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James A. Dewar

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## Assumption-Based Planning

Unwelcome surprises in the life of any organization can often be traced to the failure of an assumption that the organization's leadership didn't anticipate or had "forgotten" it was making. Assumption-based planning (ABP) is a tool for identifying as many of the assumptions underlying the plans of an organization as possible and bringing those assumptions explicitly into the planning process.

This book presents a variety of techniques for rooting out those vulnerable, crucial assumptions that, through familiarity or other reasons, have gotten buried in one's thinking. The book also presents steps for monitoring all the vulnerable assumptions of a plan, for taking actions to control those vulnerable assumptions where possible, and for preparing the organization for the potential failure of those assumptions where control is not possible.

The book provides a variety of examples and practical advice for those interested in carrying out an application of ABP in the fields of business, management, strategic planning, and engineering and in military applications.

James A. Dewar is Director of the RAND Frederick S. Pardee Center for Longer Range Global Policy and the Future Human Condition and Frederick S. Pardee Professor of Long-Term Policy Analysis at the RAND Graduate School. He is also a senior mathematician and Director of Research Quality Assurance at RAND. For the past 15 years, Dr. Dewar's main research interest has been strategic planning. He led the development and application of the concept of assumption-based planning, and his planning experiences include projects for all four U.S. military services, higher education institutions, public corporations, and Fortune 100 companies.

Dr. Dewar's ongoing work in pure mathematics is also closely related to ABP, as the assumptions underlying a plan are similar to the axioms underlying a mathematical system.

Dr. Dewar has written and lectured on a variety of topics related to policy analysis, including a prize-winning paper for the Military Operations Research Society.

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*To Don, Barb, Kits, and Carl*

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## Preface

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Assumption-Based Planning (ABP) started out in 1987 as an approach Morlie Hammer Levin and I developed to solve a U.S. Army strategic planning problem. Thanks to the fall of the Berlin Wall two years later, that early ABP work initiated an ongoing conversation with the Army about how to do planning in the Army's newly and differently uncertain times. The use of ABP was first described in James A. Dewar and Morlie H. Levin, *Assumption-Based Planning for Army 21*, Santa Monica, Calif.: RAND, R-4172-A, 1992, and ABP itself was first documented in James A. Dewar, Carl H. Builder, William M. Hix, and Morlie H. Levin, *Assumption-Based Planning: A Planning Tool for Very Uncertain Times*, Santa Monica, Calif.: RAND, MR-114-A, 1993. As ABP evolved through various Army and other applications, it turned into a planning tool—a self-contained process with a specific planning purpose—that is applicable to *any* kind of plan or planning process. ABP continues to evolve, but its fundamentals have changed little in its last several applications. For that reason, it seemed appropriate to document formally what we have learned about it.

The careful reader will already have noticed that I use both the singular and plural first-person pronouns in talking about ABP. My co-authors on the original ABP documentation were intimately involved in both the intellectual development of ABP and in the learning process that accompanied its application to real planning problems. When I talk about what I know about ABP, then, it would make me very uncomfortable to use the singular pronoun. However, I have no such reservations when giving personal opinions. For that reason, I have tried to be careful about who is implicated in any statement I make

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about ABP—hoping to err on the side of including the many contributors to my understanding of ABP and of planning.

My hope for this book is that it speak to two planning audiences. I intend this book, first, for students of planning and want them to use it as I intend to use it—as a reference on both the “how” and the “why” of Assumption-Based Planning. As simple as the concept of ABP is, my colleagues and I have found a great many subtleties in its application. These subtleties are easily forgotten from one application to the next. A separate chapter is devoted to each of the five steps of ABP, and each chapter contains a road map that both details our understanding about that step and places those details in a logical sequence. The primary intent of the road map is to allow easy access to specific aspects of each step—particularly on a second or subsequent reading.

The second intended audience is practicing planners, who, I realize, are more interested in just the “how” of planning. The book is set up to address three levels of potential interest on the part of practicing planners.

At the first level of interest, a planner might wonder whether ABP would be useful for a particular planning problem. Chapter 1 is intended to give enough of the philosophy, mechanics, and strengths and weaknesses of ABP to help that planner make an informed decision about whether to proceed.

At the second level of interest, a planner might wish to apply ABP but would need to know more about it. Chapters 2 through 7 develop the concepts and mechanics of Assumption-Based Planning. Chapter 2 defines assumptions and builds a taxonomy of assumption types. Chapters 3 through 7 detail each of the five steps of ABP—defining the terms used in ABP and characterizing some of the subtleties that we have discovered over the years in applying ABP to planning situations for a variety of organizations, from domestic and foreign militaries, to public companies, to private businesses. Where possible, I have included examples to illustrate the concepts. In addition, I have used the planning of a lemonade stand as a compact example with which to illustrate, in turn, each of the five steps of ABP.

At the third level of interest, a planner would be applying ABP and running into practical problems. As with any planning system, there is an art to how ABP is conducted. Not all of what we have learned can be passed along as easily as the concepts and mechanics of ABP. Chapters 2 through 7 discuss some of the art as it pertains to the concepts

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and mechanics. Chapter 8 is aimed more at the art of conducting an ABP application. It is intended to help planners work the major practical problems that we have encountered in our applications.

Assumption-Based Planning is a planning tool that is primarily useful for improving the robustness and adaptability of existing plans. However, it is also useful as a part of any planning methodology—a topic taken up in Chapter 9.

The Appendix carries on the “why” of ABP and strives to connect the terms and concepts of ABP with the same or similar terms and concepts in the literature. It is for readers who are familiar with the terms, concepts, and methods of planning and wonder how and where ABP fits in. It is not a thorough treatment but covers most of the popular planning concepts that relate strongly to ABP.

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## Acknowledgments

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My first debt of gratitude is to the codevelopers of Assumption-Based Planning. From the beginning, then-RAND colleague Morlie Levin and I thought about, discussed, and argued over the Army's strategic planning problem and how to go about formulating an alternative approach. Soon thereafter, Mike Hix joined in the ongoing practical and philosophical problems of ABP. The late Carl Builder, in addition to his practical contributions, provided an intellectual "sanity check" on our thinking. Without Morlie, Mike, and Carl, ABP would simply not have come into being.

Since the development and first publication on ABP, many have contributed to both the intellectual foundations and practical application of ABP. Maren Leed continues to bring interest and insight to the evolution of ABP. Particularly instrumental in solving the practical problems of applying ABP have been then-Lt. Col. Tim Daniel of the U.S. Army and RAND colleague Jed Peters. Rich Kedzior contributed much to our understanding of the planning literature, as did Gary Moody before him. The sections that deal with decision analysis owe most of their intellectual content to Kristine Kuhn. Judy Larson has been my touchstone for turning my understanding into readable prose. In the process, Judy often helped me think about what I really meant. Laurie Rennie has helped in so many ways over the years that the details would quickly overwhelm this brief section. Finally, any number of people have contributed in small, but sometimes important, ways to the current status of ABP.

The intellectual content and readability of this book owe much to reviewers of earlier drafts. I particularly appreciate the informal, collegial reviews of the earliest drafts by B. J. Duke, Jim Gillogly, Mike Hix, Bob Klitgaard, Judy Larson, Maren Leed, and Jed Peters. Three people gave the penultimate draft excellent, thorough, formal reviews. Paul

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Bracken's review positively affected the style of the final draft and added important examples and references. Paul Davis suggested several examples, some crucial references, and some interesting related concepts. He is most responsible for the chapter on the art of conducting ABP. Yehezkel Dror was exactly thorough in his review. His deep insights into planning challenged my thinking in several areas and caused me to seriously rethink some crucial concepts.

I have had manuscripts edited before, but not like Marian Branch edited this one. Her intellectual involvement equaled her technical prowess, and the book has benefited significantly from both.

I want also to acknowledge people along the way who have encouraged and championed the 15-year journey of discovery that has been ABP. This list includes Donna Betancourt, David Chu, Lynn Davis, Dave Kassing, Tom McNaugher, and Jim Quinlivan.

Not one of those (incredibly few, I suspect) authors who gleefully write books, I also owe a special debt to my wife, Ruth. Not only did she gently encourage me to write the book when I was agonizing over the decision, but she did so knowing she was likely to be (and was) saddled for several months with some of my routine, day-to-day tasks in order to accommodate the absent-mindedness that such projects seem to induce. She also contributed significantly to the book, masterfully walking a fine line between being my toughest critic and my biggest fan.

As with any book, the final responsibility for its content and style rest with the author. I begrudgingly accept it.