

Preface

The simplest thing that can be said about unconventional conflict is that it is not conventional war. It may include combat operations. It may include multiple conflicting parties. It may have a time span measured in years, depending on the situation. It may be confined to a single country or span a continent. It certainly includes social and cultural behavior issues, and the parties to the conflict may not all play by the same set of rules.

This volume describes issues in modeling unconventional conflict and suggests a new way to do the modeling. With the creation of a holistic ontology that describes the domain, we now have a nearly complete specification for modeling unconventional conflict at the theater level. Further, this new approach disentangles the more straightforward modeling issues from the harder problems of discovering and selecting the social theories that are required to justify the connections between causes and effects.

Even with the ontological approach to modeling unconventional conflict, the modeling process will be complex. And, even with the disentanglement of the “hard parts” from the easier parts, there is no guarantee that the hard parts will be modeled correctly.

However, it is important to realize that as long as unconventional conflicts take place, someone has to deal with them. Without the support of a coded model, that someone must rely on his or her mental model of the situation and the likely responses of other parties in making his or her decisions. Just as Napoleon was regarded as a strategic genius in executing the conventional war of the time, there may be a genius in charge of conducting operations in an unconventional conflict. But if there are geniuses, there are many more “average” strategists and some awful strategists. There is no guarantee that we will have a genius when we need one.

A coded model has the advantage over a mental model of being specified, so that if it is seen to be in error, that error can be identified, addressed, and mitigated, if not fully corrected. Further, in using a mental model, it is easy to forget to consider something. The coded model will, at least, consider everything that is specified—every time.

Chapter 1 introduces the book by presenting some ways of thinking about unconventional conflict and some modeling preliminaries and an expanded discussion of the software design process.

Before discussing how to model unconventional conflict, it helps to have a common view of what unconventional conflict is. Chapter 2 discusses the many aspects of unconventional conflict and some past analysis efforts.

Although modeling unconventional conflict is new when compared to efforts to model combat, there have been a number of models constructed in the past two decades and a number of people have put a lot of thought into the matter. Chapter 3 discusses modeling constructs and approaches and past modeling of unconventional conflict in some detail.

One of the major developments in the thinking about unconventional conflict has been the creation of the DIME/PMESII paradigm. The central concepts are that the state of a situation can and should be described and the descriptive variables can be organized into Political, Military, Economic, Social, Information, and Infrastructure (PMESII) categories (or some variant). Similarly, the efforts of a nation to change the state of the situation can be organized into Diplomatic, Informational, Military, and Economic (DIME) levers of national power (or some variant). Chapter 4 concentrates on the DIME/PMESII paradigm.

A second major development has been the creation of the concept of ontologies as a means of describing what we know about a domain and the application of this concept to unconventional conflict. Chapter 5 introduces ontologies and discusses the application of this concept to unconventional conflict.

The third major development started with combat modeling—the formalization of the concepts of verification, validation, and accreditation (VV&A). It culminated with the application of VV&A to unconventional conflict models. Chapter 6 discusses verification, validation, and accreditation in general and its particular application to models of unconventional conflict.

With the preliminaries in place, Chapter 7 introduces a prescription for modeling unconventional conflict (within the geographical extent, level of resolution, and duration under consideration here).

Chapter 8 reviews the contents of the previous chapters and recaps the major points that have been made.

The front matter includes a listing of the acronyms used in this book and their definitions. The end matter includes a bibliography of the citations in the text and an index to the appearance of important terms in the text.

I have written this book from a U.S. perspective. Despite having performed some work for the North Atlantic Treaty Organization (NATO), my personal perspective is basically a U.S. perspective. Many other countries are involved in unconventional conflicts and may find this work useful because of the wide variety of unconventional conflicts in which the U.S.A. has been involved.

Significant parts of this book arose from work performed for the Defense Modeling and Simulation Office (DMSO) of the U.S. Department of Defense (DoD) and other U.S. government organizations. DMSO is now known as the Modeling & Simulation Coordination Office (M&SCO); however, its vision is the

same, to support the full spectrum of DoD's activities and operations with improved modeling and simulation (M&S) capabilities. I hope that this book will serve to improve M&S capabilities, also; however, no part of the U.S. government was involved in writing this book and the views expressed here are solely my own.

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A Modeling Perspective

Hartley, D.

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