

WORKING P A P E R

Influencing Violent Extremist Organizations and Their Supporters without Adverse Side Effects

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PREFACE

This working paper collects material developed as RAND along-the-way contributions to a DoD project, “Influencing Violent Extremist Organizations” (I-VEO project) being conducted by the Strategic Multi-Layer Assessment (SMA) program under the Rapid Reaction Technology Office of the Office of the Director, Defense Research and Engineering. Some of the material here appears also, in shortened form, in one of the project’s final reports (Helfstein et al., 2011).

CONTENTS

Preface	ii
Figures.....	v
Tables	v
Summary	vii
Acknowledgments	ix
1. Introduction	1
Background	1
Structure of Paper.....	1
2. Influencing a Violent Extremist Organization (VEO) and the Larger System in Which It Operates	3
Actors and Influences	3
A Spectrum of Influences	4
The Range of Those Influenced.....	5
Conceiving Strategy as a Composite	6
Defining a Situation or Context.....	6
Choosing Strategy as a Set of Situation-Appropriate Strategems	7
3. Sources of Knowledge and Insight	9
Alternative Approaches To Inquiry.....	9
Defining Some Troublesome Terms	9
Toward Systemic Theory	10
Empirical Testing and Refinement of Qualitative Systemic Theory	11
Implications for the Body of Knowledge	14
Diverse Sources of Knowledge	17
Red Teaming and Other Special Critical Reviews	17
Learning from History	18
Models, Simulation, and Wargaming.....	18
Other Methods.....	19
4. Some Potential Aids to Thinking and Decision	23
Factor Trees	23
Influence Diagrams	24
Action-Interaction Matrix	26
Effect-Mitigation Tables.....	27
5. Qualitative Systemic Theory for Influencing Public Support of VEOS without Bad Side Effects	29
Overview of Theory	29
The Theory's Narrative	30
Effectiveness of the Organization	30
Motivation	31
Sense of Legitimacy for Terrorist Violence	31
Acceptability of Costs and Risks.	31
Applying the Concept to the Challenge of Avoiding Unintended Negative Consequences	32
Further Decomposing the Public.....	32
Structuring Discussion of How To Avoid Negative Consequences	33

7. Final Observations 35
Bibliography..... 37

FIGURES

Figure 1 Components and Processes of the VEO System	3
Figure 2 Illustrative Dimensions for Possible Decomposition of Population	4
Figure 3 Illustrative Parts of the Larger System Affected by Influence Operations	6
Figure 4 A Factor-Tree Model (Qualitative Systemic Model) of Public Support for Insurgency and Terrorism	14
Figure 5 An Illustrative Factor Tree for Public Support of Al Qaeda.....	24
Figure 6 A Notional Influence Diagram Showing Interactions and Side Effects	26
Figure 7 A Qualitative Systemic Theory of Public Support for Insurgency and Terrorism	30
Figure 8 Illustrative Decomposition of a Population	33

TABLES

Table 1 Spectrum of Influences	5
Table 2 Strategems as a Function of Circumstances	8
Table 3 An Action-Interaction Matrix	27
Table 4 Dealing with Possible Negative Side Effects.....	28
Table 5 Illustrative Influence Actions and Possible Unintended Influences	34

SUMMARY

In developing strategy to affect violent extremist organizations (VEOs) it is useful to take a “system perspective” to characterize the different elements of a VEO and the larger environment in which the VEO operates. It is also useful to think about an influence *spectrum* that includes efforts at one end to co-opt or induce and, at the other end, actions taken to punish now so as to deter later. Strategy, then, takes actions to promote different kinds of influences on different elements of the system with the intention of achieving desired effects, avoiding or mitigating unintended side effects, and being in a position to exploit unintended but favorable side effects.

Many different approaches can be taken in seeking knowledge and insights to guide influence strategy. Researchers even have highly varied concepts of what constitutes both “theory” and “empirical evidence.” One approach to theory identifies discrete hypotheses. Another approach, favored in this paper and a larger body of RAND work, is more systemic—attempting to see the whole rather than just the various fragments represented by discrete hypotheses. A related contrast exists in empirical work. Statistical analysis is one type of empirical inquiry. It can be used to test discrete hypotheses and for inductive discovery. However, empirical inquiry may instead be informed by more systemic theory and may be either qualitative or quantitative. In that approach, empirical data is used to help test and improve systemic theory, rather than for inductive work. Further, the conclusions drawn are based on causal thinking and expressed as *contingent* expectations (i.e., expectations dependent on the situation), rather than conclusions about “on average” past correlations. Both approaches have strengths and weaknesses. The SMA project included an ambitious and fruitful review of hypotheses, as well as new quantitative testing. It also included, as discussed here, reviewing advances in systemic theory and in qualitative, theory-testing empirical work. Some of that work uses a nonclassical approach to model “validation” that focuses on falsifiability, coherence, and usefulness rather than quantitative comparison with controlled experimental data.

Numerous sources of knowledge and insight are seldom included in scholarly discussions but can be valuable in understanding unfamiliar cultures and patterns of thinking, as in explaining how others perceive the world and why some apparently logical influence actions could be counterproductive. The nontraditional sources include red teaming, historical studies, modeling and simulation, gaming, on-scene observation

(including by military officers rather than professional social scientists), and literature and films. The SMA project as a whole included a number of these.

Developing a knowledge base is one thing, but communicating and reasoning about that knowledge is another. Some methods for doing so that seem particularly apt include factor trees, influence diagrams, action-interaction tables, and effect-mitigation tables. The paper illustrates a number of these. It then uses a factor-tree depiction of qualitative systemic theory to discuss how to understand and influence public support for VEOs. It adds some rough-cut tables that attempt to anticipate, and to suggest mitigations for, unintended side effects.

ACKNOWLEDGMENTS

Many aspects of this paper stem from work with a number of RAND colleagues over time, particularly Brian Jenkins, Kim Cragin, and Eric Larson. I also benefited from many discussions with other contributors to the Strategic Multi-layer Assessment effort.

1. INTRODUCTION

BACKGROUND

The larger effort to which this paper contributed stemmed from a Joint Staff request for assistance from the research community in sharpening the methods to be used in formulating and assessing influence operations with recognition of potential side effects.

Actions taken in the name of influence operations *usually* have side effects—some good, some bad. They are sometimes anticipated and are sometimes surprising to nearly everyone. A continuing challenge is how to improve the construction of strategy and related plans so as to prepare to exploit opportunities that may arise (good side effects), how to mitigate or avoid bad side effects, and how more generally to prepare for the adaptations that will inevitably be necessary in many instances. This challenge appears in one form or another in all kinds of planning.

STRUCTURE OF PAPER

The remainder of the paper is organized as follows. Section 2 describes a spectrum of influences, how to conceive the system within which influence is to be attempted, and how to develop alternative composite strategies. Section 3 describes information sources and evaluation methods for comparing strategies, and the need to move toward well-hedged strategies. Section 4 suggests analytic tools that can be aids to discussion or decisionmaking. Section 5 illustrates use of qualitative systemic theory to inform influence strategies intended to avoid or mitigate negative side effects. Section 6 gives some final observations.

2. INFLUENCING A VIOLENT EXTREMIST ORGANIZATION (VEO) AND THE LARGER SYSTEM IN WHICH IT OPERATES

ACTORS AND INFLUENCES

A violent extremist organization (VEO) is not a monolithic entity, but rather a complex organization operating in an even more complex environment.¹ Figure 1 decomposes the system enough to make certain generic observations.² Influencing top leaders of a VEO, for example, is very different from influencing the “foot soliders” of the activity or those who may be actively or passively supporting the VEO.

Figure 1
Components and Processes of the VEO System

Parts or Elements (partial list)	Processes (functions) (partial list)
<ul style="list-style-type: none"> • Top leadership • Lieutenants • “Foot soldiers” • Expeditors, e.g., financiers and logisticians • Spiritual leaders • Publics (and components thereof) • Foreign powers, or parts thereof, such as an intelligence service 	<ul style="list-style-type: none"> • Recruiting • Training • Communicating • Propagandizing • Traveling and maneuvering • Collecting intelligence

In a given context, planners must decompose the VEO system more extensively, Figure 2 shows various dimensions along which decompositions can be made. Some of these may be correlated. The point is to illustrate the complexity, not to enumerate the

¹ The distinction is between “complicated” systems (systems with many elements) and “complex” systems, with subtle and frequently nonlinear interactions. This usage is consistent with the science of complex adaptive systems (Bar-Yam, 2005; Holland, 1998; Holland and Mimnaugh, 1996). A complicated system need not be complex, nor a complex system complicated.

² This discussion adapts earlier work (Davis and Jenkins, 2002) and a short updating paper prepared for the SMA effort (Davis, 2011a).

“correct” basis for decomposition. Staffs in combatant commands are familiar with these distinctions and, in a specific region, may be able to lump some of them together.

Figure 2
Illustrative Dimensions for Possible Decomposition of Population

Ethnic: Tajik, Pashtun,...
Geographic: Southern, Northern,...
Organizational Type: tribal, criminal,...
Religious/cultural: Salafi,...
Class: lower, middle, upper; warrior, administrative, commercial; ...
Stance toward VEO: oppositional, negative, neutral, positive, supportive
Stance toward government: oppositional, negative, neutral, positive, supportive
Stance toward U.S.: unfavorable, neutral, favorable
Many others

A Spectrum of Influences

Similarly, Table 1 shows a spectrum of influences, but again at a relatively abstract level. *How* various actors can be co-opted, induced,....deterred...or crushed is something to be worked out in a given planning context.

Table 1
Spectrum of Influences

Influence	Meaning
Co-opt	Bring inside the political system
Induce	Bribe or trade with
Persuade	Convince intellectually that the act is inappropriate
Dissuade	Help the other to recognize the potential negative consequences of the possible act
Deter	Threaten contingent punishment (classic deterrence)
Raise risks and uncertainties	Cause worries about action backfiring or being more costly than expected
Be seen as able to defend	Convince that an attack would fail (i.e., “deter by denial”; to include demonstrating defensive capability)
Deter next time by punishing now	Demonstrate capability and will to mete out even worse punishment
(Disrupt, defeat, destroy)	(not usually thought of as merely influencing, but all of these actions have influences later)

The Range of Those Influenced

Influence operations affect many actors other than the VEO itself. These include governments, economies, social structures, public opinion in the primary country of interest, and also public opinion elsewhere across the globe. Figure 3 suggests this range of influence (intended or unintended) by noting that actions have effects in multiple sectors.

Figure 3
Illustrative Parts of the Larger System Affected by Influence Operations



Note: figure taken from a draft by Allison Asterino-Coutois, “Action-Effect (A-E): Planning Framework and Effects Taxonomy,” July 13, 2011.

CONCEIVING STRATEGY AS A COMPOSITE

Against this background, an influence strategy can be seen as a composite of actions that include attempting to influence many different actors in many different ways. Further, even the attempt to influence a particular individual may have multiple threads for, e.g., deterrence, co-optation, and current punishment. Moreover, a plan of action might include offering through an intermediary to take some actions to induce a particular supporter of the VEO to quit doing so—while at the same time taking actions to sensitize the supporter to recognize his vulnerability to punishment.

It would be convenient if some reliable algorithm existed for optimally associating influence efforts with targets and avoiding or mitigating bad side effects. However, even if such an algorithm existed (which it does not), it would necessarily depend on the circumstances. That is, alternative influence strategies and stratagems would be evaluated differently in different situations. How can this be made more concrete?

Defining a Situation or Context

To military commanders it is a familiar exercise to do situation assessment before deciding on a course of action. It may involve characterizing the orders of battle, terrain, weather, relative capabilities, and likely behavior of third parties (e.g., the partners of both the enemy and one’s own alliance). Situation assessment in counterinsurgent and

counterterrorism domains involves additional variables. Again, this is familiar to current-day commanders and their staffs. Broad aspects of context or situation include the identity and character of the VEO(s), their physical location(s), broad U.S. and allied objectives and strategy, the character and strength of the local government(s) where the VEOs operate or from which they receive assistance, the state of the world and local economies, and the state of relevant international relations. More specific elements of situation might include:

- The state of conflict between competing factions of the VEO, or between competing leaders within the primary VEO.
- Ambivalence within portions of the public in countries in which the VEO(s) operate because of not knowing who will prevail in the longer run.
- The inability of local villages to protect themselves from intimidation by enemy combatants in the form of night-time killings in homes.

Choosing Strategy as a Set of Situation-Appropriate Strategems

Social science is not yet in position to define a generic structure within which “situation” can be adequately characterized. Context matters. However, for a context, it can be valuable to conceive situation assessment so that the appropriateness of a course of action will be explicitly dependent on the primary factors in the assessment. This is another way of assuring that the assumptions that underlie decisions are made explicit. It can also help transform what appear to be dilemmas into recognition that the course of action should depend on the situation or case. As an example drawn from the recent social science of stabilization operations (Davis, 2011c), Table 2 suggests elements of strategy for each of eight distinct cases characterized by whether the general environment is favorable to continued peace, whether the opposition to the government might plausibly reconcile, and whether the VEO has broad support within the population. Depending on the case, a primary stratagem might be a combination of positive and negative inducements targeted on the various relevant actors (e.g., VEO, supporting public, government, external actors supporting the VEO, and international actors potentially supporting reconstruction). This particular table focuses on the VEO, seen as the “opposition” to the government. More generally, strategy will typically want to target additional elements of the system described in Figure 1.

Table 2
Strategems as a Function of Circumstances

Case	Favorable external environment?	Reconcilable VEO?	Broad support of VEO by population?	Strategem	Inducements	
					Positive	Negative
1	Y	Y	Y	Find accommodative solution	TBD	TBD
2	Y	Y	N	Create reasonable incentives as part of solution	TBD	TBD
3	Y	N	Y	Weaken opposition; separate it from its base.	TBD	TBD
4	Y	N	N	Weaken opposition; separate from its base	TBD	TBD
5	N	Y	Y	Improve environment	TBD	TBD
6	N	Y	N	Improve environment; find accommodative solution	TBD	TBD

With this background of constructs to discuss influence operations, the next section addresses ways to gain related knowledge and insights about how influences may affect different elements of a VEO and the larger system in which it operates.

3. SOURCES OF KNOWLEDGE AND INSIGHT

The SMA program is casting a wide net in attempting to pull together knowledge relevant to influence operations. This has included an extensive literature review to identify discrete hypotheses relating to influence and potential side effects (Ackerman and Pinson, 2011), a number of more specific case histories (Sawyer and Pate, 2011), and quantitative analysis on historical data sets (Asal, Derouen, Rethemeyer, and Young, 2011). All of this is summarized in the SMA project's report (Helfstein et al., 2011). This section discusses alternative paradigms and methods that researchers use. It then elaborates on recent methods that seek to improve *systemic* understanding rather than addressing discrete hypotheses. The elaboration is appropriate because these systemic methods are relatively unusual within the social science literature, but are particularly apt in informing strategy and related reasoning.³

ALTERNATIVE APPROACHES TO INQUIRY

Defining Some Troublesome Terms

It is common to distinguish between “theoretical” and “empirical” knowledge, but the terms have drastically different connotations depending on context. To refer to a theory may be to refer to a mere notion, speculation, or parochial explanation. Or it can refer to a settled body of systemic knowledge on which we can rely. Reference to “empirical knowledge” is also ambiguous. It may refer to results of statistical analysis of available quantitative data, to insights gained from qualitative research such as comparative case studies, to an anthropologist's observational field research, to a military officer's operational experience, or to an intelligence officer's skillful use of what others might see as anecdotal information.

Another confusing point is that many people assume that a good theory should be predictive and that such a theory can be empirically tested by comparing actual results with predictions. Knowledge, however, is not always of the variety that allows this. When considering social systems, it may be useful to focus more on understanding the factors and processes at work, and on developing a rough sense for interactions,

³ Tensions exist between the common data-driven approach to social science and the less common theory-driven approach (Davis, 2009b; George and Bennett, 2005).

than on attempting reliable prediction.⁴ Perhaps we know the primary factors, but not their current values or precisely how they interact; or perhaps we know that unknowable factors add a random element to events. In such cases, it is a time-honored strategy to proceed along an *informed* path, but to develop hedges, monitor developments, and adapt one's actions intelligently as necessary. Understanding the factors and qualitative influences may greatly improve the ability to do so. Military officers learn such skills to deal with the fog and surprises of war. To express this differently,

- A theory and corresponding model may help understand, explain, and even inform actions without being able to predict the course of events.

Lest this seem abstract, consider chess. Understanding the theory (the rules, moves, gambits, and how to do situation assessment) can greatly improve prospects. Even a grand master, however, does not predict the course of a game before it begins.

With this background, what follows describes some recent work that has emphasized synthesis, integration, and a systemic perspective, rather than an attempt to find predictive formulas. The research has been referred to as providing “conceptual models,” but it should be understood as moving toward systemic theory with an emphasis on qualitative variables, being descriptive rather than prescriptive, and focusing on structural aspects at different levels of detail (multiresolution modeling).

Toward Systemic Theory

A recent RAND study reviewed the social science literature relating to terrorism (Davis and Cragin, 2009). It provided a critical review of literature bearing on: (1) root causes of terrorism (Noricks, 2009b), (2) why individuals become terrorists (Helmus, 2009), (3) public support of terrorism (Paul, 2009), (4) how terrorist organizations make decisions (Jackson, 2009), (5) how terrorism ends (Gvineria, 2009) and (6) terrorism as viewed through the lens of economics and a modified version of rational-actor theory

⁴ This is sometimes true of physical systems as well. A control engineer does not predict detailed dynamics of an aircraft flying “outside the envelope” because those are sensitive to details. Instead, he defines the envelope of stable operations and makes it difficult for the aircraft to get into unstable domains. More generally, many models valuable in policy analysis cannot be validated in the classic way if uncertainties are large and deep. Nonetheless, they can be validated for exploratory analysis that identify good, bad, and marginal domains (Davis, 2002; Bigelow and Davis, 2003). The same principles apply to social-science models of the sort discussed here.

(Berrebi, 2009). It also included chapters on special topics such as strategic communications (Egner, 2009), competing epistemologies and analytic methods (Davis, 2009a), disengagement from terrorism (Noricks, 2009a), and cross-cutting observations (Cragin, 2009).⁵

The book's most original and significant contribution was synthesis accomplished with the introduction of "factor-tree models" summarized by simple diagrams that put the pieces together, rather than describing the myriad of factors separately. Such models (described in Sections 3 and 5) moved discussion toward systemic theory.⁶ To put the matter differently, it sought to change discussion from competing claims (discrete hypotheses) about "the" cause of terrorism to recognition that different pathways to terrorism exist, triggered or enabled by a variety of factors. Thus, *sometimes* radical Islamic ideology has been an important factor, and other times not. *Sometimes*, economic factors play a role, but other times they do not. Sometimes, the objectives are ultimately political, but other times not (unless the definition of "political" is defined so broadly as to make the argument circular). Further, terrorism depends on an interaction of multiple factors, with several of them usually being *necessary* (as represented in factor trees by connectors with "ands").⁷

Empirical Testing and Refinement of Qualitative Systemic Theory

Several subsequent studies have tested the initial conceptual models with empirical information.⁸ A more recent study was on understanding and influencing public support for insurgency and terrorism, a subject closely related to the current SMA study (Davis et al., forthcoming). We drew on empirical information for insurgency

⁵ The review drew on hundreds of scholarly articles and books by such noted authors as Eli Berman, Martha Crenshaw, Audrey Cronin, Bruce Hoffman, John Horgan, Brian Jenkins, Mark Jurgensmayer, Doug McAdam, and Mark Sageman. See also the compilation of more than two-score short papers by contributors to the study of terrorism and counterterrorism developed within the SMA program (Fenstermacher, Kuznar, Rieger, and Speckhard, 2009).

⁶ See Davis (2009b).

⁷ If this were not true, there would be a great deal more terrorism in the world. Grievances, perceived relative deprivation, a supply of hot-headed young males eager for action, social causes, and other individual factors are ubiquitous in most societies. Extremely few individuals, however, become terrorists. The conceptual model includes a product rule in which *all* of the top-level factors must be present (to some threshold extent). That goes far in explaining the low incidence rate.

⁸ Limited-distribution studies have been led by RAND colleagues Kim Cragin, Brian Jackson, and Todd Helmus.

and terrorism in four cases: Al-Qaeda central, the Taliban in Afghanistan, the PKK in Turkey, and the Nepalese Maoists. The data was largely new in that it had not been used in the 2009 review work. Thus, it was useful for testing.

Before testing, our study team rethought and enhanced the original model by combining elements of the earlier work and drawing heavily on insights from social movement theory, which describes what an insurgent or terrorist organization will do to promote its effort and thus identifies factors that should be in the conceptual model.

The Approach

The study took an exploratory approach and used data of several different types, including both quantitative and qualitative content analysis, survey results, and careful reading of materials from al Qaeda-related thought leaders. This heterogeneity implied less “control,” but improved insights. It proved valuable because each class of data had its own slants and comparing across data sources sometimes revealed them.

Although some of the content analysis was quantitative and led to appealing tables and charts, we ultimately downplayed these quantitative aspects because they encouraged erroneous interpretations and obscured the stronger but more robust qualitative findings about what factors were at work. Thus, in this empirical work we experimented with, but eventually deemphasized what some might have seen as more “rigorous” methods.

The Concept for Testing

The concept of empirical testing was rather unique. Our intent was to see whether the factors of the conceptual model were complete (i.e., did other factors pop up in the new case work?), whether the model’s relationship of the factors to each other reflected the “story” that seemed most coherent in the cases, whether the model helped in understanding those cases, and whether—as predicted by the underlying theory—the relative significance of the factors varied significantly with context. That is, did the emerging qualitative theory help in diagnosis and could it be useful for prescription in specific cases?

Adopting language from the philosophy of science:

- The conceptual model (qualitative systemic theory) is *falsifiable*.⁹ Empirical research might reveal that major factors affecting public support of insurgency and terrorism are absent from the model. Given enough cases, the model might also be falsified by discovering that certain factors identified in the model are fact unimportant in *any* of the cases.¹⁰
- Analysis with the conceptual model is *reproducible*: others could evaluate the model with separate data, and assess for themselves whether the model's factors are complete and appropriate.

At this stage of research, a major purpose in empirical work is less to test in a yes/no fashion than to look for omissions or more coherent explanations and to then iterate. That is, *a major purpose is theory-building*.¹¹ It follows that there is no shame in finding a flaw; rather, doing so is an opportunity to iterate and improve. And, in fact, that is what occurred.

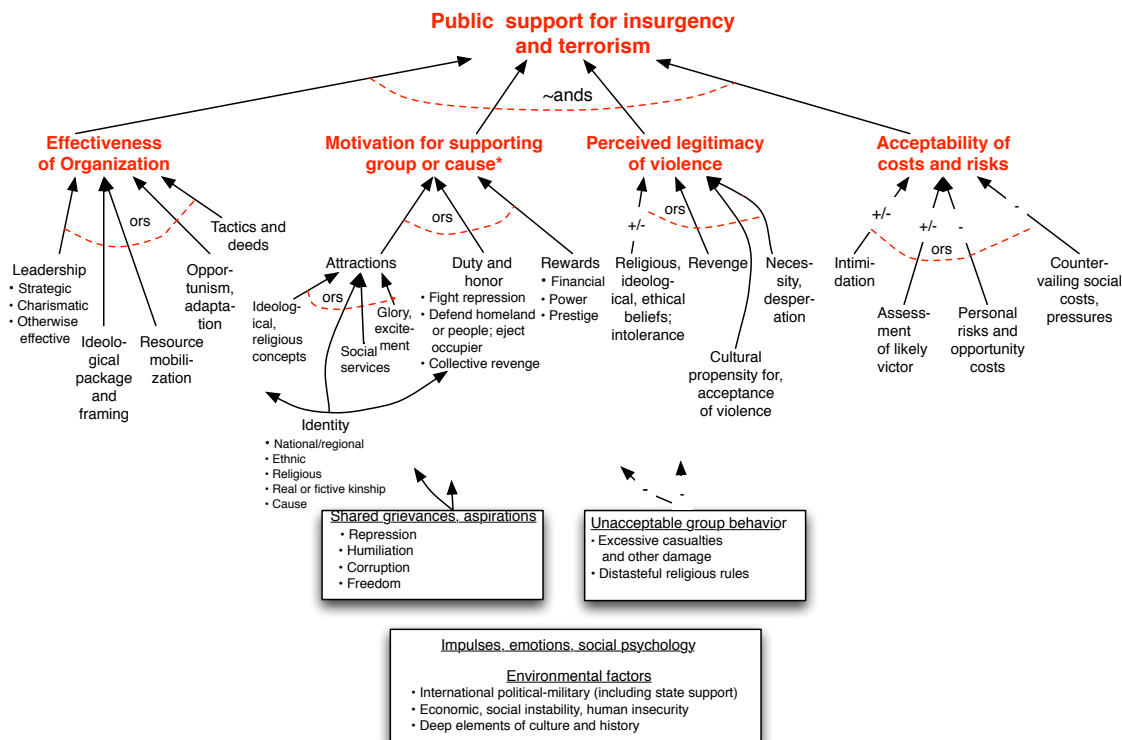
Figure 4 is the final conceptual model from the study. It improved significantly but was very much built on the earlier work (Paul, 2009; Davis, 2009). We shall return to Figure 4 later in the paper.

⁹ The key criterion of falsifiability was identified by Karl Popper (Popper, 1934), who was motivated in part by challenges dating back to David Hume.

¹⁰ Neither of these falsifications occurred. The conceptual model was intendedly general, applicable across contexts, and theory predicted that the relative significance of factors will depend on specific context. Thus, a factor playing no role in one case might be important in another. That proved out in the case histories. All of the conceptual model's factors were at least sometimes important, but their importance varied with case.

¹¹ Our perspective mirrored that of Alexander Gorge, who pioneered defining ways to conduct case studies systematically and meaningfully (George and Bennett, 2005).

Figure 4
A Factor-Tree Model (Qualitative Systemic Model) of Public Support for Insurgency and Terrorism



2.17.11

IMPLICATIONS FOR THE BODY OF KNOWLEDGE

One implication of the work discussed in this section is to dramatize the difference between seeing theory as a collection of discrete and disconnected hypotheses and seeing it as systemic knowledge:

- From a systemic perspective, it makes no sense to test individual fragments of theory because some of the interactions may be strong, fundamental, and nonlinear.¹²

Another way to put this is that when social scientists respond to questions by saying “Well, it depends,” they are reflecting the fact that whether a given factor (the subject of one discrete hypothesis) will have a given influence depends on the values of a number

¹² See also discussion in a recent RAND study of stabilization (Davis, 2011c), particularly page xii and 327 ff.

of other factors. Another consequence of the systemic approach to inquiry is the conclusion that

- Quantitative analysis should often be done with nonlinear specification of models, rather than the ubiquitous linear-regression methods that dominate much of the literature.

Using standard linear regression and a discrete-hypothesis approach can obscure and misinform, as discussed in a recent RAND study of social science for stabilization (Davis, 2011c). One example from the earlier study of terrorism will suffice here: Studies of the relationship between terrorism and democracy have concluded that increased democracy relative to a low base leads to increased terrorism, but that further increases lead (for advanced democracies) to a lower incidence rate (a so-called inverted-U phenomenon). The apparent conclusion, then, would seem to be not to encourage democracy for states that don't have it already—not a palatable or valid conclusion. A better analysis would recognize the existence of a hidden variable: the combination of democratization *and* a strong government control structure should not lead to increased terrorism (think of Singapore), whereas increased democratization accompanied by a very weak control structure as in new fragile states might very well see increased insurgency and terrorism. The inverted U observed empirically (using aggregate and very heterogeneous data) is very likely an artifact of methodology.

Another implication is that empirical knowledge confirms that many of the factors at work are inherently qualitative and not readily measured with conveniently published aggregate data. Even where data seems to exist (e.g., survey results), interpretation may be difficult without a richer level of interview information than is often available.

It should also be noted that many examples of quantitative analysis in political science are burdened by heterogeneous data, hidden variables, and major uncertainties about the data itself and its appropriate coding into model terms. The result, often, is that the conclusions derived from analysis are very sensitive to a myriad of assumptions, as discussed in caustic terms by Harvard's Stathis Kalyvas (Kalyvas, Shapiro, and Masoud, 2008). This means that—except in rare instances in which robustness testing has been accomplished:¹³

¹³ Some researchers are doing more robustness testing than in earlier years. See, e.g., (Goldstone et al., 2010). Such testing is important to mainstream econometrics work (Angrist and Pischke, 2009).

- It is inappropriate to summarize results with statements such as “Increases in Factor X cause increases in Y.”
- It is also inappropriate to summarize results in terms of “probabilities” if the assertion will be interpreted as prediction of future relationships.¹⁴
- About all that can properly be said is that “In our analysis of the particular data set with the particular methods and assumptions, increases in X correlated with increases in Y.”

Ultimately, the core problem is that historical-empirical work is not laboratory experimentation unless, as occasionally occurs, there is the kind of “natural experiment” sought by econometricians (Angrist and Pischke, 2009). This problem has been noted by a number of prominent economists (e.g., Berrebi, 2009) researching issues of terrorism.

Despite these caveats, it is crucial to understand that the various classes of theory and empirical analysis contribute differently to knowledge, complementing each other, although not neatly. It should not be surprising that case-history and observational information are often more useful in understanding phenomena through the lens of systemic theory than are the results from ordinary statistical analysis of aggregate data—especially sparse, aggregate historical data, rather than more micro analysis over time in a particular context. However, that statistical analysis may be extremely valuable for other reasons:

- Empirical cautionaries: when analysis of prior cases with at least moderate similarity to current cases report a high rate of failure for an action being contemplated, that should be extremely sobering even though, of course, optimists will argue that “this time will be different.” Why?

¹⁴ It is routine to use the language of probability in some quantitative analysis, but the “probabilities” are backward looking—relating, e.g., to the fraction of cases in which a particular result occurred if a particular variable was present in the historical data. In instances in which separate historical data is available to test the conclusions from initial analysis, and the results hold up, there is greater basis for assuming that past might be prologue, in which case one might cautiously use probabilistic language in projecting future consequences. The problem with doing so even then, of course, is that the *ceteris paribus* condition is sometimes not met. The Great Recession of 2008-2009 occurred when something never previously observed happened, with enormous leverage.

- Empirical simplification: sometimes, quantitative analysis reveals simple patterns that strongly suggest that the myriad of complications and subtleties to be found in theory are ultimately not as important as they seem, suggesting the need to find ways to simplify the theory.
- Empirical models based on historical data analysis are often the best available basis for predicting the odds of success or failure because good theory simply does not exist.¹⁵

DIVERSE SOURCES OF KNOWLEDGE

Against this philosophical background, the following subsections describe briefly a number of different sources of knowledge that can inform influence strategies. Exploiting the sources requires a mix of quantitative and qualitative methods.

Red Teaming and Other Special Critical Reviews

Critical and structured reasoning can go a long way in identifying issues. This can be enhanced by:

- Having analysts with talent for both critical reasoning and imagination that takes them outside the norm.
- Using formal “red team” tactics, as in appointing respected thinkers to find the holes in the initial reasoning. Such “red teams” should include diverse perspectives, such as might be provided by individuals who have left the insurgent organization and local and regional experts.¹⁶
- Consulting outside experts and generalists, again to both review and find vulnerabilities in the plan.

¹⁵ Examples include: (a) crude empirical costing models (e.g., cost versus weight and generational class for aircraft); (b) historical-statistical observations such as that weaker countries have frequently attacked stronger neighbors despite the seeming illogic; (c) military planning factors; and (d) analysis that shows that counterinsurgency efforts have a dismal record in countries with poor infrastructure (Asal et al., 2011).

¹⁶ The importance of Red teaming was highlighted by USMC Commandant James Amos in planning guidance. An on-line journal even exists (<http://redteamjournal.com/2010/10/red-team-journal-thirteen-years-on/#more-2565>). The Defense Science Board has often urged or written about red teaming (Defense Science Board, 2009).

Learning from History

Drawing upon historical incidents is valuable—not just for inspiration, but also for insights as to what has gone wrong in roughly analogous efforts. Such work should draw not only on the history books, but on classified histories and discussions with participants or expert historians. Sometimes, such lessons are included in military appreciations.

Historical Case Studies

One of the most powerful ways to learn from the past is with structured use of case studies. Case studies often provide a richness of insights and an appreciation of interactions and dilemmas. Comparative case studies can sharpen the use of such methods and mitigate the common tendency to draw incorrect conclusions from a single case (George and Bennett, 2005).

Historical-Statistical Information

As mentioned above, historical statistics can be valuable, especially for cautionaries. For example, if roughly analogous efforts have been tried previously, without success, the burden of proof should be on advocates: *why* would the results be different this time, and why should we believe that? A modern classic of this was failure in 2002-2003 to appreciate the risks of invading Iraq with far fewer forces than had traditionally been found necessary in stabilization activities (Dobbins, 2007).

Opposing tendencies are common. Some people resist using prior data, assuming that previous attempts were foolishly executed and that they will, of course, do better (akin to someone ignoring lessons about the fog and frictions of war). Others make too much of the data, extrapolating to poorly reasoned conclusions about strategy or policy. They may also depend too heavily on highly aggregate statistics bearing only a casual relationship to the actual factors at work.

Models, Simulation, and Wargaming

Computer models, simulation, and wargaming can all be valuable. Even today, for example, some game-theory models can do a remarkably insightful job of anticipating political maneuverings of multiple competing factions.¹⁷ They require significant expert input, and results can vary a good deal if the “experts” are less than first class, but they

¹⁷ These now exist in various forms (Abdollahian, Barnick, Efird, and Kugler, 2006), but the seminal work was done years ago (Mesquita, 1983).

have a track record at CIA and elsewhere. More generally, agent-based models will—over time—have an increasingly useful role in identifying *possibilities* and perhaps even giving a sense for the relative odds of such possibilities (Zacharias, MacMillan, and Van Hemel, 2008; Wagenhals, Levis, and Halder, 2006).

Human gaming, of course, can be invaluable. It overlaps with the use of red teams, although war games are often used more to walk through a best estimate notion of how operations will proceed, plus minor excursions, than to open the door to truly disruptive possibilities. This tendency has long historical roots, but the negative aspects can be mitigated. For example, the potentially exercise-destroying implications of troublesome red-team moves can be played out separately in more highly classified side activities using short-cut methods. Also, war gaming can be replaced by designs that have teams address numerous well-chosen vignettes, rather than working through a single exercise.

Other Methods

Some additional methods are worth mentioning because they are sometimes unappreciated or even academically denigrated.¹⁸

Personal Accounts.

First-person accounts have much to tell us, despite having numerous shortcomings with which social scientists are familiar.¹⁹ Although the late Osama bin Laden apparently did not write an autobiography, Ayman al-Zawahiri has written extensively (al-Zawahiri, 2001). Some individuals have written autobiographical accounts of how they were temporarily influenced by activities, peer pressures, and ideas that might have led them down a more radical path. One such account is included in Dipak Gupta's life-cycle discussion of terrorism (Gupta, 2008). Tawfik Hamid describes growing up in Egypt and coming under the influence of idealistic but potentially violent Islamic movements (Hamid, 2008). Hamid discusses in detail ways in which Koranic teachings are both misunderstood and distorted. An account by

¹⁸ A broad approach such as that suggested here was undertaken by the 2010 Summer Hard Program (SHARP) of the Office of the Director of National Intelligence to address VEO issues. Some of the following discussion reflects experiences in that program.

¹⁹ The shortcomings include idiosyncratic perspectives, embellishing of history (often to the benefit of the writer's reputation), and distinct propagandistic aspects when the account is intended to influence followers of a movement.

Moroccan-background Omar Nasiri (a pseudonym) (Nasiri, 2006) describes a period of his life that included street crime, being recruited by his brother into violent Islamist activities, training in Afghani Jihadi camps in the 1990s, and simultaneously reporting to western intelligence despite emotional links to many aspects of the Jihadi message. Although the book should be viewed with skepticism given its provenance and the narcissistic author, it is worth noting that in a foreword to the book, retired CIA analyst Michael Scheuer describes the account as having “no peer in the publications of the American intelligence community.” As a last example, Janja Lalich (Lalich, 2004) has described in depth her personal experiences (and lessons learned) from involvement in a 1970s American cult. Some features of this experience (e.g., the role of charismatic leadership and organizational doctrine) are relevant to understanding counterterrorism.

Movies and Books

Many of us learn over the years that we learn more in some respects from movies and books, including fiction, than from more traditional scholarly mechanisms. Sometimes this is because we need the drama or detail of a story to allow us to internalize some of what we know intellectually. Sometimes it is because they help us relate better to the thinking and culture of others. Although seldom listed in a scholarly bibliography, movies can be quite valuable even when their treatment of historical events is imbalanced and reflects artistic license. A classic example is the movie *Battle for Algiers*, but movies or documentaries exist on the Mumbai attacks, the allure of extremist Jihadis to members of middle class families in Pakistan, and the Red Army Faction among others. There are usually foreign films, but so much the better for Americans seeking to understand undercurrents and ideas in other cultures. One of the more recent, produced by the BBC, is *My Brother the Islamist*.

The Social Science Literature on Urban Gangs

Despite major differences between VEOs and urban gangs, there are also similarities worth understanding, especially in efforts to operate “left of the boom.” The relevant literature is sizable and includes examples of considerable success in reducing violence (Kennedy, Braga, and Piehl, 2001).

The Sociology Literature on Intervention

More generally, in contemplating possibilities for influence by intervention, there exists a rich sociology literature on when interventions have been successful or unsuccessful on matters such as violence, intolerance, and alienation. Much is also known about measuring indicators of success and failure (Bruhn and Rebach, 2007).

Many other examples exist of knowledge sources, but these suffice to suggest that diverse approaches are desirable and feasible.

4. SOME POTENTIAL AIDS TO THINKING AND DECISION

An early issue for the larger SMA project was to identify possible aids to thinking that would be simple but well structured. This section identifies several such aids.

FACTOR TREES

Factor trees are conceptual models of a phenomenon.²⁰ As their name suggests, their purpose is to identify the *factors* at work, and to do so in several layers with increasing detail. Ideally, a factor tree's higher level is *comprehensive*, but necessarily somewhat abstract. Lower levels of the tree indicate numerous sub factors, some of which may substitute for another in contributing to a higher level effect. That is, the factor trees emphasize that there may be any of a number of causal chains at work. A well-executed factor tree can provide a general check list of issues and suggest lines of action.

A general factor tree should be comprehensive, but more specialized trees may be useful for specific contexts, with some factors being much more important than others. The temptation to focus only on context-specific factors should be resisted, however, because the competing actors will often look for additional ways to accomplish their goals and, in so doing, will discover and trigger the previously missing factors. Leaders of a given faction, for example, may appeal at one time to nationalism and at another time to religion or culture, depending on what resonates at the time. Later yet, revenge may be a theme.

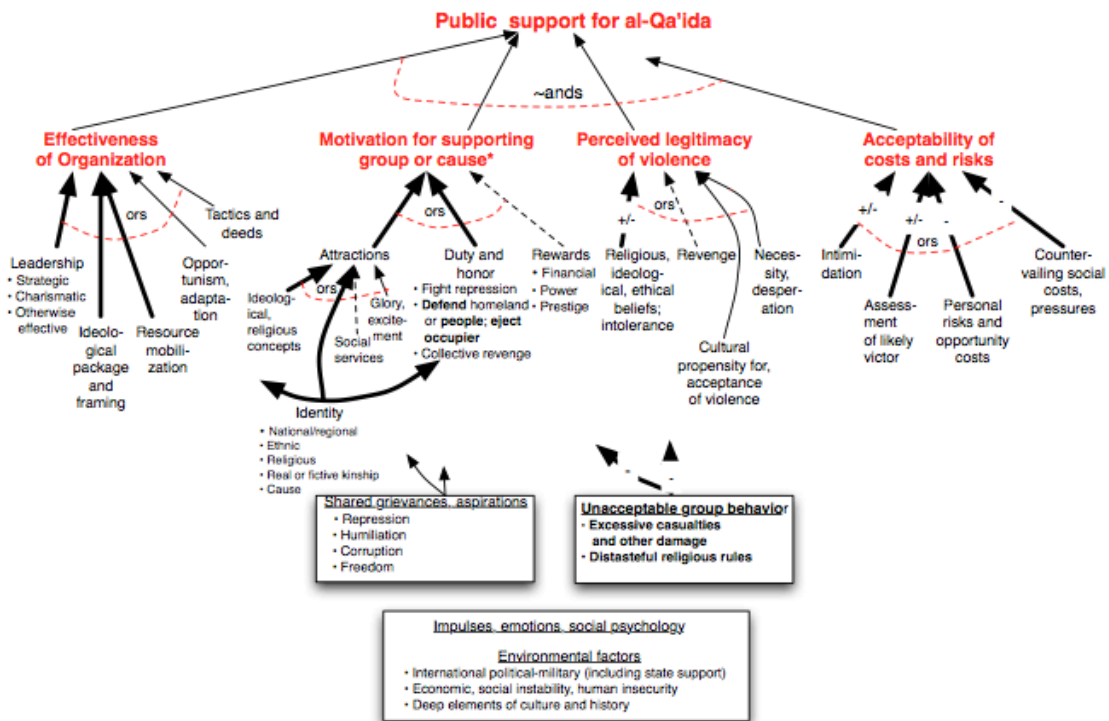
Figure 5 shows an illustrative factor tree from a recent study of public support for insurgency and terrorism (Davis et al., forthcoming). It specializes the general findings to al Qaeda Central by showing some "notable" influences with thicker arrows or bold letters. The intent was to indicate how public support for al Qaeda was influenced by, e.g., leadership, ideology, resource mobilization, and appeals to identity, and to show that some factors have negative influence, such as group behavior killing innocent

²⁰ Factor trees were introduced in an integrative review for the Department of Defense of social science bearing on terrorism (Davis and Cragin, 2009). A shorter discussion explains the philosophy (Davis, 2009b) and a new paper based on work sponsored by the Human Social Cultural and Behavioral Modeling program and the Office of Naval Research is a primer for building and understanding factor trees (Davis, 2011b), which have now been used in quite a number of studies.

civilians (especially Muslims). Such depictions can be used to contrast the especially salient factors across VEOs, or even across sub groupings of a given VEO. Al Qaeda Central, for example, may have different appeal (and dis appeal) than does a portion of the Taliban in Afghanistan or an Al Qaeda affiliate in a particular country such as Oman.

Although intendedly simple, factor trees allow simultaneous recognition of different causal chains. Note that some factors (connected by “ands”) may be individually critical and, thus, a prime target for influence operations, while others are connected by “ors,” which suggests that more of one factor can substitute for less of another. That is, there is substitutability. For planners, this means that affecting one such factor will likely not be effective because of adaptations.

Figure 5
An Illustrative Factor Tree for Public Support of Al Qaeda



INFLUENCE DIAGRAMS

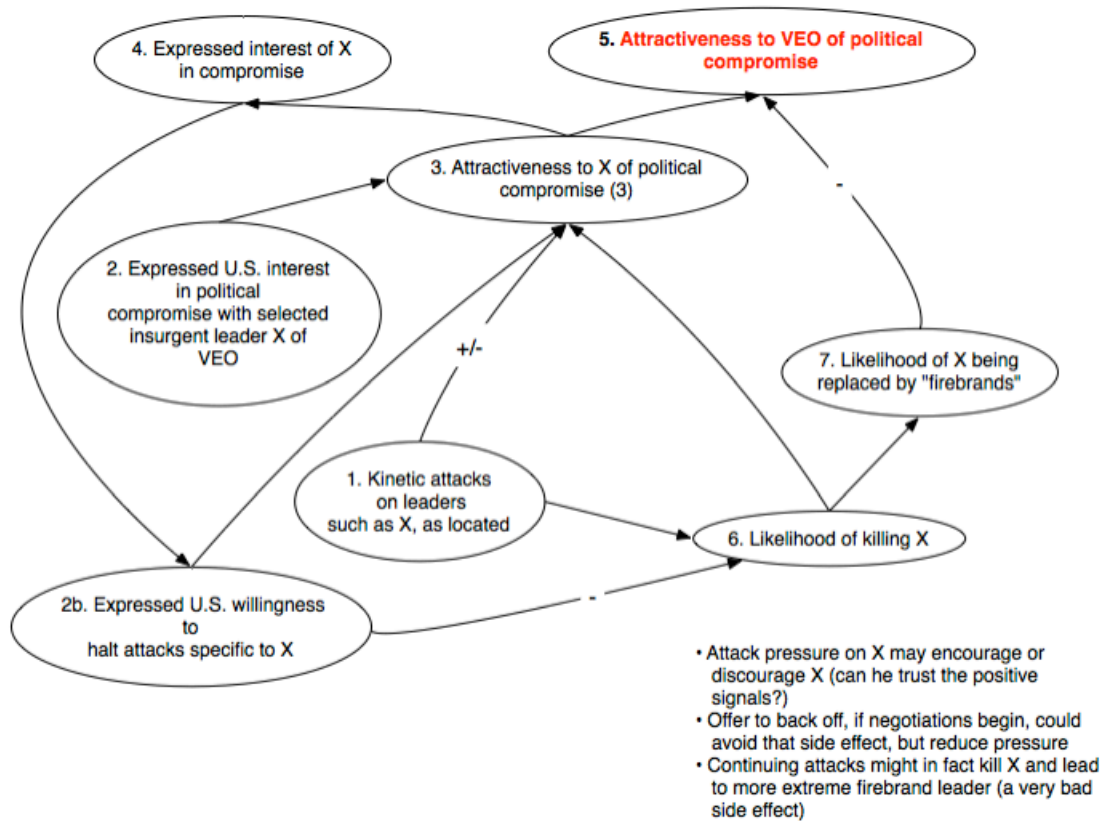
Whereas factor trees provide a static depiction of the factors at work at a given time, influence diagrams provide a dynamic depiction. In favorable cases, the dynamic interactions occur over longer times (e.g., weeks or months rather than days). It is then useful, for both conceptual purposes and planning to work the issues separately for the

different time scales. This is directly relevant to this paper's theme because influence operations have actions with direct effects. Those, however, will often have indirect effects somewhat later unless the indirect effects are anticipated and mitigated by additional and perhaps continuing actions.²¹

Figure 6 shows a hypothetical influence diagram relating kinetic attacks on opposition leaders generally, attempts to negotiate with a particular leader, and the possibility of making matters worse rather than better. Kinetic attacks on leadership could provide incentives to a given leader to negotiate if an offer were extended (1 and 2 influence 3). However, continuing attacks on him might *reduce* the credibility of offers to negotiate with him, i.e., it might reduce trust. That negative effect might be mitigated by having attacks specifically on X curtailed if X expresses interest in negotiation (4 and 2b). While this is going on, however, continuing kinetic attacks on leadership generally increase the likelihood that X will be killed, whether or not by intention. If that should happen, there might (according to this diagram) be an increased likelihood that the new factional leadership would be firebrands with whom negotiation would be impossible (item 7).

²¹ Influence diagrams exist in different versions depending on field and author. System Dynamics uses them as a core element of modeling (Forrester, 1963; Sterman, 2000). They are also at the core of modeling with *Analytica*® (Lumina Decision Systems) (Morgan and Henrion, 1992), as used in a number of RAND studies dealing with analysis under uncertainty (Davis, Bankes, and Egner, 2007; Davis, Shaver, Gvineria, and Beck, 2008). The term "influence diagram" is also used in management consulting, where the diagrams may reflect "cognitive maps," and in work relating to Bayesian networks and influence nets (Wagenhals et al., 2006). In the latter application, the nodes have probabilistic interpretations.

Figure 6
A Notional Influence Diagram Showing Interactions and Side Effects



None of the interactions in this hypothetical figure are exotic. The value of such figures is merely representing interactions compactly in a way that facilitates discussion and communication among planners, and assists in nuanced execution. We note, however, that such diagrams can be confusing and even irritating with audiences unfamiliar with them, unless they are presented artfully.

ACTION-INTERACTION MATRIX

Another type of display that can be useful in dealing with complex interactions might be called an action-interaction matrix. As in many domains, such as software development, interactions must be recognized and dealt with. Table 3 is a notional example of an action-interaction matrix. The same actions appear vertically (first column) and horizontally (top row).

Table 3
An Action-Interaction Matrix

Action	Kinetic operations against VEO	Imposing local security	Enhancing village defense forces	Sustained emergency support of village forces	Behind-scene negotiations
Kinetic operations against VEO		Must be deconflicted with	Help enable	Provide cavalry for	Deconflict with
Imposing local security	Allows smaller, more discriminate operations		Helps enable and will be supplanted by	N.A.	Affects adversary calculations
Enhancing village defense forces	Reduces need for	Supplants		Reduces magnitude of demand for	Affects adversary calculations
Sustained emergency support of village forces	Reduces need for large, crude kinetics	N.A.	Provides essential buttressing		Affects adversary calculations
Behind-scene negotiations	Deconflict with	Must be deconflicted with	Coordinate carefully with to avoid appearance of sell-out	Coordinate with to avoid undercutting promise of	

Note: a given cell's entry describes how first-column actions interact with actions in subsequent columns.

EFFECT-MITIGATION TABLES

Another way of discussing interactions focuses on anticipating possible side effects, seeking to mitigate the likelihood or extent of bad effects effects, watching for the effects to arise, and having adaptations ready if necessary. Preparing to exploit good side effects is also important. Table 4 shows an example drawn from public discussion of the difficulties associated with certain counterinsurgency actions. The examples shown are intended to be familiar and simple. In planning operations, the actual examples might be more fine-grained and subtle, relating to specific insurgent or government leaders, to effects across sectors of a region, and the the possibility of retaliatory actions.

Table 4
Dealing with Possible Negative Side Effects

Action	Potential Side Effect	Mitigation	Observable	Adaptation
Bombing	Collateral damage, public anger	Improve intelligence, targeting. Warn civilians.	Reported, verified collateral damage	Do better. Reduce level or intensity of bombing.
Night raids	Public fear, anger; errors and injustice	Collect and disseminate proof justifying raids	Expressed anger by government and population; recognized errors.	Do better; pay compensation; apologize effectively
Provide leadership and logistics to partner armies	Excessive dependence; lack of initiative; resentment	Have, explain, implement transition plan visibly	Assessments by U.S. officers on scene, locals, and observers	Accelerate hand-over despite loss of near-term effectiveness. Allow failure. Dramatize implications of reduced U.S. role.

5. QUALITATIVE SYSTEMIC THEORY FOR INFLUENCING PUBLIC SUPPORT OF VEOs WITHOUT BAD SIDE EFFECTS

This section elaborates on the earlier discussion of how qualitative systemic models can be used to discuss options for influence operations, including operations that avoid or mitigate negative side effects.

OVERVIEW OF THEORY

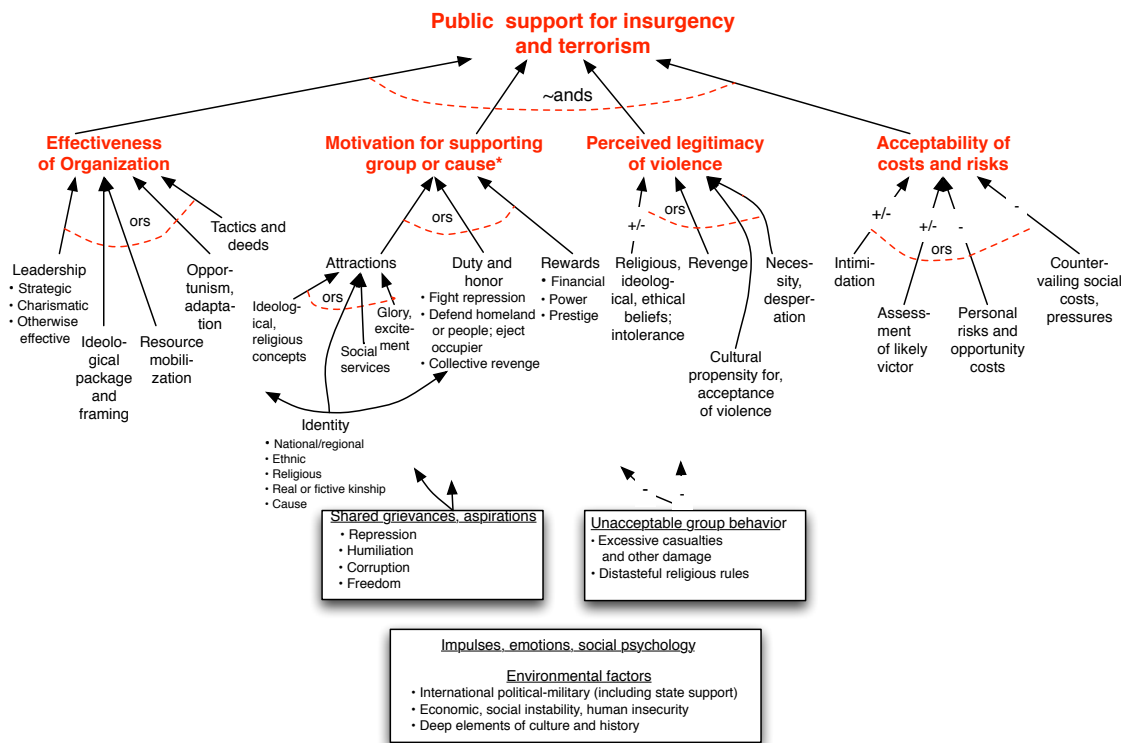
A recent study on public support for VEOs has a number of suggestions for those planning strategic communication activities (Davis et al., forthcoming):

1. Review the applicable “whole of government” strategy to have it firmly in mind, seeing the public-support issue as part of that much larger context. Coordinate accordingly.
2. Identify the entities in competition (e.g., internal factions, government, alliance assisting in counterinsurgency, other foreign governments).
3. Characterize the insurgent’s strategy, in part by characterizing how it addresses each of the elements of organizational effectiveness identified by the social-movement-theory portion of this study.
4. Develop specialized factor trees for each subpopulation so as to appreciate where potential actions could have both intended and counterproductive effects, depending on subpopulation and targeting. Plan efforts accordingly.
5. Focus on possible actions that are feasible, for which there can be congruence between reality and messages, and for which bad side effects (also called second- and third-order effects) are either unlikely or subject to mitigation.
6. Observe, assess, and adapt—reinforcing successes and adjusting where actions prove ineffective or counterproductive.

Several of these admonitions overlap with the themes of the current SMA effort. One item not mentioned earlier in this paper is (5) above, the importance of assuring a congruence between reality and messaging.

Figure 7 (a repeat of Figure 4) shows the factor-tree depiction of qualitative theory.

Figure 7
A Qualitative Systemic Theory of Public Support for Insurgency and Terrorism



2.17.11

THE THEORY’S NARRATIVE

The narrative that goes with Figure 7 is that public support for insurgency and terrorism depends on four top-level factors, read from left to right. These are all seen as necessary (in a first approximation) and are thus connected by “ands.” In this formulation, it makes little sense to identify the top-level factors as four discrete hypotheses: rather, the hypothesis of the theory is that all must be present. In contrast, factors lower in the tree are typically connected by “ors,” which means that the higher-level effect may be achieved by many different combinations, with some of the factors being substitutable for one another. For example, in the branch for motivations, religious ideology might be important, but the motivation might instead be a matter of duty and honor, as in defending one’s homeland or tribe.

Effectiveness of the Organization

Public support for an insurgent or terrorist organization requires that the organization exist and have some level of effectiveness. Grievances, identity, and many

other individual-level factors are ubiquitous; only sometimes, however, does public support for insurgency build to significant levels. The insurgent organizations' effectiveness, then, is crucial and may be seen as the result of leadership, ideological package and related framing, the mobilization of resources, opportunism and adaptation to circumstances, and tactics and deeds. This effectiveness is a prerequisite for and, over time, is a cause of the other factors.

Motivation

Most people who support insurgency and terrorism believe that they are doing something positive, such as contributing to a worthy cause, fulfilling a duty, or maintaining honor. Some attractions are rooted in religion or other ideology, a sense of identity, appreciation of social services provided by the violent organization, the glory and excitement of the cause or activity, or some combination. Referring again to the issue of identity, people may feel a sense of duty or honor to support the insurgency because of nationalism (e.g., when dealing with an occupier), or their connection with a particular ethnic group, tribe, religion, or cause. Other motivations may involve financial payments or gaining power or prestige.

Sense of Legitimacy for Terrorist Violence

Terrorist violence may be perceived as legitimate for any or a combination of many reasons. The reasons may be religious, otherwise ideological, or ethical; they may be due to intolerance rooted in unthinking ethnic prejudices and ignorance that denigrate "others;" they may be the sense of legitimate personal revenge or, in a culture with endemic violence, a belief that legitimacy is a non-issue. And, even if violence is seen as deplorable, it may be seen as necessary. It should also be remembered that "good" revolutionaries are often insurgents, and that only sometimes do they have the luxury of taking a peaceful approach as in Gandhi's India or in the Egypt of 2011's Arab Spring. A public may deplore or come to deplore terrorism, but to approve other forms of violence as necessary for the cause.

Acceptability of Costs and Risks.

The fourth branch is expressed as acceptability of costs and risks (given motivations) because the behaviors in question are often not the result solely of sober cost-benefit calculations, but also of emotions such as the excitement of revolution or the horror of having witnessed slaughter. Responding to intimidation is less a matter of calculations than of being frightened by the government, insurgent group, or both. For

those cross-pressured by both, a calculation may indeed occur: who will be the likely victor and, thus, with whom is it most important to cooperate? There may also be personal-level risks and opportunities to consider, and a variety of countervailing social and culture pressures against support.

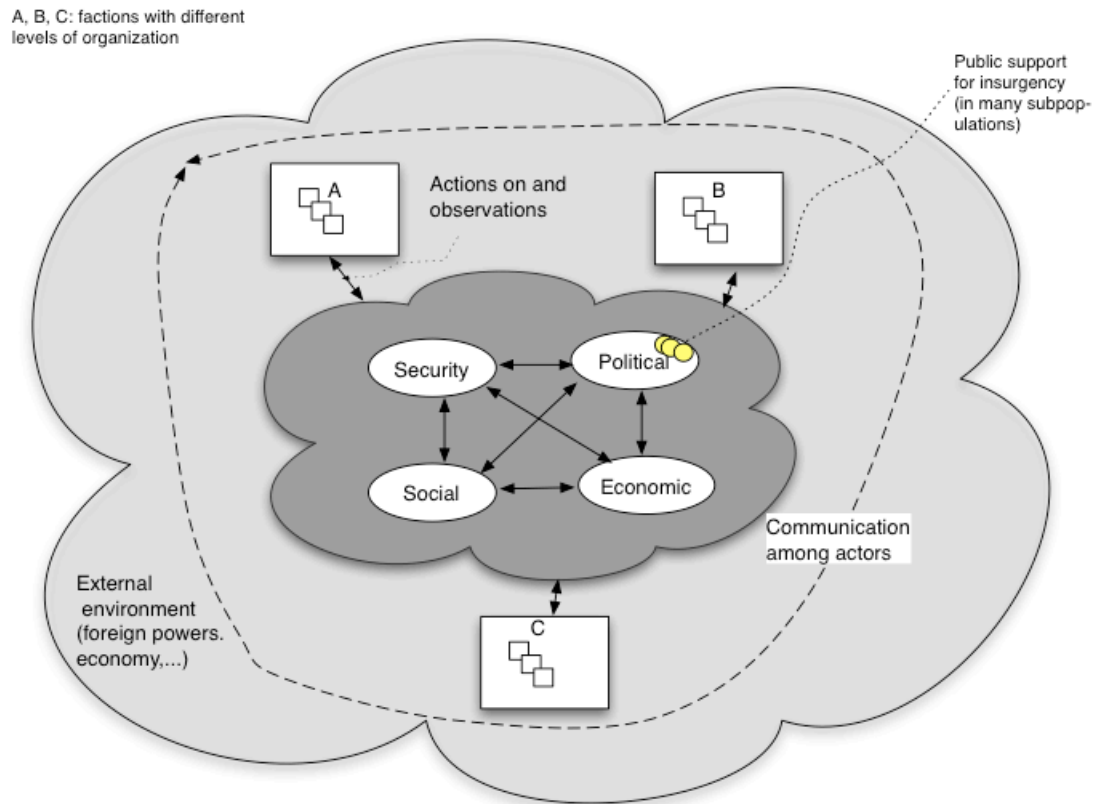
All of the top-level factors affect the others over time. Additional cross-cutting factors are indicated at the bottom of Figure 7. These include grievances and aspirations, unacceptable behavior by the insurgent organization (which can undercut public support), various psychological and emotional factors, and such environmental factors as international relations, economics, instability, and culture.

APPLYING THE CONCEPT TO THE CHALLENGE OF AVOIDING UNINTENDED NEGATIVE CONSEQUENCES

Further Decomposing the Public

Influence operations may be directed narrowly at a violent extremist organization (VEO) or on parts of the system in which it operates. Actions intended to influence the VEO or its system may also have indirect effects on states, non-state organizations, and processes. These may or may not be favorable. Figure 8 illustrates this by showing three factions A,B, and C vying for power with the government in a given states. Each faction can be seen at different levels of detail (e.g, leadership, active participants, and facilitators). One of these factions may be the VEO of particular interest, while the others are competitors (violent or nonviolent). These factions and affect one another and all operate in a system that includes political, security, economic, and social processes of the country in question. The external environment includes other countries and non-state organizations, as well as international political, security, economic, and social processes. Figure 8 is one of many possible depictions suggesting the complexity of the system within which an influence action may be operating, but it is sufficient to make some distinctions worth pursuing.

Figure 8
Illustrative Decomposition of a Population



Structuring Discussion of How To Avoid Negative Consequences

To illustrate how these matters should affect the planning of influence operations, suppose that the intention is to influence public support for a particular VEO. Recall that Figure 7 identified the top-level factors underlying public support and, thus, identified potential foci for influence actions. Table 5 now suggests some of the unintended consequences that might be caused for audiences other than the VEO itself.

Table 5
Illustrative Influence Actions and Possible Unintended Influences

Attack VEO's Public Support	Class of Influence Action	Potential In-Country Unintended Influences	International	Domestic U.S.
Attack VEO's organizational strength	Assassinate leaders	Public anger because of respect for leader and issues of sovereignty (as when Israel killed Hezbollah leader)	Reaction toward U.S. "bullying" and interference with "cowardly" means of attacks (drones)	Reactions if U.S. political figures become targets
	Disrupt or close down propaganda organization	Public and government anger because of sovereignty and free-speech issues	Reactions by international organizations used (wittingly or not) for VEO propaganda	
Undercut motivation for supporting the VEO	Counter-narrative messaging	Repudiation of previously respected figures or themes if tainted by U.S. connections	Repudiation of previously respected figures or themes if tainted by U.S. connections	
		Advertising for the VEO, enhancing its perceived significance	Advertising for the VEO, enhancing its perceived significance	Potential problems if IO actions mislead Congress or public
		Enhancing influence of a similarly deplorable faction or ideology	Inflaming international passions, possibly leading to war (e.g., between India and Pakistan)	
Undercut acceptability of costs and risks	Economic Sanctions	Anger due to effects on innocent population (as with UN sanctions on Iraq during the 1990s)	Anger due to ill effects and unfairness	
	Improved security measures	Fear of omnipresent government ad repression	Criticism if US training and systems are used to support government repression	Criticism if US training support government repression

7. FINAL OBSERVATIONS

This paper has been an informal compilation of contributions made to the larger SMA project over a period of many months. These have included review of over arching concepts for structuring discussion of influence strategy, a broad view about the many sources of information that can and should be used to build the knowledge base, suggestions about techniques useful as decision aids, somewhat critical and provocative discussion about the relationship between and relative merits of qualitative and quantitative approaches to empirical inquiry, and the schematics of an application of qualitative systemic theory to the challenge of how to understand and influence public support of a violent extremist organization.

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