon as the warfighting stage ends. In the near- to mid-term there will be many more threats, some of which we cannot even envisage at present. But together they are likely to shape this century's strategic realities.

This realisation poses many challenges. At the strategic and operational levels two in particular stand out. First, how (if at all) should the West reconfigure its military capabilities? And second, is the West's conceptual approach to warfare consistent with these new realities? Analysing the former challenge falls outside the scope of this thesis, other than to note that nations routinely ponder future such scenarios so that they may procure equipment best suited to their needs. Many of their findings are freely available on government internet sites, and they make for interesting reading.

But reconfiguring the Western mindset is an altogether different matter. That said, few military practitioners see any requirement for change, as they believe that the West already has at hand everything it needs, at least in conceptual terms, to engineer the downfall of its opponents. In some scenarios they are undoubtedly correct. In other scenarios, however, nothing could be further from the truth. Paradoxically, such complacency is eminently understandable - and indeed within the UK it follows a rich military tradition.[212] In today's case this stems from recent success at the joint operational level in Kosovo, Sierra Leone, Afghanistan, and in Iraq. Those who opine that there is no need for conceptual change cite these examples, the underlying premise being that where concepts worked well in the past, they will work equally well in the future. Yet this conclusion is deeply flawed, and history is replete with examples wherein for each new paradigm introduced by Player A, a superior response is generated by Player B.[213]

But this does not always happen. Indeed the military response to 9/11 illustrates the point, as it failed to take into account the strategic realities of the day. By attacking countries that harboured terrorists or their allies, the *military* solution addressed the symptoms - the terrorists, supported by governments unfriendly to the West - rather than the problem itself: the appeal of terrorist ideology to potential recruits. Consequently the actions that occurred in the wake of 9/11 were never going to tackle the problem *per se*. Certainly many insurgents have died, yet the overall number of deaths is irrelevant if each

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[212] According to Major-General John Kiszely, during the 1950s "...the British Army had a strong antipathy for doctrine...within each arm, each regiment believed that it was the best, and that it was the best because of the special and different way it did things". Many in the RAF would agree that this characteristic transcends the colour of one's uniform. See Kiszely's *The British Army and Approaches to Warfare since 1945*, in *Military Power: Land Warfare in Theory and Practice*, ed Brian Holden Reid, Frank Cass, London, 1977, p 185.

[213] Ludendorff noted this in 1931: "Surely we know by now that the appearance of every new weapon of offence is followed by its defensive counterpart or by effective measures of protection?" Ludendorff, E, *The Coming War*, Faber & Faber, London, 1931, p 80.

is followed by a further recruit to the cause. The problem is compounded when for each individual death there are multiple recruits to the cause.
What worked well in security terms in previous centuries can no longer necessarily be relied upon in the 21st Century. To understand why this is so, today's strategic realities must be considered in some detail.

Globalisation and the Wider Security Environment

People are now sufficiently familiar with the globalisation processes that they barely notice how much, and indeed how quickly, the world is changing. They might feel the impact of globalisation when a domestic service such as a telephone answering facility is relocated to another country, and there might be a feeling that this process is likely to continue as long as labour is cheaper elsewhere. But in most respects globalisation has little bearing on the average individual. In micro terms, globalisation seems little changed from the processes originally set in train by the industrial revolution, and consequently many view it as merely another rung on the evolutionary ladder. Yet the same is not true in macro terms. In January 2002, Prime Minister Blair set out his vision for Britain's role in the post-9/11 world. Commenting on the emergence of a new "modern foreign policy"[214] he noted that Britain would henceforth act with others "to make sense of this global interdependence and make it a force for good, for our own nation and the wider world".[215] He did not say (as was later popularly supposed) that Britain would be a 'Force for Good'; rather he made the point that *global interdependence* would become a 'Force for Good'. This, then, is the official UK view of globalisation.

However, for each upside there is usually an attendant downside. Globalisation by its very nature imposes constraints on countries to act as freely as they did in the past, because the linkages that exist between them is steadily rising, and hence their freedom to act unilaterally is thus diminishing. But these constraints do not apply across the board. Organised crime now launders money in ways previously undreamed of, often at the touch of a button, due to improvements in global electronic transfer technology. Similarly, terrorists can now communicate in novel ways, using encryption that did not exist even a few years ago. In both of these examples the fault lines generated within the globalisation process are open to ruthless exploitation. This is especially true of Al Qaeda: witness the 9/11 attacks on the World Trade Centre and the Pentagon; the bombing of three railway stations near-simultaneously during the Madrid rush hour on 11 March 2004;[216] and the London attack of 7 July 2005. This new form of terrorism, with its trademark generation of shock effected through massive numbers of casualties, has added a new dimension to warfare.

The Ubiquitous Media

Another new dimension exists in the form of instantaneous media, which now exerts global influence as never before. The electronic information-age has truly come of age. This is impacting directly, and in near-real time, upon military operations. Anyone with a camera-equipped mobile phone can send photos (and often video footage) from their location direct to international media hubs in real time. Rapid analysis can take place *in*

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[214] For the context of his remarks see http://news.bbc.co.uk/1/hi/uk_politics/1743985.stm
[215] Ibid.
[216] This was a significant act of terror; 190 lives were lost.

situ at the hub and a credible news report (with pictures) can appear on television later that day: witness how quickly the Boxing Day Tsunami of 2004 was transmitted across the world.[217] More recently, mobile phones captured graphic video imagery of the London bombings of 7 July 2005, showing passengers grimly exiting the remains of a London Underground carriage shortly after it had been blown up.

The mobile phone has become the latest media adjunct and many of its users are willing cameramen. Wherever civilians exist so too does the mobile phone. Consequently mobile phone imagery has become a feature of 21st Century warfare. Wartime reports can now reach domestic audiences in near-real time. Ironically, many people believe that in less developed nations, TV lacks the same impact as it does in the West. However, this does not survive scrutiny. There may only be one TV in the village, but at times the whole village will watch it. Indeed the TV owner in his cafe can increase his custom during power outages, thanks to his generator;[218] and as long as he benefits the community, the community will ensure that the generator will run.

Media affects everyone, and it does so in ways that did not exist a decade ago, largely by dint of speed of transmission. One Abu Graib picture - be it official or unofficial - sends the same message to all who view it, be they are friendly, enemy or neutral. The West no longer has the luxury of considering only friendly and enemy actors. In the 21st Century it must pay attention to neutral players as never before.

In similar vein today's media demands detail as never before. During Operation Iraqi Freedom, albeit the UK's politicians were keen to 'move on' after the war had finished, the subject refused to disappear from TV screens until the media, rather than the politicians, decided it was yesterday's news. This would have been inconceivable during the Falklands invasion. Indeed even in the aftermath of Iraq's expulsion from Kuwait, politicians cited 'national security' to avoid answering embarrassing questions. This mechanism no longer exists, however. The demand for accountability has raised the media stakes, and this is another challenge that now influences national conduct during warfare.

Another change regarding the media in its broadest sense was the arrival of the internet. Web traffic, when used as a vehicle for recruiting to a cause, poses significant security challenges. This threat did not exist much more than a decade ago. As recently as mid-1993 a mere 130 web sites existed.[219] Within six months this number had grown to 650 000. This expansion shows no sign of abating. Between 2000 and 2004, European internet use rose by 124%. Yet during the same period it grew by 227.8% in the Middle East, making this the world's highest region of growth. However, the region with the highest usage in 2004 was neither Europe nor America, with 31.6% and 68.3% of their populations respectively. It was Asia, with a mere 7.1% of the population using the internet at that time. This adds a further dimension to the contemporary security panorama.

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[217] Most of the early imagery was from tourists who were already in place, rather than from reporters who needed to be flown in from outside.

[218] Source: author. Serving in Bosnia during the so-called 'Siege of Sarajevo' in 1994, it was evident that local TV stations and radios continued to transmit even during power outages, and the few coffee shops that had working TVs and / or radios were often busier than those that did not.

[219] Source for all internet statistics: Matthew Gray of the Massachusetts Institute of Technology. http://www.mit.edu/people/mkgray/net

The Humanitarian Dimension

Another strategic reality concerns the Humanitarian Dimension. According to Hikaru Yamashita, an expert on humanitarian matters, the 1990s was the decade in which "humanitarian rights became an influential discourse in international affairs".[220] Certainly it was the decade in which human rights assumed visibility due to events in Bosnia-Herzegovina. Dormant since the fall of Srebrenica and Zepa in 1995, it re-emerged in the shortly after 9/11 with the US providing $187 million in aid to Afghanistan.[221] Thus humanitarianism and human rights clearly influence today's security environment. However, these two issues should not be confused. Human Rights law concerns the relationship between states and their citizens, whereas "humanitarian law is focused on conflict situations and is concerned with treatment by a state of the citizens of its enemy states".[222] It is this latter strand that is likely to impact upon military activities.

FURTHER CHALLENGES

In light of the above it may be seen that the world is steadily changing. In fact many of today's challenges are markedly different from those of the Cold War and, importantly, its immediate aftermath. Recognising this, the West's armed forces have adapted with great skill, and they now have impressive expeditionary capabilities. This was a significant achievement, but it only goes part way towards addressing today's strategic realities. The boundaries between military and civil action are becoming increasingly blurred through, for example, organised crime, drug cartels, warlordism, and humanitarian intervention, and each of these dimensions becomes more complex when non-governmental agencies are involved - particularly during conflict. Understanding and addressing these issues is a core requirement for EBW. However, it is not the only one; another important requirement is the ability to take into account the cultural element.

The Cultural Equation

In *Fighting for the Future: Will America Triumph?* Ralph Peters notes that "in most of our recent deployments, no one weapon system, no matter how expensive and technologically mature, has been as valuable as a single culturally competent foreign affairs officer".[223] This is an enduring lesson of warfare, but only recently has it featured at the outset of operations. For example, David G Marr, the first Vietnamese-speaking US Marine sent to Vietnam, notes that while studying at the Monterey Army Language School in 1961he:

> "...soon discovered that almost all of the vocabulary was military and, worse yet, Vietnamese instructors were being forced to coin entirely new words to conform with a set of technical English terms...not

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[220] Hikaru Yamashita, *Humanitarian Space and Intervention Politics: The Creation of Safe Areas*, National Institute for Defence Studies, Japan, Ashgate, Aldershot, 2004.
[221] Ibid.
[222] Ibid.
[223] Ralph Peters, *Fighting for the Future: Will America Triumph?* Stackpole Books, Mechanicsburg PA. 1999, p 21.

> surprisingly, when tried out in Vietnam such words received nothing but stares, and were promptly forgotten."[224]

When he arrived in theatre:

> "My colonel simply wanted to know if 'the enemy' was located in village 'A' or village 'B', whether he had weapons larger than 30 calibre that would force us to fly above 1500 feet, and what the weather was going to be like tomorrow. The colonel cared not a wink about the local political 'infrastructure' [or] the relationship of the 'insurgents' to the local population".[225]

Understanding culture is vital. This demands expertise in two specific areas: first, know the enemy - how he thinks, how he behaves, and what motivates him. Second, know the 'non enemy': own country, allies, and neutrals. These cognitive domains are very different.

In *Strategy and Ethnocentrism* Ken Booth observes that "culture shapes the ends which create the problem to which rational thinking has to be addressed".[226] He offers the example of Kamikaze pilots during World War Two. Not only did Western cultures fail to understand this expression of Japanese culture, but they could not explain its significance to the Japanese population. In similar vein, North Vietnam's preparedness to absorb huge fatalities was equally difficult for the Western mindset to fathom. This facet of cultural awareness is well recognised, but there is another aspect to the equation: the need to understand our own cultures at more than a superficial level.[227]

Dr Karen Carr, Director of Future Systems at BAe Human Resources, suggests that even the process of *thinking* takes different forms between different cultures. She believes that, for example, thinking tends to be more process-driven in the US than in the UK;[228] and that it is not uncommon for allies to have different institutional, as well as national, approaches to subjects. To compound this problem further, language in itself provides a barrier - even when nations share a common language. Churchill's comment about Britain and America being two nations 'divided by a common tongue' has resonance within this context. Thus the widely held assumption that allies generally think and communicate in similar ways is in fact erroneous - and potentially disastrous. Cultural differences can lead to misunderstandings at all levels, from increased (and avoidable) friction at the tactical level, to outright mistrust between strategic partners.

Dr Carr also makes the point that people, rather than computers, are unequalled when it comes to understanding human behaviour. This observation raises a cautionary note, however, especially for those who believe that technological solutions can unlock their understanding of other cultures. Moreover, intuition and experience have always had a

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[224] David G Marr, *The Rise and Fall of "Counterinsurgency": 1961-1964*, in *Vietnam and America: The Most Comprehensive Documented History of the Vietnam War*, Gettleman, Marvin E; Franklin, Jane; Young, Marilyn B; and Franklin, Bruce (Eds), Grove Press, New York, 1995.

[225] Ibid.

[226] Ken Booth, *Strategy and Ethnocentrism*, Croom Helm, London, 1979, p 64.

[227] Even this is an oversimplification. Mao Tse-Tung believed it imperative to understand not only the conditions of our own and enemy countries, but also friendly countries and indeed countries friendly to the enemy; the logic being that countries friendly to the enemy might prove useful for influencing the enemy, thus opening up a new line of operation. Mao Tse-Tung, *Unrehearsed Talks and Letters: 1956-71*, Ed Stuart R. Schram, London, 1974, p 128.

[228] Dr Karen Carr, Interview, July 2005.

key role to play in warfare. It follows, therefore, that if greater reliance is placed on artificial intelligence, less reliance will be placed on intuition and experience.

Culture and Rationality

Up to this point only rational actors have been considered. However, coherent decision-making becomes increasingly difficult when irrational actors enter into the equation. Between the two poles of rationality and irrationality exists an infinite assortment of characteristics and personalities which, when combined together, complicate the task of understanding culture by an order of magnitude.

Knowing what motivates an opponent is rarely as straightforward as it first appears. Knowing how an opponent will think and act - especially when he or she is under duress and their behaviour changes - is notoriously difficult to predict. Indeed very few people behave consistently. Surprising though this may seem, it is also true that no-one applies identical reasoning from one day to the next.[229] Rather, people change their responses and behaviour as the situation warrants. Moreover, the number of variables that affect human behaviour is beyond calculation.

In *Effects-Based Operations, A Grand Challenge for the Analytical Community*, Paul K Davis notes that during the Cuban missile crisis, President Kennedy and his Executive Committee were influenced "...by numerous factors such as the vividness of certain facts or images, the order of events, physical fatigue, and random events".[230] These factors apply in all wars, and they determine outcomes in many different ways. In similar vein, Person A's rationality is extremely unlikely to mirror that of Person B. This is certainly true when two people come from the same background and are raised in similar circumstances - but it applies even more when they are from different cultures. In short, one can never assume that one's enemies undertake the same thought processes, let alone cost/benefit analyses, as oneself or one's allies.

Slobodan Milosevic famously stated that NATO was "not willing to sacrifice lives to achieve our surrender. But we are willing to die to defend our rights as an independent sovereign nation".[231] Clearly, whether or not he meant this at the time will never be known - but the point stands. Ho Chi Minh's infamous warning to the US that "you can kill ten of my men for every one I kill of yours. But even at those odds, you will lose and I will win" was more than an idle boast.[232] Saddam Hussein's rationality prior to Operation Iraqi Freedom was equally difficult for the Western mind to fathom. Indeed after it was clear that there were no WMD in Iraq, many observers asked why he had not readily admitted to the fact, thereby negating at a single stroke the UK's justification for invading Iraq. However, a very different picture emerges if matters are viewed from the perspective of Saddam Hussein. How could he admit that he had no WMD when his entire regional powerbase relied not only on the belief that he had them, but that he was prepared to use them as he chose?

Understanding rationality is difficult enough when one's opponent acts predictably, but it becomes much harder when one's adversary seeks to exploit weaknesses in his

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[229] Paul K Davis, Op Cit, p 21.
[230] Ibid, p 22.
[231] Interview with Milosevic, *United Press International*, April 30, 1999.
[232] Cited in Byman, DA and Waxman, MC, 'Kosovo and the Great Air Power Debate', *International Security*, Spring 2000, Vol 24, No 4, p 32.

opponent's understanding. Mao Tse-Tung once observed that "a careless military man bases his military plans on his own wishful thinking [and therefore] his plans are fanciful and do not correspond with reality".[233] A clever opponent will always seek to mislead his enemy with a view to ensuring that the adversary no longer trusts his model of reality. This has always been the case in warfare, but what is different today is that intuition and experience are slowly being displaced by knowledge management systems which seek to predict behaviour and truly 'know the enemy'. This perceived philosopher's stone, of process-driven solutions available at the press of a button, would be hard pressed to work even if the rationality of every potential opponent was known in advance. However, add to this the fact that behaviour and rationality change in line with different circumstances, and the problems of unlocking an opponent's cognitive domain compound accordingly.

The Cognitive Domain: Shaping Behaviour

Understanding the cognitive domain is important because physical force is not the only way to influence an opponent's behaviour. The mere threat of violence (or some other form of sanction) may in itself be enough to achieve the required objective. The school bully does not need to hit someone with a stick for them both to know that it will hurt; seeing the bully with stick in hand can be enough to encourage potential victims to acquiesce to the bully's demands. The same approach applies at the operational and strategic levels. US President Theodore Roosevelt understood this matter intuitively, apparently often quoting the African proverb "speak softly and carry a big stick; you will go far". A natural leader and a highly capable soldier, Roosevelt amassed combat experience while commanding the *Rough Riders* during the Spanish-American War.[234] By the time he assumed the Presidency in 1901, his understanding of strategy and tactics were unusually well developed. For him, influencing perception and will were no less important than the use of physical violence. He understood the cognitive domain well, and he exploited it ruthlessly.

The ability to manipulate the cognitive domain is one of the enduring tenets of warfare. Sun Tzu advised: "know your enemy, know yourself [and] your victory will never be endangered".[235] And even Clausewitz - so often viewed solely as a champion of physical force - well understood this key requirement: "Destruction of the enemy's force is only a means to an end, a secondary matter. If a mere demonstration is enough to cause the enemy to abandon his position, the objective has been achieved"[236] He later added that "military activity is never directed against material force alone; it is always aimed simultaneously at the moral forces which give it life, and the two cannot be separated".[237]

The cognitive domain may be thought of as a lever that links the military commander to the enemy's 'moral forces'. And, as one of the greatest moral forces is leadership, the ability to bend an enemy's will in order to secure key objectives will always be a prized skill in conflict.[238] For George S Patton, familiarity with Rommel's book on *Infantry*

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[233] Mao Tse Tung, *Selected Military Writings*, p 86.
[234] He was recommended for the Congressional Medal of Honour for 'conspicuous gallantry in leading one of the charges' at San Juan Hill on 1 July 1898. The award was finally made in 2001.
[235] Sun Tzu, *The Art of War* (tr Samuel B Griffith), New York: Oxford University Press, 1971, p 129.
[236] Carl von Clausewitz *On* War, ed and tr. Sir Michael Howard and Peter Paret, Princeton NJ, Princeton University Press, 1984, p 96.
[237] Clausewitz, Op Cit, p137.
[238] This is equally true in territorial wars, because if the enemy leadership accedes to territorial demands the strategic objective will have been achieved.

Attacks allegedly helped him to beat Rommel in 1943 at Tunis.[239] However, literary 'silver bullets' such as these are few and far between, and the modern commander must therefore turn to more reliable mechanisms if he is to defeat his opponents.

All models of warfare demand that opponents are studied closely before battle is joined, but in reality this rarely happens. Rather, wars begin with both sides knowing less about the opponent than is known at the end.[240] Consequently assumptions are made and then adhered to, until it becomes apparent that the enemy is behaving differently to what was expected. When this happens, the early assumptions are revisited either until the cycle stops repeating itself or the war concludes. The Malayan Campaign of 1948-1960 is often cited as being a success in terms of knowing the enemy, and for good reason. Yet it was markedly less successful in the early stages than towards the end. As it was being fought, the British Forces and Malay Police continued to learn about the enemy: how the insurgents thought, what motivated them, and how they might be 'turned'. One significant deduction was that the enemy's link to civilian support contained key vulnerabilities. Once these were identified, a crossover point was reached and thereafter the path to victory became assured.

A similar approach was used by Ramon Magsaysay during the post-Second World War campaign against the Hukbalahaps in the Philippines. Magsaysay had to contend with poor morale within the military forces and cases of graft and corruption.[241] But by delivering key land reforms he gave the populace everything that the insurgents had promised, and by doing this he removed at a single stroke the Hukbalahaps' justification for fighting - and also the populace's rationale for supporting them. According to Lawrence M Greenberg, Magsaysay's in this regard greatest strength was:

> "...his ability to see the Huk guerrilla movement as symptomatic of greater diseases that were threatening his country - poverty, rising social expectations, and an uncaring and corrupt central government. These were the targets that Magsaysay set his sights on. He combined military operations with civic-action projects to form his grand strategy, a strategy that, if successful, would improve Philippine living conditions and remove the base of guerrilla strength - popular support. He demanded that each soldier, regardless of rank, be dedicated first to the people, then to killing the guerrillas... The military and the government had first to win the respect of the people before their anti-Huk campaign could ever produce tangible results".[242]

As in Malaya, the greatest resistor to Magsaysay's objective was twofold: the enemy and the populace. If he lost the confidence of the populace, the enemy would benefit: indeed the more he lost the populace, the more the enemy would benefit. Therefore he had to understand both the enemy and the populace equally. This he did supremely well. Ultimately the insurrection petered out, with bemused guerrillas surrendering piecemeal once they realised that they had lost their rationale to continue the fight.[243]

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[239] Rommel's book, *Infanterie greift an*, was first published in Germany in 1937.
[240] Bin Laden, Al Qaeda, and the Taliban in Afghanistan all illustrate this point.
[241] See Lawrence M. Greenberg's *The Hukbalahap Insurrection, A Case Study of A Successful Anti-Insurgency Operation in the Philippines, 1946-1955*, U.S. Army Centre of Military History, Washington, D.C., 1987, p 83.
[242] Ibid, p 146.
[243] Source: Dr Joe Strange of the US Marine Corps War College, interviewed in April 2003.

The cognitive domain comprises three distinct target groupings - friendlies, neutrals and the enemy. Accordingly, Greenberg makes the point that if "American policy had been less complacent and more sensitive to the needs and aspirations of the Filipino people, the Hukbalahap movement would simply have dried up and blown away after the [second world] war."[244] In the event it ended a decade later.

THE 21ST CENTURY AFTERMATH

Today's new strategic realities do not end here of course, if only because the aftermath now needs to be considered as never before. 'Getting it right' matters increasingly, and this means delivering an aftermath that is satisfactory to the international community. Yet this is not something that extant model of warfare is good at achieving, because it views the warfighting and post-warfighting stages as unrelated entities. Reflecting on Iraq, retired US General Thomas White, Secretary of the Army from 2001 until April 2003, stated on 12 August 2004 that:

> "...there was kind of this mind-set...that the postwar deal is kind of a lower form of life; it's kind of a necessary evil... to do that portion of the operation justice, you probably would have had to slow down the military operation itself...an enormous amount of planning would have had to go on, and none of it went on. It was easier just to keep on the short track of the logic of the war: the imminent threat to the United States. Therefore we have to attack quickly, and oh, by the way, we'll just kind of bumble along when the war's over, and hopefully it will turn out okay. And it didn't".[245]

White is not alone in making such comments. Colonel Douglas Macgregor, US Army (retired) and currently a Senior Military Fellow at the Institute of National Strategic Studies at the National Defence University, noted that prior to the war:

> "...all of the Iraqis we had worked with said: 'Number one [priority]: civil order and security. Number two: power restoration. Number three: jobs'. They sang that particular song day in and day out for months. From the time that we even got close to the border with Iraq, they said. 'Those are your top three priorities'. If you address those early on: in other words, you arrive with a civil order, new rules of engagement, psy-ops teams driving down the street, speaking Arabic, saying: 'Go back to your homes. Police, stay on duty. If you are seen on the streets and are carrying a weapon, you will be shot. If you loot or commit acts of criminality, you will be shot'. But for whatever reason, that didn't happen. The generals did not plan any of that. And I think that it might be useful to ask them why they didn't".[246]

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[244] Ibid, p 143.

[245] See http://www.pbs.org/wgbh/pages/frontline/shows/pentagon/interviews/ for additional opinions. Several retired US generals were interviewed.

[246] Ibid. Interview took place on 23 July 2004. In December 2000 Macgregor was advised by a representative of the Secretary of Defense that the US Army's Chief of Staff sought 560 000 troops for the coming invasion. Macgregor's response was that less than 10% of that number - a mere 50 000 troops - would be required. The following month he was sent by the White House to discuss his proposals with General Tommy Franks, who "generally signed up for that".

One does not need to ask any generals, however. In July 2003, shortly after the war ended, *USA Today* interviewed more than 30 current and former U.S. officials, analysts, Iraqi-Americans and other parties. This group included a cross-section of officers who had been involved in the planning process. They identified several reasons for the coalition's failure to generate 'the aftermath we sought':

> "...a number of pre-war decisions...helped create the current situation. Hasty planning, rosy assumptions about Iraqi attitudes and a failure to foresee and forestall the disastrous effects of looting and sabotage all contributed, they say. Most spoke on the record, but a few in sensitive positions requested anonymity".[247]

Six reasons were identified: deploying too few troops for the task;[248] commencing planning for the aftermath too late;[249] underestimating the impact of looting and the poor state of local infrastructure;[250] making wrongful assumptions as a result of the previous Gulf War experience; planning for crises that didn't happen; and failure to resolve inter-agency conflicts, particularly between the State Department and the Pentagon's civilian leadership. James Fallows takes up the baton in *Blind into Baghdad*:[251]

> "The military-civilian difference finally turned on the question of which would be harder: winning the war or maintaining the peace. According to Thomas White and several others, OSD [Office of the Secretary of Defence] acted as if the war itself would pose the real challenge. As White put it, "The planning assumptions were that the people would realize they were liberated, they would be happy that we were there, so it would take a much smaller force to secure the peace than it did to win the war. The resistance would principally be the remnants of the Ba'ath Party, but they would go away fairly rapidly. And, critically, if we didn't damage the infrastructure in our military operation, as we didn't, the restart of the country could be done fairly rapidly." The first assumption was clearly expressed by Cheney three days before the war began, in an exchange with Tim Russert on *Meet the Press*:
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> RUSSERT: If your analysis is not correct, and we're not treated as liberators but as conquerors, and the Iraqis begin to resist, particularly in Baghdad, do you think the American people are prepared for a long, costly, and bloody battle with significant American casualties?

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[247] Barbara Slavin and Dave Moniz, 'War in Iraq's Aftermath Hits Troops Hard', *USA Today*, 21 July 2003.
[248] Four years earlier, the War Game "Desert Crossing" had been conducted by Marine General Anthony Zinni, the then commander of U.S. forces in Iraq and the surrounding region. It showed that a force of 400 000 troops would be needed to invade and stabilize Iraq. In the event, at the insistence of Defence Secretary Rumsfeld, ground forces in the March invasion were held to about 130 000 US combat troops and approximately 30 000 British troops.
[249] The Pentagon's Office of Reconstruction and Humanitarian Assistance (ORHA), tasked with initial post-Saddam political and economic work, did not exist until shortly before the war.
[250] According to retired US Army General Jay Garner, who headed the initial post-Saddam planning and reconstruction efforts, "our plan was to immediately stand up 20 of 23 existing ministries". However, by the time the plan was put into action "...17 of them had been vaporized". This is an excellent example of where considering effects in the round, rather than securing victory in the quickest possible timescale, would have yielded tangible results.
[251] James Fallows, 'Blind Into Baghdad', *The Atlantic Monthly*, January/February 2004, Vol 293, No. 1, p 53-74.

> CHENEY: Well, I don't think it's likely to unfold that way, Tim, because I really do believe that we will be greeted as liberators ... the read we get on the people of Iraq is there is no question but what they want to get rid of Saddam Hussein and they will welcome as liberators the United States when we come to do that".

On the matter of force numbers required for the aftermath, Fallows notes that:

> "They were very proud that they didn't have the kind of numbers my plan had called for," Zinni told me, referring to Rumsfeld and Cheney. "The reason we had those two extra divisions was the security situation. Revenge killings, crime, chaos - this was foreseeable."
>
> Thomas White agrees. Because of reasoning like Cheney's "we went in with the minimum force to accomplish the military objectives, which was a straightforward task, never really in question," he told me. "And then we *immediately* found ourselves shorthanded in the aftermath. We sat there and watched people dismantle and run off with the country, basically."

Fallows then draws attention to a US Army War College Draft Report entitled *Reconstructing Iraq: Insights, Challenges, and Missions for Military Forces in a Post-Conflict Scenario.* He notes that:

> "According to the standard military model, warfare unfolds through four phases: 'deterrence and engagement,' 'seize the initiative,' 'decisive operations,' and 'post-conflict.' Reality is never divided quite that neatly, of course, but the War College report stressed that Phase IV 'post-conflict' planning absolutely had to start as early as possible, well before Phase III 'decisive operations' - the war itself. But neither the Army nor the other services moved very far past Phase III thinking. "All the A-Team guys wanted to be in on Phase III, and the B-team guys were put on Phase IV," one man involved in Phase IV told me. Frederick Barton, of the Centre for Strategic and International Studies, who was involved in postwar efforts in Haiti, Rwanda, and elsewhere, put it differently. "If you went to the Pentagon before the war, all the concentration was on the war," he said. "If you went there during the war, all the concentration was on the war. And if you went there after the war, they'd say, 'That's Jerry Bremer's job." Still, the War College report confirmed what the Army leadership already suspected: that its real challenges would begin when it took control of Baghdad".

Clearly the West's extant model of warfare failed to avoid these pitfalls. It did not consider the warfighting and the aftermath stages concurrently, and it not consider both - even separately - during the early planning stages. But perhaps its greatest failure was its inability to comprehend that effects achieved during the warfighting stage inevitably shape the aftermath to some degree.

CONCLUSION

For a variety of reasons, warfare in the early 21st Century is unlikely to mimic even its immediate predecessors. Naturally some aspects - the enduring fundamentals of warfare - will undoubtedly remain much the same, but there will clearly be some changes largely because the wider security environment has itself undergone significant transformation. Many of today's strategic realities are unprecedented. Indeed they could not have been predicted even two decades ago. One case in point is Al Qaeda, which has had a huge impact on international security; so significant in fact that we are today witnessing a fundamental shift in Western mindset regarding the utility of 'the warfighting stage' as a discrete activity. The adoption of a 'war on terror' demonstrates this very point, because in the past wars were declared against nations, countries, or alliances, or perhaps against piracy, warlords or brigands. In each case the enemy was easily identifiable and could be defined in human terms. Today, however, the advent of a 'war on terror' has changed this model, and in doing so it has added further complications to an already complex discourse.

The process of globalisation has also made its mark. The range of options now available to countries to conduct warfare according to rules of their choosing is steadily diminishing, because increasing global linkages translate into directly into nations' reduced freedom to operate unilaterally. Common motivation between allies dilutes when one of them has economic links with an enemy who shortly before the conflict commenced was considered to be a friend. This is especially true when the post-war expectation of all involved is a return to the *status quo ante*.

The increasing presence of the media presents yet another challenge to Western militaries. As technology improves, so too does the media's ability to transmit in real time, and with great clarity, from the front lines. In the immediate aftermath of the Cold War there was no indication that civilians would soon routinely become news cameramen - indeed today's ubiquitous mobile phone / camera combination did not exist even a few years ago. And whilst at present the military has yet to be called to account for every action it undertakes, this is sure to change as media coverage becomes all-encompassing.

The humanitarian dimension has returned to public consciousness by dint of the suffering that occurred after the 2003 invasion of Iraq, and operations against the Taliban in Afghanistan. At first sight these examples appear to be very different, yet pressure on local civilians by armed gunmen is a feature that is common to both. The former example in particular has heightened awareness of poor aftermath planning, and in light of the current perceived stalemate in Iraq, demands for coherent aftermath planning are likely to increase in the future.

Finally, one of the greatest challenges to EBW is also one of the oldest: the need to understand the cognitive dimension. This demands a thorough understanding of the enemy, of allies and of friendly nations, and to be successful it must accept that human behaviour cannot be predicted with certainly; that one person's rationality is another's irrationality; and that effects must be viewed from the perspectives of all involved.

EFFECTS BASED WARFARE: THE SUM OF PREVIOUS EXPERIENCE?

CONCLUSIONS

This thesis asked whether EBW is an original model of warfare or the sum of previous experience. Tempting though it might be to dismiss this question as an irrelevance, the fact remains that the background to EBW has never been analysed at an appropriate level within an academic context. Consequently the wider purpose of this thesis was to fill this vacuum, because this lack of scrutiny has led to several fundamental misunderstandings about the model. Those seeking familiarity with it must be willing to invest time in understanding its minutiae, yet these extend well beyond the practicalities which separate it from the current model, to its earliest roots; to *why* it came into being, and crucially, to the *manner* in which it came into being. Unless these factors are considered in some depth, discussions concerning this complex and intricate topic are likely to occur in isolation from the context within which EBW arose. Therefore viewing selected facets of the model (as opposed to the wider model in the round) could lead to fundamental misunderstandings regarding the model's potential. In the best case, this approach smacks of ignorance. In the worst case, however, it is disingenuous; because context drove the model's development, and when the significance of this context is marginalised, the inevitable result is an unbalanced appreciation of the model. The process of seeking to eradicate these misunderstandings has produced several important conclusions, as outlined below. These bolster the original conclusions described within the body of the study, which - for reasons of brevity - are not developed further within this final section.

The first conclusion, alluded to above, concerns EBW's complexity. Whereas previous models of warfare are relatively easy to grasp, at least in general terms, the same is not true for EBW. For example, attritional models require relatively little knowledge of military matters; indeed in some cases all that is needed is a basic understanding of mathematics. Manoeuvre Warfare is a significantly more complicated construct, yet it too may be grasped in outline after only the briefest of introductions. This is also true of the nuclear models of Flexible Response and Tripwire, the latter arguably being one of the simplest models of warfare yet devised, and perhaps one of the few to be understood at an intuitive level by the general public. But EBW does not fall into these moulds. It cannot be grasped *even in outline* by scanning introductory articles on the subject, no matter how competently they are written. EBW is simply too big a topic, too multifaceted in its character, and too diverse in its underlying methodologies to be grasped in sufficient depth to have meaning. And herein lies one of its principal challenges: educating its participants. Because if this does not happen, those who will find themselves involved are highly likely to misunderstand the underlying minutiae, hence they will enter the process with fundamental misconceptions about both the paradigm and its potential.

EBW is predicated upon a sophisticated, and at times extremely subtle, approach to warfare in its widest sense. Many models focus on achieving victory on the battlefield, but EBW aspires towards an altogether higher aim: victory over the longer term. Within this model, victory on the battlefield is implicit, together with the additional requirement for aftermaths acceptable to the international community; this is the second conclusion. Importantly, it does not imply that alternative models ignore the usual strategic desire for peace once the warfighting stage is over; indeed nothing could be further from the truth. The key difference, however, is that whilst other models routinely

plan in a linear and chronological fashion, EBW requires the totality of effects to be taken into account across the full spectrum of conflict, and - to the extent that this is possible - from the earliest planning stages to the establishment of conditions for a lasting peace. Consequently, within EBW, the effects that occur during the warfighting stage must be factored into the planning for the post-warfighting stage, and this is demonstrably not the case at present. Further, 'effects that occur' is very different to 'effects that are sought', because it takes into account both undesired and unintentional effects, in addition to those that were sought in the first place; and again, this is rarely the case in the current model. In fact this EBW requirement applies as much to those effects considered positive by the victors as to those considered negative by the losers - and also the wider international community. This demand will present a significant problem to military practitioners, as it will complicate the fighting equation by an order of magnitude.

To elaborate further, whereas many models of warfare focus on the operational level, EBW spans each level of warfare, and it does so in a holistic manner. Thus it takes the roles of non-military bodies, both governmental and otherwise, into account *during the military planning process*. This is a very different stance from the current model. Consequently the issue is not one of semantics, as many profess, but one of substance. In truth, it probably represents the single greatest difference between EBW and its predecessor. To illustrate the point, the Kosovo Case Study revealed that after 78 days of air activity, 70% of all road and 50% of rail bridges across the Danube were down. This, from a military perspective, tightened the ratchet on Milosevic precisely as intended. Yet it interfered greatly with the subsequent *non*-military rebuilding operation that was undertaken after the military endstate had been secured. Contrast this with the more enlightened approach of Desert Storm - which took place before Kosovo - wherein electrical installations were spared from destruction because the underlying effect (no electricity in Baghdad) had been attained. The difference between these approaches is stark.

If EBW is the sum of previous experience, it is difficult to explain how or why the effects mindset demonstrated during Desert Storm regressed shortly afterwards during Kosovo, only to re-emerge three years later in the form of the UK's EBA. This example, one of many referred to throughout this study, hints at the possibility that EBW may indeed be more than a mere evolutionary stage of the current model. Crucially, factors exist within EBW which are wholly unrelated to the Manoeuvrist Paradigm. These factors *cannot be linked directly to Manoeuvrist thinking* hence - ipso facto - they cannot have evolved from it.

It should also be noted that the Kosovo mentality still very much in evidence in the Fallujah Case Study. What this timeline reveals is that the two systems are (or were) operating in parallel. This observation does not undermine the evolutionary argument as such - indeed at first sight it seems to support it, by suggesting that EBW is a branch of its predecessor rather than an entity in its own right. However, an alternative (and equally plausible) explanation is that EBW naturally built upon previous success rather than starting from scratch. Such an approach would be entirely reasonable, given the functionality and success of the Manoeuvrist Paradigm in the late 20th Century (for example, the 1982 Falkland Islands campaign, Desert Storm land operations in 1991, and the Non-Combatant Evacuation of Sierra Leone in 2000). It is therefore not unreasonable to surmise that those at the heart of effects development would have had neither the desire, nor seen the need, to abandon many of the underlying principles of the Manoeuvrist Paradigm. Indeed the very notion of 'starting with a completely clean sheet'

is anathema to the contemporary military mind, which prefers instead to compile 'lessons learned' from each new campaign and to modify its approach accordingly. The fact that two systems may have been operating in parallel is interesting in itself, but inconclusive. Equally interesting is the realisation that when 'effects thinking' was first articulated during Desert Storm, it applied to the Air component rather than to the joint campaign plan as a whole. From this it may be deduced that not only is it possible for the two approaches to be used during the same period, but that they could indeed be used concurrently - and very effectively - during the same operation.

Unfortunately none of the foregoing answers the question of evolution versus revolution. What does emerge, however, is the realisation that this matter cannot be resolved solely by studying historical examples. In this respect the timeline issue is highly relevant, because it calls into question Foucault's brief but pivotal role within this study. His belief that on occasion sudden and unexpected changes can occur, served as a lens for analysing the *manner* in which EBW came into being. The contention that new eras produce their own mindsets has great relevance in the case of EBW; because if EBW contains elements that are unrelated to the current model - hence they cannot have evolved from it - the headline question now becomes twofold: *where* did EBW came from, and *why* did it emerge in the first place?

The answers are outlined in Chapters 2 and 3, the US and UK origins of EBW. In the case of the US, key personalities drove the earliest inputs to the model, with the contributions of air power theorists - most notably Warden and Deptula - being largely self-evident. However, these airmen built upon the work of others, such as Boyd and Lind, Starry and DePuy, and it becomes necessary to query how far back one must delve in order to unearth EBW's earliest roots. The post-Vietnam catharsis clearly had a role to play, but this is hardly a surprise. Infinitely more revealing is the extent to which America's remote past moulded the thinking of modern US theorists, whether they knew this or not. Indeed America's unique approach to warfare proved to be fertile ground for modern effects thinking. That said, the catalyst for contemporary action appears to have been the realisation that improvements in airpower equated to time compression on the battlefield - and from this awareness the nascent effects mindset began in earnest. Targets no longer needed to be re-attacked repeatedly *as long as the rationale for attacking them in the first place had been, and was continuing to be, met*. From this point onwards, at least for the US Air Force, ongoing destruction became subservient to the selection of meaningful metrics of success.

Analysing the US input accounts for the roots of the modern EBW paradigm, but it leaves many questions unanswered. One obvious example is that whilst EBW claims to be holistic, the US desire to seek overwhelming victory on the battlefield has never been matched by a concomitant desire to set appropriate conditions for peace - hence EBW cannot, by definition, be holistic. Yet there is an answer to this conundrum. Eschevarria notes that the American approach to war is in fact a way of battle rather than a mature model of warfare, and this perhaps explains to some degree why there is no commonly agreed definition of EBW. Holistic it might be from a UK perspective, but it does not appear to be so from a US perspective. In fact this missing element - the wider approach to warfare - is precisely what the UK delivered to the paradigm. This happened because whilst the US input focused predominantly on operational developments, the UK input was pitched at the operational / strategic interface. Once work in the UK began in earnest, the EBW model moved forwards in ways that were unlikely to have occurred had it remained under US custodianship.

Albeit unwittingly, *Modernising Government* provided the framework around which the UK's holistic approach subsequently took shape. This it achieved by making explicit the aspiration that henceforth all departments would work more closely together than in the past. With hindsight this was an obvious precondition for EBA, the UK's pan-governmental approach to warfare, but clearly this was not known at the time. Nonetheless, a mere two years after *Modernising Government*, the *New Chapter to the 1998 Strategic Defence Review* stated that future military options were to be framed in terms of desired effects, and from this point onwards there would be no going back for the UK. Indeed the *New Chapter* spelled this out in no uncertain terms, by making it clear that not only was EBA the UK's model of choice, but that it was here to stay. The significance of the above was soon picked up outside the UK, with Australia's Defence Science and Technology Organisation noting in 2004 that "the effects-based approach is a concept that may impact on National security and National prosperity in profound and challenging ways".[252] This comment hints at the potential of the new model, as well as at the scale of progress that was achieved within such a short period of time. It may therefore be seen that that not only did the UK build substantively upon the earlier US work, but that in doing so it identified a key omission: EBW's potential as an holistic model of warfare.

Two further conclusions remain. The first is that warfare in the early 21st Century is not mimicking its predecessors. The contemporary security environment has changed. The rise in international terrorism has been a key factor, but so too have globalisation, the increased efficacy of the media, the re-emergence of humanitarianism, and the realisation that planning for today's aftermaths currently lacks coherence. None of these factors was significant when the West's extant approach first emerged during the Cold War.

The final conclusion is that EBW's viability is not known at present. The paradigm is largely conceptual. Certainly it claims to have codified and formalised the best of today's approach, and it aspires to future effects being consistent with those that were envisaged during the planning process. However, these are bold claims. And whilst they appear to be sound in theory, they cannot be quantified empirically until the model is used in earnest. Given EBW's immaturity this is unlikely to happen in the short term; indeed the fact that no overarching UK national philosophy exists at government department level stands against EBW's use until this omission has been rectified. This is not the only frustration, however. Another fundamental problem is that no tool or mechanism exists, or seems likely to exist, that will predict accurately both individual and corporate human behaviour in the face of individual effects. The span of possibilities is simply too great. Paradoxically, EBW's thirst for greater cognitive understanding might prove to be its undoing.

With these caveats in mind, EBW's apparent attractions need to be carefully balanced against its likelihood of success. Ultimately it may prove to be an aspiration too far, and perhaps it will only ever deliver partial solutions. If this is the case, the key question becomes one of whether the West's current approach - as exemplified in Iraq and Afghanistan - should be maintained, or whether a conscious shift in direction might yield better results in the future. One thing is certain, however: if the paradigm is to stand any chance of success, it needs to be properly understood. This can only be achieved by understanding why and how it emerged in the first place. EBW is many things, but the sum of previous experience it is most certainly not.

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[252] Chapter 3. Op Cit.

BIBLIOGRAPHY

PRIMARY SOURCES

HM Government

HM Government, *FCO Departmental Report 2001*, 2001.

HM Government, White Paper: *Delivering Security in a Changing World*, Cm 6269, July 2004.

HM Government, White Paper: *Modernising Government*, Cm 4310, 1999.

JDCC Draft Paper *The Effects Based Approach*, 041011, undated.

JDCC Paper *The UK Military View of Effects - Definitions and Relationships*, undated.

JDCC *UK Joint High Level Operational Concept*, undated.

JDCC Presentation *The UK Approach to the Planning, Execution and Assessment of Effects-Based Operations*, undated.

JDCC Joint Defence Publication 0-01, Edition 6, *UK Glossary of Joint and Multinational Terms and Definitions*, May 2004.

JDCC Joint Warfare Publication 0-01, *British Defence Doctrine (Second Edition)*, October 2001.

JDCC Joint Warfare Publiction 3-00 (Second Edition), *Joint Operations Execution*, March 2004.

JDCC Joint Warfare Publication 5-00, *Joint Operations Planning*, March 2004 Edition,

UK MOD. *Joint Operations*, Joint Doctrine Publication 01, March 2004.

UK MOD, *Kosovo: Lessons From the Crisis*, Cm 4724, June 2000.

UK MOD. *The Strategic Defence Review: A New Chapter*, July 2002.

UK MOD, *The Strategic Defence Review: A New Chapter Supporting Information & Analysis*, Cm 5566 Vol II, July 2002.

Interviews

Butler, Colonel E. Deputy Director, Higher Command and Staff College, UK Defence Academy, September 2004.

Capewell, Colonel D, RM, UK Joint Force Headquarters, September 2004.

Carr, Karen. Director of Future Systems at BAe Human Resources, July 2005.

Grant, Lieutenant Colonel D. Directing Staff, Joint Services Command And Staff College, UK Defence Academy, September 2004.

Neville-Jones, Dame Pauline. Former Chairman Joint Intelligence Committee, November 2004.

Smith, General Sir Rupert. March 2004, February 2005.

Williams, Lieutenant Colonel R J E. Directing Staff, Joint Services Command And Staff College, UK Defence Academy, September 2004.

Presentations

Blix, Hans. Former UN Weapons Inspector in Iraq, Oxford University, September 2004.

Kissinger, Henry. Guest at the UK Higher Command and Staff College 03, February 2003.

SECONDARY SOURCES

Books

Alberts, David S and Hayes, Richard E, *Power to the Edge: Command, Control in the Information Age*, CCRP Publication Series, 2003.

Boot, Max, *Savage Wars of Peace: Small Wars and the Rise of American Power*, Basic Books, New York, 2002.

Booth, Ken. *Strategy and Ethnocentrism*, Croom Helm, London. 1979.

Churchill. Winston S, *The World Crisis,* Vol. 2. Charles Scribner's Sons, New York, 1923.

Citino, Robert M, *Blitzkrieg to Desert Storm: The Evolution of Operational Warfare*, University Press of Kansas, Kansas, 2004.

Clausewitz, Carl von. *On War*, ed./trans. Michael Howard and Peter Paret. Princeton University Press, Princeton, 1976.

Clausewitz, Carl von, *On War*, tr. Colonel J J Graham, Barnes and Noble, New York. 1968.

Cooper, Robert, *The Breaking of Nations*, Atlantic Books, London, 2004.

Cox, Sebastian, ed, *Sir Arthur Harris - Despatch on War Operations*, Frank Cass. London. 1995.

Davis, Paul K, *Effects Based Operations: A Grand Challenge for the Analytical Community*, RAND, Santa Monica, 2001.

Freedman, Sir Lawrence, *The Official History of the Falkland Islands Campaign Volume One: The Origins of the Falklands War*, Routledge, London, 2005.

Foucault, Michel, *The Order of Things: An Archaeology of the Human Science*, Vintage Books, New York, tr 1994.

Fuller, Major-General J F C, *Armoured Warfare*, Eyre and Spottiswoode, London, 1943.

Gettleman, Marvin E; Franklin, Jane; Young, Marilyn B; and Franklin, Bruce (eds), *Vietnam and America: The Most Comprehensive Documented History of the Vietnam War*, Grove Press, New York, 1995.

Gray, P, ed, *Air Power 21: Challenges for the New Century*, HM Stationary Office, London, 2000.

Greenberg, Lawrence M, *The Hukbalahap Insurrection, A Case Study of A Successful Anti-Insurgency Operation in the Philippines, 1946-1955*, U.S. Army Center of Military History, Washington, D.C., 1987.

Guevara, Che, *Guerrilla Warfare*, in *Guerrilla Warfare*, Cassell, London, 1961.

Halperin, Martin H, *Contemporary Military Strategy*, Faber and Faber, London, 1972.
Handel, Michael I, *Masters of War: Classical Strategic Thought*, Frank Cass, London, 1992.

Hanson, Victor Davis, *Carnage and Culture: Landmark Battles in the Rise of Western Power*, Doubleday, New York, 2001

Hanson, Victor Davis, *The Western Way of War: The Infantry Battles in Ancient Greece*, Knopf, New York, 1989.

Holden Reid, Brian, ed, *Military Power: Land Warfare in Theory and Practice*, Frank Cass, London, 1977.

Holmes, Richard, ed, *The Oxford Companion to Military History*, Oxford University Press, Oxford, 2001.
Howard, Michael, ed, *The Theory and Practice of War: Essays Presented to Captain B H Liddell Hart on his Seventieth Birthday*, Cassell, London, 1965.

Howard, Russell D, Sawyer, Reid L, and Downing, Wayne A. *Defeating Terrorism: Shaping the New Security Environment*, McGraw-Hill, Guildford, Connecticut, 2003.

Ivo H, Daalder N and O'Hanlon, ME: *Winning Ugly: NATO's War to Save Kosovo*, Brookings Institution Press, Washington, 2000.

Kissinger, Henry, 'American Strategic Doctrine and Diplomacy', in *The Theory and Practice of War*, ed Michael Howard, Cassell, London, 1965.

Liddell Hart, Captain B H, *The Revolution in Warfare*, Faber and Faber, London, undated.

Lindsay, Major-General G M, *The War on the Civil and Military Fronts*, Cambridge University Press, 1942.

Ludendorff. Erich, *The Coming War*, Faber & Faber, London. 1931.

Mann Colonel E; Endersby Lt Col G; and Searle, Thomas R, *Thinking Effects: Effects-Based Methodology for Joint Operations*, Air University Press, Alabama, 2002.

Mao Tse-Tung, *Selected Military Writings of Mao Tse-Tung*. Foreign Language Press, Peking, 1966.

Mao Tse-Tung, *Unrehearsed Talks and Letters: 1956-71*, Ed Stuart R. Schram, London, 1974.

Mao Tse-Tung, *Yu Chi Chan, Guerrilla Warfare*, in *Guerilla Warfare*, Cassell, London, 1961.

Martin, Laurence, The Reith Lectures 1981, in *The Two-Edged Sword*, Weidenfeld and Nicolson, London, 1982.

Maynard, John, *Bennett and the Pathfinders*, Arms and Armour Press, London, 1996.

Murray, Williamson., Knox, MacGregor., and Bernstein, Alvin, eds: *The Making of Strategy-Rulers, States and War*, Cambridge University Press, 1994.

Parker, Geoffrey, *Military Revolution: Military Innovation and the Rise of the West 1500-1800*, Cambridge University Press, New York, 1996.

Peters, Ralph, *Fighting for the Future: Will America Triumph?* Stackpole Books, Mechanicsburg PA, 1999.

Sawyer, Ralph D, tr *The Seven Military Classics of Ancient China* , Westview Press, Oxford, 1993.

Shelling, Thomas C, *Arms and Influence*, Yale University Press, 1966, p 34.

Smith, Edward R, *Effects Based Operations: Applying Network Centric Warfare in Peace, Crisis and War*, CCRP Information Age Transformation Series, 2002.

Stankovic, Milos, *Trusted Mole: A Soldier's Journey into Bosnia's Heart of Darkness*, HarperCollins, London, 2000.

Stoller, Mark A, *George C Marshall: Soldier Statesman of the American Century*, Simon & Schuster. New York, 1989.

Strange, Dr J, *Perspectives On Warfighting Number Four, Second Edition: Centers of Gravity and Critical Vulnerabilites*, Marine Corps University Foundation, Quantico. Virginia. 1996.

Weigley. Russell F, *The American Way of War: A History of United States Military Strategy and Policy*, Macmillan, 1973.

Woodward, Admiral Sandy, *One Hundred Days: The Memoirs of the Falklands Battle Group Commander*, HarperCollins, London, 1992.

Briefs; Journals; Periodicals; Reviews.

Barnett, Roger R, 'Effects Based Operations: Applying Network-Centric Warfare in Peace', *Naval War College Review*, Washington, Spring 2004, Vol 57, Issue 2.

Bassford, Christopher, 'John Keegan and the Grand Tradition of Trashing Clausewitz', *War and History*, November 1994, Vol 1, Number 3.

Batschelet, Allen W, 'Effects-Based Operations for Joint Warfighters', *Field Artillery*, Fort Sill, May/Jun 2003, Issue 3.
Bellamy, Chris, 'Cause or Effect', *Defence Director*, Sept 2004.

Bingham, Price T, 'Transforming Warfare with Effects-Based Joint Operations', *Aerospace Power Journal*, Maxwell AFB, Spring 2001, Vol 15, Issue 1.

Bingham, Price T, 'Seeking Synergy: Joint Effects-Based Operations', *Joint Force Quarterly*, Washington, Spring 2002, Issue 30.

Burridge, Air Chief Marshal Sir Brian, 'Technical Development and Effects Based Operations', 2004 Trenchard Memorial Lecture, *RUSI Journal*, London, October 2004, Vol 149, No 5.

Byman, Daniel L and Waxman, Matthew C, 'Kosovo and the Great Air Power Debate', *International Security*, Spring 2000, Vol 24, No 4.

Cebrowski, Vice Admiral Arthur K, and John J. Garstka, 'Network-Centric Warfare: Its Origin and Future', *Proceedings*, January 1998.

Covington, Stephen R, 'Defensive Actions in a Strategic Soviet Offensive', *International Defence Review*, 1989, Number 2.

Crowder, Gary L, 'Effects-Based Operations', *Military Technology*, Bonn, June 2003, Vol 27, Issue 6.

Deptula, Major General David A, 'Effects-Based Operations: A US Perspective', *World Defence Systems*, RUSI, London, August 2003.

Deptula, General David A, 'Effects Based Operations: Change in the Nature of Warfare', *Aerospace Education Foundation*, Virginia, 2002.

Echevarria, Antulio J, 'Toward an American Way of War', *Strategic Studies Institute of the US Army War College*, March 2004.

Fadok, David S, 'John Boyd and John Warden: Air Power's Quest for Strategic Paralysis', *Air University Press*, Maxwell AFB, Alabama, February 1995.

Farndale, General Sir Martin, 'The Operational Level of Command', *RUSI Journal*, Autumn, 1988.

Herbert, Major Paul H, 'Deciding what has to be done: General William E. DePuy and the 1976 Edition of FM 100-5, Operations', *Combat Studies Institute*, Fort Leavenworth, Kansas, 1988.

Kamps, Charles T, 'Effects-Based Operations', *Air & Space Power Journal*, Maxwell AFB, Summer 2004, Vol 18, Issue 2.

Kessler, Glenn, 'In Fallujah, U.S. Envoy Greeted by Complaints', *Washington Post*, April 14, 2005.

Lind, William S, 'Some Doctrinal Questions for the US Army', *Military Review*, March 1977, Number 3.

Linn, Brian M, 'The American Way of War Revisited', *The Journal of Military History*, April 2002, Vol 66, No 2.

Lowe, Donald and Ng, Simon, 'Effects-based Operations: Language, Meaning and the Effects-Based Approach', *2004 Command and Control Research and Technology Symposium: the Power of Information Age Concepts and Technologie*, 2004.

Mann, Edward; Endersby, Gary; Searle, Tom; 'Dominant Effects: Effects Based Joint Operations', *Aerospace Power Journal*, Maxwell AFB, Fall 2001, Vol 15, Issue 3.

McNicholl, Air Vice Marshal Iain, 'Effects Based Air Operations: Air Command and Control and the Nature of the Emerging Battlespace', *RUSI Journal*, London, June 2003, Vol 184, Issue 3.

Moscow Times, 'Bargaining over Spoils in Iraq', May 16, 2003.

Mroue, Bassem and Saadi, Abdul-Qader, 'US Bombs Fallujah Mosque; More Than 40 Worshippers Killed', *Associated Press*, April 7, 2004.

O'Hanlon, Michael, & Lins de Albuquerque, Adriana, 'Scoring the Iraq Aftermath', *The National Interest*, Winter 2003/04, Number 74.

Pendall, David W, 'Effects Based Operations and the Exercise of National Power', *Military Review*, Fort Leavenworth, Jan/Feb 2004, Vol 84, Issue 1.

Pengelley, Colonel Patrick, 'Air Land Battle: A Hollow Charge?', *Defence Attaché*, 1983, Number 3.

RAND Research Brief, *Operation Allied Force: Lessons for the Future*, 2001.

Romjue, John L, 'The Evolution of the Airland Battle Concept', *Air University Review*, May-June 1984.

Slavin, Barbara and Moniz, Dave, 'War in Iraq's Aftermath Hits Troops Hard', *USA Today*, 21 July, 2003.

Tirpak, John A, 'Go For Effects-Based Operations', *Air Force Magazine*, Washington, December 2003, Vol 86, Issue 12.

TRADOC Pamphlet 525-5, *Military Operations: Operational Concepts for the AirLand Battle and Corps Operation*, 25 March 1981.

Zinni, General (Retired) Anthony, *How Do We Overhaul The Nation's Defense to Win the Next War?* Presentation to the US Naval Institute, September 4, 2003.

Web Sites (September 2004 - August 2005)

http://www.antiwar.com/lind/?articleid=4201:
Lind, William S, *Fallujah: Little Stalingrad,* December 22, 2004.

http://Archives.Obs-Us.Com/Obs/English/Books/Mcnamara/Ir236.Htm:
Robert S. Mcnamara with Brian Vandemar. *In Retrospect: The Tragedy And Lessons Of Vietnam.*

http://www.cnn.com/2003/ALLPOLITICS/03/19/sprj.irq.bush/index.html

http://www.gtalumni.org/StayInformed/magazine/fall02/article3.html
Coram, Robert, *John Boyd: Architect of Modern Warfare.*

http://news.independent.co.uk/world/middle_east/story.jsp

http://ocw.mit.edu/.../Political-Science/17-40Fall-2004/AA23CB5F-A2DB-4321-BF69-52F1BF2DC0B6/0/17_40_lec14_spol.pdf

http://www.pbs.org/newshour/bb/international/jan-june99/blair_doctrine4-23.html

www.army.mil/cmh-pg/books/coldwar/huk

www.comw.org/pda/0202strangeves:
Strange Victory: A Critical Appraisal Of Operation Enduring Freedom And The Afghanistan War.

www.gdcanada.com/company_info

www.globalsecurity.org/military/ops/enduring-freedom

www.globalsecurity.org/military/ops/oif-phantom-fury-fallujah.htm

www.guardian.co.uk/Iraq/Story

www.mit.edu/people/mkgray/net

www.nationmaster.com/encyclopedia/BAE-Nimrod

www.pbs.org/wgbh/pages/frontline/shows/pentagon/interviews

www.portaliraq.com/news:
Big Fish Set To Swallow Most Spoils Of Iraq War, November 24, 2003

www.raf.mod.uk/falklands

www.rand.org

www.rdg.ac.uk: Newsome, Bruce, ' "Executive Summary" Mass-Casualty Terrorism: Second Quarterly Forecast', *University of Reading Terrorist Forecasting Group*, June 13, 2003.