Proteus Futures Digest

A Compilation of Selected Works Derived from the
2006 Proteus Workshop

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First Edition

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Compiled and Edited by
John Auger
William Wimbish

The Proteus Management Group

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Comments about this publication are invited and should be forwarded to Co-Chair, Proteus Management Group, USA, 650 Wright Avenue, Carlisle Barracks, Pennsylvania 17013-5049. Copies of this publication may be obtained by calling the PMG, USA at 717 245 3366.

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Foreword

The Proteus Management Group is an international consortium and "think tank" focusing on the refinement and continued development and practical application of the Proteus Insights. The Proteus Management Group assembled this anthology from selected works by Proteus Fellows and Associates. This collection includes an eclectic group of essays designed to present novel ways to examine "future complexity." They are not designed to be predictive or prescriptive, but rather they examine issues filtered by another lens through which to view the world. These essays will assist strategic and high-operational level decision makers, planners, and analysts in "outside the box" consideration and critical analysis of national military and intelligence issues within the Joint, Interagency, Intergovernmental, and Multinational environment. Additionally, they will help strategic decision makers, planners, and analysts to consider values and perceptions of future target audiences by systematically looking "outside" of the values contained in Western Civilization when considering the application of all elements of national power (Diplomatic, Informational Military, and Economic). Finally, they are useful in identifying and considering the second and third order effects and unintended consequences of policy and strategy decisions.

Many of these essays were first presented at the Proteus Futures Academic Workshop: "Analyzing Future Complex National Security Challenges within the Joint, Interagency, Intergovernmental, and Multinational Environment." The Proteus Management Group USA hosted this workshop from 22 to 24 August 2006 at the Collins Center for Strategic Leadership, United States Army War College, Carlisle Barracks, Pennsylvania. Also included are others works submitted by Proteus scholars that illuminate the utility of the Proteus Insights.

We are grateful to all the authors for their work and its contribution to a fuller understanding of the Proteus Insights and how they can help us understand "future complexity." Further information on the Proteus management group can be found at https://www.carlisle.army.mil/Proteus.

Linda Williams
Bill Waddell
Co-Chairs, Proteus Management Group

CHAPTER ONE

Introduction

The Proteus Management Group assembled this anthology from selected works by Proteus Fellows and Associates. This collection includes an eclectic group of essays designed to present novel ways to examine "future complexity." They are not designed to be predictive or prescriptive, but rather they examine issues filtered by another lens through which to view the world.

This chapter will briefly describe the history of the Proteus project. It also includes a brief discussion of three related and relevant products from the project: the "Planes of Influence," the scenarios that were foundational in developing the observables or insights, and finally a brief description of the Protean Insights. These observables and findings were a product of the original Proteus Study work groups.

Background

Proteus began in 1999 as a result of an effort by the National Reconnaissance Office (NRO) Advanced Systems and Technology Directorate to explore the "Problem Space" for the year 2020 and assist in identifying technology needs for "Systems-After-Next." The NRO brought together some of the finest minds in the country – "from poets to intelligence professionals"[1] – to examine possible future world scenarios and to compile a group of necessary and important findings into ways of dealing with future national threats and issues. During an eighteen month period the group created a 2020 Forecast Document. The document consisted of Future Intelligence Needs, Global Trends and Probable World Scenarios, "Wild Card" Events, Asymmetric Warfare Concerns, and Global Weapon Trends. A scenario-based planning group was formed. The scenario team identified mission "drivers" and planning space "dimensions," identified "worlds," and wrote "narrative histories." They then prepared and conducted a series of workshops and synthesized their findings. The team then developed sixteen scenarios. Each scenario's planning space incorporated varying transnational openness and mobility, global structures of influence, U.S. government global involvement, perceived threats to U.S. quality of life, and U.S. economic position and strength. From these sixteen scenarios, five were selected to be the grist for the workshop problem-solving sessions. The workshop participants consisted of "insiders" from the intelligence community and "outsiders" from various academic and scientific backgrounds. The groups' task was to identify threats and problems in each of these scenarios. One of the intriguing findings was that each group had different ideas and experienced varying degrees of difficulty concerning "how" to identify the problem sets and threats. The process also revealed biases that often blinded the intelligence community and precluded creative thought and alternate approaches to problem solving when confronted with future uncertainty. These sessions proved to be extremely valuable because of the elucidation derived from their work.

Thus the importance of the initial Proteus work was that it identified the need to view the world through different "lenses" that provide a potential change in focus in the way the U.S. considers the

1. David A. Kier in the "Forward" to *Proteus Insights from 2020*, compiled by Pamela H. Krause, p. vii.

problems and difficulties in the contemporary world. Instead of looking through "Cold War" lenses or through a United States-only set of filters, the 1999 Proteus Study highlighted the need for today's planners, analysts and decision makers to consider a variety of issues that may affect the actions and reactions of people groups and leaders. These findings, or lenses, promote the development of future group of analysis, planning and decision making tools to assist leaders in many areas of government to establish a new paradigm to face new asymmetrical emerging threats; non-state actors, ambiguous operations, unanticipated conflicts, changes to the political and economic environment in the U.S., etc. The Proteus study underscored the need for leaders to creatively and critically think and develop new and innovative ways to gain a much fuller understanding of the dynamics of the future geo-strategic environment and conflict, as well as avenues for consideration for military planning in non-traditional operations.[2]

The Planes of Influence

The original Proteus workshop teams also identified areas in which future friendly, hostile or neutral actors and things influence others and are acted upon. Key to this concept is not only to identify these places but to finitely analyze actor attributes and discreet interrelationships. These following were complied and named as follows: The Terrestrial Plane consists of the classic military and geopolitical domains of land, air, sea as well as the physical concentrations of wealth (i.e., sea lanes, oil fields, etc.). The Spectral Plane is the electromagnetic spectrum where Electronic Warfare, bandwidth, frequency management and sensing occur. Space encompasses the domain of satellites and future space platforms. The global world of networks and connectivity make up the Virtual Plane. Finally, there is the Psychological Plane wherein the Media and other information channels are used to influence the hearts and minds of people.[3]

The Protean Scenarios

The scenario group initially developed a total of sixteen scenarios to use for analysis. This was later reduced to the five scenarios briefly described below. A fuller description of these scenarios can be found in Appendices B through F of *Proteus: Insights from 2020*.

Amazon.Plague: This scenario analyzes a world beset by a series of highly contagious, deadly viruses that emerge, subside, and then reemerge in a more viral, mutated form. The world political order has been badly shaken with some states slipping into chaos while in others, strong, authoritarian rulers have come to the forefront. The United States and other nations with stable political institutions and low mortality rates have banded together to develop a cure for the viruses and to protect their borders from mass migration. U.S. politics are equally divided between the "Greens," who advocate a return to a more simple life and see technology as the root cause of the current problem, and the "Techs," who perceive technology as the solution and not as the problem. The economic impact on trade and commerce is enormous and the global economy is in a serious, long-term recession. The Global Information Grid (GIG) is the means for commerce, communication, and education in this disease-ridden world.

2. Christopher Schroeder, TASC Briefing " Proteus", 22 August 2006 See briefing at: https://www.carlisle.army.mil/proteus/docs/Schroeder_2006-08%20AWC.pdf.

3. Pamela H. Krause, comp., Michael S. Loescher, Chris Schroeder and Charles W. Thomas, Proteus Insights from 2020 (The Copernicus Institute Press,2000): 19-20.

The Enemy Within: This scenario portrays the devolution of the United States from a relatively homogeneous nation into one splintered by disagreements, ethnic tensions, and single issue politics. A witch's brew of racial, cultural, ethnic and intergenerational strife, exacerbated by unemployment rivaling the Great Depression, has set the members of churches, families and neighborhoods at odds, often violently. Indeed, distrust, hate, and revenge seem to be the order of the day. The economy is in a shambles as the Government attempts to deal with a threat to national survival seemingly as serious as the American Civil War.

Militant Shangri-la: This scenario portrays the United States as a prosperous and vibrant entity in an increasingly complex world. A new international actor has emerged – the "Alliance," a consortium of powerful states which confronted the U.S. and its allies both legitimately on illegitimately on the world stage. The Alliance used crime, extortion, murder, money laundering, piracy and whatever else was profitable to keep the world on the edge of chaos in order to reap profit, and to kill the idea of personal liberty.

New Camelot: The world is a good place to be summarizes this scenario. Of course there are some exceptions; but in general, there is solid economic growth, international stability, and technological progress. Life in the United States is good. The U.S. is still an important player in world affairs but no longer dominates militarily or economically. In a milieu where everything seems to be coming up roses, no one cares. While not everyone in the world is sharing in these good times, most are. The future is bright and people can't wait to get there.

Yankee Going Home: The fifth scenario posits that the world has changed in fundamental ways. It is not clear who is running things or who the decision makers are, or even what goals are being pursued or who the friends are. Beset by errors in foreign policy and serious economic problems at home, the U.S. has withdrawn from the world. The world now is controlled by both traditional and non-traditional actors who cooperate for power and influence while simultaneously compete for position and control in a constant whirl of politics and economics, bewildering to nearly all concerned.

It was through an analysis of these scenarios that the original nine Protean Insights were developed.

The Protean Insights

The initial NRO study and the resultant insights have informed the Proteus effort. Nine insights were developed in the initial study, and continue to be relevant to contemporary and future issues. A tenth insight was added subsequent to 9/11 and the United States Global War on Terrorism and our military actions in Afghanistan and Iraq. A brief description of the insights follows.[4]

Bedfellows: The essence of this insight is that the significance of teaming increases as the pace of global complexity is accelerating. Intelligence and security demand agility and new partners internationally in the diversified arenas of information, access and alliance. Global complexity accelerated in all the worlds, even when the U.S. attempted to disengage. At the same time, the economic component of national security – everyone's national security – increased as the world economy and information infrastructure grew and tended to upstage military, diplomatic, and political components. Thus, in every case, national security changed – as did the logically derived intelligence functions, priorities, and players. Not only were there more players, but what the Intelligence Community needed to know

4. Ibid, Schroeder, 22 AUG 2007.

was different. To be effective, the Intelligence Community needed new partners and new customers – almost continually. As a result, the idea of an IC as a static entity with well-defined participants emerged as an anachronism.

Herds: This insight describes people and ideas are on the move – affecting loyalties and affinities in complex space-time and idea-belief situations. The emerging power and influence of nontraditional global organizations is not the issue that matters. What matters is the underlying "movement" of people and ideas. In each of the scenarios, the intersection of changes in demographics, economics, and technology led to the creation of influential transnational and sub-national groups that reshaped how people viewed their identities and where they placed their loyalties. The loyalties and affinities that bind many people to organizations and groups – e.g., corporations, religions, gated enclaves, factions, or advocacy groups – are complex, dynamic, fickle, and sometimes conflicting. Other people, however, adopt extremely narrow and rigid loyalties that shift only under extreme pressure. Herds have inherent capacity for malevolence or benevolence, and Proteus can elaborate the distinctions.

Parallel Universe: This insight highlights the fact that from networks to cyber realities and avatars, the flows of information capability and configurations of prospective threats are becoming more extensive as cyberspace assumes new and highly strategic relevance in all domains. The Internet is a river of wealth and power. Where it flows, "haves" arise; where it does not, "have-nots" arise. Across the scenarios, the scope of virtual enterprises and activities ranged from global schools and an electronic religion to a conduit for subversion, a definer of community, and a theater for corporate competition and warfare. Across every world – even when we tried to invent scenarios that minimized its relevance – cyberspace becomes a key enabler of human activity and an underpinning of the world order. We came to think of the Internet less as a communications network and more as a new venue or destination. Metaphorically, cyberspace is a "Parallel Universe" that co-exists with and influences every aspect of the physical world.

Power: This insight notes that as values change, the distribution and instruments of power can shift. Power is temporal, dimensional and erodeable in the emerging cellular environment. In all of the worlds, the nature and/or distribution of power changed in significant ways. As values changed, there was an alteration in both power and the instruments of power. In a world of changing values, power is temporal. What power is today and what it will be tomorrow will depend on the extent to which values are shared or at least understood. Therefore, instruments of power accumulated over time – political, economic, cultural, military – will erode and perhaps become irrelevant. If you don't understand or have foresight into existing or emerging values, then you won't be able to understand the full dimensionality of power. If you don't understand the total dimensionality of power, then you will miss many of the instruments of power that can threaten you.

Sanctuary: This insight posits that 'they' can run and 'they' can hide. Information about movements may be more valuable than secrets tied to stable locations, and luminosity may be more important than stature. Sanctuary is a way of thinking about information access. In all of the scenarios, the need for secrecy increased rather than decreased. Not only will there be more things of value that people will want to hide, but more entities will be interested in hiding them: from private citizens to nongovernmental organizations, from corporations to nation-states. The future will be an increasingly secretive place. Sanctuary will be extremely valuable in every aspect of public and private life, and it will be pursued as the antidote to an invasive world: "Life, liberty, the pursuit of happiness, and leave

me alone." New venues for denial will arise at least as fast as the instruments of surveillance. Moreover, the things we will have to find in 2020 may not be physical or even virtual. Some (e.g., information and wealth) will be temporal…but all leave trails.

Small Stuff: An analysis of the five scenarios provided the insight that from biotech to nanotech to Internet supported information technology appliances and cognitive systems, technologies are converging to create distributed and diverse threats. The world of the small (including cellular or networked organizations) and the relatively autonomous is creating ambiguity and potential threat. Across all of the worlds, it was clear that instruments of power and sources of threat will come in smaller and smaller packages – but with no lessening in lethality. Biological viruses are good examples of both instruments of power and source of threat that will be smaller and smaller. Sophisticated software agents, roaming future cyberspace, are also likely examples. Classic tools of state power (e.g., weapons and surveillance systems) will be dramatically miniaturized as a result of both bio- and nanotechnology. Nanotechnology will produce macro effects – a fact that offers opportunities and presents challenges.

Starlight: Most current intelligence is derived from retrospective insights, however real predictive foresight capacity is turning toward the recognition of a need for strategic information from a confluence of multiple planes of influence in time, space, meaning and cyber systems. In some cases, the catalyst will take a familiar form: a dramatic and obvious event. In others, subtle, incremental, and seemingly unrelated occurrences in multiple planes of influence will combine to create change. In all of the worlds, the global balance of political, economic, military, and cultural power will be capable of being quickly and significantly altered. Some of the planes of influence are physical, some are psychological, and some are virtual. Threat patterns can often be identified when temporal connections emerge among events or transaction flows across multiple planes. It became apparent that a real danger lies in preoccupation with only one – or the wrong – plane of influence. One consequence will be an inability to recognize threat patterns until after the fact. Another will be the difficulty of acknowledging that a new threat exists at all.

Veracity: This insight overturns conventional wisdom because it posits that truth and knowledge are not as absolute and fixable as previously believed. Empiricism, authentication and revelation may be relative and difficult to determine when viewed in the context of their creation in the dynamic environments able to be modelled by Proteus. For thousands of years, knowledge has been passed through three sources – authority, empiricism, and revelation. Our look at these worlds suggests a fourth source: spontaneous knowledge available from the use of complex, interconnected global networks. This "new" source of knowledge will be silent on truth or falsehood. When knowledge takes on intrinsic value in the global economy, "unintended consequences" may result. Under certain conditions, something that is incorrect or false can become an accepted truth. Therein lie the seeds of illusion, deception, and – above all – change. Regardless of whether it arises from deliberate attack or from the innocent creation of false impression, knowledge will become one of the most powerful and frightening forces in a globally networked world. When coupled with shifting 21st century loyalties and the reality of global perception management, knowledge will make vast, permanent change possible in short order.

Wealth: The golden rule – he who has the money makes the rule – is called into question by this Protean insight. It's not just money – non-traditional currencies are entering the influence planes and

creating substantial shifts in global value. New currencies expressed as capacities for influence can alter strategic positions and create vulnerabilities. Proteus creates perspective upon these complex interactions and transactions and examines prospective impacts. Across the scenarios, the foundations of wealth and the concept of highly liquid and fungible assets included nontraditional "currencies" (e.g., knowledge, safety, health, personal networks). These currencies and their interrelationships will be more vulnerable to manipulation than they are today. Significant threats to national wellbeing will emerge from shifts in the global economy. These threats might result from deliberate "attacks." Alternatively, they could be spawned by the confluence of myriad economic decisions that are, in turn, based on highly complex interactions and transaction flows.

Threat-Opportunity: This insight was not derived from the original Proteus work, but was added later. Watchfulness in all venues is necessary because every threat is someone else's opportunity. Anticipation of threat requires understanding the ecology of the continuum – accounting for both the pre-conditions and the manifestation of threat in terms of capacity and technology in context. Threat is omnipresent in the world, arising as it does from greed, ambition, desperation, and the enduring conditions of human character. In each of the worlds, the nature of threat – what was threatening and from whence threats arose – varied. We found that watchfulness in all venues – the physical, the virtual, the biological, and the temporal – was necessary to see the full spectrum of a given threat. The more we look at multidimensional activities, the more clearly we see that the obverse of threat is always someone else's opportunity.

While these insights are not entirely new individually, when combined and applied within the analytic and decision-making process they can generate unique patters of thought, allowing the analyst or decision maker to consider issues outside of normal biases, contributing to the desired "outside the box" thinking. An ability to determine possible second and third order effects and unintended consequences can be gained by asking "what do I want to happen" and "what do I not want to happen" while considering all ten of the above insights as they relate to the issue being considered.

The Rest of the Story

The NRO's Proteus study spawned numerous technical and classified products. The nine original Protean Insights are described in detail in the original book, Proteus: Insights from 2020. As noted above, a tenth insight was subsequently added. The NRO study was the genesis of the initial Proteus consortium and guides the current Proteus Management Group effort. Part of this effort is the publication of Protean-related articles. The remainder of this work contains an eclectic assortment of articles that we have grouped under common themes. Each work underscores the need to be creative and think critically and holistically in examining the future geo-strategic environment in order to gain the necessary foresight to solve complex problems and prevent strategic surprise.

CHAPTER TWO

Addressing Complexity in Geo-Strategic Policy and Strategy

Overview

The three essays that compose this chapter analyze U.S. policy and strategy in addressing complexity. The first two take a broad look at the subject while the latter two examine our current involvement in the Middle East. Each of these analyses is informed by the Protean insights.

Lieutenant Colonel Ike Wilson authored the first essay, "Strength and Honor." Colonel Wilson, a member of the Social Sciences faculty at West Point, reconsiders what we have come to regard as the modern-age of war and describes a new alternative *future of war and peace*. His specific analytical focus goes beyond the popular contemporary descriptions of the *paradox within the American way of war* and even beyond the debates over whether or not we are witnessing and experiencing a new era of Fourth-Generation Warfare (4GW). His essay's analysis centers on the *how* of contemporary U.S./Western intervention practices as a tool of national and "Westphalian" intervention policy and strategies.

Major Kathleen M. Meilahn, currently assigned to the CENTCOM J-5, authored the paper, "Addressing the Curse of the 21st Century: Considerations and Updates to National Strategy for Victory in Iraq (NSVI)." This paper discusses the National Strategy for Victory in Iraq and argues that it is essential to add a fourth track, a "Strategic Influence Track," that would include counterinsurgency enablers: Strategic Insight, Influence, and Ideology Management (SIIIM). Major Meilahn stresses that, if the NSVI included a Strategic Influence track, a number of important topics would be taken into account by U.S. government agencies as they address the Iraqi conundrum. These topics include tribes and culture in Iraq, history, problems, implications, opportunities, and Islamic conflict management. She underscores that U.S. government leaders must understand the broader cultural context in which they find themselves operating in order to communicate effectively and to appropriately plan for operations. The author notes that the U.S. Department of Defense could lead the way by integrating the SIIM concept into its own strategic policy, increasing operational effectiveness, and providing an example for other U.S. government agencies.

Ms. Pippi Van Slooten in her paper, "Democracy Promotion and Human Rights Development in the Middle East: A Path Dependency Theory Approach" argues that, while the United States is learning the lessons necessary to wage an ongoing battle against al Qaeda and other international terror organizations that seek to destabilize world peace efforts, the United Nations (UN) has already learned the lessons necessary to encourage and promote democracy in the global community. In her paper she advocates a division of labor where the United States withdraws from a democracy promotion agenda, which it is not suited for, and that the UN adopts the path dependency approach to democracy promotion as described by Juan Linz and Alfred Stepan in their book, *The Breakdown of Democratic Regimes: Crisis, Breakdown and Reequilibration*. She notes that this approach takes into account the particular nation's start point and guides that nation through the democratic transition process to eventual democratic consolidation. To explain her argument, she discussed the problems

with the U.S. role in democracy promotion abroad and the promise of UN democracy promotion and its contribution to global peace and security. Her paper concludes with an analysis of the case of Qatar as a promising example of internal democracy promotion that should be encouraged along its current path of development to democratic consolidation.

"Strength and Honor"

The Quest for Sustainable Security

Lieutenant Colonel Isaiah Wilson
Department of Social Sciences, United States Military Academy

Introduction

In an annual report to Congress, 1 December 1862, President Abraham Lincoln summarized both the security dilemmas of the day facing the young American Union, and the challenges and obligations of national leadership:

> *The dogmas of the quiet past, are inadequate to the stormy present. The occasion is piled high with difficulty, and we must rise—with the occasion. As our case is new, so we must think anew, and act anew. We must disenthrall ourselves, and then we shall save our country.*[1]

The signs of those times, as ambiguous, uncertain, and unpredictable as they were, demanded the foresight and courage to disenthrall our collective selves of the "old tried and true" ways, and think and act anew. It was nothing less that saved the country and the Union in the 1860s and 70s.

Today's Stormy Present

What is our problem today? And what are those lingering "dogmas?" With regard to the primary security threat facing us today and in the future, we now face a global challenge—a challenge faced not only by the United States of America (USA), but by all Westphalian nation-states: how to effectively and legitimately apply power, particularly military power, in a manner that can ensure a sustainable legitimate security future?

The U.S. National Security Strategy: "Waging Democracy"

The United States, for better or for worse, has come to the conclusion that the ultimate problem of contemporary international affairs is the "pathological weakness of states," and the instability and threat that can and often does emanate from failed, failing, or misgoverned states. The sanctuary and safe-harbor offered in these "ungoverned spaces"[2] often fill the very swamps that give rise to the infestations of radicalism and extremist organizations. This new dimension to the old security dilemma has now made the principle of the inviolability of territorial borders of sovereign nation-states less absolute. Since the terror attacks of 9/11, the United States has departed from past International regimes, legal and conventional, that have since the *Treaty of Westphalia*[3] prohibited the rights and authorities of a foreign power to interfere in the internal affairs of another sovereign nation-state. Thomas Friedman's quip in the immediate aftermath of the 9/11 attack, that "if we don't visit bad neighborhoods around the world, they will surely visit us"[4] has since 2001 become the bedrock supporting the United States' new vision of the world, the security environment, and her roles and responsibilities therein. The application of national power to deal with the threat that can emanate from failed and failing states and places, *over there* before they can harm us *over*

here now defines the core of U.S. national security and military strategy. Military intervention has proven to be an effective instrument for regime change; the tool of first rather than last choice in some cases. From the experiences of 9/11, and our expedition in Afghanistan in 2002, the United States gathered two significant lessons: (1) that today's threat cannot be *contained* or *deterred* as the threat of old, and (2) that the U.S. military, particularly its landpower, is once again a proven means of regime change, even in the most austere and difficult areas of the world—that U.S. military power can be projected globally and rapidly. These two lessons now shape the *Bush Doctrine,*[5] a doctrine centered on what the Administration calls "the right of preemption for self-defense," but by international legal standards and definitions more accurately falling into the domain of preventive war.[6] The lesson we have gleaned from implementation in Afghanistan has been that the United States' best and most available tool of preemption (prevention) is the U.S. military power.

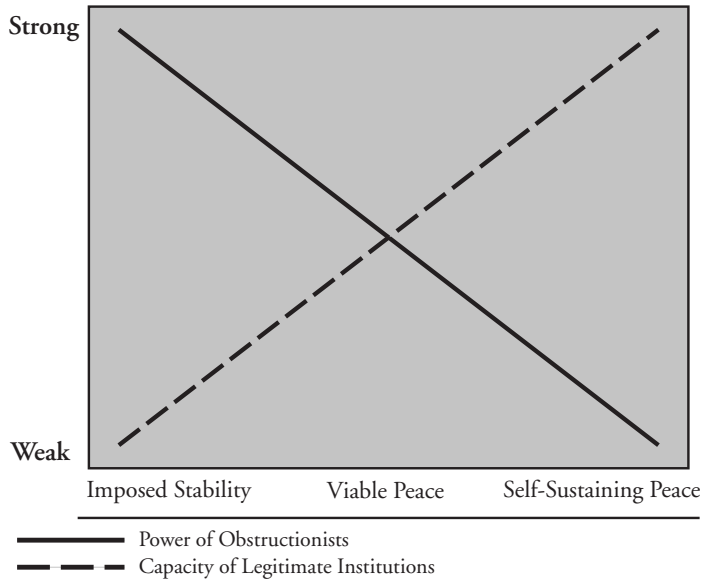


Figure 1. Viable Peace: The Turning Point in Conflict-Transition

Since the formal articulation of the Bush Doctrine and this new U.S. approach to intervention in early 2002, the United States has been on global expedition waging a *War on Terror*. These expeditions, focused more on direct action against "grave and growing"[7] threats to America's physical security and national interests than on a *quest for a viable peace*[8] in war-torn societies, have likely done as much to complicate the sustainable security question than to calm it. The challenges of 21st century international security have become even more complex and vexing when we consider—and evaluate—the *pyrrhic*[9] nature of our past, recent, and ongoing interventions.

Other Lessons…Gathered but Not Yet Learned

While the unequaled military power of the United States may make it possible to vanquish rogue regimes with astonishing speed and precision, securing the future will be a function of what the military can do, and what will eventually take the military's place, "post-conflict." To drain the swamps where the sources of regional disorder, transnational terror, and humanitarian calamity breed, responsible governance must reliably emerge as the ultimate outcome of international intervention. The lessons gathered so far are telling:

- Sustainable security "for us" depends on achieving a viable peace "for them," and for all.
- Winning the peace' cannot be done piecemeal;
  - Armies don't win wars, but they can surely contribute to their losses depending on how force is applied;
  - Similarly, humanitarians and peace operators don't win-the-peace...not without a little help from some form of security force support;

- While an offensive strategy is necessary, it is woefully insufficient as a complete solution – "liberating" societies from conditions of mal-governance may serve a necessary role in certain cases, but emancipation is only a first stage toward liberty, itself an intermediate step toward viable civil society;
- Regime change is more complex and involves much more than the simple toppling of preexisting States. Change "in" a preexisting regime requires commitment to the next step – change "within" the regime...the rebuilding of new governance.[10]

Iraq (2003 to present) is perhaps our best and most tragic of teachers in the lessons of what it takes to attain a viable peace and the sort of strategies required to achieve sustainable security. Our absence of a comprehensive international plan for waging and winning the "rest of the war" that extended well beyond the toppling of Saddam Hussein's Baath Party state on 9-April 2003 is testament that neither a viable peace nor a sustainable security can be attained by combatives alone.[11] We now understand that more often than not, internal conflict persists long after a military intervention has been mounted.[12] We can now also better appreciate the complexity that comes with these sorts of protracted interventions: for how long can the intervener intervene? For how long must the intervener be willing and capable of intervening? While premature exit only leads to a catastrophic loss of what was gained, and more often than not, lead to return visits to the original crisis zone, staying beyond your local and regional welcome can lead to equally unsavory outcomes.

How we intervene matters. Modern western military thought and practice (doctrine) has deep roots in *Just War*[13] tradition. Just action in modern wars has centered on the protection of noncombatants (at risk to combatant rights and life, if necessary) and the laws of military necessity and proportionality.[14] But since the end of the Cold War we have been living in a "post"-modern era; an age that is posing huge challenges to the modern paradigms, and as a consequence, placing the point, purpose, and practices of our interventions in severe question. Today, the United State's claims of legal rightness and moral justness in a policy of prevention and strategy of preemptive warfare are born of frustrations that come from early intervention failures in this new age. Understandably, these claims and this posture have come under fire from many in the community of nation-states that see our policy and practices as violations of long-standing laws and principles. Our actions in these post-modern interventions, against a new kind of enemy that is in no way or form bound by the traditional rules distinguishing combatant from protected person, have tested the limits of just behavior in war ("jus in bello"). In some noteworthy instances, our actions have failed our own long-standing tests (i.e., Abu Ghraib; Guantanamo; accusations of "rendering" transfers to other nation-states; etc.)[15] These examples, along with others, combine to show the severe limits in the effectiveness and legitimacy of our long-standing intervention strategies and practices—our ways of war and peace.

Intervening With What We Have On-Hand

In response to soldier questions during a town hall meeting at Camp Buehring in Kuwait, December 8, 2004, Defense Secretary Donald Rumsfeld offered the following:

> *As you know, you go to war with the Army you have. They're not the Army you might want or wish to have at a later time.*

As with many Rumsfeld "isms," this statement offers the obvious with no answers to the cause or solutions to overcoming the negative effects of those causes. Perhaps it is because of the "Army" we

have on-hand that we choose to go to "War." The bald fact is that the environment of conduct/conflict gets a majority vote in all matters of defense and security policy; a vote that places new force planning and force generation demands on strategy makers. Failure to hear the environment of conduct and to heed its warnings leaves us in the traditional predicament defining of the paradox within America's way of war and peace: seeing all challenges of global security as the proverbial "nail" meriting the use of a hammer. Professor Gregory D. Foster of the Industrial College of the Armed Forces at the National Defense University considers the current U.S. strategic course as illogical, stating that its policy architects, "[M]esmerized by their own illogic, [they] have failed to recognize that perpetual war can never lead to the ideal state of perpetual peace that Immanuel Kant spoke of over two centuries ago. It can only drain us of all we are and possess."[16]

An Era of New Obligations?

The post-modern era heralds new obligations in the wake of war: *jus post bellum* ("justice after war") obligations and responsibilities that now call for a rethinking of the modern spectrum of war and peace itself and a reconsideration of the *ends-ways-means*[17] of security strategy-making for the post-modern age. We see the obligations that now face us demanding we "stay the fight, finishing what we started, and avoiding premature exits; but we also feel the limits of our capability and capacity—the exorbitant cost—of "going it alone" and "staying it alone" for the long term. Too little of a commitment is not good enough ("too soft"), but it seem that a full-commitment is "too hard." This is a *goldilocks dilemma*. We seek strategy that is rightly arrayed (and legitimized in rule of law) in capabilities and capacities to wage a cost-effective intervention, while at the same time, meeting the new *jus post bellum* obligations of the day: "buying what we have had a hand in breaking"—building viable peace after intervening in states (and ungoverned spaces) chronically ridden with internal strife, wallowing in illiberal governance and impoverishments of all sorts. This quest for a viable peace begins—and ends—in our success or failure in identifying the appropriate way and means of a sustainable security strategy.

What is "Sustainable Security?

…and how do we get there? Sometimes the best way of attaining an understanding of what something "is" is to first consider its counterfactual. And so, a good start on answering the question of what is sustainable security is to consider briefly what is "unsustainable" about current U.S. security strategies:

- The current OPTEMPO, comprised of a protracted "long peace" commitment in Afghanistan and a "long war" in Iraq, which are currently adding to an annual budget deficit of $500 billion
- The current defense strategy of "1-4-2-1" as articulated in the 2001 QDR (reaffirmed in the 2006 QDR)

This strategic posture becomes even less sustainable if the possibilities of a landwar in Iran or any other additional rogue state or area becomes a probability or a reality. Something has to give to achieve a rebalance of U.S. power and legitimacy—either the United States must curtail its interests and ambitions (its appetites) or exercise a new approach to strategymaking that offers ways and means of achieving strategic goals, attaining sustainable security, while preserving a reputation of benevolence and suasion as international system hegemon. Obviously, some sort of conceptual frame of analysis

is needed that will provide a way of classifying, U.S. and international security posture and strategy, assessing this against the realities of the environment of conduct (the contemporary operating environment, or "COE") in order to make a judgment as to the adequacy/suitability, feasibility, and acceptability of the standing policy and posture as an effective and "sustainable" strategy.

The word "sustainable" has been added as a qualifying prefix to all sorts of public policy, to include security policy. Most notable is the concept of sustainable development.[18] But when it comes to the concept of sustainable security, little is known. Virgil's offering, "I sing a song of arms and the man," is a classic testament to the history of mankind as predominantly, and sadly, a history of war.[19] It is vital human needs (general concerns with Human Security) that trigger human interactions; migrations that often times fuel conflict. This is as true in the 21st century as it was in the past.

Our Nation has been set upon a course of securing its national security heavily centered on preventive and preemptive strategies largely through the application of military power. This strategy has neither passed the test of "sustainability" nor "legitimacy" (viability). The record of U.S. national security interventions since the 1990s has been a record of late starts, muddling efforts, and failures to finish.[20] The U.S. intervention in Iraq, begun in March 2003 has become a case-in-point of the paradox of America's way of war and peace: our persistent failures to "win the peace" in spite of winning all the combative battles along the way. The U.S. approach is clearly not a path to sustainable security. The need for another and better way is apparent.

Could there be a new way of visualizing a global security that is all-encompassing and lasting? Might this be the "sustainable" security we seek? In order to achieve this, we need to consider three complementary driving forces when dealing with emerging conflicts, eliminating past dangers, and establishing effective regulators.

- Human security and essential human needs (food, health, accessible energy, personal security, hope, culture and progress) are fundamental to the harmonious development of a society. Collective provision of these is the surest way to neutralize the frustrations that are the source of collective risks. To neglect these factors means to accept the imbalances that create lasting unrest and violence.
- Cultural security is equally vital. We need to address the historical, geographical and economic roots of violence between societies, peoples and states. We need to alleviate frustration and treat the after-effects of the national tensions inherited from the past. It is the role of an outward-looking, flexible vision of democracy to help attain these post-historical objectives: to reconcile former enemies, make amends for errors and heal the wounds of human history.
- Multilateral control is essential; mediation, arbitration, a willingness to listen and multipolarity are more reliable guarantees of security than the use of force and the exercise of constraints, even when endorsed by an impartial international community. This control is essential in order to anticipate the impact of human activities and prevent the disarray they can cause.

The term "sustainable security," based on the model of "sustainable development," clearly merits a fuller attention than is affordable in this limited chapter. But briefly, two core principles demand some explanation: *balance and durability*.

Balance covers every aspect of security: territorial, state, economic, human and societal. Durability means the capacity to endure. Beyond the ceasefire and the peace treaty, the ability of a state or society to achieve lasting peace inside and outside its borders is elusive and has to be assessed. There are a multitude of alternative frameworks. The *Clingendael Institute in the Netherlands* has published a Stability Assessment framework (SAF) based on an analysis of recent developments in Mozambique, Kenya and Rwanda, offering a balanced summary of *governance, security and socio-economic development*. Using this model, we can talk of "sustainable security" when the following conditions are met:

1. The **rule of law is upheld**; the public sector provides an equitable service to all its citizens, who in return recognize the state as legitimate.
2. The **[legitimate] state holds the monopoly on legitimate violence**; the armed forces are subject to democratic control and guarantee the security of all citizens.
3. **Economic development**, basic social services and natural resources are **properly managed**.

A list of 12 indicators,[21] grouped under three main headings, is used to assess the situation: Governance;[22] Security;[23] Socioeconomic development.[24] The work is closely based on research by the *Fund for Peace*, particularly the contributions of its President, Pauline Baker, and Angeli Weller, who in 1998, in the *Conflict Prevention and Recovery Model*, provided a table of performance indicators for detecting the risks of outbreak of a crisis, analyzing a state's ability to manage a crisis once it has been declared, and then determining to what extent the state had achieved lasting recovery. Examining the condition of a state in transition or emerging from a crisis, the authors used the term "sustainable security" when a state had regained the capacity to cope autonomously with conflict issues.[25] For this, two main conditions must be fulfilled: a legal framework for the parties to settle their differences peacefully, in accordance with fundamental democratic principles; and guarantees that the "core four" state institutions—the judiciary, the police, the military and the civil service—are operating satisfactorily.

These two core principles (balance and durability), further defined by the three primary conditions (rule of law/equity and legitimacy; state monopoly control over violence; effectively managed economic development), and the 12 indicators of success (governance [4]; security [2]; socioeconomic development [6]), hint to a useful and promising baseline understanding of sustainable security and a basic framework for a sustainable security strategy; one that offers a way forward toward a condition of viable peace.[26, 27] The present U.S. security posture has not, to date measured up to these types of requirements and these sort of conditions. United States international expeditions since the end of the Cold War are a testament to this point. Moving current U.S. security strategy in this new direction demands an assessment of the current posture and a reconstruction based on what we learn. The four-stage framework that follows is an attempt at the latter on behalf of achieving the former.

Step 1: Consider the Contemporary Environment of Conduct

DoD's 2001 Quadrennial Defense Review (QDR) pointed out that we "cannot predict with a high degree of confidence the identity of the countries or the actors that may threaten (our) interests and security." The QDR explains DoD's perception of the changed threat by stating that the U.S. is no longer physically protected by distance from its adversaries. It sees a "broad arc of instability" from the Middle East to Northeast Asia, where non-state entities whose activities are damaging to U.S. interests (drug traffickers, terrorists, etc.) are growing in strength and finding safe-haven in weak and

failing states. In addition, new technologies (especially information technologies and those related to chemical, biological, radiological, nuclear, or enhanced high-explosive weapons) are increasingly within the reach of potential adversaries, and warfare may extend to space and cyber space. The official U.S. definition of threat as it is laid out in the *2006 National Defense Strategy*, particularly since one of the focal areas of this essay is the sustainability of U.S. military power and force generation capacity. The capabilities that determine U.S. military power and the nature of its force generation capacity are predicated on how the United States views the environment of conduct.

In short, The United States' view of the COE is mainly as an environment of threat—to U.S. global interests (a traditional security dilemma) but now increasingly threatening to the physical security of the American Homeland. The attacks on the American Homeland of September 11th 2001 were truly a watershed event in United States history—the event has altered the psychology and world-view of America and Americans. As the leading hegemon in the world-system today, this new U.S. world-view has implications for the entire global security environment and the modern-age system of international relations.

Figure 2 summarizes the prevailing U.S. world-view; a system of threats falling into four domains: traditional threats; irregular threats; disruptive threats; catastrophic threats. The four threat arenas define how the United States perceives the security dilemmas of the 21st century—threats which seek to erode, paralyze, marginalize, and in general, challenge U.S. power and hegemony. The January 2002 State of the Union Address was the first public articulation of this threat concept and the first public U.S. response: President G.W. Bush's declaration of a *War on Terror*, against an "axis of evil,"[28] and any nation-states that were to be found giving safe-harbor or sanctuary, either willingly or unwittingly, to terrorists with a global reach. The President's Commencement Speech to the West Point graduating Class of 2002 in early June of that year refined that original theory of conflict and rudimentary policy into what has come to be referred to as the Bush Doctrine.[29]

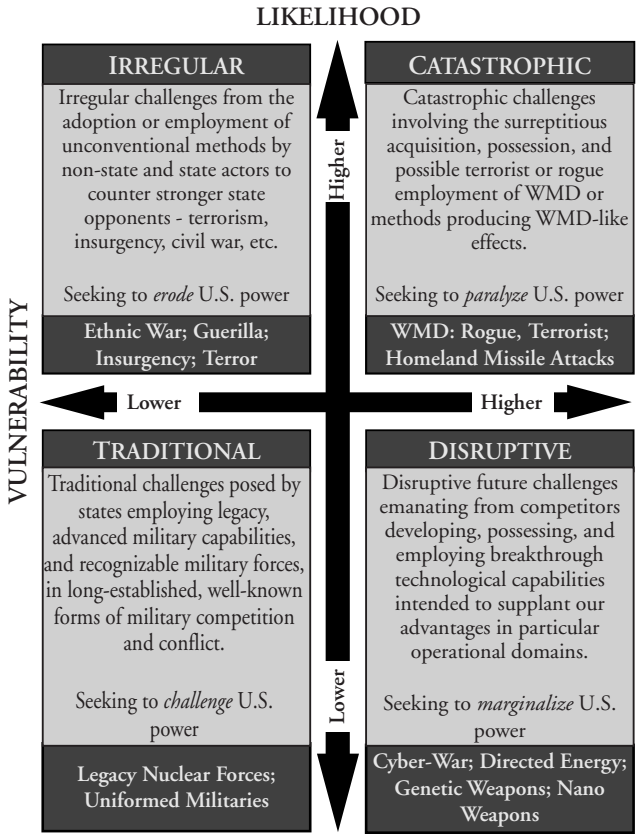


Figure 2. The Security Environment

The Real Threat: Whither Westphalia?

The real challenge is to Westphalia not just the United States. As the leader, architect, and long-time "defender" of the Westphalian-based international system, the United States has certainly been a prime target of attack. But to interpret the nature of the global threat as one of Anti-Americanism is both the ultimate in hubris and a tragically errant concept of the nature of today's environment of conduct and the threats it poses. The real threat is one directed toward the Westphalian system itself; American is merely a proxy, and recently a more consistent and accessible target for attack.

Is it possible that the United States and the "Community of Democracies"[30] it leads contributed to this threat situation? The record of international intervention since 1990 seems to indicates as much.[31] The result was a "shortchanging" by the United States of the full attention and commitment demanded at that time to the security challenges and perceived relative depravations (PRD)[32] that were just beginning to take root and percolate. What the United States, and frankly most if not all of 'Westphalia' ignored or dismissed during the 1990s has literally come home to roost.

The real *Long War* is more than a war of competing means. This war is a political discourse with the Westphalian international system itself—not just America alone. The discourse has degraded to a most violent and ruthless *politics of the gun*, a creation of both the nature of the enemy we face (how they choose to fight), but also, sadly, a politics of our own making . . . in what we ignored or failed to effectively face with regard to the complaints of second-, third-, and fourth-tier nation-states and nonstate actors with what they argued during that earlier time as flaws within Westphalia. The real Long War is a rising global insurgency[33] against Westphalia. As the 2005 National Defense Strategy states,

> "[f]ueled by ideologies that oppose **our Nation's** bedrock values, al-Qaeda and other enemies are committed to reducing **American global presence** and to destroying **our society**. They have publicly stated their goal: to gain control in the Islamic world by establishing a unified caliphate, stretching from North Africa to Indonesia." [author's emphasis]

The real threat, in part, is a globalizing Islamic extremism.[34] But to think of the global security challenges of these times purely and only in these current terms is under-appreciating the scope, scale, and nature of the war we truly face and the path toward failing Clausewitz' first judgment—getting the war wrong. The NDS articulation of threat also over-emphasizes the threat to "us" (the USA, our society, our interests) setting the very conditions that we have seen and felt the impacts from since 9/11: a largely unilateralist and offense-centric approach to treatments of "U.S." security dilemmas. America's lead in this War, thus far, has been far too focused on the means employed by the opponents (a focus on materiel "capabilities") and a particular foe (AQ) and the risk to national self than it has been on the root causes of the war and the base nature of the war. Though fitfully and reluctantly at times, Westphalia has for the most part followed the USA in this nearsighted approach.

"Mapping" the Contemporary Environment of Conduct

In 2004, Thomas P.M. Barnett published the book, *The Pentagon's New Map: War and Peace in the Twenty-First Century*.[35] What many have claimed that Barnett's book has accomplished, not the least of whom is Barnett himself, is provide the United States' security establishment with a new and accurate operating theory to explain how the seemingly "chaotic" world of the 21st century works and the United States with a new roadmap—a blueprint for the establishment of a new and effective security strategy.

The map Barnett provides illustrates his approach to globalization, which combines security, economic, political, and cultural factors. The map divides the world into two parts: "the functioning core" and the "non-integrated gap." Barnett's "core" consists of economically advanced or growing countries that are linked to the global economy and bound to the rule-sets of international trade. The rest of the world he labels and regards as the non-integrated gap—outside the global economy, not bound to the rule-sets of international trade. While Barnett's map draws out the locations and hints

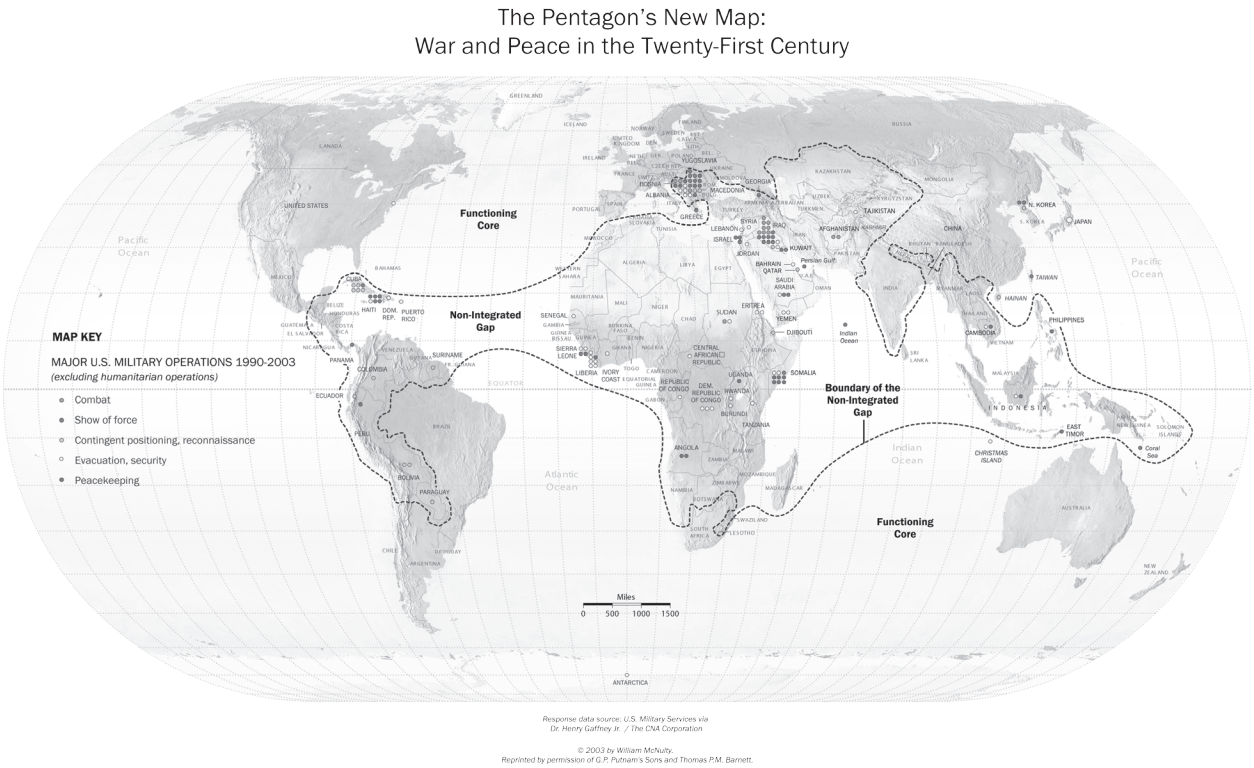


Figure 3. Barnett's Pentagon's New Map (A larger version is available at the end of the essay).

at the sources of current and future conflict (in a macro-sense), what it does not provide is a sense of the *nature of the threat*. What are the causes of these kinds of wars we now face in this 21st century COE? What creates this "Integrated Core" and its non-integrated antithesis? Answers to these kinds of questions must frame the baseline of future strategymaking if we hope to attain sustainable security at the end of the day.

Step 2: Define the Operational Problem

For the United States, the nature of the strategic problem is one of developing a security strategy that can effectively and efficiently counter what are idiosyncratic and asymmetrical compound threats of global reach and potential catastrophic impacts on the United States, U.S. global preeminence, and global interests in a way that deters, dissuades, defeats enemies, yet reassures friends and allies. From a strategic standpoint the problem defined is one of how to "best" (i.e., most accurately and legitimately) align ends to means, and objectives to resources available in a way that reflects a just and right intent behind our interventions as reflected by what we do and how we do it—that is, as reflected in our capabilities and capacity for taking action to attain viable peace solutions. Michael J. Dziedzic and Len Hawley, two preeminent scholars and experienced practitioners in international intervention offer a description of that contemporary challenge, one that most accurately matches with the United State's current security assessment and programmed force posture as articulated in the most current National Security and Military strategies:

> ***The quest for viable peace in war-torn societies*** has become one of the defining challenges of our era. Since the end of the Cold War, international security has repeatedly been

> disrupted by the dysfunction or disintegration of troubled states. Multilateral interventions have been mounted in response to intolerable situations ranging from ethnic cleansing by marauding military and paramilitary forces to state hijacking by global terrorists. The rise of radical Islamist movements in states such as Afghanistan has particularly ominous, long-term implications. The stakes now include the security of homelands around the globe. [this author's emphasis]

Dziedzic and Hawley provide a well-articulated and convincing description of the symptoms of the strategic problem. I offer that the root cause to today's global security dilemmas, and a prime source of our strategic challenge lies in an improper scoping of the COE (already discussed) and how that has led to the adoption of a security course of action (i.e., a policy and implementing strategy) that is by-design exacerbating the security dilemmas rather than eradicating them. I call this our "crisis of democratization and sustainable development," a dilemma we witness at the next stage of the strategymaking process—the point of where we must define the "operational problem," or those sets of requirements and constraints (i.e., resources available, political will, etc.) that determine what we "can achieve" . . . the art of the possible, or *operational art*.

Waging Democracy?

Is democracy-building ("democratization") the answer to a future sustainable security? The question of a democratic peace[36] (Fukuyama 1992; Russett 1993) is now far more than the subject of scholarly debate and theorizing—it has become the foundation of the Bush Doctrine, the National Security Strategy of the United States, and American intervention policy; our ways of peace and war. As early as the 1996 National Military Strategy, the Joint Chiefs of Staff noted explicitly that the military needed to "shape" the international environment by "engaging" other states in order to "promote the development of democratic institutions, and help keep some countries from becoming adversaries tomorrow." In the most recent rendering of the NMS, this military "shaping" role has risen in prominence as the Administration's tool of choice and greatest effect.

The United States is now well underway in formulating strategies of democratization. The Office of the Undersecretary of Defense for Policy and Strategy (OUSDP Strategy) as well as the Department of States' new Office of the Coordinator for Stability and Reconstruction (S/CRS) are presently formulating concept and operational plans for dealing with what OSD and the military services have come to define as "Ungoverned Spaces" (see figure 4).[37] This ungoverned spaces initiative represents the next stage in the development of a U.S. policy of democratization—the operationalization of the policy into strategies for policy implementation—and represents the contemporary understanding of our national next-steps in bringing democracy to the four-corners of the globe.

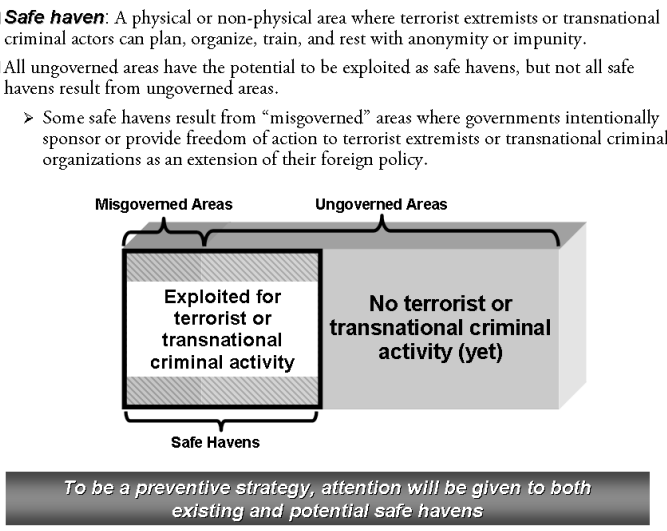


Figure 4. Ungoverned Areas vs. Safe Havens

Waging Democracy & the Paradox within the American Way of War and Peace

Of the many concerns with, and arguments against the waging of democracy abroad, particularly through uses of military power, the most convincing is the most practical—great powers, especially democratic ones have a poor historical record of success in waging democracy. *Do Democracies Tend to Lose in Small Wars?* Ours has not been a strong record of success in waging and winning wars against insurgency (counterinsurgency). This has long been the *paradox within the American (Westphalian) way of war and peace.*

What do we mean by "the paradox"? Simply put, the paradox describes our national tendency, in what we regard as limited or "small" wars, to *win all the battles but still lose the war*.[38] This tendency was sealed in public sentiment in the aftermath of our experiences in limited warfare in Vietnam during the 1970s, and most recently repopularized during the 2004 Presidential Campaign, when presidential candidate, Senator John Kerry asked, why we had a plan to "win the war" in Iraq, but none to "win the peace"?

The vision of global democracy is not the source of the trouble, but rather, the ways and means we have chosen to attain it. Democratization is the future challenge and the present danger. The present danger is of two main sources: (1) wrong instrumentality; (2) wrong scope and scale.

The Tragedy of "Scale"

When more units of a good or a service can be produced on a larger scale, yet with (on average) less input costs, economies of scale (ES) are said to be achieved. Alternatively, this means that as a company grows and production units increase, a company will have a better chance to decrease its costs. According to theory, economic growth may be achieved when economies of scale are realized. We normally think of the subject of returns to scale in purely economic and business terms. But the concepts apply to governments and nations just the same as firms, or industries, or households.

There is also a point of diminishing returns, where specialization can become "over-specialization" and divisions of labor can become dysfunctional. Just like there are economies of scale, diseconomies of scale (DS) also exist. This occurs when production is less than in proportion to inputs. What this means is that there are inefficiencies within the firm or industry—or nation-state—resulting in rising average costs.[39]

Today we see the limits of the individual nation-state—the limits of national power—as an ironic consequence of the successes of Westphalia and the Westphalian system. The spread of liberal free-market capitalism and the acceleration of globalization is both a testament to the victory of Westphalia during the 20th century (modern-era) and at the same time, a mark of an "end of history"[40] of sorts for the power and influence of the individual nation-state. No single nation-state can muster and sustain the type, quality, and quantity of resources demanded to meet and defeat the global threats of this new age nor those needed to take advantage of and prosper from those global opportunities offered by this same COE. The challenges and opportunities are "beyond" the means of the single nation-state, even a national state as "powerful" as the United States of America.

Step 3: Consider the Strategy . . . the Ways and Means

While there are several source documents that speak to the U.S. security strategy, it is the Quadrennial Defense Review (QDR) that this author finds most useful and the best blueprint for current and future National Defense strategy. It is the QDR where one gains the best understanding—the most accurate picture, shy of on-the-ground observation—of the real National Defence and National Security strategies; the QDR shows the mechanics of national security strategymaking . . . the conversion of stated security interests and goals (ends) into implementable policy through its linkage of means (capabilities) to those ends through force generation, planning, and posturing methods, tactics-techniques-procedures ("ways"). The latest QDR (dated, February 6, 2006) includes a five-year assessment of the "capabilities-based" method of force generation first articulated in late-2001, as a departure from the traditional Cold War-era "threat-based" construct and in the immediate, and therefore hurried reaction to the terror attack of 9/11 on the U.S. homeland.

> To operationalize the *National Defense Strategy*, the Department's senior civilian and military leaders identified four priority areas for examination during the QDR:
>
> - Defeating terrorist networks.
> - Defending the homeland in depth.
> - Shaping the choices of countries at strategic crossroads.
> - Preventing hostile states and non-state actors from acquiring or using WMD.

The 2006 QDR: A look at the balance sheet[41]

What the balance sheet reveals is a set of ways and means (a strategy) that, in spite of some noteworthy forward strides in the evolution of "Joint"[42] operations and improvements in conceptualization of the COE, remains critically nationalistic in its world-view, strategic posture and approach—a posture that perpetuates mismatches between means-available versus means-required.

Table 1 provides only a snapshot of the types of capabilities the 2006 QDR advertises as the new stable of wares and operational processes that are intended to effectively "operationalize" the NSS and NMS systems, programs and doctrinal procedures and processes that due to seven to 14-year acquisition and procurement/production timelines will define the United States' security posture through the year 2025, and given the extended life-cycles of many of these wares, will tie the United States NSS to these "capabilities" well toward the median of the 21st century.

We see this shift in the transition from the W.J. Clinton Administration (1992-2000) to the G.W. Bush Administration (2000–present).[43] Basing national security strategy on military capabilities, which has been the dominant conception of a "capability" to date, can (and has, in some cases) create rifts with allies (in the technological race for state-of-the-art wares); encourage reliance on anticipated but unfielded technology; lead to technological incompatibility with coalition partners; and most unsettling, depart from (or completely ignore) traditional U.S. strategic policies, values, goals, and interests.

This has led to a troubling condition in U.S. national security policymaking: a situation where the size and shape of the military force the country is willing to (or capable of) resourcing tends to determine national policy (values, goals, aims, endstates), rather than the converse.

Joint Ground Forces	• Rebalancing the Force – create modular brigades in all three Army components: 117 Regular Army (42 BCTs and 75 Support BDEs); 106 in Army National Guard (28 BCTs and 78 Support BDEs); and 58 Support BDEs in the Army Reserve. • A 46% increase in readily available combat power and an improvement in balance between combat and support forces • Stabilize the Army's end strength at 482,400 Active and 533,000 Reserve Component personnel by Fiscal Year 2011. • Stabilize the Marine Corps' end strength at 175,000 Active and 39,000 Reserve Component personnel by FY 2011.
Special Operations Forces	• An 81% increase in the baseline budget since 2001. • Supplemental appropriation of over $5.5 billion between 2001 and 2006 in improvements in SOF ISR. • Increase (beginning FY 2007) active duty Special Forces Battalions by one-third. • Expand Psychological Operations and Civil Affairs units by 3,500 personnel (33% increase) to provide increased support for SOF and the Army's modular forces. • Establish a Marine Corps Special Operations Command (MARSOC) composed of 2,600 Marines and Navy personnel to train foreign military units and conduct direct action and special reconnaissance. • Increase SEAL Team force levels to conduct direct action missions. • Establish a SOF unmanned vehicle squadron to provide organic capabilities to locate and target enemy capabilities in denied or contested areas. • Enhance capabilities to support SOF insertion and extraction into denied areas from strategic distances.
Joint Air Capabilities	• Maturation of the Air Expeditionary Forces (AEF) concept. • Integration of smart stand-off weapons with legacy systems (i.e., B-52 + JDAM). • Plan to increase long-strike capabilities by 50% and increase penetrating component of long-range strike capabilities by a factor of five by 2025. • Reconfigurations of B-2 fleet to support Global Strike Operations. • Restructuring of the Joint Unmanned Combat Air System (J-UCAS) program and development of an unmanned longer-range carrier-bases aircraft capable of air-refueling for extended range operations, expanded payload capacity, and extended naval strike reach. • Nearly double UAV coverage capacity by accelerating the acquisition of Predator UAVs and Global Hawk. • Restructuring of the F-22A program and extend production through FY2010 with a multi-year acquisition contract. • Organize the Air Force around 86 combat wings (i.e., fighter; bomber; ISR/Battle Management / Command and Control, mobility, Air Operations Centers, Battlefield Airman, and other missions and Space/Missile) – with emphasis on reach back and minimum forward footprints and expedite force deployments while reducing airman strength by approx. 40,000 full-time equivalent personnel with balanced cuts across all three components.
Joint Maritime Capabilities	• Emphasis on global strike, "from the sea" deployment and seabasing; Emphasis on riverine operations and capabilities. • Maritime Prepositioning Force (Future) family of ships – to advance the capability of seabasing. • Forward Afloat Bases (AFSB) to provide more flexible and sustainable locations from which to operate globally. • Adjustment of Navy force posture to provide at least operationally available and sustainable carriers and 60% of its current submarines in the Pacific to support engagement, presence and deterrence. • Build a larger fleet that includes 11Carrier Strike Groups. • Accelerate procurement of Littoral Combat Ships to provide power projection capabilities in littoral waters. • Procure the first eight ships of the Maritime Pre-Position Force (Future) to improve the Department's (Navy) ability to operate in restricted access environments. • Build partner capacity to improve global maritime security by reinvigorating the Navy Foreign Officer program and procuring Disaster Relief Command and Control flyaway communication support capabilities. • Return to a rate of steady-state submarine production of two attack submarines per year not later than 2012 while achieving an average per-hull procurement cost objective of $2.0 billion. • Within two years, deploy an initial capability to deliver precision-guided conventional warheads using long-range Trident Submarine-Launched Ballistic Missiles.

Table 1. Types of Capabilities Proposed in the 2006 QDR.

America's Overstretch

The 2006 Quadrennial Defense Review reflects a U.S. National Security posture that is already stretched beyond the limits of its capacity to sustain the interventions already in progress. This overstretch, coupled with a security strategymaking process focused on capabilities and an equally means/method-based concept of threat (i.e., terrorism), sets conditions that are ripe for imperial and

CAPABILITIES-BASED PLANNING	THREAT-BASED PLANNING
• Used when threats to U.S. interests are "easily recognized and identified." • Scenario-based or contingency-based modeling to determine force needs. • Provides a quantifiable rationale for the recommended force structure.	• Used when threats to U.S. interests are multifaceted and uncertain. • Ambiguous threats do not lend themselves to single-point scenario-based analysis. • Planners apply a "liberal dose of military judgment to determine the appropriate mix of required military capabilities. • Claim to focus on objectives rather than scenarios.

Figure 5. Capabilities-based planning compared with threat-based planning.

illiberal uses of force on behalf of security policy. The pyrrhic nature of the present U.S. NSS/NMS is more prone to adding to the real security threats facing Westphalia than to eradicating them. The consequence for the United States is two-fold and mutually damaging. As the United States becomes more effective and efficient in defeating short and near-term threats to its own physical security and material interests (at home and abroad), the techniques the United States will find itself needing to employ to secure herself will come at the cost of American leadership, with other Westphalian nation-states becoming increasingly less secure, by the manner by which the United States intervenes, more and more reluctant to follow the leader, when it seems that the United States is unclear of where it is going.

Step 4: Modify the Strategy

"Policy is the art of the possible."[44] And unfortunately, more often than not, what becomes possible is what is enforceable through the use of power available, and typically the more fungible of power available. This tends to be the military instrument of power. Therefore, how the military is shaped, sized, and implemented becomes the *de facto* U.S. national security policy. Understanding that what the NMS reflects is seen and perceived as the Nation's true and full character and its long-term and lasting interests is vital. It is not a reflection of the way things should be, but rather a reflection of the way things currently are. So, what do friends, foes, and "fence-sitters" see and take away with them about who the United States is, what she wants, and what her future intentions are from our security strategies in-action? What is the prevailing global perception of American power and hegemony?[45] The perception, by most accounts is proving to be quite negative.[46]

Strength & Honor: *Preserve Republicanism, Avoid Imperialism, and Secure the Peace*

There is a point of diminishing return that all empires must come to face inevitably in relations to the power available to expand, manage, and govern over its imperial dominions. As Historian Paul Kennedy noted:

> Nations project their military power according to their economic resources and in defense of their broad economic interests. But, the cost of projecting that military power is more than even the largest economies can afford indefinitely, especially when new technologies and new centers of production shift economic power away from established Great Powers – hence the rise and fall of nations (Kennedy 1987, Introduction).

This return of scales dilemma seems to have affected all empires (expansive nation-states) defining of a spiral of imperialism to which all empires, to varying degrees, have fallen prey. In his strategic analysis of the decline and eventual fall of Rome from republic to empire and his comparative to American power,[47] Edward Luttwak noted the following:

> For the Romans, as for ourselves, the two essential requirements of an evolving civilization were a sound material base and adequate security. For Romans, as for ourselves, the elusive goal of strategic statecraft was to provide security for the civilization without prejudicing the vitality of its economic base and without compromising the stability of an evolving political order.

Luttwak identified three distinct systems of imperial "security" that encapsulated the latter three centuries of Rome's zenith as a Pax Romana through its fall from hegemony. The first epoch Luttwak termed *hegemonic expansionism*. The second epoch was identified as *territorial security*. The third and final stage was a period of time focused on the *survival of the imperial power* itself.[48]

A key causal variable in the story of rise-and-fall of great powers seems to be a combination of declines in national power economies of scale coupled with a rising use of force (i.e., military power) more and more as a readily available and fungible tool of power. The mechanism that seems to lead a nation-state from republican (liberal) forms of intervention toward empire and imperialism (illiberal forms of intervention) is the use of the military power itself, and the manner in which it is used. For the Roman Empire, it was the Legions—the institution of last resort—that seems to have in its efforts to secure Rome and her empire, contributed to her decline through the increasingly authoritarian and illiberal uses of its coercive power. Great care must be taken to ensure that the actions of our own "Legions" do not lead to unintentional illiberal consequences.

Size and Shape of the Force Matters

In *Restoring American Military Power*, Lawrence J. Korb, Caroline P. Wadhams, and Andrew J. Grotto offered the following as some of the essential steps needed to be taken in order to support, strengthen and protect U.S. armed forces:

- *Increase U.S. Land-Power force capabilities, with an increase in size of the Total Army by at least 86,000 active-duty troops (adding two division-sized peacekeeping or stabilization units; doubling the size of active duty Special Forces; adding 10,000 military police, civil affairs experts, engineers, and medical personnel to the Active Component (AC), and maintaining the end strength of the Marine Corps (185,000 AC; 40,000 RC);*
- *Reduce Sea- and Air-power capacity (retire one Carrier Battle Group, leaving the arsenal with 10xCBGs; retire one Air Force Tactical Fighter Wing, leaving a total of 18);*
- *Repeal "Don't Ask, Don't Tell" and eliminate ban on women in combat;*

- *Increase investment in reset of the current Army force from 24% to 28% in order to pay for additional boots-on-the-ground (BOG) and equipment recovery and modernization;*
- *Reorganize the Total Force, returning National Guard to its traditional roles and functions of Homeland Defense and Security;*
- *Reinforce U.S. Northern Command and improve upon its resident capabilities and capacity to "follow and assistance" of Federal Emergency Action Plans execution and planning;*
- *Integrate DoD's intelligence (as well as all others throughout the USG Interagency) into the Office of the Director of National Intelligence; integrate all intelligence "colors of money" under one unified management (the DNI);*
- *Fund the following weapons systems: F-35 Joint Strike Fighter (JSF); UAVs; B-2 Heavy Bomber; Future Combat System (FCS); Stryker Interim Armored Vehicle; CVN-21 Aircraft Carrier; Littoral Combat Ship;*
- *Eliminate the following weapons systems (stop production): F/A-22 Raptor Stealth Fighter; SSN-774 Virginia-Class Submarine; DD(X) Destroyer; V-22 Osprey; C-130J Transport Aircraft; Offensive Space-Based Weapons Systems; Further Development of National Missile Defense System.*

This alternative "QDR" is one of enhancement of BOG capabilities, consolidations and integration of functions and assets, eliminations of excess capabilities, and reorganizations of capabilities and organizations—all on behalf of improving security capacity of the U.S. armed forces and a return of the nation's economy of scales in security strategy. While this strategy improves the United States' current and near-term operational shortfall, the treatment remains woefully limited in its sense of the nature, scope and scale of capacities required to meet the challenges (and opportunities) of the contemporary strategic environment. While these capabilities and capacity adjustments are necessary, alone they remain insufficient. What else is required?

- A Modular-Based ordering construct;[49]
- A Joint, Interagency, Intergovernmental, and Multinational (JIIM) Organization and Operating (O&O) concept and framework;[50]
- A JIIM-Based Acquisition Process and Force-Generation / Management System;
- A Post-Modern personnel education and professional development system.[51]

This new organizational and operational (O&O) construct would reorient U.S. national capacity to the realities of the 21st century COE. The next step would be to then reconsider the use (implementation) of "force."

The Uses of Force Are Determinant

While the literature on "imperial overstretch" and empire postulates about the limits of national power, the contemporary environment of conduct seems to confirm the inability of Nations, even "great powers" such as the United States, to attain *sustainable* security through the offensive use of power. Moreover, history notes example after example the demise largely by way of their own hands; their own efforts to secure their own territorial sovereignty by ways and means that proved inefficient, ineffective, and illiberal.

In his essay, "The Four Functions of Force," Robert J. Art offered a summary of what he deemed at that time as the four functions (uses) of force: defensive, deterrent, compellent, and swaggering.[52]

While newly emerging international conventions appear to call upon nation-states to do more than dispel with rogue regimes and illiberal sociopolitical conditions within mal-governed or ungoverned places and spaces, new security dilemmas seem to mandate that intervening states go beyond war toward the creation of conditions for viable peace within these fragile areas in order to attain sustainable security for themselves and the international system at-large. At a minimum, this new COE seems to call for a more nuanced and refined form of traditional *compellance*. What is more likely needed is a completely new-way of thinking about power and how it can be more effectively and legitimately applied in the post-modern era.

In the preface to his 2004 best seller, "From Empire to Community: A New Approach to International Relations" (*Palgrave Macmillan* Press), Professor Amitai Etzioni expressed the following sentiment:

> Whether one favors the U.S. global projection of force or is horrified by it, the question stands—where do we go from here?[53]

Etzioni's discussions of the nation-states' inability to effectively attend to what are now rising transnational problems, provides substantial evidence supporting the existence of a paradox within not merely America's way of war and peace, but in the intervention capacity of individual nation-states in general, particularly when they choose to act alone and outside of a "community of nation-states" mandates.

Type	Purpose	Mode	Targets	Characteristics
Defensive	Fend off attacks and/or reduce damage of an attack	Peaceful and physical	Primarily military; Secondarily industrial	Defensive preparations can have dissuasion value; Defensive preparations can look aggressive; First strikes can be taken for defense
Deterrent	Prevent adversary from initiating an action	Peaceful	Primarily civilian; Secondarily industrial; Tertiarily military	Threats of retaliation made so as not to have to be carried out; Second strike preparations can be viewed as first strike preparations
Compellent	Get adversary to stopdoing something or start doing something	Peaceful and physical	All three with no clear ranking	Easy to recognize but hard to achieve; Compellent actions can be justified on defensive grounds
Swaggering	Enhance prestige	Peaceful	None	Difficult to describe because of instrumental and irrational nature; Swaggering can be threatening

Table 2. The Four Functions of Force.

The Roadblocks to Sustainable Security

Overcoming the constraints in national-centric force generation paradigms is a significant challenge to sustainable security strategy, as has been explained and examined. Underlying those challenges in

traditional force generation are the problems of the traditional and dogmatic conception of "force" itself and its applications through what have for far too long been conceived as separate (and separable) domains of the functions and purposes of "War" as opposed to those of "Peace." These traditions have led the evolution of U.S. and western military thought and practices in an opposite direction from the evolution of force in international peace operations (operations regarded and organized as "other than war"). We must understand this modern-age dialectic in order to have hopes of overcoming it.

Industrialization and nationalization of war and warfare during the late 19th and early 20th centuries separated institutionally, organizationally, and professionally these now separated domains into separate stovepipes. If we think of our entire governance capacity—our entire national security apparatus—in terms of a jigsaw puzzle, then it's easier to see the point—the "generations of warfare" argument. Simply stated, as we "evolved" from the age of dynastic rule to the modern-day, (industrial) nation-state based international system, we see an increase in the complexity of war-policy (more tools available beyond the martial tool) but consequently, a division of war-policy into separated functional domains (Weberian divisions of labor). We divide war into its component parts (separate the science of war policy from the artistry of war-policy) in an attempt to better understand and control the evolutions, and since, have failed to adequately put the puzzle pieces back together again. Over time, we have institutionalized each division of labor (function of war-policy) into its own function-based organizations, and as a consequence have failed to reestablish a comprehensive and "holistic" purpose-based intervention-policy premised upon the attainment of a quality of peace (stability) endstate. Being the more "matured" of the functional domains, the military tool has remained our most potent and mature instrument of power (policy tool). This has contributed to the militarization of U.S. intervention policy…and in fact all public policies (i.e., Department of Homeland Security). What we witness in the evolution of the Clausewitzian theory and thesis of war and war-fare into today's modern forms and functions exemplifies the very fault that CvC warned against. Our modernization as a national state and an advanced industrial age military powerhouse reflects a steady, gradual, yet persistent and progressive building of a way and regime of war and peace operations that examples a divorcing of war from political life. The United States military, and particularly its land forces, define and determine the American way of war; for America, war has been limited to a martial affair. The United States Army fights and wins America's wars. We as Americans have become comfortable and confident in this idea; a notion which is more a fallacy than actual fact.

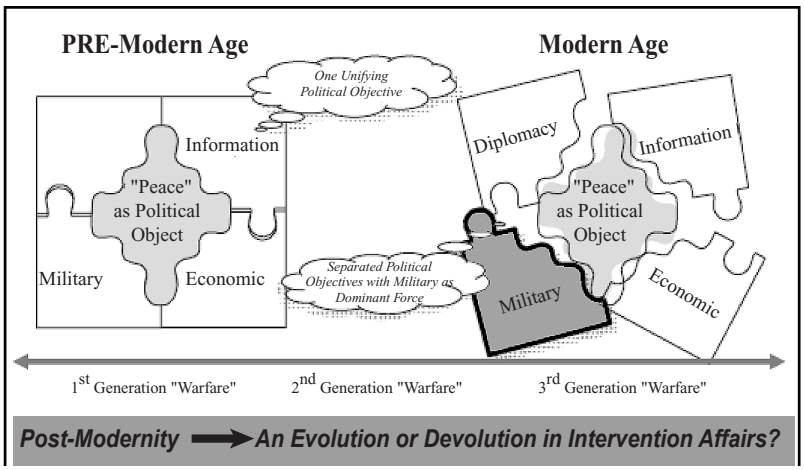


Figure 6. The Evolution of "War-fare"

The evolution of International Law and Conventions guiding intervention policy and "peace operations" (evolution of United Nations sanctioned and mandated peace operations) witnesses a similar trend. The Council on Foreign Relations, in 2005, sponsored a high-powered Task Force mandated to study and report on the state of readiness in U.S. and International capacity to wage and win post-conflict stability and reconstruction operations. The Task

Force was titled, "In the Wake of War: Improving U.S. Post-Conflict Capabilities," was directed by General (Ret.) William L. Nash, and Co-Chaired by Sandy Berger and Brent Scowcroft—two former National Security Advisors. What this report offered was a brief but thorough history of the evolution of international peace operations.

When we couple the organizational causes on the military side of war-policy with what we see here on the "peaceside" of war-policy, we can see a significant and potentially catastrophic gap persist within our prevailing National Way of War…an arbitrary separation of War (the method) from Peace (the end) and a commensurate separation of our prevailing (modern era) ways of war-fare from our ways of peace-fare.

The Road toward Sustainable Security—*Integrated Power*

Lawrence Korb and Robert O. Boorstin, along with the National Security Staff of the Center for American Progress (CAP) have offered a national security strategy alternative to the current U.S. strategy, one centered on the concept of "integrated power."

Integrated power means discarding previous concepts of "hard" and "soft" power and viewing them not as alternatives but as essential partners. Integrated power means using the unifying forces of

"First Evolution" (1948 to 1980s)	"Second Evolution" (1988 to 1993)	"Third Evolution" (1993 to present)
Rules of Intervention • UN action authorized to promote peaceful settlement of disputes with consent of parties.	**Rules of Intervention** • Transitional and emergent; increased pressures from member states to undertake more complex operations aimed at resolving internal conflicts.	**Rules of Intervention** • UN intervention authorized irrespective of whether the parties to the conflict consent to the deployments.
Force Approach / Design • Deployments of lightly armed UN troops.	**Force Approach / Design** • No new organizational forms; "Blue-helmeted" forces.	**Force Approach / Design** • No US-led peace "enforcement" packages; • "Green-helmeted" forces.
Purpose / Endstate • Monitor ceasefires or disagreements between states.	**Purpose / Endstate** • Stave off internal conflicts; • Intervention of member states against "rogue states" on behalf of national and individual claims of self-determination and human rights.	**Purpose / Endstate** • Enforce consent of warring parties; • Restore stability.
UN Chapter Mandate • Chapter IV.	**UN Chapter Mandate** • Chapter IV; • Chapter IV "plus."	**UN Chapter Mandate** • Chapter VII.

Figure 7. The Evolution of Inernational "Peace-fare."

globalization to defeat the centrifugal forces of fragmentation—terrorist networks, extreme regimes, and weak and failing states—that pose the greatest threat to the American people. Integrated power means leading and using alliances to increase the powers of the United States, rather than taking a solitary road. Integrated power means combining new strategies that respond to new threats with traditional strategies that respond to the kinds of enemies we have previously confronted.

The strategy forms upon three primary principles, or policy guidepost: protection of the American people first; prevention of conflict whenever possible; and leadership of vital alliances and International institutions to better serve our national security. The concept of integrated power is an essential step toward a better and more sustainable security strategy for the United States, but one which must go well beyond national concepts of power, its use, and the legitimization ("mandating;" insuring) of its uses. A sustainable security for the United States lies beyond nation-state solutions and at the nexus of a global (communitarian) system, premised on a new (expanded) Clausewitzian "Remarkable Trinity" relationship.[54]

The situation we now face offers three strategic choices. We could always choose to do nothing, leaving security in general to linger in the diseconomies of scale situation, with nations and coalitions of the willing acting on behalf of a better future security, but lacking the capacity to realize it. We could stay the present course, and continue to consolidate national power in ways to allow national leaders to project power abroad, before threats arrive at the nation's shores in efforts to prevent and preempt. I offer that such a course has already led the United States to a path of illiberalism. The third option takes the concept of "integrated power" to the "community" level. Here, we can conceive of the absolute preservation of the traditional rights of any and all recognized nation-states to act in their own self-defense as well as the obligations that fall to all members of the community of nation-states to act to correct "system anomalies" (i.e. predation-based breaches of a nation-state's territorial sovereignty; acts of ethnic cleaning and/or genocide). Yet we can also think beyond, and begin to structure a new relationship between *Man, the State, and War* (and Peace),[55] one that conceives of, plans for, and mandates international interventions at the "super-national" level (international level legitimization), where those plans are then operationalized by selected collectives of member-states, based on their niche specializations and finally implemented by coalitions of able and internationally-endorsed and supported (reinforced) integrated forces. This sort of paradigm would offer solutions to the two dilemmas of contemporary international intervention: it would solve both the durability and the balance problems. Such an approach would recalibrate Westphalian power in ways that could return economies of scale and legitimacy to future interventions. The approach would reflect a symmetrical balancing of threat to target of threat, and place strategic alternatives more in line with the actual threat: a growing global insurgency against the Westphalian system of governance.

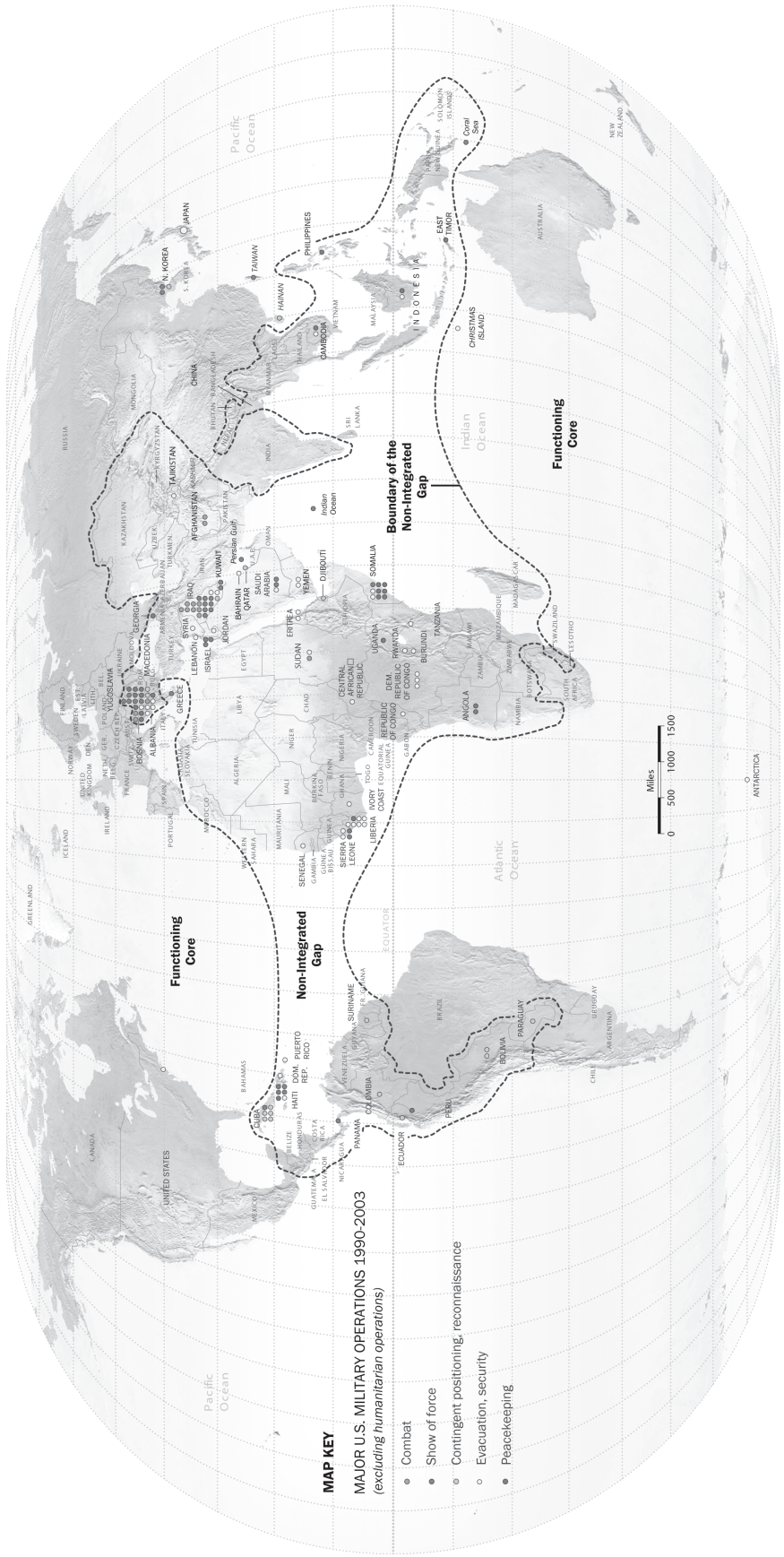
Conclusion

Such an approach would clearly demand the adoption of a "National Security" strategymaking approach that would go well beyond traditional "national" strategymaking regimes. The inclusion of multinational partners from the "community of democracies" in U.S. National Security, Defense, and Military strategy processes would be a natural direction in which to think and begin to move. National procurement, acquisition, production, and fielding of "capabilities" would require adjustments allowing for equal inclusions of both multinational partner nations and intergovernmental organizations and agencies from within the U.S. National Security System. To sustain such a joint, interagency,

intergovernmental, multinational (JIIM) approach, nothing less than a new "National" Security Act followed by a Defense Reorganization Act similar to the 1986 Goldwater-Nichols Act would be required. The United States government—all three branches; Federal, State and Local Authorities—would have to act in community and as a united Nation in order to achieve this next step toward sustainable security.

At the close of the Constitutional Convention of 1787, Benjamin Franklin on his way out of Independence Hall was pulled aside by a local stander-by and asked, "Well, Doctor, what kind of government have you given us—a Republic or a Monarchy?" Franklin responded, "Madam—a republic, if you can keep it."

As ironic as it is, in order to save the Nation and the Westphalian principles upon which our nation rests and prospers, the United States will need to take the hard and difficult steps of leadership toward a final disenthralling of our notions of "Nation" if we are to have a best hope of a sustainable security that allows us to keep the Republic given to us over 231 years ago.



Source: http://www.thomaspmbarnett.com/pnm/index.htm

Endnotes

1. President Abraham Lincoln (1862)

2. New Office of the Secretary of Defense (OSD) security policy construct, as of 2004.

3. By "Westphalia" I am referring to the current, and still dominant, international system—a system international politics and affairs premised on the ordering principle of the sovereignty of nation-states. This international system of nation-states (Modern Europe) that emerged from the convulsions of the 30 Years war in 1648 with the signing of the "Peace of Westphalia." The principles of international order that emerged in Europe after the conclusion of this peace treaty have become the foundation of the modern international system. The modern international system is based upon the principles of state sovereignty and international law. The Westphalian System is based on the following principles: Principle of internal sovereignty (based on the dynastic principle of hereditary sovereignty—*not* the mass popular national-states of today), Beginnings of a new concept of international law and diplomacy, and "Raison d'etat" (reason of state) replaces religion as the determining principle of alliances between European princes thus: primary loyalty to the state (and later, the nation).

4. Friedman (2003)

5. Term attributed to the tenets of U.S. security policy speaking to no safe harbor to terrorist organizations and the legitimacy of preventive war and preemptive attacks in light of "grave and growing dangers to national security as opposed to traditional "clear and present danger" (imminent danger) triggers.

6. See *The Defense Strategy Webpage* at, http://www.comw.org/qdr/preventivewar.html

7. President's *State of the Union Address*, January 2002.

8. Jock Covey, Michael Dziedzic, and Leonard Hawley, The Quest for Viable Peace: International Intervention and Strategies for Conflict Transformation (May 2005)

9. A reference to King Pyrrus' campaign against the Romans. Under Pyrrus' leadership the Hellenic city-states successfully defeated the "weaker" Roman foe in nearly every battle, yet in spite of these victories, the Greeks lost the wider war against the Romans. This led King Pyrrus himself to state, "another victory like this and we will be completely undone."

10. Stephen Krasner, *International Regimes* (1986)

11. Michael R. Gordon and Bernard E. Trainor, *Cobra II: The Inside Story of the Invasion and Occupation of Iraq* (New York: Pantheon, 2006), Isaiah Wilson III, "America's Anabasis," in Thomas Keaney and Thomas Mahnken (eds.), War in Iraq: Planning and Execution (New York: Routledge, 2007), and also Isaiah Wilson III, *Thinking Beyond War: Civil-Military Relations and Why America Fails to Win the Peace* (New York: Palgrave, 2007)

12. Hawley text

13. The parameters of why, when, where, and how a western power, particularly a democracy should intervene have been set during the modern era between *jus ad bellum* ("justice of war") and *jus in bello* ("justice in war") guideposts. The modern-age "just war" centers on the inviobility of nation-state territory, the prohibition of foreign party interferences in what is deemed to be the internal affairs of a sovereign nation-state (with limited and specific exceptions), and the obligation of outside parties to intervene (with community of nation-state sanction) on behalf of thwarting an aggressor state's unlawful violation of another state's territorial sovereignty (border incursions) and to take action to reestablish the *status quo ante.*

14. Hague and Geneva Conventions (1927)

15. Seymour Hersh, *New Yorker* articles

16. Gregory D. Foster, "The Long War Posture," *Baltimore Sun*, 26 April 2006.

17. Definition of "strategy" offered by Colonel Harry Summers, Jr. (On Strategy, 1986).

18. Defined as maintaining a delicate balance between the human need to improve lifestyles and feeling of well-being on one hand, and preserving natural resources and ecosystems, on which we and future generations depend. According

to the WCED, this is "development that meets the needs of the present without compromising the ability of future generations to meet their own needs." Sustainable development implies economic growth together with the protection of environmental quality, each reinforcing the other. The essence of this form of development is a stable relationship between human activities and the natural world, which does not diminish the prospects for future generations to enjoy a quality of life at least as good as our own. Many observers believe that participatory democracy, undominated by vested interests, is a prerequisite for achieving sustainable development (Source: Mintzer, 1992). There are over 100 definitions of sustainability and sustainable development, but the best known is the World Commission on Environment and Development's. This suggests that development is sustainable where it "meets the needs of the present without compromising the ability of future generations to meet their own needs." The term refers to achieving economic and social development in ways that do not exhaust a country's natural resources. See, also, Ashford (1995) and The World Commission on Environment and Development (1987). In the Commission's words: "…sustainable development is…a process of change in which the exploitation of resources, the direction of investments, the orientation of technological development, and institutional change are made consistent with the future as well as present needs".

19. Virgil's *The Aeneid*

20. Wilson (2004)

21. The 12-indicators are detailed in the three footnotes to follow.

22. (Governance) Is the state perceived as legitimate? Do public services function in an equitable manner? Are the rule of law and protection of human rights guaranteed? Do the ruling elites represent common interests equitably?

23. (Security) Does the security apparatus serve all citizens? Is the state threatened by hostile or unstable neighboring countries?

24. (Socioeconomic development) Are demographic trends controlled? Is there large scale movement of refugees and IDPs, creating humanitarian emergencies? Is society in the grip of a syndrome of reprisals-revenge-retaliation? Has a process of reconciliation been initiated? Is there a tendency to massive human flight? Is economic development even or are there severe inequities that divide communities? Is the country going through a phase of economic growth or recession?

25. This marries in a useful way with Dziedzic and Hawley and their proposed "viable peace" conditionality.

26. Pauline Baker pragmatically suggests a concise three-point version of these parameters: define a political framework, meet basic needs, and reconstruct the four key state institutions: judiciary, police, military and civil service. The advantage of this model, devised during the 1990s, is that it provides a clear conceptual framework. However, the tensions persisting in most of the countries that have recently emerged from inter-state conflicts show that the most difficult aspect has still to be taken into consideration: *recovery from the crisis by society itself*.

27A conceptual framework of this kind could also enable us to define the limits of a collective security mandate. Foreign interveners would leave as soon as they have established the base conditions for "sustainable security"—the desired end state. To define the appropriate exit strategy, certain requirements would need to be met: acceptance by the parties of a political decision, a system for the demilitarization/ disarmament of the warring factions, assurance that the population's basic needs are being covered, an acceptable level of public services, resumption of economic activity, and a properly functioning civil society.

Purpose of force in "sustainable security"— ***Proposition:***

Type		Purpose	Mode	Targets	Characteristics
Constructive / Restorative ("Constituent")		Achieve a state of "viable peace" in "areas" where crisis and conflict persist in the aftermath of an international intervention	Applications of "Integrated Power;" Mixes of physical and peaceful (lethal; non-lethal) Mix of direct and indirect applications of force	Simultaneous targeting of all vectors of civil-society (military; industrial; civilian / socio-political and cultural) Integrated and simultaneous through all available lines of operation (diplomatic; military; informational; economic; etc.)	
	Governance	Administer to the general public ("Deliver the goods") in a reliable and legitimate manner Build governing institutions and transfer governance to these forms as soon as practicable	"Community of Democracy" members with niche specialties in governance-building (Supported-Supporting nested-arrangements)	SAME AS ABOVE	1. Is the state perceived as legitimate? 2. Do public services function in an effective and equitable manner? 3. Are the rule of law and protection of human rights guaranteed? 4. Do ruling elites represent common interests equitably?
	Security	Build (man, equip, train, educate, etc.) Indigenous Security Forces Teach, mentor, inspire professional ethos and subordination of security forces to civilian authority Handover as soon as practicable	"Community of Democracy" members with niche specialties in security-building (Supported-Supporting nested-arrangements)	SAME AS ABOVE	1. Does the security apparatus serve all citizens? 2. Is the state threatened by hostile or unstable neighboring countries?
	Socioeconomic Development	Restore essential services Manage short-and near term "great expectations" Deal with unemployment Reestablish trade networks and financial markets (Foreign direct investments)	"Community of Democracy" members with niche specialties in economic development and socio-political development (Human Security) (Supported-Supporting nested-arrangements)	SAME AS ABOVE	1. Are demographic trends controlled? 2. Is there large scale movement of refugees and IDPs, creating humanitarian emergencies? 3. Is society in the grip of a syndrome of reprisal-revenge-retaliation? 4. Has a process of reconciliation been initiated? 5. Is there a tendency to massive human flight? 6. Is economic development even or are there severe inequities that divide communities? 7. Is the country going through a phase of economic growth or recession?

28. State of the Union, January 2002.

29. The doctrine, in short, formalized the "no safe harbor" warnings and, most tellingly, offered early signs of a shift in long-standing U.S. security policy from a policy of collective defense and security to one of increased unilateralism. The *West Point* speech witnessed the President eulogizing the days and utility of "containment" and deterrence as relevant and effective security strategies, and intimated strongly the intent of the United States to move in its future security strategies and force postures where preemption would become a strategy of greater instrumentality, to be triggered not just on the imminent threat of a *clear and present danger*, but rather on the grounds of "probable cause" and the perception of *grave and growing dangers* to the United States, its foreign friends and interests.

30. Morton Halperin

31. During the 1990s, we hoped for a long fought for, hard won, and well deserved "peace dividend" and in the hoping, failed to plan adequately for the challenges and opportunities offered by that day—and era's—COE. Our security interventions tended to be episodes of "muddling through" and examples of U.S. intervention policies and strategies that where either implemented with too little capabilities, too late to right a catastrophic wrong or for not long enough to make a significant long term difference for the better. More often the dilemma was a combination of all three shortcomings. Interventions participated in, and in most cases led by the USA in places like Somalia (1992-3), The Balkans (1992-1994), Haiti (1994), Rwanda (1994), Bosnia-Herzegovina (1995-1998), and Kosovo (1999-2000) could accurately be described as the "other than war" wars of the 1990s—interventions neither considered rhetorically nor in terms of national commitment as legitimately "wars" worthy of full commitments of national power—blood, treasure and reputation.

32. http://www.elissetche.org/dico/R.htm

33. JCS presentation (2005)

34. See, "Harmony and Disharmony," Report by the Combating Terrorism Center (CTC), United States Military Academy (West Point, NY, 2005).

35. Barnett (2003). Barnett's map may be downloaded from http://www.thomaspmbarnett.com/pnm/index.htm.

36. Russett, Bruce (1993). *Grasping the Democratic Peace*. Princeton University Press.

37. Source: Office of the Secretary of Defense, Policy (September 2005). This slide graphically displays how the USG is currently viewing (defining and dividing) the international system—as a system of governed, misgoverned, and ungoverned areas or spaces. As our policy sees it, and our national strategies are beginning to address it, efforts to democratize those areas deemed potential safe havens for terrorist extremists or transnational criminal actors and activities (failing states or areas) will frame the preventive aspects of the NSS, while those states and areas already "failed" —misgoverned and proven as sanctuary to intransigents—would be the focus of America's martial-led preemptive strategies. But how can (and how should) the military of liberal democratic states be used (employed) as a strategic tool of democratization?

38. A recent study by Patricia Sullivan, Associate Professor of Political Science at Georgia State University summarizes the "paradox" this way:

> Despite their immense war-fighting capacity, major power states failed to attain their primary political objective in almost 40% of their military operations against weak state and non-state targets since 1945. Why do strong states frequently fail to achieve even limited objectives when they use military force against vastly weaker targets? Evidence from recent research suggests that war outcomes are largely a function of strategic selection (war initiation), military-industrial capabilities, combat effectiveness, and strategy choice. But none of these factors can explain why a major power would ever lose an armed conflict with a weak target.

Sullivan's longitudinal study using an original data set of 127 post-WWII major power military intervention cases of her own construction, is a powerful contribution to the subject literature as it empirically confirms to some degree the existence of the paradox itself. Another highly acclaimed study by Gil Merom focused on the micro (domestic sources) variables that might explain the paradox—in his words, "how democracies fail in small wars in spite of their military superiority. Sullivan and Merom, and the bodies of scholarship their works represent, all ground their propositions in the notion that the kind of intervention ("war" in this case) really matters. But there is another lesson to be gathered, and thoroughly considered, from these studies (and others these represent): the paradox may be in part a consequence of scale with the cost of waging democracy having become far too high and unsustainable, particularly for single nation-states, to merit the investment in such a strategy in the first place.

39. Reem Heakal, "What Are Economies of Scale?" 27 January 2003, at: http://www.investopedia.com/articles/03/012703.asp

40. Francis Fukayama (1992)

41. Any assessment of the QDR should look for the degree of balance (or lack thereof) between stated goals (ends), intentions as reflected in the array of capabilities articulated in the QDR blueprint (ways), and the resources and resourcing (means) dedicated to making the states strategy a reality. This arrayal of ways and means should then balance with the realities (constraints and challenges) of the contemporary operating environment. The 2006 QDR offers the following blueprint for an effective transition from 20th to the 21st century:

20Th CENTURY	21St CENTURY
• From a peacetime tempo	…to a wartime sense of urgency
• From a time of reasonable predictability	…to an era of surprise and uncertainty
• From single-focused threats	…to multiple, complex challenges
• From conducting war against nations	…to conducting war in countries we are not at war with(safe havens)
• From "one-size-fits-all" deterrence	…to tailored deterrence for rogue powers, terrorists networks, and near-term competitors
• From responding after a crisis starts (reactive)	…to preventive actions so problems do not become crises (proactive)
• From crisis response	…to shaping the future
• From threat-based planning	…to capabilities-based planning
• From peacetime planning	…to rapid adaptive planning
• From a focus on kinetics	…to a focus on effects
• From 20th century processes	…to 21st century integrated approaches
• From static defense, garrison forces	…to mobile, expeditionary operations
• From under-resourced, standby forces (hollow units)	…to fully-equipped and fully-manned forces (combat ready units)
• From a battle-ready force (peace)	…to battle-hardened forces (war)
• From large institutionalized forces (tail)	…to more powerful operational capabilities (teeth)
• From major conventional combat operations	…to multiple irregular, asymmetric operations
• From separate military Service concepts of operation	…to joint and combined operations
• From forces that need to deconflict	…to integrated, interdependent forces
• From exposed forces forward	…to reaching back to CONUS to support expeditionary forces
• From an emphasis on ships, guns, tanks, and planes	…to focus on information, knowledge, and timely, actionable intelligence
• From massing forces	…to massing effects
• From set-piece maneuver and mass	…to agility and precision
• From single Service acquisition systems	…to joint portfolio management
• From broad-based industrial mobilization	…to targeted commercial solutions
• From Service and agency intelligence	…to truly Joint Information Operations Centers
• From vertical structures and processes (stovepipes)	…to more transparent, horizontal integration (matrix)
• From moving the user to the data	…to moving the data to the user
• From fragmented homeland assistance	…to integrated homeland security
• From static alliances	…to dynamic partnerships
• From predetermined alliances	…to dynamic partnerships
• From predetermined force-packages	…to tailored, flexible forces
• From the U.S. Military performing tasks	…to a focus on building partner capabilities
• From static post-operations analysis	…to dynamic diagnostics and real-time lessons learned
• From focusing on inputs (effort)	…to tracking outputs (results)
• From Department of Defense solutions	…to interagency approaches

42. Military operational referent to coordinated operations between Army, Air Force, Navy, and Marine Corps service arms.

43. Refer to 2003 Strategy Revisited article, Military Review (Jan-Feb 2003)….What a capabilities-based approach to security strategymaking does is largely tie strategic options to the wares on-hand, readily at-hand, and investment expenditures already spent or programmed. Where a purely threat-based approach has worrisome tendencies of eventually limiting the strategymaking paradigm to stagnant set-piece scenarios, at the other extreme, strategymaking heavily reliant on capabilities have opposite but equally worrisome potentialities for stagnancy. While too much emphasis on threats-of-the-day (or moment) can lead to a narrowing of security and strategic focus on certain regions at the expense of grave and growing threats in others, too much emphasis on capabilities—current and programmed wares—can lead to a means-based, or worse, a means–determined security worldview and strategic approach.

"Strategy Revisited" Propositions:

- That a capabilities-based approach to force planning will lead to a strategy-resources gap and a mismatch between capabilities and national policy intentions similar to its predecessor, the two-MTW construct.
- That such a paradigm wrongly privileges military strategy over security strategy, allowing capabilities and available resources to determine and define policy and strategy.
- That while there are advantages to be gained by politicians and decisionmakers from the strategic ambiguity on which a capabilities-based model centers, the tasks that strategists and the military face in formulating and implementing a coherent, effective national security policy and strategic posture that is more commensurate with the goals and responsibilities of a global power, such as the United States, will be all the more difficult to achieve.

This author, then and now, believes that a comprehensive ("holistic"), policy-based, force-structuring paradigm, which incorporates the advantages of threat- and capabilities-based approaches and which models, shapes, and sizes military forces (as well as other instruments of power) in light of national values, goals, interests, and obligations, is a paradigm most befitting a global hegemonic power such as the United States.

44. Richard Neustadt, *Presidential Power and the Modern Presidents: The Politics of Leadership from Roosevelt to Reagan*

45.Global perceptions of American power and hegemony vary. The prevalent view seems to be of a nation determined to maintain its position of dominance over the world-system;

- A nation committed to self-preservation . . . by any means necessary . . . and no longer willing to remain reactionary in its strategic postures;
- A nation committed to maintaining its lead position, by any means necessary;
- A nation dedicated to military intervention, preemption, and preventive war;
- A nation that prefers unilateralism, albeit willing and able to commit reluctantly to multilaterist approaches as last resort;
- A nation that maintains some strong commitments to human rights and the alleviation of human sufferings, and with a capacity for effectively treating these ills at localized levels;
- A nation with "commitment issues"—a nation that often times "fails to finish what it starts;"
- A nation committed to the fruits of democracy and to the concept (if not completely to the instrumentality) of "waging democracy;"

46. Not all of these statistics are particular to the United States; nor are all of them "worrisome" or suspect. All nation-states worry about their sovereignty and security, and justly so. All nation-states, communities, and human beings maintain the natural right of self-protection and self-preservation; a natural law that is also codified in domestic and international humanitarian law. The more important and troublesome stats are those that speak to (1) the dwindling effectiveness in individual nation-state strategic treatments to today's complex and globalized challenges, (2) the declining effectiveness in the nation-state's ability, unilaterally, to extract the benefits to national and global communities and their citizens that come with globalization, and (3) the degree of commitment among many national-states, particularly Westphalian state . . . and more specifically the United States, to nation-state based strategies – in spite of their proven declines in effectiveness.

47. Comparisons of United States hegemony with the rise and fall of Rome from republic to imperial state have always been popular historical exercises. In the late 1970s and 1980s the enterprise gained renewed popularity with the works of Paul Kennedy and others in an era of growing concern with what at that time seemed to be a sunset of American power in the dawn of a rising Japan. In the aftermath of 9/11, there has come a third-wave of empires comparative studies, seeking contemporary answers to old questions – whither Pax Americana?

48. Edward Luttwak, Strategy: The Logic of War and Peace (Cambridge: Belknap Press, 2001).

49. General Peter Schoomaker (CSA) (2003)

50. Wilson (2003:2006)

51. Wilson (2002)

52. Robert Art, *The Uses of Force*

53. Amitai Etzioni (2004)

54. See Clausewitz (1832)

55. Waltz (1954)

Addressing the Curse of the 21st Century

Considerations and Updates to National Strategy for Victory in Iraq (NSVI)

Major Kathleen M. Meilahn, USAFR

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> *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)

There are two problems that must be solved for the United States to achieve victory in Iraq: 1) Irregular Threats to U.S. and Coalition Forces in Iraq, and 2) Need for Greater Insight into Iraq Cultural Context. This is transferable to the broader region and will apply to future U.S. conflicts.

General Situation

The Government of Iraq (GoI) is facing a crisis of legitimacy as a result of power struggles undertaken under the auspices of sectarianism, resulting in large scale civil violence.

We are entering a world of shadows. Earlier this year General Abizaid said, "The curse of the 21st century is undoubtedly going to be getting diverse people of diverse religions to live together."[1] Although left unsaid, the broader implication is that the challenge facing the United States and the Multi-National Force-Iraq (MNF-I) is getting people living in diverse cultural contexts to cooperate and live along side each other peacefully. Violence due to power struggles among tribes and religious sects are complicated by a reverse-phase (top down) insurgent resistance, al Qaeda in Iraq (AQI) activity, local jihadists or religious extremists, terrorists, foreign fighters, militias and criminals. Fear and violence lead to popular support of non-state destabilizing elements to ensure individual basic survival. Such irregular threats are what the United States and partners can expect to confront in future conflicts, as "our conventional military preeminence virtually guarantees adversaries will resort to irregular means."[2]

Background

The National Strategy for Victory in Iraq (NSVI) lacks cultural emphasis to inform decision-making and operations toward winning support of the populace.

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1. Associated Press article, "Troop Drawdown In Iraq A Delicate Balance," *The New York Times* on the Web, March 7, 2006.

2. "Countering Irregular Threats: A Comprehensive Approach," USMC, 14 June 2006.

In November 2005, the White House produced the NSVI in response to the Murtha Resolution and other congressional measures aimed at identifying just exactly what it would take for the United States to get her troops out of Iraq. The July 2006 GAO report, "Rebuilding Iraq: More Comprehensive National Strategy Needed to Help Achieve U.S. Goals and Overcome Challenges" identified a number of weaknesses in the NSVI and associated documents. One issue remaining unaddressed is that the NSVI (and supporting documents) is anemic in its non-inclusion of "information" aspects related to cultural understanding, effective engagement, and communication in a culturally appropriate context, and ideology management—or, for ease of discussion: Strategic Insight, Influence, and Ideology Management (SIIIM). Security, Economic and Political Tracks of interagency strategic guidance ignore this critical aspect required to win the Peace and counter irregular threats (counter insurgency, or COIN).

Failure to include cultural understanding as part of interagency strategy contributed to misinformed decision-making. This helped create conditions for the ongoing irregular threats and sectarian strife that challenge the MNF-I coalition today and hampers efforts toward establishing a secure, stable Iraq. COIN, which embodies the indirect approach to warfare, requires long-term comprehensive approaches that fall outside of solely military means and seeks to gain the support of the populace while minimizing the opposition's influence. The COIN precepts are not only useful against insurgents, they are useful in countering other unconventional or irregular threats (such as in a civil war) and in gaining support of the popular will.

Strategic Insight, Influence and Ideology Management (SIIIM) and *Protean Insights*

"I do not want the peace that passeth understanding.
I want the understanding which bringeth peace."

—Helen Keller

U.S. Government (USG) policy, strategy, plans and operations would benefit from increased emphasis on Countering Irregular Threats (Counter-Insurgency/COIN) and its cultural context enablers: Strategic Insight, Influence and Ideology Management (SIIIM).

If the perfect Grand Strategy for a state is to achieve its will without military engagement and in the end "Win the Peace," SIIIM is the enabler. SIIIM is an umbrella term addressing cultural understanding, effective communication in a culturally appropriate context, and ideology management. It is an instrument of the state, overlaps and informs a number of interagency activities both on the ground in Iraq and back at home: Training, Education & Doctrine; Diplomacy; Information Operations; Civil Affairs; Strategic Intelligence; Public Affairs, etc.

SIIIM is a Force for Peace that is aligned with the ***Protean Insights***[3] which can provide the impetus for the paradigm shift necessary to meet the level of understanding required in evaluation of a future environment full of irregular threats. SIIIM applies to *Starlight*, wherein predictive foresight capacity and the ability to visualize different perceptions from different view points leads to a need for strategic

3. In 1999, the National Reconnaissance Office (NRO) organized a workshop attended by multi-disciplinarians who evaluated new ways to consider problem sets and future scenarios. From this meeting, a set of "Protean Insights" were developed, providing vision into what will affect the future, a new way of considering actions and evaluating potential unintended consequences and second and third order effects of decisions/actions.

information (at the heart of the SIIIM concept). It applies to *Herds*, wherein people and ideas are on the move, affecting loyalties and affinities (see discussion on tribes and sectarian divisions). It applies to *Wealth* wherein non-traditional currencies become capacities for influence that can alter strategic positions and create vulnerabilities (such as cultural understanding, or the lack thereof). SIIIM informs *Power* which addresses how distribution and instruments of power can shift (i.e. Al Qaeda and Associated Movement (AQAM), and other irregular threats utilizing religious influence). It applies to *Threat-Opportunity* wherein anticipation of threat requires understanding of pre-conditions and manifestations of threats, and the fact that every threat is someone else's opportunity (at the heart of the irregular threats the USG and MNF-I face in Iraq today). The primary Protean domain of action and influence associated with SIIIM is Psychological Media, because this relates to conduits used to win the hearts and minds of people.

A tool for the USG to utilize toward achievement of the grand strategy in Iraq and the region, SIIIM embodies the indirect approach to warfare. It informs decision-making and enables culturally appropriate communications, diplomacy, negotiation, conflict management, and relationship building—all activities critical to "winning the hearts and minds," required to counter irregular threats and insurgencies. It is central to Peacekeeping and Stability Operations (PKSO) as it enables management of conflict (mediation and arbitration intra- and inter-culturally) and can aid in bridging sectarian gaps toward formation of a central unity government that is seen by the Iraqi populace as legitimate.

For DoD, SIIIM is a force multiplier. Although it extends far beyond simply this, SIIIM is intimately tied into what the Army calls Information Operations, which are composed of 5 main activities: Operations Security (OPSEC), PSYOPS, military deception, electronic warfare (EW), and computer network operations (CNO). It has four supporting domains: physical security, information assurance, intelligence, surveillance and reconnaissance (ISR) and command, control, communications and computers (C4) systems. These activities are not strategically defined nor coordinated across USG agencies. SIIIM also lends itself to Network Centric Warfare (NCW) and the supporting Operational Net Assessment (ONA) concept as SIIIM enhances the situational awareness at the heart of these concepts, expanding upon the current doctrinally limited view provided by traditional intelligence gathering and analysis. NCW includes actions in four domains: physical, information, cognitive and social. Of these, the last three can be informed by SIIIM.

National emphasis on SIIIM would encourage interagency activity and enable activation of USG energy and assets on multiple levels to create a synchronized effort and a systems approach. SIIIM should be a precursor to, aid and enable policy, strategy, plans, and operations and would prevent duplication of work as well as enhance ongoing activities.

Especially in the Iraq case, SIIIM and the *Protean Insights* apply themselves well to deterrence: "the ability of one nation to cause the opposition to choose conflict resolution in an other-than-violent manner."[4] During this ongoing Iraq Stability and Reconstruction (S&R) operation, the challenge is post-conflict resolution. There is a need to know and understand local cultural values, thereby be able to effectively make assumptions, and forecast potential intended and unintended consequences of MNF-I or USG actions and reactions, diplomacy or other efforts. Application and employment of *Protean Insights* in USG development of policy, national strategy, planning and operations would be

4. Waddell, William O., *Proteus: New Insights for a New Age*, Center for Strategic Leadership, U.S. Army War College, p.1.

beneficial not only for the Iraq operation, but also for Afghanistan, management of the Arab-Israeli conflict, in the case of Lebanon and in negotiation with regional powers as the United States attempts to assert her influence in the region.

SIIIM and the *Protean Insights* will also prevent policy decisions formulated on erroneous assumptions as a result of viewing the world through ones' own (Western context) lens rather than understanding the impact USG actions will have on another due to his/her point of view point. Keeping SIIIM and *Protean Insights* in mind, USG actors can do as the cultural anthropologists do and ask, "What does this look like from the other culture's point of view?"

Strategic Insight *is cultural understanding within context.* It includes *Strategic Intelligence*: knowledge of the indigenous population's societal organizational structures, networks, power structures (political or economic elites, hierarchy, etc), belief systems, values, biases, tendencies, religious ideology, language, distribution of ethnic groups, how they interpret their own history, etc. In the context of Iraq, this means understanding tribal function and organization, relations within/between tribes, kinship ties, Islamic based legitimate authority versus tribal authority. Strategic Insight means being able to distinguish the difference between Islamic Law (*shari'a*) and cultural norms, being able to answer the question: "What is it the people are fighting for?" and importantly, it means understanding where there is an overlap with Western conceptions (how, why, and where we can meet the "other" on common ground). Strategic Insight includes knowledge of all civil society groups as well as organized official political or business groups. All of this is informed by the local and regional history, relationships, and the understanding by each group or faction of their own unique experience.

Strategic Insight informs diplomacy, policy, strategy, planning, and operations. It allows USG personnel to anticipate actions or reactions of the target/local population as a result of their socio-ethno-religious cultural historical context. Such *Strategic Insight* will enhance diplomatic endeavors, intelligence collections, and military operations. Understanding what the conflict is about in PKSO such as in Iraq, the former Yugoslavia, Somalia, or other "hot spots" will allow the USG to make better decisions, informed policy and strategy, and enable effective operational planning. Critically, it will help avoid negative unintended consequences or second/third order affects.

Strategic Insight leads to and allows for exerting effective *Strategic Influence*—enabling and encouraging outcomes that are desirable—or in other words successfully wielding power.

Strategic Influence *is achieving USG Will—changing (winning) the hearts of the people.* It is effectively enabling and encouraging outcomes that are desirable for U.S. ends—or in other words successfully wielding power. To be most effective, Strategic Influence occurs via responding to the needs of the people. This concept is particularly applicable to countering irregular threats and to PKSO as countering insurgency successfully creates conditions of security which enable state building and peace making activities.

The USG, via the NSVI, should seek to create alliances and bridge differences among groups. The USG should engage appropriate religious or cultural Legitimate Authorities and ensure that it is in the leader's (and the group's) best interest to cooperate with the coalition. USG should encourage and enable conflict management in accordance with culturally appropriate peacemaking and reconciliation traditions between Coalition and Iraqis, Intra-Iraqi and Intra-Muslim groups. In keeping with tradition, USG should utilize appropriate third parties and obtain international assistance for this role.

Strategic Ideology Management *is changing (winning) the minds of the people.* USG attempts to shape public perceptions, perspectives, and opinions via Psychological Operations, Public Affairs, Strategic Communications (StratCom) and Information Operations as well as simple relationship management between U.S. forces and Iraqis. Unfortunately, the USG Achilles' Heel is a limited ability to understand non-Western cultures. If StratCom were better informed by *Strategic Insight*, communications directed at target audiences, whether leadership or populace, would be more effective. We have often failed to reach and affect the target audience, or used the wrong message via the wrong medium at the wrong time. Due to cultural misunderstandings, the USG and MNF-I have failed upon occasion to engage appropriate authorities—appropriately. Due to U.S. and MNF-I frequent failure to make amends for perceived insults or injustices in a culturally appropriate manner, Iraqis are now out for *intiqua'am* (revenge) against the coalition forces.

President Bush said "We have to fight ideology with ideology."[5] The USG should shape public perceptions, perspectives, and opinions. This means using *Strategic Insight* of Islamic/cultural norms versus Western norms and applying that appropriately. This is where the rubber meets the road in countering irregular threats and in bridging differences among people. *Strategic Ideology Management* applies directly to use of "information" in diplomacy or warfare, in execution of national power, and requires an understanding of the opposite party which is provided by *Strategic Insight*—something the USG needs to work on to increase efficacy.

Due to organizational structure within the United States there is a requirement for leadership at the highest levels to provide vision and clarity in StratCom. SIIIM and *Protean Insights* can provide assistance with development of themes and messages that will be used during this interagency effort in order to ensure a cohesive message.

Discussion

Iraq today is a failed state undergoing crisis. This is a reverse-phase of classic insurgency and guerilla warfare[6] and as such MNF-I COIN operations need to be re-evaluated in that context. The USG and MNF-I attempted to execute democracy-centered-development in Iraq immediately following Phase III primary combat operations. Hampered by high security costs and insurgent sabotage as well as other management difficulties, use of funds was inefficient and infrastructure redevelopment remains inadequate.

Unmanaged irregular threats challenge the GOI's capacity to provide services due to lack of security (both the purview of the state), which reduces the legitimacy of the state's authority in the eyes of the people. Large numbers of Iraqis have looked to authorities such as tribal chiefs, clerics, and militia leaders to provide basic services and security because the central government does not yet have the capacity. Often they turn to a *sheikh* who encourages or allows insurgent activity or sectarian violence. One example of this is Muqtada al-Sadr, although now it appears that he has lost control of his own militia as he calls for them not to participate in sectarian violence yet they continue to do so.

5. 21 August 2006 speech by President George W. Bush.

6. Gavrilis, James, "Understanding Insurgency and Counterinsurgency in Iraq: Context Counts," draft, forthcoming publication, Spring 2007.

As the Sunni community feels marginalized and increasingly left out of the government apparatus due to situations such as the 11 Oct 2006 passage of the Federal Regions Formation Law (FRFL),[7] the crisis of legitimacy is intensified.

Engagement with tribal and religious leaders to obtain their cooperation and support for both the coalition forces and the central Iraqi Government is critical as they are in a position to influence the population, thus are key to successful counter-insurgency as well as good governance. There is a tremendous, previously ignored, capacity for activation of the populace through traditional leaders. Historically, tribal *sheikh* and religious leaders have provided primary leadership to the populace, and their authority was strengthened under the British occupation and also the Saddam Hussein regime. The U.S. and coalition should capitalize upon the leadership of the tribal *sheikh*, religious leaders (such as the Grand Ayatollah al-Sistani or other Ayatollahs at an Najaf), and even militia leaders such as al Sadr to unleash that capacity.

Tribes and Iraqi Authorities/Leaders

Tribes are the heart and soul of Iraqi civil society and historically have acted as political institutions, social organizations and economic centers. There are an estimated 150 tribes (30 are most influential) and three quarters of the population are members. The USG should encourage the GoI to consider senior *sheikh* who currently lead tribes or tribal federations (*qabila*) for governmental administrative positions such as City Manager, Provincial Advisor, etc. Tribal leaders can be encouraged, through GoI channels, to participate in reconstruction efforts, thus providing employment and ensuring constructive activity. Alternatively MNF-I and GoI should hold tribal leaders accountable for the disruptive activities of their members and ensure it is in the tribe's best interest to cooperate with the coalition. For example, a certain level of security in tribal geographic area should be required prior to continuing reconstruction projects that would benefit the tribe.

In this way, tribes can play a role as an element of state power, and tribal alliances can support the state via utilization of existing institutional structures to deliver infrastructure services and security to the populace. This would allow the *sheikh* to maintain traditional authority, but within the political or administrative central government structure. Integrating traditional authorities into the government apparatus, thus obtaining their cooperation, allows them continue acting in their leadership role yet strengthens and builds up state governance by providing access to, and control within, currently challenged provincial and local areas. Muqtada al Sadr is a prime candidate for such transformation.

Unfortunately a number of tribal leaders, especially Sunni in al Anbar Province, have defected to Syria and other states. It would be necessary for the GoI to undertake efforts to bring them back into the fold, literally and figuratively. This would require increased efforts against AQI and the Sunni tribes and elements that are cooperating with the insurgent activity in order to create a situation secure enough that the exiled tribal leaders would be willing to return.

A number of currently non-cooperating tribes could be brought into political society as well as into the counter-insurgency fight, and in some cases can be brought out of the insurgency. To do this, it is necessary to identify individuals or elements for potential collaboration that are disgruntled or seeking to gain (or maintain/re-gain) political or economic power. MNF-I should seek to obtain

7. The FRFL passed despite a Sunni boycott and the boycott of other factions, which proved that the Sunni community is not required to pass legislation, nor are their interests going to be represented.

political support and "buy in," or at least tactical collaboration from religious leaders, tribal leaders, militia leaders (who are seen by the populace as legitimate authorities). Good targets for this Strategic Influence effort include some Sunni elements who are struggling to maintain control in al-Anbar Province, former Ba'athists, Muqtada al Sadr (a nationalist) and al Sistani or other honorifics.

There are three things which must be defeated in the Iraqi people to gain cooperation against insurgents: fear, apathy and empathy for insurgents.[8] Ensuring security and providing state services addresses their fears regarding safety and livelihood, but right now is MNF-I's greatest challenge. Apathy and empathy for insurgents or those acting out in sectarian violence can be defeated via SIIIM activities such as culturally appropriate communications, diplomacy, negotiation, conflict management, and relationship building—all activities critical to "winning the hearts and minds" of the Iraqi people. It is not a simple solution, as countering irregular threats is a long term endeavor requiring long term comprehensive approaches that fall outside of discretely military means.

A number of Iraqi tribal elements were disgruntled under the Saddam Hussein regime, including houses (*bayt*) within his own federation (*qabila*) called al-Takarita and within his Albu Nasir tribe. These tribal elements could be brought into political and civil society as well as into the counter-insurgency fight. The insurgency largely consists of former Ba'athists and members of the regime, and elements that were alienated for one reason or another may be willing to aid the coalition and the new Iraqi government in opposing the insurgents if they can be provided with incentives to cooperate. These tribal *sheikhs* will require inclusion in the political process and official recognition as legitimate authorities within Iraq, as well as likely economic incentives in order to cooperate. Cessation of the de-Ba'athification process will be a critical precursor to their inclusion and cooperation.

Former elements of the Ba'ath Party who were not "active members" (within the four most senior ranks of the party, *'adhu 'amil*), and who do not have a record of crimes against humanity or serious corruption could also be considered for integration into the GoI (MoI, MoD, etc.) and into the new Iraqi political society.

Tribal *sheikhs* who have turned into "warlords" of sorts such as Muqtada al-Sadr can be integrated into the unity government and convinced to cooperate, although this will require GoI concurrence and the influence of honorifics such as Grand Ayatolla al-Sistani during such negotiations. It is imperative that the USG to remain out of the picture in this case. Al-Sadr is a nationalist who is against foreign troops in Iraq, and his movement has already joined the United Iraqi Alliance (UIA), a good first step toward political integration. He is considered a religious leader (although some claim him to be a religious student, or *talib*) but his authority stems from traditional means. He is a *sheikh* who has capitalized on family and tribal honor (his father was a Grand Ayatollah, and his uncle is a former leader), and his status as a *sayyid* (descendant of the Prophet Mohammed). These combined sources of legitimacy make him an authority figure that must be addressed in a constructive manner, or he and his followers will continue to be a force for instability in Iraq. Additionally his ability to provide basic services to his followers is the critical, basic survival mechanism of his influence. If the GoI could capitalize on this talent to provide for the people and extend it into greater Iraq, it would mitigate the problems that motivate the populace to participate in sectarian violence or insurgent activity.

8. General Zinni, interview, November 2005.

Conflict Management

One key insurgency related issue that must be addressed is the fact that the coalition is currently experiencing tribal revolts for reasons of revenge (*intiqaam*). "Many of the attacks against the occupying forces are acts of revenge for assaulted family members, or people who were killed during raids, demonstrations or checkpoints."[9] There is anger over tribal or family deaths caused by coalition operations but also due to what is seen as public humiliation of *sheikh.* As coalition forces raided *sheikh* homes due to lack of information on insurgent identities, forces would push *sheikh* to the ground and place a booted foot on them at gunpoint (as happened to many others in the populace during raids). This type of activity appears normal to MNF-I forces, but in the cultural context it is seen as an insult to the leader and the tribe. This has provided the basis for *intiqaam,* especially among the Sunni tribes, since this was viewed as a blatant act of disregard and disrespect for such a respected member of society to be treated in such a manner. Additionally homes, businesses and other property have been damaged by coalition activity. Cultural conflict management practices dictate that there should be a settlement following death, insult, or destruction of property via payment of *diyya*. And apologies would be appropriate.

To be successful in Iraq, U.S. authorities must reach outside of Western conflict resolution tradition and theory to understand and utilize Islamic and cultural methods of managing conflict. *Sulha* (the peace-making tradition) and *musalaha* (reconciliation) can be utilized to manage conflict between the coalition forces and tribes or families that seek revenge. It can also be enacted on an international level to settle emerging diplomatic crises, on inter-Arabic or inter-Islamic sectarian levels using a legitimate authority as a third party.

To mediate ongoing civil conflicts in Iraq, the U.S. should attempt to reinvigorate al Maliki's National Reconciliation and Dialogue Project. Look to legitimate authorities within Iraq (leaders such as Grand Ayatollah al-Sistani) to act as capable third parties. Or, regional/international religious or political leaders such as Saudi King Abdullah, Malaysian or Indonesian leaders would be acceptable and appropriate Third Parties. Emphasis on Islamic values of *salam* (peace), *al-Rahim* (compassion) and tolerance to address traditional ideals such as the *ummah* (Islamic community), *tawhid* (unity), consideration for the next generation, and the tradition of forgiveness and dignity can help re-establish harmony and solidarity in Iraq.

On a grassroots level, an Iraqi *Reconciliation Commission* would be helpful to alleviate conflict between coalition and Iraqis, intra-Iraqi and intra-Muslim groups. Assistance for this endeavor can be obtained via subject matter experts such as Muslim/Arab academics in the Peace and Conflict Resolution field who specialize in both Western and Middle Eastern conflict management and mediation. Due to the role of memory in shaping culture, Iraqis will need to develop a mechanism specific to their own customs and traditions (i.e. *musalahah*) for 'truth telling', healing, and reconciliation."[10]

Public perceptions and expectations should be managed via media, communications with Iraqi *sheikh*, and other resources to mitigate U.S. image as an occupying power, build consensus for a unified government and democracy, and provide honest discourse that lets Iraqi people know that if they continue to disrupt stabilization and reconstruction efforts, the U.S. will not militarily disengage from

9. Riverbend [pseud.]. "Sheiks and Tribes," *Baghdad Burning*, September 29, 2003, http://riverbendblog.blogspot.com/2003_09_01_riverbendblog_archive.html.

10. Said, Abdul Aziz, "Unity in Diversity: The Cultural Mosaic of Iraq," for The First Cultural Forum on Iraq UNESCO Headquarters, Paris, 26 – 27 May 2004.

Iraq. The Iraqis should understand in clear terms that they are the key to stability and success, and that their cooperation is central to coalition disengagement and re-establishment of Iraq's sovereignty.

Synergies and Opportunities—SIIIM and the Current NSVI Tracks

The ***Security Track*** seeks to exploit fissures but ignores creation of alliances, winning over the population, or conduct of operations in a culturally appropriate context. It fails to address security provided by non-state individuals, which thus usurp state authority. Security would be enabled by immediate emphasis on appropriate activities to counter irregular threats such as the insurgents, militias, sectarian factions, terrorists, etc. Consideration should be given to an increase in troop numbers in accordance with counter-insurgency doctrine in order to succeed in COIN operations, evolve away from the currently ongoing mostly conventional warfare activity, and back to unconventional warfare methods in order to meet the threat. Special Operations activities should be increased, conventional forces should be trained in specialized COIN activities that would benefit day to day operations, and supporting efforts such as SIIIM should become a high priority activity. Culturally appropriate methods of conflict management should be used by MNF-I to moderate animosity of the populace.

The ***Economic Track*** seeks to sustain security forces in COIN efforts via reconstruction and development which is sabotaged by terrorists and insurgents. This track will be enabled via provision of security which will in turn allow effective reconstruction, and SIIIM is central to effectively countering the irregular threats which destabilize Iraq. Security will enable efficient use of funding and national resources, prevent infrastructure destruction following development, and ensure the safety of personnel engaged in such activities. The DoD should provide security to Provincial Reconstruction Teams in order to enable their activities and progress.

The ***Political Track*** will most benefit by any activities that aid in ensuring the legitimacy of the GoI's state authority. This track seeks to enable good governance via effective and legitimate institutions and authorities, to enable inter-communal and cross-sectarian cooperation, reconciliation and rule of law. However, according to the 2005 Department of State (DoS) Human Rights Report, Iraq is facing a problem of "misappropriation of official authority by sectarian, criminal, terrorist and insurgent groups." For a state to exist,[11] the dominated (citizens) must obey the authority that is claimed by those in power, and violence within its borders should be the extension of state power (through control of force such as the police force or the military forces). It is important for the USG to continue its *Strategic Influence* to ensure the GoI's transparency, good governance and the rule of law, to reduce sectarian violence perpetrated from within the MoI and MoD, and to enable conflict management activities within Iraq. This current crisis of legitimacy is the critical problem to be solved in order to stabilize Iraq.

Conclusion

Interagency cooperation is imperative for mission success, and whether or not the Administration chooses to include SIIIM or other Protean Insights into its strategic considerations or not, the DoD can lead the way via its own example and integration of these strategic concepts. SIIIM is a Force Multiplier and a Force for Peace.

11. Weber, Max, *Economy and Society: An Outline of Interpretive Sociology*, New York, Bedminster Press, 1968.

Recommendation

Add Strategic Insight, Influence and Ideology Management (SIIIM) to the NSVI.

SUMMARY

Interagency Cooperation/Issues:

- SIIIM should be integrated into planning processes of all agencies.
- Security for reconstruction activities is necessary before Economic Track can effectively achieve reconstruction and development goals. Until Congress allocates security funding to the DoS, the DoD must be tasked to provide reconstruction security.
- DoS cannot direct Iraq assignments for personnel and fill critical positions. Allow Department of State to direct assignment of Foreign Service Officers to Iraq for crucial assignments at the U.S. Embassy or PRTs.
- Coordinate interagency reporting on NSVI progress. DoD reports do not link Tracks to conditions for stabilizing Iraq, nor do they track progress in meeting NSVI goals.
- MNF-I and Embassy Baghdad must complete a Joint Campaign Plan ASAP. The chain of command must be clear. One person must be responsible and all others report to him/her.

DoD–The Way Ahead:

- Establish a policy of engaging appropriate religious or culturally perceived Legitimate Authorities directly to obtain their leadership assistance through Coalition-Iraqi grass roots civil-military relationship building and coordination, in accordance with appropriate rank structure through mediators if required (Brigade Commanders address Tribal Leaders, Gen Casey address Ayatollahs).
- Hold Tribal Leaders accountable for the disruptive activities of their members (ensure it is in the tribe's best interest to cooperate with MNF-I. Require a certain level of security in tribal geographic area prior to continuing reconstruction projects. Tribal leaders can be encouraged, through GoI channels, to participate in reconstruction, providing employment and ensuring constructive activity.
- Encourage/enable grass roots s*hura,* the peace-making tradition, in accordance with culturally appropriate conflict management and reconciliation traditions between Coalition and Iraqis, Intra-Iraqi and Intra-Muslim groups via development of an Iraqi *Reconciliation Commission*. Obtain assistance from SMEs with regional experience such as Muslim/Arab academics in the Peace and Conflict Resolution field specializing in both Western and Middle Eastern concepts.
- Identify and utilize appropriate Third Parties as mediators for use on the grass roots level. On the national level, obtain international assistance (i.e. Saudi/Jordan/Qatar, the Organization of the Islamic Conference (OIC), Malaysian or Indonesian political or Muslim leaders/authorities).

- Encourage GoI to consider senior *sheikh* currently leading tribes or tribal federations (*qabila*) for governmental administrative positions such as City Manager, Provincial Advisor, etc.

- Establish a policy of utilizing cultural conflict resolution/management practices such as *sulha* (the face-saving conflict management ritual), *musalaha* (reconciliation) and payment of *diyya* (making reparations for damages, asking for forgiveness) during Coalition engagement with Iraqis when offenses are made to individuals, as reparations for injury or death, and for damage to property.

- Provide DoD security assistance to PRTs to enable their development activities.

- Identify elements for potential collaboration. Obtain political support—or at least tactical collaboration—from religious, tribal, or militia leaders (seen by the populace as legitimate authorities) and who may be currently disenfranchised by other actors in Iraq. For example, Sunni elements such as exile elites of Anbar Central Council (ACC) or the Emergency Council to Rescue al Anbar (ECRA) who are struggling to maintain control in al-Anbar Province, Muqtada al Sadr (a nationalist) and top Shi'ia Ayatollahs. SCIRI should be marginalized for its destabilizing actions.

- Revive the National Reconciliation and Dialogue Project by requesting assistance from honorifics and international leaders for encouragement and practical assistance with mediation and dialogue.

- Increase use of COIN tactics/techniques on other non-AQI/former Ba'athist irregular threats.

- Request an increase in troop numbers accordingly to succeed in COIN operations and evolve away from conventional warfare to unconventional means in order to meet the threat.

- During the first phase of pre-deployment, Commanders of units, MTTs and PRTs should attend a Cultural Orientation block of instruction (including history, ethnic, religious and tribal orientation, examples where cultural awareness and ineptness undermined coalition efforts, key phrases and greetings) similar to the MNF-I COIN Center for Excellence curriculum in the AOR. Open the course attendance to DoS personnel and establish cross-seeding of insight via an ISF version.

- Work with the Pentagon to increase the number of Arabic, Farsi, Dari, Pashto, Hebrew, French linguists and Foreign Area Officers 1) trained and 2) in the AOR. Ensure Advisors are trained.

- Influence DoD Personnel Management to create assignment and promotion incentive structures that reward members with cultural expertise.

- Montgomery McFate[12] has a number of additional ideas:

  – Reach out to the Office of Science & Technology Policy (OSTP) which advises the President on activities with strategic impact and could coordinate social science (cultural

12. McFate, Montgomery, "Social Science and Stability Operations," Council on Foreign Relations Special Report, draft, forthcoming October/November 2006.

understanding-related) research across the USG to enhance future DoD cultural insight training and policy.

– Create a data base of cultural information such as tribal relationships, "dos and don'ts," key phrases and greetings, etc that can be utilized in the field via coordination by PKSOI, CAOCL, the Army's Cultural Awareness training at Ft. Huachuca, and other DoD centers.

– Utilize/spend the DoD budget for social science research related to cultural issues.

– Contract SMEs in the short term for advisor roles in Iraq.

– Army Research Institute for the Behavioral and Social Sciences (ARI) can direct efforts toward anthropological and cultural research that will inform SIIIM.

– National Science Foundation involvement in research of SIIIM subjects.

– National Institutes of Health involvement in research of SIIIM subjects.

– DoS Bureau of Intelligence and Research (INR) involvement in SIIIM research.

– Leverage NGO/business sector knowledge in short term and on the ground in Iraq.

Appendix I – Background and Track Issues, Synergies, Opportunities and Implications

BACKGROUND

The National Strategy for Victory in Iraq (NSVI) outlines goals and measures progress along three tracks—Security, Economic, and Political. It does not integrate Strategic Insight, Influence, and Ideology Management (SIIIM). The U.S. and coalition forces should capitalize on Iraqi *sheikhs* as a source of power outside of Baghdad and utilize these leaders and legitimate authorities toward their goals. This fight against irregular threats should be primarily concerned with "winning the hearts and minds."

TRACK ISSUES, SYNERGIES, OPPORTUNITIES AND IMPLICATIONS

Security Track

Counter-Insurgency (COIN) Operations:

- SIIIM concepts directly enable COIN operations. Basic cultural understanding is useful for conventional forces to ensure culturally appropriate operations, and enable the task of "winning hearts and minds" of the Iraqi population, a critical task of COIN operations. This skill set can also be appropriately applied for StratCom, by U.S. Army Foreign Service Officers and Psychological Operations Officers as well as Special Forces.

- The United States is "trying to apply classic models of counterinsurgency that just don't fit" according to some military analysts. Per LTC Gavrilis, Iraq is a reverse-phase of classic insurgency and guerilla warfare and in fact Saddam had not surrendered but rather continued the war unconventionally, among other variances.

- The Multi-National force–Iraq (MNF-I) developed COIN leader training called the Counterinsurgency Center for Excellence (CCFE) which trains coalition unit and transition team as well as Iraqi Army company, battalion and brigade leaders. This training should be provided for members of the MTTs and PRTs, and should be open to DoS personnel. A cross-training course for the ISF should be created to encourage better cross-cultural understanding and communication.

- Foreign *jihadists* are currently only a minor threat and a "tactical menace."

- Use of cultural conflict resolution practices are not systemically used by the coalition forces, such as *sulha* (peace-making), *musalaha* (reconciliation), payment of *diya* ("blood money" or reparations) As a result, much of the insurgency the coalition faces is a result of retaliatory revenge (*intiqaam*).

- Integrating cultural understanding and culturally appropriate communications and relationship building into the command climate would aid in COIN goals.

- Insurgent groups provide identity, purpose, and community in addition to physical, economic, and psychological security; however they also lack an ideological center of

gravity due to ethno-religious divisions, resurgence of tribalism and erosion of national identities.[13]

Militias / Sectarian Strife:

- Due to sectarian strife, possibly more than 400,000 Iraqi people have fled their homes since the beginning of the war.

- Muqtada al-Sadr and his militia are strong nationalists, and stridently opposed to the presence of foreign soldiers in Iraq. Due to his nationalist stance, there is potential for unofficial coalition cooperation with him as well as Iraqi government diplomacy and coordination. U.S. contact and diplomacy must be covert.

Security Forces:

- In November 2005, the DoD decided to withdraw Arabic specialist Foreign Service Officers from Iraq due to internal Pentagon debate regarding the best means to fight unconventional wars and institutional failure to acknowledge language skills and regional expertise as "warfighting skills." Failure to capitalize on such assets contributes to conventional forces' inadvertent mistakes and cultural faux pas resulting from cultural misunderstandings.

- There is no deterministic relationship between increasing numbers of trained and equipped ISF or increasing control of battle space by Iraqi units and any associated reduction of U.S. forces, according to the NSVI.

- There are 148,000 U.S. forces on the ground in Iraq and an additional approximate 20,000 coalition forces made up of 29 countries including NATO.

- There are 253,700 total trained and equipped Iraqi Security Forces (ISF) as of May 3, 2006.

  - Desired end strength for the MoD Iraqi Armed Forces is 131,000. As of May 3 there were 115,000 personnel, or 88% of the desired end strength.

  - Desired end strength for MoI forces is 195,000. As of May 3 there were 138,700 personnel, or 71%. Of this, the primary civilian police organization is the IPS, and they have trained 72%, or 97,300 of the 135,000 estimated end state. Those remaining are in special police units.

  - As of March 20, 2006, 49 Iraqi Army battalions control their own battle space. 62 Iraqi Army battalions, 7 National Police battalions and 1 Emergency Response Unit are able to lead counter-insurgency operations.

- Due to a CPA decision in 2003 to avoid heavily equipping the Iraqi Army, the soldiers are ill equipped, with only a few light vehicles, small arms, occasionally body armor, and two uniforms per soldier. Logistics organizational infrastructure for the Iraqi Army is only now being developed, and equipment has not been addressed.

13. McFate, Montgomery, Ph.D., J.D, and Jackson, Andrea V., "The Object Beyond War: Counterinsurgency and the Four Tools of Political Competition," *Military Review*, January-February 2006.

- The populace sees the police as a means of legitimizing illegal activities—police accept bribes to ignore smuggling, black market activities, kidnapping, murders, and for a fee most will arrest an innocent man or allow a detainee to bribe his way out of jail.

- Ministry of Interior and Defense are plagued by corruption and ineptness, as well as influence of militias which undermines legitimate authority and poses a threat to public security.

- General McCaffrey estimates it will require *2-5 years* of U.S. coaching, officer education, and combat back up before the Iraq Army can stand on its own.

- General McCaffrey estimates that it will require *10 years* of U.S. assistance to resource and build the police forces. He estimates large requirements for fortification of police stations, local jails, Humvees, a nationwide command and control system, embedded U.S. contractor trainers, remote area camera monitoring systems and other assistance.

- General McCaffrey estimates that the United States should be able to militarily disengage the majority of combat forces in 3-5 years, but an additional 5 years will require specialized assistance in other forms.

- U.S. forces are concurrently engaged in a police action and counter-insurgency, and feel constrained not to use lethal force but rather to follow police procedures. Clarification of situational Rules of Engagement must be made via command influence down to the lowest levels of boots on the ground.

- According to General McCaffrey, "huge percentages of both the Shia and Sunni populations believe that the MNF Coalition forces are the single greatest threat to safety and security in Iraq today."

Economic Track

Funding:

- As of April 2006, over $3.5 billion of the pledges of non-U.S. assistance has been disbursed. Much financial assistance is being channeled for implementation through Iraq Relief and Reconstruction Fund (IRFF) trust funds, contractors, NGOs, international organizations and Iraqi institution.

- This provides *opportunities to engage organized militias*, such as that of Muqtada al-Sadr, in reconstruction projects without requiring direct coordination with the United States (thus enable him to "save face" and maintain legitimacy while providing jobs and infrastructure related services to his followers in a constructive manner, in addition to occupying the militias that would otherwise be diminishing the security environment).

- The Gulf Region Division of the Army Corps of Engineers (ACE) has completed 2,600 infrastructure projects. 3,206 have been started and as of May 1, 2006, an additional 3,614 are planned. Iraq needs an additional $55 Billion to repair neglected infrastructure. The ACE is currently "training Iraqis how to care for projects once they are finished" rather than *employing Iraqis in projects*.

- Only $73.27M has been designated for civil society training and support, to include initiatives related to Strategic Influence including open media, peace-building and conflict resolution activities, and human rights. Additional funding is desirable.

Security:

- Surging violence drove up security costs and idled workers on reconstruction projects that were awarded to U.S. contractors.[14] At the end of 2006, the $18.4 billion that Washington has allocated for Iraq's reconstruction runs out. All remaining projects in the U.S. reconstruction program, including electricity, water, sewer, health care and the justice system, are due for completion. As a result, the next nine months are crunch time.

- Unemployment is a major problem, and if the unemployed could be provided jobs related to reconstruction, provided micro-finance, etc they would not have time or reason to engage in militia or insurgent activity.

- Incentives paid to tribal members via tribal chiefs, as well as conduct of reconstruction projects, can encourage the population to cooperate with the coalition and Iraq central government.

National Resources:

- There is a "brain drain" with educated and wealthy Iraqis leaving if able.

- Oil distribution is problematic via differing sectarian interests.

- In Iraq, a man's honor is dependent upon his ability to provide for the family, thus provision of employment is critical. Employment via micro-finance, small scale local enterprises or large scale infrastructure redevelopment would contribute to increasing individuals' viability and prevent them from enacting insurgency.

Political Track

Security:

- Iraqi President Jalal Talabani said April 30 that he had met with various insurgent groups, and he said, "I believe that a deal could be reached with some groups." A U.S. embassy spokeswoman said the U.S. position has always been to try to persuade insurgents to join the political process.

- The NSVI states that Provincial Reconstruction Teams (PRT) are intended to aid in development of effective national and provincial governance, and states that it is a key component of Iraqi self-reliance and defeating the insurgency. However the DoS has not been funded to provide security for the PRT and neither has it been augmented by DoD.

Governance:

- Prime Minister designate al-Maliki committed to assemble a cabinet by May 22nd. SCIRI has recommended May 9th as an "appropriate" date.

- Overt, obvious interaction between Iraq's central government leaders and U.S. leaders at the National Security Council level and above risks de-legitimating the authority of those Iraqi

14. Ellen Knickmeyer, *The Washington Post* reprint in *Seattle Times*, April 3, 2006.

leaders because the populace then perceives them as "puppets" of the United States. A low profile should be maintained in the future.

- The United Iraqi Alliance (UIA) has made attempts to create a National Security Council which would be an effective power-sharing mechanism for Iraq's central government.

- The UIA Shi'ia alliance was established with the blessings and encouragement of the senior religious leader in Iraq, Grand Ayatollah al-Sistani, and consists of Hizb al-Dawah (HD), the Supreme Council for Islamic Revolution in Iraq (SCIRI) and Muqtada al-Sadr's movement, as well as the al-Fadila Party, Independents and others. There are historic tensions among the groups, and low level battles for power have hindered the governance process as exemplified by the battles over former transitional Prime Minister al-Jaafari whose nomination by one vote to continue as P.M. was vehemently opposed by Kurdish and UIA Shi'ia factions. The alliance provides an opportunity to capitalize upon existing relationships and legitimate authorities' support for nationalism and unity.

- Most players within Iraq and the region view a strong Shi'ia majority as a threat to their interests.

- The NSVI encourages obtaining buy-in from electoral lists but does not focus on buy-in from religious, tribal or militia leaders—who are seen as the legitimate authorities in Iraq by the populace.

Strategic Influence Issues:

- Military advisor Dr. Ahmed S. Hashim, was "surprised by how little the U.S. military understands about the culture, or 'human terrain,' of Iraq. That includes 'societal networks, relations between tribes and within tribes, kinship ties…what is it people are fighting for?'"[15]

- The United States is putting all its "eggs in one basket" via Ambassador Zalmay Khalilzad and must identify or groom an heir to the position of key U.S. negotiator and ambassador who is seen as legitimate by the Iraqis.

- To win the "hearts and minds" of the Iraqi people and larger regional community, *the United States must mitigate its image as an occupying power* by publicizing existence of a plan to reduce military presence and transition to Iraqi sovereignty, but must also reassure availability and willingness to intervene if requested.

- The NSVI aims to divide terrorists from insurgents. It fails to seek to create alliances and bridge differences among groups in order to bring them into the political process and encourage civil society development.

- "You do not declare war against rebels." (Kenneth Jeffrey). Declaration of war against terrorists and *jihadists* provides political legitimacy.

- It must be in the tribes' interest to cooperate with the coalition and Iraqi central government.

15. Steve Inskeep, "U.S.' Cultural Ignorance Fuels Iraq Insurgency," Morning Edition on National Public Radio (NPR), April 28, 2006.

Appendix II – Tribes and Culture in Iraq: History, Problems, Implications, Opportunities, Islamic Conflict Management

A number of currently non-cooperating tribes could be brought into political society as well as into the counter-insurgency fight, or out of the insurgency.

There is a tremendous, previously ignored, capacity for activation of the populace to support the new Iraqi government, eliminate support for the insurgency, and reduce sectarian strife. Should the United States and coalition capitalize upon the leadership of the tribal *sheikh* (and religious leaders such as the Grand Ayatollah al-Sistani, which is currently being acted upon), they can unleash that capacity.

Tribes are the heart and soul of civil society and historically have acted as political institutions, social organizations and economic centers. There are an estimated 150 tribes (30 are most influential) in Iraq and three quarters of the population are members.

History of the Iraqi Tribes

Most Iraqis identify strongly with a tribe (*'ashira*), and according to some estimates, nearly half of Iraqis are more loyal to their clans or tribes than to the national government, more strictly bound by family ties and the honor code than by ethnicity or religion. Tribes are grouped into federations (*qabila*). Below the level of the tribe, there are the clan (*fukhdh*), the house (*bayt*) and the extended family (*khams*).

Tribes act as somewhat of a mini-state and fulfill primary functions of conflict and resource management for their members.

During the Ottoman period, tribes were primarily nomadic and engaged in trade, raiding and collecting tribute. The *sheikh* historically was a militaristic leadership position intended for tribe protection, and over time it mutated into an hereditary position. Tribes, as extensions of a family group, occasionally brought in other tribes, sometimes dominating them via their nomadic expeditions, raids, and counter-raids. The rank of *sheikh* was patriarchal from its inception, and eventually became associated with class position. Social division came through the warrior spirit as fighting nomads superceded agrarian tribes in the realm of power, and class structures were created. Camel-breeding tribes (the *ahl-il-abl* or People of the Camel) or mounted Kurdish tribes were at the top followed by sheep-herders, peasants, then marsh dwellers. Among the agrarians, rice-growers were at the top followed by vegetable growers and manual workers.

Settlement policies and land reform measures of the Ottomans in the mid-19th century provided *sheikh* with additional power and economic means. Title, rank, and land were passed down to heirs and the ruling family selected the most qualified individual to take on the position. Over time, tribal bonds became less patriarchal and the relationship transitioned into a more economic one.

Following World War I, the British united three Ottoman provinces of Basra, Mosul, and Baghdad into the state of Iraq. *Sheikhs* that did not take part in the Iraqi uprising of 1920 became landed upper classes and the legitimacy of their authority was legalized as they became part of the administration within the political structure. Thus their position was reinforced via "election" to Parliament as well as via economic means, including land tenure policies, impunity from property taxes, subsidies, and

cash presents. Many smaller *sheikhs* in the south led the resistance of the 1930's and remained landless. Tribes continued a trend of settling into village communities, which took on the name of the tribes.

Under the monarchy, the tribes began to lose power as urbanization further weakened tribal ties. Following the 1968 Ba'athist coup, under President Ahmad Hasan al-Bakr (1968-1979), tribal chiefs were given weapons, land, money and authority over their tribes as well as tribal autonomy which caused tribal law and practices (*'urf, 'adah*) to prevail in the countryside. Blood feuds and peacemaking (*sulha*), blood money, "honor crimes" and other traditional judiciary issues or practices took precedence to state law.

Saddam Hussein, a Sunni and member of the Albu Nasir tribe, identified Iraqi *sheikhs* as a source of power for him outside of Baghdad. They were a combination of mercenary army, local government, and loyalty club. He encouraged tribal identity, however he was hesitant to allow tribal chiefs too much power, should they become his competition (in fact a number of coup attempts were made by various tribes, and he fought down Kurdish and Shi'ia insurgencies for years). He encouraged re-establishment of tribal councils to supervise economic activities, resolve conflicts, and police their local areas.

Tribes received economic power by funding from Baghdad from the smuggling trade formed around trade sanctions, which then in return supported the enabling clan or tribe militias.

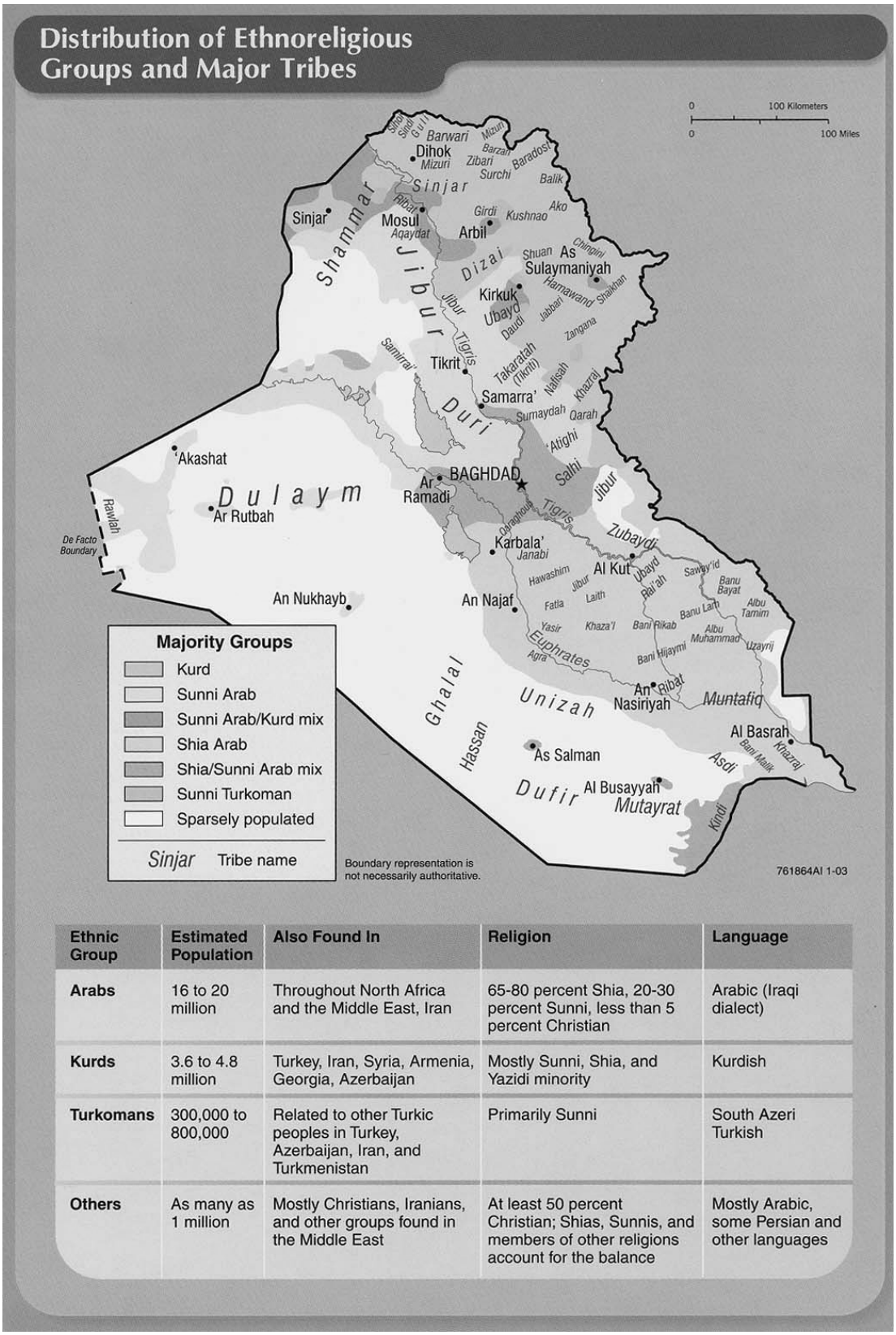
Sunni-Shi'ia tensions mounted following the Islamic Revolution in Iran in 1979 and during the Iran-Iraq War of 1980-88. At this time, tribal connections were further encouraged as tribal Arabs were considered to be more trustworthy against the Persians, and also to have retained tribal values such as communal spirit, honor and valor.

Military and government service were soon seen by impoverished tribes as a means for upward mobility and economic stability, and tribes often supported the government in order to obtain state services that could not be provided widely throughout the state. Tribal leaders were sources for employment, economic subsidies and conflict management.

Tribal society provides protections to the members, although it is a paternalistic structure that can violate human rights such as women's rights and children's rights. Historically, so-called "honor crimes" were not punishable by Iraqi law and were carried out by tribal judgments to punish women for ruining the honor of the family. Women could not decide whether or not to work or in what profession or whom to marry. If a woman refused to abide by the tribal or family decisions, it is considered to be "immoral" which thereby ruins the honor of the family. Children could be punished by any means the family decided which could result in exorbitant punishment.

Tribal members, when loyal, refer to themselves as the leader's "sword"—and when rebellious, they say his "grip is slipping."

Today's *sheikh* is the mayor, judge, and social worker. As judge, he gives verdicts that are not the "law" but any member who goes against his decision does so without the support of the tribe. He is responsible for the well-being of poor tribal members, orphans and those in need. The populace has a deep respect for wisdom as well as origin (tribes) and it is considered an honor to have a strong family support structure. Tribes have been acting in semi-independence and *sheikh* must be incorporated into the new Iraqi political authority structure, whether administratively or via other means.



Ethnic Group	Estimated Population	Also Found In	Religion	Language
Arabs	16 to 20 million	Throughout North Africa and the Middle East, Iran	65-80 percent Shia, 20-30 percent Sunni, less than 5 percent Christian	Arabic (Iraqi dialect)
Kurds	3.6 to 4.8 million	Turkey, Iran, Syria, Armenia, Georgia, Azerbaijan	Mostly Sunni, Shia, and Yazidi minority	Kurdish
Turkomans	300,000 to 800,000	Related to other Turkic peoples in Turkey, Azerbaijan, Iran, and Turkmenistan	Primarily Sunni	South Azeri Turkish
Others	As many as 1 million	Mostly Christians, Iranians, and other groups found in the Middle East	At least 50 percent Christian; Shias, Sunnis, and members of other religions account for the balance	Mostly Arabic, some Persian and other languages

Figure II–1. Distribution of Ethnoreligious Groups and Major Tribes of Iraq.
Courtesy of The University of Texas at Austin.

and could be brought into political and civil society as well as into the counter-insurgency fight. The insurgency largely consists of former Ba'athists and members of the regime, and elements that were alienated for one reason or another may be willing to aid the coalition and the new Iraqi government. These tribal *sheikhs* will require inclusion in the political process and official recognition as legitimate authorities within Iraq, as well as likely economic incentives in order to cooperate.

Former elements of the Ba'ath Party who were not "active members" (within the four most senior ranks of the party, *'adhu 'amil*), and who do not have a record of crimes against humanity or serious corruption could be considered for integration into the coalition fold and into the new Iraqi political society.

Elements for potential collaboration

- *bayt*: 'Abd al-Mun'im, of Major General Umar al-Haza', The Albu Latif *bayt*, The al-Shaya'isha *'ashira* (tribe), and elements of the large Sunni Arab tribal federation of the Dulaym west of Baghdad (in the Sunni triangle)—the Shammar Jarba and the Jazira, Al-Jaburi tribe factions, Bani Hasan tribe, Al-Dulaimi tribe

Elements of likely Regime Allies

- The Jubbur in Sharquat, the 'Ubayd in al- 'Alam and Tarmiya, the Mushahadah in Tarmiya, the Luhayb in Sharquat, the al-'Aza in Balad, the Harb in ad-Dur, the Tayy in Mosul, the Khazraj from south Mosul, the Maghamis from Khalis, and the large Sunni Arab tribal federation of the Dulaym west of Baghdad (in the Sunni triangle)

Islamic Conflict Management

In Islam, the *ummah* (Islamic community) takes precedence over the individual who is recognized to have a role in the community, but the public good and rights of the community come first. There is a focus on repair and healing of relationships, on restorative justice (public apologies, compensation, etc), and the culture is "high context" (meaning that there is a recognition of feelings and emotions, and there is an emphasis on face saving). The Qur'an, *Hadith* and *Sunnah* are religious sources for the concepts of Islamic conflict resolution and exemplify values such as *tawhid* (oneness of God and the unity of all being), *fitrah* (every human being has dignity), *adl* (justice), *afu* (forgiveness), *al-Rahman* and *al-Rahim* (mercy and compassion) and peace (*salam*).

Shura, the peace-making tradition, consists of consultation and collective deliberation. Conflict is viewed as harmful to society and there is a focus on bringing back harmony, resolution, and reparation of broken relationships. This is done through social justice which emphasizes linkages between people, and which is a redistributive (meaning that public apologies and compensations are made, forgiveness and compassion are given) form of reconciliation, cultural legitimate authorities enable the process.

Tahkim is the process of arbitration, and arbitrators are chosen by their wisdom, justness/fairness, knowledge of customs and traditions, knowledge of genealogies and good rhetoric. Parties bring in *bayinah* (proof or evidence), and must make an oath or swear by their word (*yamin*). Each party to the conflict will have an arbitrator, and the two arbitrators collectively decide the outcome. Their decisions are binding.

Problems

The U.S. approach tends to focus on cultural, ethnic and religious differences instead of family ties that bind and opportunities for reconciliation and rapprochement.

During Jay Garner's administration in 2003, a "conference" of prominent members of society was held wherein many *sheikh* were invited. They were asked for assistance and support in building a democratic Iraq. Although many *sheikh* had lost family members to U.S. air strikes (one of the unintended consequences of indiscriminate firepower), they reportedly agreed to assist if it would help move Iraq forward, but with one stipulation: they required a time table by which the coalition forces would leave, otherwise, they could not ask their tribes to cooperate with the coalition (despite good reasons for taking revenge, or *intiqaam*). Some reportedly wanted to contribute politically. They were told that there were no promises, no time tables, and that they had no input into the situation…which infuriated them.

Adding to anger over family deaths, public humiliation caused as coalition forces raided *sheikh* homes due to lacking information on insurgent identities increased reasons for *intiqaam* especially among the Sunni tribes. Coalition forces would push *sheikh* to the ground and place a booted foot on them at gunpoint (as happened to many others in the populace), but for such a respected member of society this was viewed as a blatant act of disregard and disrespect, and had consequences on the civilian population.

Revenge is a serious cultural issue. "Many of the attacks against the occupying forces are acts of revenge for assaulted family members, or people who were killed during raids, demonstrations or checkpoints."[1]

The coalition is currently experiencing insurgency due to tribal revolts for revenge (*intiqaam*) as well as tribal *sheikh* that have turned into "warlords" of sorts such as Muqtada al-Sadr (although he also is a religious leader and a traditional leader via other means). Tribes may continue to attempt to expand their authority via distribution of state services and security, or mount local attempts to challenge authority. With their standing armies, tribes can rise up overnight if the *sheikh* gives the word.

Opportunities

Tribes can play a role as an element of state power, and tribal alliances can support the state via utilization of existing institutional structures to deliver infrastructure services and security to the populace. According to some analysts, clan traditions provide more stability and support than Western institutions (Ihsan M. al-Hassan). Yet, the more educated and urbanized the more likely are Iraqis to support and adopt Western values.

Sheikhs are a potential conduit through which the populace can receive resources from the central government as a distribution network. However, loyalty must be secured via official recognition of administrative authority of the *sheikh.* Such utilization as channels for state services can be an effective reinforcement for rule of law and the legitimacy of the Iraqi central government.

A number of Iraqi tribal elements were disgruntled under the Saddam Hussein regime, including houses (*bayt*) within his own federation (*qabila*) called al-Takarita and within his Albu Nasir tribe,

1. Riverbend [pseud.]. "Sheiks and Tribes", Baghdad Burning, September 29, 2003, http://riverbendblog.blogspot.com/2003_09_01_riverbendblog_archive.html.

Often, a *wasta*, or third party mediator is brought in to obtain a resolution to interpersonal conflicts. Normally to be perceived as a legitimate intervener or intermediary, the mediator should be an older and/or wiser person respected in the community hierarchy, such as a political, military or religious leader. The mediator should come from within the community, know the parties and their history, family relationships, etc., and have a vested interest in the outcome. Decisions are not binding.

Often a *Kadi* (judge operating in accordance with *sharia*) is the mediator or arbitrator. The third party "…is perceived not as a mere facilitator, but rather as someone who has all the answers and solutions…."[2] Precedents for judgments are set by previous courses of right action (best exemplified by the *sunnah*, deeds of the Prophet Mohammed), but these precedents are not as binding as in U.S. courts. They are utilized by *jaha* or *wasta* for guidance in their own decision-making process.

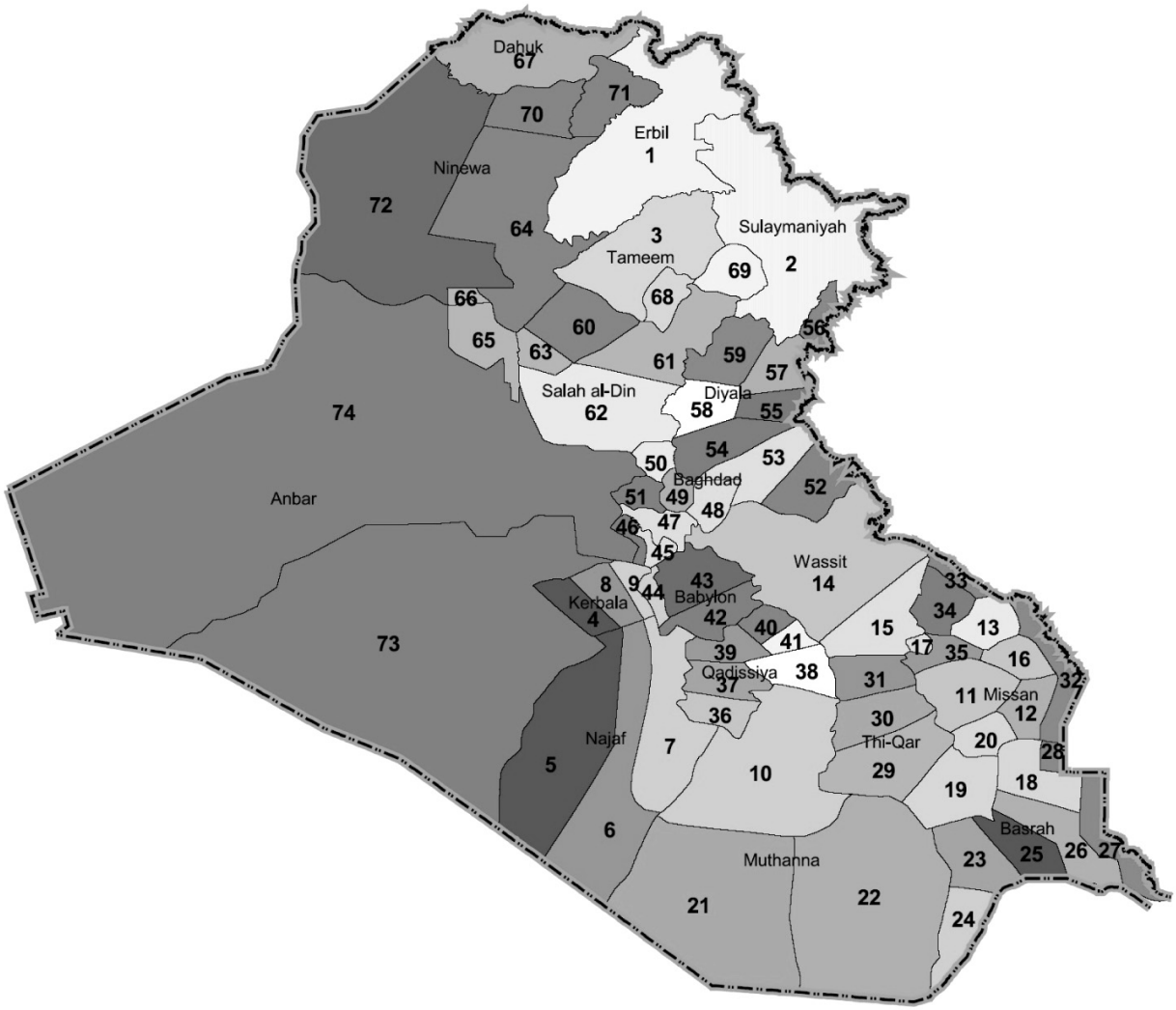


Figure II–2A. Iraqi Tribes. Adapted from UN Humanitarian Information Centre-Iraq, as found at **http://www.humanitarianinfo.org/iraq/maps/284%20A4%20Tribes%20in%20Iraq.pdf (Accessed 12 May, 2007)**

2. Irani, George and Nathan C. Funk. "Rituals of Reconciliation: Arab-Islamic Perspectives," in Arab Studies Quaterly, Vol. 20, No. 4, Fall 1997, pp. 58.

Sulha is peace-making and *musalaha* is reconciliation. *Sulha* is a ritualistic conflict management process that can be used privately (inter-communal or inter-personally) or publicly (between governments or at high political levels). It is face-saving, meaning that the process aids in preservation of the social aspect of identity—the image presented to the world as a window of personality—in order to prevent shame. The *Jaha* or delegation of mediators, (*wujaha* is delegates, plural) are the people who try to help the parties get to a truce, and act on the behalf of the offender to request consent for the process.

Number	Name of Tribe	Number	Name of Tribe	Number	Name of Tribe
01	mixture of Kurd tribes	26	AL-KHAZRAJ	51	DULAIM
02	mixture of Kurd tribes	27	none shown	52	AL-JUBOUR
03	KURD, TURK, ARAB tribes	28	none shown	53	AL-SSALHI
04	AL-GLALL	29	AL-RIBAD	54	ATEEGHY
05	AL-GLALL	30	BANO HJAIM	55	AL-QARAH
06	AL-HASSAN	31	BANO RIKAB	56	none shown
07	UNIZZAH	32	none shown	57	AL-KHAZRAJ
08	AL-HASSAN	33	none shown	58	SOMAIDA'
09	UNIZZAH	34	AL-SAWAE'ID	59	AL-NIFEESAH
10	UNIZZAH	35	BANO LAM	60	AL-JUBOUR
11	ALBU MUHAMMED	36	AL-AGR'A	61	AL-TAKARETAH
12	AL-OZAIRIJ	37	ALBU YASER	62	AL-DDURY
13	BANO BAYAT	38	AL-KHAZ'IL	63	AL-SAMARRAIY
14	AL-ZOBAID	39	AL-FATLAH	64	AL-JUBOUR
15	AL-RABI'H	40	AL-JUBOUR	65	AL-SAMARRAIY
16	ALBU TIMIN	41	AL-LAITH	66	AL-SAMARRAIY
17	AL-RABI'H	42	AL-HAWASHIM	67	TKRITY tribes
18	AL-MONTIFIG	43	AL-JANABI	68	KURD, TURK, ARAB tribes
19	AL-MONTIFIG	44	UNIZZAH	69	mixture of Kurd tribes
20	AL-MONTIFIG	45	AL-QARAGHOUL	70	SINJAR
21	AL-DUFEER	46	DULAIM	71	SINJAR
22	AL-MOTAIRAT	47	AL-QARAGHOUL	72	SHAMMAR
23	AL-ASDI	48	AL-SSALHI	73	DULAIM
24	AL-KINDY	49	mixture of tribes	74	DULAIM
25	BANO MALIK	50	AL-DDURY		

Figure II–2B. Iraqi Tribes (Legend).

Conflict Management Opportunities

To be successful in Iraq, U.S. authorities must reach outside of Western conflict resolution tradition and theory to understand and utilize Islamic and cultural methods of managing conflict. *Sulha* can be utilized publicly on an international level to settle emerging diplomatic crises, on inter-Arabic or inter-Islamic sectarian levels using a legitimate authority as a third party. To mediate ongoing civil conflicts in Iraq, the United States should look to legitimate authorities and leaders such as Grand Ayatollah al-Sistani to act as capable third parties. Emphasis on Islamic values of *salam* (peace), *al-Rahim* (compassion) and tolerance to address traditional ideals such as the *ummah* (Islamic community), *tawhid* (unity), consideration for the next generation, and the tradition of forgiveness and dignity can help re-establish harmony and solidarity in Iraq. On an institutional level, an Iraqi institution of *Reconciliation Commissions* may be helpful. Due to the role of memory in shaping culture, Iraqis will need to develop a mechanism specific to their own customs and traditions (i.e. *musalahah*) for 'truth telling', healing, and reconciliation."[3]

The following Qur'anic sura may be useful to alleviate sectarian strife:

Qur'an 5:48

"...if Allah had so willed, He would have made you a single People, but (His plan is) to test you in what He has given you: so strive as in a race in all virtues. The goal of you all is to Allah; it is He that will show you the truth of the matters in which you dispute…"

3. Said, Abdul Aziz, "Unity in Diversity: The Cultural Mosaic of Iraq," for The First Cultural Forum on Iraq UNESCO Headquarters, Paris, 26 – 27 May 2004

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Dr. Amatzia Baram, Professor at Department of the History of the Modern Middle East at the Haifa University, Israel; former Fellow at the Woodrow Wilson Center, the Smithsonian Institution, and Senior Associate Member at St. Antony's college, Oxford; Iraq expert; numerous discussions.

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INTERVIEW QUESTIONS:

1. INSURGENCY AND TERROR: What do you think of the insurgency/terror situation in Iraq today? Is it a guerilla insurgency? Is it a civil war? Is it both? Do you have any ideas on how to resolve the situation? How does the US/coalition presence impact the violence?
2. LEGITIMATE AUTHORITY: What legitimizes authority and political influence in Iraq, and how can those authorities be identified? Do Iraqis view state government officials as legitimate authorities, and if not, how long will it take for the people to view them as such? How can the U.S. military better engage Iraqi leaders and the civil sector through legitimate authority figures to improve governance and security?
3. CONFLICT RESOLUTION/MANAGEMENT: What culturally based (non-Western) conflict resolution/management techniques exist? Can the U.S. military win the peace in Iraq by using these techniques in inter-cultural contexts and via promoting intra-state communication?
4. DEMOCRATIZATION AND NATION BUILDING: What is your perspective on the current academic debate regarding democratization and nation building (whether one must come first, or whether they can successfully be conducted in tandem) as it applies to Iraq and Iraq's future? Do you have ideas on how to ensure reconstruction efforts are successful and not sabotaged?
5. DISENGAGEMENT CONDITIONS: In your opinion, what do you think it would take for the U.S. to militarily disengage without leaving a failed, unstable state behind? What are your thoughts on benchmarks that should be met for gradual reduction of forces?
6. TROOPS-TO-TASK: Do you know of any troops-to-task analysis that may provide guidance toward the numbers of troops that can be redeployed based on conditions on the ground? Do you know of analysis that provides data on the troop numbers required to defeat the insurgency?
7. MULTI-LATERALISM: What thoughts do you have on the U.S.' ability to obtain participation in Iraq of additional coalition forces, regional actors or allies? Are there other means that could be used to obtain participation such as a UNSC mandate, economic and nation-building participation, security force training, etc?
8. CORRUPTION: What impact do you see this having on the situation in Iraq? Are there certain forces or actors that need to be overcome, and are there exemplary uncorrupt actors? Do you have ideas on how to address the problem?
9. Is there anything I forgot to ask, or anything that you think I should know?

Democracy Promotion and Human Rights Development in the Middle East

A Path Dependency Theory Approach

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Introduction

In the March 27, 2006 edition of the Wall Street Journal, Francis Fukuyama and Adam Garfinkle responded to the Journal's editorial challenge of does anyone out there have a better idea than the Bush administration's policy of high-profile democracy promotion in the Arab and Muslim worlds as a means to fight terrorism? [1] Considering the fact that factional and insurgent violence has caused massive death tolls bordering on humanitarian crisis-levels, the question begged a response. Fukuyama and Garfinkle's answer was to separate the fight against radical Islam from the goal of promoting democracy in the Middle East. They disagreed with the Bush administration argument that radical Islam prevents democracy promotion, and argued that radical Islamists operate in democratic Europe as well as in other places in the world. The problem of radical Islam can be fought militarily as well as through international stigmatizing and pressure from the international community that such ideas will not be tolerated. But the military and external intervention does not necessarily need to be used to "midwife" democratization efforts.

While I agree with Fukuyama and Garfinkle that the fight against al Qaeda and other radical groups bent on the destruction of the West needs to be de-coupled from support of democratization efforts through out the world, I do not believe that the authors go far enough in stating exactly how this should be done. While the United States is learning the lessons necessary to wage an on-going battle against al Qaeda and international terror organizations that seek to destabilize world peace efforts, the United Nations has already learned the lessons necessary to encourage and promote democracy in the global community. Therefore my "better idea" involves a sort of division of labor argument where the United States withdraws from a democracy promotion agenda for which it is not suited and that the UN adapts Linz and Stepan's path dependency approach to democracy promotion which takes into account the particular nation's start point and guides it through the democratic transition process through to eventual democratic consolidation.[2]

Promoting and encouraging democratization in the Middle East must take into account the different types of regimes that each nation begins with, whether it is militaristic, authoritarian, post-totalitarian, or "sultanistic"—that is to say one despotic leader has total control over all aspects of political and civil life.[3] In doing so, the political advisor takes into account the different historical paths of development of each relevant state in order to effectively aid in the transition to democracy and in the final consolidation process. During this process, human rights gains may not be immediate as the society goes through an entire restructuring, a good case in point here is Qatar which according

to a 2005 Human Rights Practices report released by the Bureau of Democracy, Human Rights and Labor, has made significant strides in the areas of arrest and detention, women's rights, children's rights, and freedom of speech and press, but still has work to do in these areas and in the areas of freedom of assembly and in the rights of refugees to seek asylum.[4] This is a transitional process and Qatar will be analyzed later as a case study for internal rather than external democracy promotion and consolidation. The hypothesis that I am working with here is an adaptation of path dependency theory, in that the more authoritarian regimes will require more time for transition and may have fewer immediate human rights advancements than less authoritarian regimes. While the UN is not always needed to directly promote such transitions, they are better suited to monitor and encourage these processes than the U.S. military. This is mainly due to the quite different mission of the U.S. military right now which is to combat international terrorism and to protect our national borders and interests.

To explain this argument, the study is divided into the following sections: the problems with the U.S. role in democracy promotion abroad, the promise of UN democracy promotion and its contribution to global peace and security, and finally an analysis of the case of Qatar as a promising example of internal democracy promotion which should be encouraged along its current path of development to democratic consolidation.

Problems with U.S. Role in Democracy Promotion

Problem 1: A Poor History in this Area. Sherrill argues in "Promoting Democracy: Results of Democratization Efforts in the Philippines" that while each state's situation requires a democratizing strategy unique to the problems of that state's current situation, the United States could learn a lot from its past failures, particularly that of the Philippines.[5] Sherrill found that as of the 2004 elections, the current status of the rule of law in the Philippines, and the quality of governance over the people, democracy in the Philippines was far below expectations.

He based his argument on four primary areas that the United States Agency for International Development (USAID) uses in developing democratization programs: 1) elections continued to be dominated by the elites of certain families, 2) idea-centered political parties had failed to develop, 3) the rule of law was questionable since the central government was unable to exercise control over all of the territory of the state, and 4) institutionalized corruption inhibited economic progress needed to ensure a properly functioning democracy that could secure the trust of the people. The main problem he found was that the lack of sustainable economic development was undermining attempts at sustainable democratic political development. U.S. efforts at economic reform only transferred power from one set of elites to another. He found that the government was remote and unaccountable to the people and they felt no particular loyalty to their capital. This led the author to conclude that failure to achieve political legitimacy resulted in a lack of reception to democratizing efforts.

So what was the United States really doing "on the ground" if not building a democratic base? Sherrill argued against Zakaria's definition of an illiberal democracy and stated that true democracy must at a very minimum safeguard minority rights, provide for true electoral egalitarianism, freedom of speech, and rule of law. Once these procedural aspects are secured, then the people can work on voting for more substantive rights such as social and economic equality, freedom of religion, property rights, and so forth. While the United States efforts at economic development and reform were needed, those efforts could have and should have waited for procedural legitimacy to be established among the

people. It is like building a house on a foundation of quicksand. This is the lesson that should have been learned from democracy promotion in the Philippines.

Problem 2: National Security Fears and the Promotion of "Polyarchy." Robinson takes the argument one step further in "What to Expect from U.S. 'Democracy Promotion' in Iraq" to argue that due to its own foreign policy and national goals, the objective in the Middle East is not to foster free and democratic elections but to create a region more integrated into a global capitalistic system.[6] He states that the type of political system designed by Washington for Iraq does not involve power of the people, but rather the installation of a system where a small group rules on behalf of transnational capital. The electoral process is restricted so as to maintain this core group in power. Thus "democracy promotion" programs in the Middle East are in fact "polyarchy promotion" programs designed not to empower the mass electorates in the region and thereby bring about a more peaceful world and higher standard of living, but to further U.S. global economic-hegemonic goals. While Robinson's article needed more evidence to support this conclusion (past historical examples, actual evidence of this "on the ground" in Iraq, etc), his article does exemplify the perception problem that the United States suffers from in the region. As Robinson mentions in his article, because of the U.S. past history of supporting authoritarian regimes in the region, we may not be the best suited to now promote democracy.

Problem 3: Promotion of Democracy vs. Other Foreign Policy Goals. Barbara Slavin in her 2006 USA Today article writes that Islamic fundamentalists who oppose U.S. interests in the Middle East have actually benefited from the U.S. democracy promotion policy by making significant gains in recent elections.[7] In Egypt the Muslim Brotherhood was positioned to do well in national elections as well as the Palestinian Hamas group, Hezbollah in Lebanon and several anti-U.S. religious groups in Iraq. But according to Linz and Stepans, this is part of the democratic transition process.

In the early democratic transitions of Eastern European states, pro-Communist parties often won elections, but this was because the electorate didn't trust new untested democratic structures to fully replace the authoritarian systems that they were used to. Moreno in his book on political cleavages argues that in early transitioning states the main cleavage is along Democratic-Authoritarian lines until democracy consolidates and becomes "the only game in town."[8] This will happen in time as the economy strengthens and as life becomes more stable under the democratic system. Then the Democratic-Authoritarian cleavage will settle along more benign issue-oriented rather than structural lines. Again, the UN may be better positioned to allow this process to take place since as an institution it does not necessarily have national security interests at stake when watching anti-Western groups win elections.

Problem 4: Perception in the Region. Slavin again argued in a 2005 edition of USA Today that Secretary of State Rice's democracy promotion visit to Central Asia provided a forum for opposition leaders to complain that U.S. democracy promotion and human rights promotion interests fall behind their interests in tapping the region's oil.[9] While this may or may not be true, the United States does have a perception problem due to its lack of success in the area of democracy promotion and due to its mixed polices during the Cold War.

Dalacoura stated in *International Affairs* that mixed results in the Arab world are due to the fact that democracy is part of a wider set of U.S. interests in the region which at times are contradicting: more freedom, but more support of U.S. policies, and that U.S. administrations (both Clinton and Bush) have viewed democracy as a panacea for their problems in the region but they often overlook

problems in implementation and that democracy promotion policies have limited non-politically neutral outcomes.[10] This boils down to that the United States may often have both good intentions and national security goals in the region, but ultimately has a history of being ineffectual at reaching either goal.

Problem 5: Lasting Democracy Must be Promoted from Within. Using Eastern Europe as an example, Beissinger argues that the promotion of democratic revolution from abroad has negative effects on lasting long-term democracy in the region. He argues that revolution can not be imported but must come from within if lasting democracy is to develop. Democracy promotion cannot be looked upon as an external state's tool of foreign policy but must be viewed as an indigenous revolutionary development.[11]

Carothers and Ottaway agree in *Uncharted Journey: Promoting Democracy in the Middle East.*[12] They state that the journey to democracy in the Middle East is uncharted and that there are no simple answers to how to bring about political transformation. They do agree though that for democracy promotion to be successful efforts will have to be tailored to regional circumstances and that the main problem with U.S. efforts is that the United States has no real credibility in the Arab world as a pro-democracy promoter. The authors agree that democracy and political Islam are compatible, but that the present global environment of perceived hostility is radicalizing elements in the Muslim world. Only truly free and fair elections can bring change to this perception and possibly end the process of radicalization. So while the United States has the dual mission of combating global terrorism and of promoting democracy particularly in the Middle East, the best way for it to achieve the latter mission may be to allow internal democracy promotion within Arab states and to let the UN supervise this process.

The Promise of United Nations Democracy Promotion

While the word "democracy" does not appear in the UN Charter, and while being a democracy is not a precondition for being a member, the UN has been involved in the practice of promoting democracy for more than a decade.[13] The UN has been involved in promoting democracy as a part of the decolonization process of many states which were apart of the waves of democratization since the end of World War II. Their role has been primarily overseeing the election process, transferring decision making power to local actors, and trying to assure a certain level of security so efforts at democratization can take hold. The UN focus is on successfully rebuilding the civilian infrastructure so that democracy can take place.

The Arab Human Development Report 2002 was written by Arab specialists and had a positive impact on a region still struggling with democratization. But the UN has credibility in this area, which the United States lacks, due to the expertise it has built up from learning from its past mistakes in the Balkans, Somalia, and other places. But UN resources are limited, and Rich and Newman write that the UN has experienced more success in advancing democracy in small societies and success has yet to be seen in larger nations like Afghanistan and the Congo.

The UN often works with the host nation when it can, as intervention as a breech of state sovereignty is not mandated by the charter except where there is a threat to international peace and security. But even in such cases as Somalia clearly represented, the UN alone does not have the military capability to

provide security in an unstable region. This is where the United States and the UN can work together to bring about democracy and security.

So even though the UN's efforts at democratization are not mandated by its charter, the Universal Declaration of Human Rights – particularly Article 21 – does include a statement that the will of the people shall be the bases of the authority of the government, and that universal and equal elections shall be provided for. Also, the International Covenant on Civil and Political Rights does provide a space for the UN to promote democracy abroad where the United States has no such clear mandate. So on the one hand, the United States has the means, but the UN has the authority and legitimacy. In such a situation, internal democracy promotion should be fostered where it can be in order to reduce undue demands on UN and other state resources, and to allow a stable democracy to develop. Qatar is one such example where internal promotion is possible in the Middle East.

Qatar: An Example of Internal Democracy Promotion—The Path from "Sultanic" Rule to Democracy

Linz and Stepan state that the purpose of their *Problems of Democratic Transition and Consolidation* is to provide an "analysis of the conditions that lead to the breakdown of authoritarian regimes, to the process of transition from authoritarian to democratic regimes, and especially to the political dynamics of the consolidation of post authoritarian democracies."[14] As such they argue that liberalization is different from democratization in that liberalization can occur in a non-democratic setting as long as there is a mix of social and political policies that allow a space for opposition and other groups to organize and express themselves. This seems to be occurring in Qatar, as the Emir allows for more and more human rights changes to bring about such openness. But the authors state that for democratization to occur there must be open contests for the right to win control over the government, this means free, competitive elections. This has not yet occurred in Qatar, but the Emir has stated that he is committed to placing his nation on that path and has completed several steps toward doing so.

Qatar will move from the transitional stage to the democratic consolidation stage when democracy becomes reutilized and is deeply internalized as a part of institutional, social, and daily life and becomes a path for political and economic success. But this is the end part of a long, temporarily destabilizing process. The authors state that if a functioning state exists (such as, but not yet quite the case, for Iraq) then there are five other interconnected conditions that must also be crafted for a democracy to be consolidated:

1. The conditions must exist for the development of a free civil society
2. There must be an autonomous political society
3. There must be a rule of law to ensure citizens' freedoms
4. There must be a useable state bureaucracy
5. There must be an institutionalized economic society

These are the conditions that the United States, for example, had to ensure occurred in the Philippines, but instead they only focused on the fifth and possibly fourth conditions.

But beyond these conditions, at a more basic level, the authors state that "Democratic transition and consolidation involve the movement from non-democratic to a democratic regime. However,

specific polities may vary immensely in the paths available for transition and the unfinished tasks the new democracy must face before it is consolidated."[15] The authors describe "sultanistic" regimes as having the most difficult path to democratization, in that the administration, economy, military, and so forth are all the personal instruments of the head of state. The authors state that the only paths possible are where a foreign patron forces the sultanic leader to step down or where internal revolution wrests power from the leader violently. Here, "sultanism is unrestrained personal rulership,"[16] but even under such circumstances, internal democratization and self-restraint are possible. This is the case of Qatar and many other states in the Middle East, but Qatar shows that democratization is possible even along this path of transition.

Qatar is known globally as the home of the Al Jazeera satellite network. Al Jazeera is developing the potential to influence Arab political opinion and Arab politics through its relatively uncensored media content when compared to the other state-run news outlets in the region.[17] Emir Sheikh Hamad bin Khalifa al-Thani of Qatar staged a peaceful coup against his father in 1995 and immediately set about nurturing free speech and lifted censorship of the media by disbanding the Information Ministry. Al Jazeera now serves as a form for pan-Arab opposition to their own governments and to other agencies, something new in an authoritarian region. This network has angered other Arab states because of its frankness and often critical programming. But it has also been criticized by Western human rights groups for being funded by the Emir and for self-censoring information critical of the Emir or the ruling family.

The U.S. State Department released its human rights practices report on Qatar in 2005 and stated that despite its promotion of democracy, the following human rights problems still existed:

- Restriction of the right of citizens to peacefully change their government
- Restriction of freedom of assembly and association
- Restriction of freedom of the press (primarily through self-censorship)
- Limited freedom of religion
- Government revocation of citizenship in some cases
- Government corruption in some cases
- Legal discrimination against women
- Trafficking in persons
- Severely restricted workers rights

But upon closer inspection, the report states that overall human rights conditions are developing along positive lines. There were no reports of arbitrary deprivation of life during the report period, there were no reports of politically motivated disappearances, prisons met international standards, there were domestic human rights laws in place designed to protect citizens from government abuse, criminal cases were tried in a timely manner, and in general there was a respect for civil liberties including freedom of speech and press where the government supported a series of public debates called the "Doha Debates" and the government did not prosecute anyone for the expression of views considered offensive.[18]

Government censorship of foreign material was mainly looking for pornography and other obscene materials. A permit is required regulating the freedom of assembly and a peaceful assembly following a

theater bombing was allowed to take place. Women do occupy high positions of government, though most of them are affiliated with the ruling family. The only serious shortcoming with Qatar's human rights program lay in its lack of protection of refugees. Domestic law did not provide for the granting of asylum or refugee status in accordance with the UN Convention relating to the Status of Refugees. Refugees were refused entry unless they were able to obtain local sponsorship or employment. But there were no reports of the forced return of persons to a country where they feared prosecution.

Because of these and other concerns, Human Rights Watch send a letter to the participants of the 2000 Community of Democracies Conference in Poland complaining against the participation of Qatar.[19] Human Rights Watch argued that non-democracies such as Tunisia, Yemen, Egypt, Burkina Faso, Azerbaijan, Qatar, Kenya, and Kuwait should be barred from participation otherwise the concept of democracy would be "cheapened" by the inclusion of one-party states. They argued that democracy is more than just elections; it is also the rule of law and the accountability of public officials. They called on the World Trade Organization (WTO) in 2001 to reverse its decision to hold its meeting in Qatar since "freedom of assembly was nonexistent."[20] Human Rights Watch also wrote a letter to the Emir in 2003 recommending that Qatar ratify the International convention on the Protection of the Rights of All Migrant Workers and Members of their Families.[21]

The point here is that Middle Eastern states such as Qatar are already on a difficult path to democratic transition and consolidation. Qatar has made great strides to improving human rights conditions in the country and should be rewarded for it, not punished. Democracy and democracy promotion are not conditions mandated in the UN Charter and so a nation's voluntary internal promotion efforts should be both encouraged and supported.

Conclusion

In the book *Losing Iraq*, former Senior Advisor to the U.S. State Department, David Phillips makes the argument that the United States stayed in Iraq too long after declaring military victory, thus giving energy to the developing insurgency.[22] Sovereignty should have been granted sooner so that democracy could have been promoted from within. It is possible for a Middle Eastern country to put itself on the path toward democratization as Qatar exemplifies. Sadiki argues in *The Search for Arab Democracy* that there are different types of democracies, and U.S. democracy is different from many European democracies.[23] As such, Middle Eastern states should be allowed to develop their own forms of democracy if democratic peace is to be made a reality in the region. The UN is better positioned to help in this process, and the United States then can limit its role to providing security when needed and then to withdraw from the region when it is time for the people to build their own democratic state.

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CHAPTER THREE

Psychological, Religious, Social and Cultural Complexity in Future Policy and Strategy Formulation

Overview

The six essays contained in this chapter examine the impact of psychological, religious, social, and cultural forces on policy and strategy formulation. All present novel ways to view and attempt to understand complexity.

The first paper, "Ahmadinejad and Islamic Just War" by Professor Cindy Ayers, discusses the implications of the Iranian president Ahmadinejad's public overtures and the potential impact of his bellicosity on the global community. She notes that Ahmadinejad is displaying an ability to skillfully manipulate the concerns of Western diplomats and politicians utilizing culturally inspired hatred and "true belief." He appears to be attempting to mobilize the Muslim world for the onset of an apocalyptic "Islamic just war."

Dr. Joshua Teitelbaum in his essay, "Holding It All Together: Present and Future National Cohesion in Saudi Arabia," examines the Saudi system in detail and then presents the various centrifugal forces that are operating in Saudi Arabia today: religious, regional, and tribal, some of which have developed into an insurgency. He notes that in the past the Saudis have controlled the public space. At one time, the regime controlled the air waves, including satellite television. Today it no longer controls satellite television, and despite valiant and expensive attempts at filtering, it cannot control the Internet either. These developments have the potential to undermine national cohesion. Dr. Teitelbaum's essay concludes with an assessment of developments, their potential future trajectories, and the Saudis' ability to address them.

Ms. Aidan Kirby and Mr. Shawn Brimley, who were Research Associates at the Center for Strategic and International Studies when they authored their paper, address how Proteus Insights can help guide analytical thinking about the current state and future of transnational jihadist terrorism. Their paper, "Proteus Insights and the Future of Global Jihadism," avers that current strategic thinking and planning aimed to confront this international security challenge is hampered by reliance on paradigms that are rapidly becoming inaccurate. They point out that Proteus Insights provide an effective framework for assessing the changes that radical Islamic terrorism has undergone in recent years and for reasonably predicting the core lines along which its evolution is likely to proceed in the coming years.

While all of the Proteus Insights offer some value to understanding the changing nature of the global jihadist movement, they identified six insights as being particularly useful. Their paper uses the Starlight, Sanctuaries, Herds, Bedfellows, Parallel Universe, and Threat/Opportunity Continuum insights as analytical lenses to bring into focus current trends in transnational jihadist terrorism and then uses those trends to map out potential futures.

In his essay, "Profiling International Change Processes: A Holistic, Integrative, and Socio-Psychologically Grounded Approach to Emerging Trends Prediction," Dr. Guntram Werther introduces and discusses core parameters of an approach to predicting emerging trends, styles, and patterns of acting with respect to international change, and hence of predicting emerging societal, country, and regional "futures." Dr. Werther argues that mathematical modeling, any accretive parsing, and other externally oriented comprehensive data-gathering approaches, and any "rational actor" approaches (including those using biological, chemical, and physical system templates) are fundamentally misdirected as to their predictive orientation if they fail to centrally place a "thinking within bias" focus as their grounding.

Major Remi Hajjar calls for the U.S. military to rejuvenate its focus on the fundamental skills needed to effectively process cultural diversity in his paper, "A New Angle on the U.S. Military's Cultural Awareness (CA) Campaign: Connecting In-Ranks' Diversity to CA." These skills include a sufficient understanding of the concept of culture, a person's own cultural memberships and how the most important cultural memberships can cause mental impediments or biases, the need for genuine open-mindedness or cultural relativism while in a professional capacity, and a thirst to appreciate and value diverse others, or at the very least the need to respect diverse people during the conduct of the mission. The paper examines three concerns within the ranks of the U.S. military to illustrate the importance of the aforementioned fundamentals: spiritual tolerance; women membership; and anti-homosexual attitudes/conduct. Finally, the paper argues that building the fundamental skills to effectively process cultural diversity helps the military in all of its missions and situations, not just in enhancing in-ranks' cohesion. Insofar as modern operations require increased emphasis on multinational, interagency, and joint campaigns, and as they highlight the crucial nature of effective interaction with populations (abroad and, as Katrina shows, at home), these fundamental skills will prove most significant. Major Hajjar argues that the U.S. military has an opportunity to bolster these cultural processing skills by addressing some of the internal issues of the force. He concludes that those in-ranks concerns provide another way to address the transformational cultural awareness initiative of the US military.

The sixth essay, "Failed States and Intelligence Collection Missions" by Dr. Ely Karmon, deals with a situation where the state failure has already happened, it has created an ungovernable country or territory, and there is the need to evaluate and constantly monitor the threat such a situation represents for the United States and the Western democratic world. The paper analyzes the intelligence requirements, methods, and resources needed to cover the threats from potential targets: terrorist and guerrilla organizations, organized crime and narco-terrorism, proliferation of small weapons, and the proliferation of chemical, biological, radiological, and nuclear agents and weapons to terrorist groups. Lastly, the paper details the ideological, geopolitical, strategic, and structural environment, describes the transnational and international relationships between the various actors, including states, non-govermental organizations (NGOs), and international agencies, and presents some proposals for improvements in the field of intelligence collection and analysis.

Ahmadinejad and Islamic Just War

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In May of 2006, Iranian President Mahmoud Ahmadinejad forwarded an 18-page letter to U.S. President George W. Bush, purportedly offering "new solutions" to the issues involved in Iran's standoff with the West over its nuclear research program. Allegedly timed to arrive during a U.N. Security Council meeting convened to discuss possible sanctions against Iran, the simple fact of the letter's existence was enough to convince European allies (as well as some of the Bush administration's detractors) that it was time for the United States to concede to "direct talks with Iran as part of the search for a diplomatic solution."[1] Although "dismissed" by President Bush's staff as not being "a serious diplomatic overture"[2] and by Secretary of State Condoleezza Rice as not "addressing the issues that we're dealing with in a concrete way,"[3] the letter was hailed in Western media as "conciliatory,"[4] "a deft trump card,"[5] "a compromise at a time when the rest of the world is divided,"[6] "a notable departure" and "an extraordinary about-turn,"[7] "an astute negotiating ploy,"[8] and a hope for "détente."[9] The Washington Post's David Ignatius optimistically stated that the letter was "a public gesture . . . [which] "has opened a canopy for a conversation between the Iranian and American people."[10] In Iran, the Ayatollah Ahmad Jannati declared the letter to be of "divine inspiration,"[11] while other Iranians felt the letter to be "peaceful steps" and a path to the "end of the hostility."[12]

But was the communication from Ahmadinejad really the magnanimous gesture that it seemed to be? Why send a rambling and basically irrelevant treatise on subjects ranging from the role of the media to the evils of U.S. imperialism and Israeli statehood, with lectures on the teachings of Jesus, human rights, and Qur'anic verse interspersed within the text to the leader of an oft-proclaimed enemy state? Why repeat the gesture two months later with a letter to German Chancellor Angela Merkel?[13] Could Ahmadinejad simply have been engaging in a "hearts and minds" campaign? Could he have been hoping for a "non-response" in order to unify his own constituency against the arrogant Western powers? These questions seemed to be left unstated by the press. Perhaps the journalists who were covering these events believed that they already knew the answers. On the other hand, maybe the true significance of Ahmadinejad's activities eluded them. Perhaps the words within the letters are more equivalent to the opening salvo of a new phase, and a new level, of Iranian defiance—the establishment of "just cause" for an Islamic "just war."

Setting the Stage

A year has passed since the contested election of Iran's controversial president, Mahmoud Ahmadinejad. Since the election, Ahmadinejad has surrounded himself with fellow hardliners, radical Islamists, former Khomeini "protégés," and Islamic Revolutionary Guard Corps (IRGC) commanders. All are reported to be "close" to the new president and some, like the Ahmadinejad himself, have been implicated in what the West would call "acts of terrorism."[14] Ahmadinejad has made no secret

of his hatred for Israel, the United States, and the West in general.[15] He has accused the United States and Great Britain of sponsoring covert attacks within his country,[16] while senior officers in the Islamic Revolutionary Guard Corp (IRGC) openly recruit Iranian youths as potential suicide bombers for operations against Israel and the West.[17] Ahmadinejad and others within his government have held and attended "conferences" and "summits"—often in conjunction with Syrian officials in Damascus[18]—where they met with leaders of terrorist organizations who were apparently being supplied with weapons, training, and other resources to carry out attacks on Israel.[19] Perhaps the most important of these meetings occurred in April of 2006, when Ahmadinejad was reported to have traveled from Tehran to Damascus with Hezbollah's notorious "overseas operations" chief Imad Mugniyeh for discussions with representatives from Islamic Jihad and Hamas.[20] These connections are obviously of great significance, considering the kidnappings and attacks that led to the subsequent war between Hezbollah, Hamas, and Israel.[21]

Since the initial celebratory announcement of the success of Iran's "nuclear research" efforts, Ahmadinejad has remained defiantly noncompliant to diplomatic requests for termination of Iran's uranium processing program.[22] He, his "boss" (the Supreme Leader Ayatollah Khamenei), and other members of the government continue to reject calls for the suspension of all uranium enrichment operations while lambasting America and Israel as "imperialists."[23] Calling the United States "the most important threat to world security"[24] and dismissing U.N. Security Council resolutions as "paper-shuffling" exercises that contain "politically motivated" threats,[25] Iran's leaders have crafted strategic alliances based on common enmity,[26] made friendly overtures to countries (Muslim and non-Muslim) that might be in a position to be swayed,[27] and skillfully turned words describing freedoms normally connected to the democracies of Israel and the West against those who are working hard to maintain those freedoms.[28]

Seen by many as belligerent, bellicose, and irrational, Ahmadinejad has been portrayed by Western media and political pundits as a "madman."[29] A few reviews describe a distinct impression of déjà vu—comparing Ahmadinejad to Adolf Hitler;[30] but with modern technology,[31] control over a considerable percentage of the world's available oil,[32] and access to weapons of mass destruction, he could actually be much more dangerous.[33] If his declared beliefs regarding apocalyptic imminence (to include his implied role as a "nail" [or a helper] who has been chosen by the Islamic "savior" al-Mahdi to provoke "a 'clash of civilisations [*sic*]' in which the Muslim world, led by Iran, takes on the 'infidel' West, led by the United States"[34]), are added to the analysis, the danger increases exponentially.

Ahmadinejad's statements and actions to this point appear as unmistakable provocations to some;[35] yet there are Western analysts who believe that neither the general Iranian population nor the clerical leadership agree with their president's fanatical views—thus, they believe he will soon fall from his current position of power.[36] But like Hitler, Ahmadinejad's talent rests in his ability to seduce individuals and the masses, friend and foe. As Hitler proved to the world, extreme hatred—when combined with "true belief"—can be a powerful manipulative tool. The key to the realization of Ahmadinejad's apocalyptic vision may depend on his ability to manipulate the world using extreme hatred, "true belief," and traditional Islamic concepts of "just war."

Islamic "Just War"

University of Gottingen Professor of International Relations and Harvard Research Associate Bassam Tibi noted that the Western concept of a "just war" is very different from the Islamic

understanding of such. "Any war against unbelievers, whatever its immediate ground, is morally justified. Only in this sense can one distinguish just and unjust wars in Islamic tradition." Thus essentially "when Muslims wage war for the dissemination of Islam, it is a just war. . . . When non-Muslims attack Muslims, it is an unjust war."[37] Tibi describes the Islamic "just war" as a "Qur'anic command to spread Islam as a way to peace." It should be used as "a last resort in following the basic Qur'anic precept to *guarantee* [italics added] the spread of Islam, usually when non-Muslims hinder the effort to do so."[38]

Florida State University's Professor of Religion John Kelsay goes further than Tibi in the delineation of Islamic "just war tradition."[39] Within both *Sunni* and *Shi'a* sects, the use of force is justified under the following conditions:

1. There is a "just cause" (which exists under "the imperative to extend the boundaries of the territory of Islam") and a proper intent (to promote peace "for the cause and in the path of God").[40] The activity associated with "extending the boundaries" is to occur until the world answers to *Allah*.[41] "The refusal of a non-Islamic political entity to acknowledge the sovereignty of Islam through the rulers converting to Islam or through the payment of tribute" constitutes "just cause";[42] thus it is intertwined with the second condition—the offer or invitation to convert.
2. "An invitation / declaration of Muslim intentions" is to be issued by the "right [legitimate] authority"—either a head of state, the leader of the entire (pan-Arab) community, or "ruler of the Muslims."[43] This is achieved by a communication of virtually any sort by "the ruler of the Muslims" to the ruler or leaders of the opposition "inviting them to accept Islam in one of two ways: either they must become Muslims or they must agree to pay tribute as an acknowledgment of the authority of the Islamic state." The "invitation" is either issued simultaneous with or prior to "a declaration of the resolve of the Muslims to fight, should the enemy refuse the invitation."[44]
3. War should be a "last resort"—the third choice that an opposing ruler of non-Muslims is to be given (the first two choices being submission to Islam by: 1. conversion and 2. acceptance of *dhimmi* status [agreement to pay tribute or tax and live under the "protection" of an Islamic ruling entity]) is war.[45]
4. There should be "a reasonable hope of success." The estimation of the chance of success is incumbent upon the Muslim leader making the "invitation." The leader must consider manpower and equipment resources as well as the capabilities of Muslim forces. There is, however, an individual obligation in regard to *jihad*—all "ablebodied, adult Muslim males who have no outstanding debts" must participate.[46]
5. There must be proportionality and discrimination "in accordance with Islamic values."[47] Proportionality and discrimination are decided based on whether the opponent is a group of rebellious Muslims or a group of infidels or apostates. First and foremost, Muslim forces are not to become engaged with Muslim rebels unless the rebels attack Muslim forces—even if prior knowledge of an attack is available to the Muslim forces.[48] Yet, "if it is important to fight, it is important to win. And, if strategic considerations lead to actions that appear to violate the rules of war, then the necessity of winning provides an excusing condition for the Muslim armies." Kelsay further notes that "the fault for excessive enemy casualties devolves upon the enemy leaders. It is the recalcitrance of such leaders in the face of truth that has led

> to suffering for their people."[49] Proportionality and discrimination could therefore be assumed for virtually any war deemed necessary by the "ruler of Muslims."

Thus, all of the traditional Western structural standards of a "just war"[50] are accounted for within the Islamic counterpart. Even an additional facet of "just cause" proposed by University of Chicago Professor of Ethics Jean Bethke Elshtain—a responsibility for maintenance of global stability[51]—can be noted within the Islamic "just war" conditions, as it is believed that when the world is united under the banner of Islam, there will be global peace, order, and stability.[52]

According to Kelsay, the main difference between the *Sunni* and the *Shi'a* versions of "just war" is the question of leadership and therefore of "right authority." It should be noted, however, that the "head of the Islamic state" or leader of Muslims, is generally understood to be a prophet, the *Mahdi*,[53] or someone who is authorized (usually by agreement of some polity) to act on behalf of *Allah*.[54] For example, the declaration of *jihad*, according to Egypt's Grand Imam Mohammed Sayed Tantawi, can only be made by "a head of state or leader of all Arab peoples when Arab lands are invaded and occupied,…when great numbers of Arab peoples are displaced and exiled, or when the tenets of Islam are directly attacked or abused."[55]

The *Sunni* traditionally regarded the High Caliphate as the rightful position of authority, but with the dissolution of the Caliphate, "right authority" evolved into authority of the *'ulama* (religious leaders or clerics) or the leaders of nation-states.[56] *Al-Mahdi* retains "right authority" status, but according to Sunni beliefs, he returns "on a periodic (centennial) basis" to "enhance the foundations of Islam" and to reinstate Islamic Law.[57] Recently, former military linguist, interrogations officer, and Chaplain, Dr. Timothy R. Furnish noted that due to the combined effects of a tendency to identify Osama bin Laden (a *Sunni*) as *al-Mahdi* and a growing influence of popular Islamic apocalyptic literature, *Sunni* "eschatological traditions, especially those of the Mahdi" are being "refashioned."[58] Thus, the position of "right authority" can be more "Mahdist" in popular thought and even in clerical (especially the radical and militant clerics') approach, than has historically been the case.[59]

Within the *Shi'a* belief system, the *Mahdi* is essentially the leader and therefore has "right authority."[60] In the absence of *al-Mahdi* (specifically during his lengthy period of being "hidden"—his "occultation"), *Allah* "appoints a righteous person" for each generation "who is the one truly legitimate leader for the Muslim community—really, all of humanity." This person "is safeguarded by God from the commission of any grave sins, and it is the obligation of all humanity to recognize and follow him."[61]

Iran's President Mahmoud Ahmadinejad, for instance, in his (or at least his supporters') belief that he is one of *al-Mahdi*'s "nails" (an assistant of sorts—someone tasked by *al-Mahdi*)[62] and by virtue of his position as a leader (albeit not the Supreme Leader) of the Islamic Republic of Iran, considers himself to be acting on behalf of Allah. His highly publicized letter to President Bush should, therefore, be heavily scrutinized keeping the intent of a "leader of the Muslims" in mind. Buried within the text of the letter is, in fact, a thinly-veiled "invitation" to convert and submit to Islam. This fact seems to have eluded the major Western newspapers and media outlets.[63] Following several paragraphs praising monotheism (Muslims believe Islam is the only monotheistic—and indeed, the only valid—religion in the world) and describing the God of this world as he sees him, Ahmadinejad invites Bush to convert:

> Do you not think that if all of us come to believe in and abide by these principles, that is, monotheism, worship of God, justice, respect for the dignity of man, belief in

> the Last Day, we can overcome the present problems of the world – that are the result of disobedience to the Almighty and the teachings of prophets – and improve our performance? Do you not think that belief in these principles promotes and guarantees peace, friendship and justice? Do you not think that the aforementioned written or unwritten principles are universally respected? *Will you not accept this invitation? That is, a genuine return to the teachings of prophets, to monotheism and justice, to preserve human dignity and obedience to the Almighty and His prophets?* [Italics added].[64]

The "Invitation"

As President Bush reflected on the letter's content, Ahmadinejad left Iran for Indonesia where he attended "the fifth summit of the D-8" and spoke to "a gathering of students."[65] Interestingly, approximately 30 days after Ahmadinejad's visit, the militant Indonesian cleric Abu Bakar Bashir, who is believed to be the spiritual leader of *Jemaah Islamiyah* (which has been linked to *al-Qaeda*),[66] staged a public presentation for journalists where he, too, called on President Bush to convert to Islam.[67] Thus, with both Ahmadinejad (a *Shi'a*) and Bashir (a *Sunni*) issuing such "invitations" to a leader of an infidel state, they were establishing the basis of a "just war" and "final *jihad*" that could not (or, at a minimum, should not) be discounted on the grounds of historic factionalism. And it didn't end there.[68] One month later, Ahmadinejad repeated his letter writing campaign with an apparently similar communication sent to German Chancellor Angela Merkel.[69]

The ruling infidel, by Islamic tradition, holds the fate of the nation or kingdom in his or her hands when making the decision to either submit to Islam (by conversion or tribute) or pay for the rejection of Islam with war and death—the ruler speaks for the nation. If the ruler rejects the opportunity to submit, the entire nation pays for that decision.[70] While some Western minds may dismiss the invitations of two arguably self-appointed "leaders of the community of Muslims" as "folly," especially since their target set includes the world's only superpower, it should be remembered that these almost simultaneous "calls for submission" could be considered a signal for Muslims to act collaboratively—the unification of all Islamic sects as prophesied for the Islamic version of the "end-times."[71]

This scenario is extremely disturbing, since a refusal of these "invitations" would be justification for war as a "last resort." It is even more disturbing when considering the fourth condition of a "just war"—"a reasonable hope of success."[72] Noting that Iran's leaders have been highly secretive about the state of nuclear research and therefore the extent to which they have been able to develop nuclear weapons, (which they deny being interested in[73]), it should be remembered that it is the Muslim leader's responsibility to have the manpower and weaponry ready for the event of a "last resort" after issuing the invitation to convert.[74] Any "leader of the community of Muslims" who took the first step toward an Islamic "just war" without the intention or the capability of following through to the "last resort" if necessary would be open to ridicule—and most likely suffer much more severe treatment as a consequence of poor strategic planning.

Looking at the scenario from this perspective, it is interesting that not long after Ahmadinejad's letter to President Bush was received in Washington, certain concessions or "carrots" were reportedly offered by the new coalition of negotiators[75] (the U.S. allegedly having joined the negotiations at the advice of the Secretary of State, Dr. Rice[76]) which would never before have been offered by the U.S. (the "package" reportedly included "peaceful" or "advanced nuclear technology"[77]). These concessions could have been understood by the Iranian leader as an offer to pay the required tribute or tax—one

of the three options that rulers have once they are "invited" to convert to Islam.[78] If nothing else, they could certainly have been "spun" that way, especially since the "sticks" were supposed to have only been issued verbally by European Union negotiator Javier Solana.[79]

There is little doubt that Ahmadinejad and other Iranian leaders have been capitalizing on this apparent "agreement" to pay tribute, considering the tone of Ahmadinejad's subsequent statements (that the offer was "a step forward" and that a counterproposal would be issued) and considering the fact that Iranian leaders were continuing efforts in uranium enrichment—the very activity that was supposed to have been "suspended" in accordance with the offer.[80] Furthermore, Ahmadinejad gave a later date (22 August) for his official response to the package than that originally desired by the coalition, who had hoped to obtain a response prior to the G-8 summit meeting in mid-July.[81]

After the initial July deadlines passed with no change in the Iranian regime's stance, the U.N. Security Council imposed a new deadline of 30 August for suspension of uranium enrichment;[82] but Iranian leadership's repeated insistence upon 22 August as a response date served to raise questions among Western academics. Princeton scholar Bernard Lewis was perhaps the first to publish grave reservations about Ahmadinejad's ulterior motives. Reflecting on Islamic history, Lewis explained: "This year Aug 22 corresponds . . . to the night when many Muslims commemorate the night flight of the prophet Muhammad on the winged horse Buraq." The prophet is believed to have gone first to "Jerusalem, and then to heaven and back," reappearing in Mecca. Considering the pointed statements made by Ahmadinejad about Israel since his election as President, and noting that "mutually assured destruction" (MAD) lacks a strong deterrent factor given the belief that such destruction is equivalent to expected apocalyptic events, Lewis worried that Ahmadinejad may have something "cataclysmic" planned for 22 August (Lewis, 2006; The Sunday Times, 2006).[83]

The Declaration of Resolve to Fight

It could easily be said that there has been no shortage of "declarations of the resolve of the Muslims to fight"[84] emanating from the Iranian regime. But in revisiting this facet of Islamic "just war"—which according to tradition, should either be issued simultaneous with or following the "invitation"—attention should be brought to a 30 July statement made by the spokesman for Iran's Foreign Ministry, Hamid-Reza Asefi. During a press conference, Asefi said: "If tomorrow a resolution is released against the Islamic Republic, then the P5+1 [incentives] package will no longer be an issue."[85] This statement would seem to be a warning that the perceived "offer of tribute" would be negated as such with any UN Security Council action that imposed demands or restrictions. Any threat of restrictions or sanctions would be seen as "strings" attached for the purpose of benefiting those who were supposed to be offering "submission."

More warnings were to follow. At some point around the beginning of August (seemingly "out of the blue"), Ahmadinejad offered to give a hastily-arranged, albeit long-awaited, private interview to former CBS correspondent Mike Wallace.[86] Held a few days later in Tehran, the content of the interview was a rather unexceptional rehash of anti-Semitic and anti-American rhetoric—except for one specific incident. After Wallace asked the Iranian president what he had expected to gain from his letter to President Bush, Ahmadinejad replied that he "*was expecting Mr. Bush to give up* [italics added];" but continued with the words "or I should say to change his behavior." He then said: "Please give him this message, sir. *Those who refuse to accept an invitation to good[,] will not have a good ending or fate*

[italics added]."[87] The "message" that Mr. Wallace was asked to relay, it would seem, might be a not-so-subtle notification that the coalition's offer of "tribute" would not be sufficient to avoid war.[88]

Two days after the interview was aired in the United States, Iranian senior cleric Ahmad Khatami announced that Iran would respond to any military attack by the U.S. or Israel with medium-range missiles aimed at Tel Aviv.[89] The following day, an intention to "show the enemies the Islamic Republic's military capability" was revealed—a plan to begin a military "exercise" by the end of the week. The code name given to the exercise—"Blow of Zolfaghar"—is reportedly a "reference to a sword that belonged to Imam Ali," the Prophet's son-in-law,[90] and thus is an apocalyptic reference to *al-Mahdi*, who is supposed to appear in "the last days" with or wearing Imam Ali's sword.[91]

The maneuvers were set to begin on August 19th—only three days from the self-imposed response date of 22 August. These "huge 'war games' . . . [were said to be] 'aimed at introducing Iran's new defensive doctrine' . . . [according to] General Mohammad Reza Ashtiani."[92] Although relatively little has been noted publicly regarding the "Blow of Zolfaghar" (as compared to a seven-day exercise dubbed "Great Prophet" held from the 4th to the 11th of April, which culminated in the announcement of a successful nuclear enrichment program[93]), it should definitely be seen as a "declaration of resolve to fight." However, the lack of frenetic activity similar in scope to that of the exercise in April begs the question: "just what does Ahmadinejad have planned for the 22nd of August?"[94]

Summary

Essentially, whether it was intended or not, the U.S. government (as well as the other countries involved in the coalition represented by Javier Solana) has offered submission to Islam by offering "tribute" (vice conversion). One must wonder if the aim was to allow the Iranian leadership the benefit of being seen within the Muslim community as winning the upper hand (the superpower submitting to Islam) so that war could be averted, if only for the time being. Considering the massive monetary and force obligations that already exist, as well as the assumed period of a few years before Iran has nuclear weapons,[95] this could well be the case. Time to rebuild the military might of the West before risking another war with a potential nuclear power would be preferable, if only for political expediency.

But even if ultimately, the offer by the negotiating coalition is merely a play for time, the game being played is a very dangerous one, indeed—especially since Ahmadinejad may also be playing for time to obtain the nuclear weaponry[96] and complete the planning needed[97] to continue to the condition of "last resort" in his "just war." The overarching question must be: How high of a price are we willing to pay for peace?

Endnotes

1. Tony Karon, "Iran plays to the Middle Ground," *Time*, 8 May 2006.

2. Christine Hauser, "Bush Says Iranian's Letter Misses the Point," *The New York Times,* 10 May 2006.

3. Associated Press, "Ahmadinejad Letter to Bush Released," *The Jerusalem Post*, 9 May 2006.

4. Tony Karon, "Iran plays to the Middle Ground."

5. Steven R. Hurst, "Iran's Letter to Bush: Ploy or Peace Overture?" *Associated Press*, 9 May 2006.

6. Jefferson Morley, "A Daily Survey of What the International Online Media are Saying: Iran Letter's Surprising Result," *The Washington Post*, 11 May 2006.

7. Rupert Cornwell as cited by Morley (Ibid.).

8. Mark Fitzpatrick as cited by Hurst. See Hurst, "Iran's Letter to Bush: Ploy or Peace Overture?"

9. Morley, "A Daily Survey of What the International Online Media are Saying."

10. David Ignatius, "What We Need to Tell Iran," *The Washington Post*, 19 May 2006.

11. Iran Focus, "Top cleric says Iran's letter to Bush was 'divine inspiration'," *Iran Focus News*, 13 May 2006; [news service on-line]; available from http://www.iranfocus.com/modules/news/article.php?storyid=7192.

12. These comments seemed to be taken from "on the street" interviews in Iran. See Hurst, "Iran's Letter to Bush: Ploy or Peace Overture?"

13. The text of the letter to Chancellor Merkel has not been released at this time. See CNN, "Germany: Iran Letter Attacks Israel," *CNN.com*, 21 July 2006; [news service on-line]; available from http://edition.cnn.com/2006/WORLD/europe/07/21/iran.letter.ap/index.html.

14. These include Foreign Minister Manouchehr Mottaki, an alleged assassin who reportedly was "asked to leave" Turkey after having been implicated in "several terrorist incidents" within the country while in residence as Iran's ambassador (see Iran Focus, "Iran's New Foreign Minister 'Was Involved in Terrorism'," *Iran Focus News*, 24 August 2005; [news service on-line]; available from: http://www.iranfocus.com/modules/news/article.php?storyid=3460); the new Minister of the Interior Hojjatol-Islam Mostafa Pour-Mohammadi, who has been accused of summary executions, and massacres (see Iran Focus, "Residents of Iran City Claim New Interior Minister Ordered Massacre," *Iran Focus News*, 19 August 2005; [news service on-line]; available from http://www.iranfocus.com/modules/news/article.php?storyid=3385); and Defense Minister Mostafa Mohammad-Najjar, who stands accused of being involved in atrocities against the Kurds and possible complicity in the Hezbollah attacks on the U.S. Marine Barracks in Lebanon in 1983 (see Iran Focus, "18 of Iran's 21 New Ministers Hail From Revolutionary Guards, Secret Police," *Iran Focus News,* 14 August 2005; [news service on-line]; available from http://www.iranfocus.com/modules/news/article.php?storyid=3315). See also Ali Akbar Dareini, "Ahmadinejad Fills Cabinet With Hard-Liners," *Associated Press, 14 August 2005;* [news service on-line]; available from http://www.iranfocus.com/modules/news/article.php?storyid=3323. Iran Focus, "U.S. Says Inquiry Showed Iran's New President is a 'Terrorist'," *Iran Focus News*, 1 September 2005; [news service on-line]; available from http://www.iranfocus.com/modules/news/article.php?storyid=3560. Iran Focus, "Iran's Revolutionary Guards Take Over Key Policy Body," Iran Focus News, 27 September 2005; [news service on-line]; available from http://www.iranfocus.com/modules/news/article.php?storyid=3841. Wall Street Journal Review & Outlook, "Iran Unveiled," *The Wall Street Journal,* 28 June 2005; [newspaper on-line]; available from http://www.iranfocus.com/modules/news/article.php?storyid=2660. Washington Times Editorial, "Iran's Terrorist President," *The Washington Times*, 1 July 2005; [newspaper on-line]; accessed from http://www.washingtontimes.com.

15. Ray Takeyh, "A Profile in Defiance: Being Mahmoud Ahmadinejad," *The National Interest*, Vol. 83, Spring 2006, p. 16-21. See also Iran Focus News on http://www.iranfocus.com for a complete rundown on Ahmadinejad's statements and opinions about Israel and the West.

16. Niusha Boghrati, "U.S., Britain and Israel Accused in Attacks," *WorldPress.org*, 20 January 2006; [news service on-line]; available from http://www.worldpress.org/Mideast/2253.cfm#down#down. Iran Focus, "Residents of Iran City Claim New Interior Minister Ordered Massacre;" Iran Focus, "Iran's New Foreign Minister 'Was Involved in Terrorism'." Iran Focus, "U.S. Says Inquiry Showed Iran's New President is a 'Terrorist'." Iran Focus, "Tit-for-Tat: Iran Accuses Britain of Weapons Smuggling," *Iran Focus News*, 12 October 2005; [news service on-line]; available from http://www.iranfocus.com/modules/news/article.php?storyid=3976.

17. Marie Colvin, Michael Smith, & Sarah Baxter, "Iran Suicide Bombers 'Ready to Hit Britain'," *The Sunday Times*, 16 April 2006; [newpaper on-line]; available from http://www.iranfocus.com/modules/news/article.php?storyid=6783. Iran Focus, "Iran Weekly Advertises 'Application Form' for Suicide Operations," *Iran Focus News*, 23 July 2005; [news service on-line]; available from http://www.iranfocus.com/modules/news/article.php?storyid=2948. Iran Focus, "18 of Iran's 21 New Ministers Hail From Revolutionary Guards, Secret Police." Iran Focus, "Iran's New Defence Minister Tied to Bombing that Killed 241 U.S. Marines," *Iran Focus News*, 14 August 2005; [Online]; available from http://www.iranfocus.com/modules/news/article.php?storyid=3321.

18. Syrian President Bashar al-Assad seems to be completely compliant with the Iranian President's wishes, supporting Iranian claims and threats with similar statements. An example is the 15 August address to a conference of cheering journalists in Damascus, where Assad claimed that Israel used the Hezbollah attacks as a "pretext for launching its massive assault against Lebanon" in what he termed was "planned aggression" on the part of the Israelis (See Lamia Radi, "Assad Defends the Resistance Against Israel," *Agence France-Presse*, 15 August 2006; [news service on-line]; available from: http://www.iranfocus.com/modules/news/article.php?storyid=8250), echoing an assertion previously verbalized by the Ayatollah Khamenei (See Iran Focus, "Iran's Supreme Leader Warns U.S. of Impending Jihad," *Iran Focus News*, 2 August 2006; [news service on-line]; available from http://www.iranfocus.com/modules/news/article.php?storyid=8125). Interestingly, an Islamic website discussing "the last days" claims that *al-Mahdi*'s "companions will be from Kufa and the brave ones who would assist him would be from Syria" (Fabonline.com, *The Rising of the Imam al Mahdi,* n.d.; [on-line]; retrieved 7 July 2003 from http://www.fabonline.com/Articles/IMAMSz12TheRisingofImamalMahdi.htm).

19. See Sarah Baxter & Uzi Mahnaimi, "Iran's President Recruits Terror Master," *The Sunday Times, 23 April 2006;* [newspaper on-line]; available from http://www.iranfocus.com/modules/news/article.php?storyid=6868. George W. Bush, *President Discusses Foreign Policy During Visit to State Department*, 14 August 2006; [on-line]; available from http://www.whitehouse.gov/news/releases/2006/08/20060814-3.html. Adrian Croft, "Blair Says Syria, Iran Risk Confrontation," *Reuters*, 1 August 2006; [news service on-line]; available from http://www.iranfocus.com/modules/news/article.php?storyid=8122. Pyotr Goncharov, "The War in Lebanon: Israeli Prelude, Iranian Finale," *RIA Novosti*, 11 August 2006; [news service on-line]; available from: http://www.iranfocus.com/modules/news/article.php?storyid=8224. Iran Focus, "Exclusive: Iran Was Behind Hezbollah-Israel War," *Iran Focus News*, 16 August 2006; [news service on-line]; available from http://www.iranfocus.com/modules/news/article.php?storyid=8255. David B. Rivkin & Lee A. Casey, "A Legal Case Against Iran," *The Washington Post* [newspaper on-line]; available from http://www.iranfocus.com/modules/news/article.php?storyid=7485. Dana Shahsavari, "Hezbollah Bases in Tehran," *Rooz*, 4 August 2006; [news magazine on-line]; available from http://www.roozonline.com/english/016945.shtml. Richard Spencer, "Iran's Place at Summit Raises Fears of Anti-West Alliance," *The Daily Telegraph*, 15 June 2006; [newspaper on-line]; available from http://www.telegraph.co.uk/news/main.jhtml?xml=/news/2006/06/15/wiran15.xml. Tabassum Zakaria, "Bush: Iran Must Stop Support for Armed Groups," *Reuters*, 14 August 2006*;* [news service on-line]; available from http://www.iranfocus.com/modules/news/article.php?storyid=8241.

20. Mugniyah (also spelled Mughniyah) is one of the FBI's "Most Wanted." He played a significant role in the 1985 TWA hijacking where a U.S. Navy diver was killed, was involved in the murder of CIA station chief William Buckley in 1984, and "linked" to the 1983 Marine barracks bombing in Beirut. He is also believed to be connected with the Israeli embassy and Jewish center bombings in Argentina during the 1990s. See Baxter & Mahnaimi, "Iran's President Recruits Terror Master."

21. Some reports have indicated knowledge not only of Iranian complicity, but of Iranian leadership in the events that led up to the war, as well as the actions taken throughout the war by Hezbollah and Hamas operatives. See Goncharov, "The War in Lebanon: Israeli Prelude, Iranian Finale." Iran Focus, "Exclusive: Iran Was Behind Hezbollah-Israel War." Rowan Scarborough, "Hezbollah Attacks Seen as Iran Diversion," *The Washington Times*, 7 August 2006; [newspaper on-line]; available from http://www.iranfocus.com/modules/news/article.php?storyid=8175. Shahsavari, "Hezbollah Bases in Tehran."

22. Bronwen Maddox, "Clever Moves May Become a Dangerous Game for Iran," *The Times*, 18 August 2006; [newspaper on-line]; available from http://www.iranfocus.com/modules/news/article.php?storyid=8277. David Millikin, "With Smoke Yet to Settle in Lebanon, Iran Nuclear Crisis Looms Again," *Agence France-Presse*, 15 August 2006; [news service on-line]; available from http://news.yahoo.com/s/afp/20060815/pl_afp/mideastconflictiran_060815153953.

23. See Agence France-Presse, "Ahmadinejad Vows to Stand by Iran Nuclear Work," *Iran Focus News,* 17 August 2006; [news service on-line]; available from http://www.iranfocus.com/modules/news/article.php?storyid=8272. Iran Focus, "Iran Revolutionary Guards Chief Vows to Defeat U.S. in Iraq," *Iran Focus News, 28 November 2005;* [news service on-line]; available from http://www.iranfocus.com/modules/news/article.php?storyid=4617. Iran Focus, "Iran Weekly Advertises 'Application Form' for Suicide Operations;" Reuters, "Iran President Chides Bush in CBS Interview," *Iran Focus News, 9 August 2006;* [news service on-line]; Retrieved 9 August 2006 from http://www.iranfocus.com/modules/news/article.php?storyid=8204.

24. Iran Focus, "Tit-for-Tat: Iran Accuses Britain of Weapons Smuggling."

25. Agence France-Presse, "Ahmadinejad Vows to Stand by Iran Nuclear Work;" Associated Press, "Iran's President Rejects U.N. Resolution," *Iran Focus News*, 1 August 2006; [news service on-line]; available from http://www.iranfocus.com/modules/news/article.php?storyid=8118. Reuters, "Iran says Can Discuss Atomic Work Suspension in Talks," *Iran Focus News, 16 August 2006;* [Online]; available from: http://www.iranfocus.com/modules/news/article.php?storyid=8258.

26. Oliver August, "Iran in Talks to Join Alliance Against West," *The Times, 16 June 2006;* [Online]; available from http://www.iranfocus.com/modules/news/article.php?storyid=7628. Ali Akbar Dareini, "Ahmadinejad Seeks Chinese, Russian Support," *Associated Press, 15 June 2006;* [Online]; available from http://www.iranfocus.com/modules/news/article.php?storyid=7610.

27. See Iran Focus, "Iran Praises Ties with UAE," *Iran Focus News*, 1 August 2006; [news service on-line]; available from http://www.iranfocus.com/modules/news/article.php?storyid=8112, for Iran and the United Arab Emirates. See Iran Focus, "Iran FM to Visit Turkey on Friday," *Iran Focus News, 10 August 2006;* [news service on-line]; available from: http://www.iranfocus.com/modules/news/article.php?storyid=8208, for Iran's efforts to engage Turkey. See Nasser Karimi, "Iranian Leaders Calls Chavez a 'Trench Mate'," *Associated Press*, 30 July 2006; [news service on-line]; available from http://www.iranfocus.com/modules/news/article.php?storyid=8088 and Kelly Hearn, "Iranian Pact With Venezuela Stokes Fears of Uranium Sales," *The Washinton Times*, 13 March 2006; [newspaper on-line]; available from http://www.washingtontimes.com/world/20060313-121547-4071r.htm for Ahmadinejad's relationship with Venezuela's Hugo Chavez. See The Times of India, "Cuba Backs Iran on Nuke Programme," *The Times of India*, 6 January 2006; [newspaper on-line]; available from http://timesofindia.indiatimes.com/articleshow/1361663.cms and Sarah Baxter, "Mischief Stirs for Bush in the 'Axis of Good'," *The Sunday Times*, 10 April 2006; [newpaper on-line]; available from: http://www.timesonline.co.uk/article/0,,2089-2047073.html for Ahmadinejad's attempts to woo Fidel Castro. See Reuters, "Iran Foreign Minister Mottaki Due in Malaysia," *Iran Focus News*, 27 July 2006; [news service on-line]; available from http://www.iranfocus.com/modules/news/article.php?storyid=8041 for Ahmadinejad's visit to and public address while in Malaysia. See Reuters, "Iran working with N. Korea on missiles," *Iran Focus News*, 3 August 2006; [news service on-line]; available from http://www.iranfocus.com/modules/news/article.php?storyid=8138 for weapons technology cooperation with North Korea.

28. Mahmoud Ahmadinejad, "La Letter de Mahmoud Ahmadinejad a George W. Bush," *Lemonde.fr*, 9 May 2006; [newspaper on-line]; available from http://www.lemonde.fr/web/imprimer_element/0,40-0@2-727571,50-769886,0.html. CNN, "U.S. Plans for Mideast Foiled, Syrian President Says," *CNN.com, 15 August 2006;* [news service on-line]; available from http://edition.cnn.com/2006/WORLD/meast/08/15/syria.assad.ap/index.html. Bernard Goldberg, "In the Fray: The Grand Inquisitor Confronts . . . Mr. Rogers?" *The Wall Street Journal*, 15 August 2006, D-6. Reuters, "Iran President Chides Bush in CBS Interview;" Reuters, "Iran Says West Dragging Feet on Middle East Truce," *Iran Focus News*, 10 August 2006; [news service on-line]; available from http://www.iranfocus.com/modules/news/article.php?storyid=8212. Simon Tisdall, "War in Lebanon Becomes Propaganda Tool in Iran," *Guardian Unlimited, 8 August 2006;* [newspaper on-line] retrieved 08 August 2006 from: http://www.guardian.co.uk/iran/story/0,,1839893,00.html.

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30. Peter Conradi, "Iran as Bad as Nazis: Merkel," *The Sunday Times*, 5 February 2006; [newspaper on-line]; Retrieved 5 February 2006 from: http://www.timesonline.co.uk/article/0,,2089- 2025730,00.html, now available on http://www.iranfocus.com/modules/news/article.php?storyid=5640. Victor Davis Hanson, "Appeasement Markers," *The Washington Times*, 18 February 2006; [newspaper on-line]; retrieved 18 February 2006 from http://www.washingtontimes.com, now available on http://www.iranfocus.com/modules/news/article.php?storyid=5829. Paul Starobin, "Experts Consider Ability to Deter Iran," *National Journal, 19 May 2006;* [news journal online]; available from http://www.nti.org/d_newswire/issues/2006_5_19.html#A663D9C3. Struan Stevenson, "Recalling History's Lessons," *The Washington Times*, 30 July 2006; [newspaper on-line]; retrieved 30 July 2006 from: http://www.washingtontimes.com, now available on http://www.iranfocus.com/modules/news/article.php?storyid=8090. Washington Times Editorial, "Iran and the Hitler Analogy," *The Washington Times,* 6 February 2006; [newspaper on-line]; available from: http://www.washingtontimes.com/op-ed/20060205-100340-9347r.htm.

31. William J. Broad & David E. Sanger, "Iran Joins the Space Club, But to What End?" *The New York Times, 4 April 2006;* [newspaper on-line]; retrieved 4 April 2006 from http://www.nytimes.com, now available on http://www.iranfocus.com/modules/news/article.php?storyid=6573.

32. Iran is said to be "the world's fourth-biggest crude oil producer" (see Ali Safavi, "Ignoring Tehran's Threats," *The Washington Times, 13 January 2006;* [newspaper on-line]; retrieved 13 January 2006 from http://www.washingtontimes.com, now available on http://www.iranfocus.com/modules/news/article.php?storyid=5288), and is ranked third in regard to oil reserves (see Energy Information Administration. (2006, June). *International energy outlook, 2006* (Washington, DC: Department of Energy, June 2006); [Online]; available from http://www.eia.doe.gov/oiaf/ieo/oil.html. Additionally, Ahmadinejad's cultivated friendship with Venezuelan President Hugo Chavez could pay off strategically if Ahmadinejad is able to get Chavez to utilize the oil threat in conjunction with Iran. Venezuela, as "the world's fifth largest oil exporter" has already pledged to assist Iran in that respect, should Iran be "attacked" by the United States (see Gideon Long, "Chavez Sees Oil at $100 a Barrel if US Hits Iran," *Reuters*, 14 May 2006; [news service on-line]; available from http://www.iranfocus.com/modules/news/article.php?storyid=7201). See also: Richard Beeston, "Defiant Iran Threatens to Use 'Oil Weapon' Against Sanctions," *The Times*, 7 August 2006; [newspaper on-line]; available from http://www.iranfocus.com/modules/news/article.php?storyid=8178. F. William Engdahl, "A High-Risk Game of Nuclear Chicken," *Asia Times*, 31 January 2006; [newspaper on-line]. Retrieved 1 February 2006 from: http://atimes.com/atimes/Middle_East/HA31Ak02.html. Safavi, "Ignoring Tehran's Threats."

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37. Bassam Tibi, "War and Peace in Islam," In T. Nardin (Ed.), *The Ethics of War and Peace: Religious and Secular Perspectives*, Vol 1, pp. 128-145 (Princeton, NJ: Princeton University Press, 1996), p. 131 and Jean Bethke Elshtain, *Just War Against Terror: The Burden of American Power in a Violent World* (New York: Basic Books, 2003), p. 131.

38. Tibi, "War and Peace in Islam," p. 130-131.

39. John Kelsay, *Islam and War: The Gulf War and Beyond: A Study in Comparative Ethics* (Louisville, KY: John Knox Press, 1993).

40. Kelsay, *Islam and War*, p. 35-36.

41. Ayatollah Ibrahim Amini, *Al-Imam Al-Mahdi: The Just Leader of Humanity*, trans. Dr. Abdulaziz Sachedina (London: Al-Islam.com/Ahlul Bayt Digital Islamic Library Project, 1996), available from: http://www.al-islam.org/mahdi/nontl/Toc.htm. Abdullah Azzam, *Join the Caravan: The Forgotten Obligation*, n.d. [on-line]; available from http://www.religioscope.com/info/doc/jihad/azzam_caravan_1_foreword.htm. Fereydoun Hoveyda, "The Danger of Militant Islamic Fundamentalism," *American Foreign Policy Interests*, Vol 25, no. 1, (February 2003), pp. 25-33. Ja'afari Islamic Center, *Anjuman-e-Asghari Jamaat*, n.d. [on-line]; retrieved 7 July 2003 from http://www.mnjamat.org/../jamaat/munatzir/1.htm. Amir Taheri, "Anti-West," *American Foreign Policy Interests, Vol 24, no.* 2, (April 2002), pp. 111-116.

42. Kelsay, *Islam and War*, p. 35.

43. James Reston Jr., "Seeking Meaning From a Grand Imam," *The Washington Post*, 31 March 2002, p. B4 and Kelsay, *Islam and War*, p. 35.

44. Kelsay, *Islam and War*, p. 35.

45. Kelsay emphasized that this choice is not the same as the Western notion of "last resort" (Ibid, p. 36). Elshtain described "last resort" in the Western sense as "a resort to armed force taken after deliberation rather than as an immediate reaction" (Elshtain, *Just War Against Terror,* p. 62). But this does not mean all actions taken after deliberation—there must, of course, be provocation in accordance with "just cause." Having established that the cause is a "just" one, "the criterion of last resort does not compel a government to try everything else in actual fact but rather to explore other options before concluding that none seems appropriate or viable in light of the nature of the threat" (Ibid., p. 61).

46. Kelsay, *Islam and War*, p. 36.

47. Ibid.

48. (Ibid., p. 85). This partially explains the initial reticence of clerics and other Muslim leaders to speak or act against Osama bin Laden and his followers. It also explains a similar reticence on the part of Osama bin Laden and Ayman al-Zawahiri to take Abu Musab al-Zarqawi to task for killing other Muslims. All three are Sunni, while those under attack by Zarqawi were considered to be mostly (if not all) Shi'a, apostates, and coalition infidels. Even though bin Laden's publicized aim is to unify the Muslim people, neither he nor Zawahiri would have felt comfortable in dealing harshly with Zarqawi as long as Zarqawi and his men were not attempting to attack specifically Sunni or other al-Qaeda forces. In fact, an admonition—according to tradition—to reconcile with rebels as opposed to punishing or eliminating them (see Khaled Abou El Fadl, "*Ahkam al-Bughat*: Irregular Warfare and the Law of Rebellion in Islam," in James Turner Johnson & John Kelsay (Eds.), *Cross, Crescent, and Sword: TheJustification and Limitation of War in Western and Islamic Tradition* (Westport, CT: Greenwood Press, 1990), pp. 149-176 and Kelsay, *Islam and War*, p. 88-93) is reflected in the words of the intercepted letter from the al-Qaeda second-in-command to Zarqawi in July of 2005 (see Ayman Al-Zawahiri, *Letter from al-Zawahiri to al-Zarqawi* (ODNI News Release No. 2-05), 9 July 2005; [on-line]; retrieved on 11 October 2005 from: http://www.centcom.mil/english_version.htm.

49. Kelsay, *Islam and War*, p. 36.

50. Elshtain listed the criteria of a "just war" based on St. Augustine's deliberations:

a. "Just cause"—defense of a populace—and "right intentions." It must be "a response to a specific instance of unjust aggression perpetrated against one's own people or an innocent third party."

b. War must be declared by "a legitimate authority."

c. War must be considered a "last resort."

d. It "should have a reasonable chance of success."

e. Must employ limited "aims and means" (Elshtain, *Just War Against Terror,* p. 57-58).

The "two key . . . requirements" of a just war, "are *proportionality* and *discrimination.*" Proportionality is described as a "level of force commensurate with the nature of the threat," and discrimination as the necessity of differentiation "between combatants and noncombatants" (Ibid., p. 65).

51. Elshtain placed this "new facet" of "just war" within the criteria of "just cause." It is essentially based on the global necessity for the world's only superpower to maintain global stability, specifically because American power is the global "anchor" of "political, diplomatic, economic and military power" (Elshtain, *Just War Against Terror,* p. 151, 169). "International order," Elshtain submited, is based on "the expectation of American power, American stability, and American continuity" (Ibid., p. 151). In other words—"as America goes, so goes the world." If American stability falters and fails, world stability falters and fails. Inversely, if large numbers of states begin to fail, "the drain on American power and treasure will reach a point where it can no longer be borne" (Ibid., p. 169).

52. David Cook, *Contemporary Muslim Apocalyptic Literature* (Syracuse, NY: Syracuse University Press, 2005). Timothy R. Furnish, *Holiest Wars: Islamic Mahdis, Their Jihads, and Osama bin Laden* (Westport, CT: Praeger Publishers, 2005). Kelsay, *Islam and War.* Samuel Shahid, *The Last Trumpet: A Comparative Study in Christian-Islamic Eschatology* (Longwood, FL: Xulon Press, 2005). The Sunday Times, "Focus: The Nuclear Fanatic," *The Sunday Times*, 20 August 2006; [newspaper on-line]; retrieved from: http://www.iranfocus.com/modules/news/article.php?storyid=8297. Tibi, "War and Peace in Islam," p. 130.

53. *Al-Mahdi* is the Islamic "savior" who was reportedly "hidden" by *Allah* as a young child. He is to return from "occultation" during the "last days," unite the Muslims, kill or convert all remaining infidels, and rule the world under the banner of Islam for approximately seven years See Cook, *Contemporary Muslim Apocalyptic Literature*; Furnish, *Holiest Wars*; Dore Gold, *Hatred's Kingdom: How Saudi Arabia Supports the New Global Terrorism* (Washington, DC: Regnery Publishing, Inc., 2003), p. 25; and Shahid, *The Last Trumpet*.

54. Gold, *Hatred's Kingdom*, p. 24-25; Reston, "Seeking Meaning From a Grand Imam."

55. Reston, "Seeking Meaning From a Grand Imam."

56. See Gold, *Hatred's Kingdom*; Kelsay, *Islam and War*, p. 37; and Reston, "Seeking Meaning From a Grand Imam."

57. Abbas Amanat, "The Resurgence of Apocalyptic in Modern Islam, In Stephen J. Stein (Vol. Ed.), *The Encyclopedia of Apocalypticism: Vol 3. Apocalypticism in the Modern Period and the Contemporary Age* (New York: Continuum Publishing Company, 2000), pp. 230-264.

58. See Furnish, *Holiest Wars*, p. 19. This statement is echoed by Dr. Samuel Shahid in his book The *Last Trumpet: A Comparative Study in Christian-Islamic Eschatology*, p. 16-17.

59. Furnish emphasized that *Mahdi* belief has been strong among the *Sunni* and is grounded in accepted *hadith* (see Furnish, *Holiest Wars*).

60. Kelsay was specifically discussing Twelver *Shi'a* beliefs, but as noted by Furnish, traditional Mahdi belief systems are becoming more homogeneous and widely accepted due largely to a rise of popular apocalyptic literature. Also see Cynthia E. Ayers, *Dovetailing the "End-Times": A Comparative Analysis of Christian Evangelical and Islamic Fundamentalist Apocalyptic Beliefs as Noted in Popular Literature, and Implications for Global Conflict*, September 2005; [on-line]; available from: https://www.carlisle.army.mil/proteus/monographs.htm; Furnish, *Holiest Wars*; Kelsey, *Islam and War*, p. 37-38; and Abdulaziz Abdulhussein Sachedina, *Islamic Messianism: The Idea of the Mahdi in Twelver Shi'ism* (Albany, NY: State University of New York Press, 1981).

61. Kelsay, *Islam and War*, p. 37.

62. Islamic scholar Amir Tahiri noted that in *Shi'a* tradition, *al-Mahdi* (while he is in hiding) appoints 36 men "in every generation" as "nails." According to Taheri, these "nails" are supposed to be "hammered into mankind's existence," in order to keep "the universe from 'falling off'" (see Taheri, "The Frightening Truth of Why Iran Wants a Bomb," paragraph 2). Ahmadinejad himself has claimed that he has benefited from supernatural assistance and has been "tasked" by *al-Mahdi* on a somewhat personal basis (see Lindsey Hilsum, "AhmadiNejad Preparing Iran for Return of Imam Mahdi," *Channel 4 News*, November 2005; [television news on-line]; retrieved 29 March 2006 from: http://www.aimislam.com/media/video_ch4.html; Lindsey Hilsum, "Preparing for Judgement Day," *The New Statesman*, 5 December 2005; [magazine on-line]; retrieved 31 March 2006 from: http://www.channel4.com/news/special-reports/special-reports-storypage.jsp?id=1262;

Lindsey Hilsum, Strong Words From Iran," *NewsHour*, 9 December 2005; [television news on-line]; retrieved 31 March 2006 from: http://www.pbs.org/newshour/bb/middle_east/july-dec05/iran_12-9.html; and Taheri, "The Frightening Truth of Why Iran Wants a Bomb."). In fact, Taheri reported that Ahmadinejad believes *al-Mahdi* himself arranged for Ahmadinejad to become president for the specific task of "provoking a 'clash of civilisations [*sic*]' in which the Muslim world, led by Iran, takes on the 'infidel' West, led by the United States, and defeats it in a slow but prolonged contest" (see Taheri, "The Frightening Truth of Why Iran Wants a Bomb," paragraph 3).

63. Morley, "A Daily Survey of What the International Online Media are Saying."

64. Ahmadinejad, "La Letter de Mahmoud Ahmadinejad a George W. Bush."

65.Al-Jazeera, "Ahmadinejad Attacks Western 'Lie'," *AlJazeera.net*, 10 May 2006; [television news on-line]; retrieved 13 August from: http://english.aljazeera.net/NR/exeres/BA71DEC3-DC0A-4254-A03A-895C881190B5.htm. CNN, "Ahmadinejad: Iran Open to Talks," *CNN.com*, 11 May 2006; [television news on-line]; Retrieved 13 August 2006 from: http://www.iranfocus.com/modules/news/article.php?storyid=7171. Nusa Dua, "President Ahmadinejad departs for Tehran," *Islamic Republic News Agency*, 13 May 2006; [news service on-line]; retrieved 13 August 2006 from: http://www.irna.ir/en/news/view/line-22/0605131295194850.htm. The D-8 is a "group of eight developing Muslim countries," formed in 1996 and comprised of "Iran, Indonesia, Malaysia, Egypt, Turkey, Nigeria, Bangladesh, and Pakistan" (see Dua, "President Ahmadinejad departs for Tehran").

66. BBC News, "Profile: Abu Bakar Ba'asyir," *BBC News*; 14 June 2006; [television news on-line]; retrieved 26 June 2006 from: http://news.bbc.co.uk/1/hi/world/asia-pacific/2339693.stm.

67. Bashir also called on Australian Prime Minister John Howard, as well as the grieving families of victims of the Bali terrorist bombs in 2002 to convert; but it appeared from the article that President Bush was the primary target of his message. Bashir had reportedly "invited" journalists to his "hard-line Islamic boarding school" following his release from prison in order to relay this message. See Irwan Firdaus, "Cleric Calls on Bush to Convert to Islam," *Associated Press*, 15 June 2006; [news service on-line]; retrieved 15 June 2006 from http://www.washingtonpost.com, now available from http://www.breitbart.com/news/2006/06/15/D8I8LDC00.html.

68. In fact, Iranian newspaper *Jomhuri-ye Eslami* announced on the 18th of May that Ahmadinejad was writing a letter to Pope Benedict, which was to have been forwarded within a few days. Nothing else is known about this letter, however. See Reuters, "Iran President to Send Letter to Pope," *Reuters*, 18 May 2006; [news service on-line]; available from: http://www.iranfocus.com/modules/news/article.php?storyid=7255.

69. See CNN, "Germany: Iran Letter Attacks Israel," *CNN.com, 21 July 2006;* [television news on-line]; retrieved 21 July 2006 from: http://edition.cnn.com/2006/WORLD/europe/07/21/iran.letter.ap/index.html. The timing of this letter is interesting in that it was apparently written either while President Bush was visiting Chancellor Merkel in Germany just prior to their trip to St. Petersburg or during the G-8 Summit in Russia. It is possible that Ahmadinejad addressed the letter to Chancellor Merkel because of her position to influence other EU members (especially given Germany's future role as President of the EU and leader of the G-8 beginning in January of 2007 [see John Vinocur, "Can Merkel's Coalition Take the Lead in Europe?" *International Herald Tribune* reprinted in *The New York Times*, 18 July 2006; [newspaper on-line]; retrieved 15 August 2006 from: http://www.nytimes.com]), but considering the typical oppressive patriarchal view of women, it would be difficult to imagine that he singled her out from the males within the EU membership. It may be more likely that he chose Chancellor Merkel not only for her position as an EU leader, but also because she has expressed friendship and support for President Bush's policies (see Jim Rutenberg, "Bush Gives Qualified Support for Israel's Strikes," *The New York Times*, 14 July 2006; [newpaper on-line]; retrieved 15 August 2006 from: http://www.nytimes.com). Additionally, Ahmadinejad most probably knew about Western news stories calling the Chancellor President Bush's "girlfriend" (see William Douglas McClatchy Newspapers, "In Germany's Merkel, Bush Gets a Chancellor to Renew Ties," *DenverPost.com*, 13 July 2006; [newspaper on-line]; retrieved 19 August 2006 from: http://www.denverpost.com/nationworld/ci_4043822) as well as the widely-reported impromptu "back rub" given to her by the President at a G-8 summit meeting (see Associated Press, "Bush's German Back Rub Magnified on Web," *CNN.com*, 21 July 2006; [news service on-line]; retrieved 17 August 2006 from: http://edition.cnn.com/2006/TECH/internet/07/21/bush.youtube.ap/index.html). In projecting his own cultural mores on the "scandals" (mostly intended to be humorous) created for a Western audience, it is possible that Ahmadinejad misunderstood the nature of the relationship, and assumed that she would have additional influence in regard to the U.S. President's decisions. Chancellor Merkel has not released the contents of the letter she received, only a

statement saying that it contained negative remarks about Israel and the Holocaust. According to the statement provided by her spokesman, she did not intend to reply (see Louis Charbonneau, "Merkel Strongly Rejects Iranian Leader's Letter," *Reuters, 21 July 2006;* [news service on-line]; retrieved 31 July 2006 from: http://www.iranfocus.com/modules/news/article.php?storyid=7992 and CNN, "Germany: Iran Letter Attacks Israel").

70. Kelsay, *Islam and War.*

71. Ayers, *Dovetailing the "End-Times."* Cook, *Contemporary Muslim Apocalyptic Literature*. Furnish, *Holiest Wars.*

72. Kelsay, *Islam and War,* p. 35- 36.

73. Philip Sherwell, "Iran's 'Nuclear University' Conceals Research," *The Sunday Telegraph*, 16 April 2006; [newspaper on-line]; retrieved 16 April 2006 from: http://www.telegraph.co.uk/news/main.jhtml?xml=/news/2006/04/16/wiran16.xml.

74. Kelsay, *Islam and War*, p. 36.

75. EU "foreign policy chief" Javier Solana delivered the package to Tehran in person on 6 June 2006. The written text contained the incentives only—the coalition (England, France, Germany, Russia, China, and the U.S.) had agreed to allow Solana to provide information on the "potential punishments" orally at a "one-on-one meeting." It was the coalition's intention to achieve a successful outcome by attempting a more "respectful" approach (Elaine Sciolino & William J. Broad, "Iran Quietly Learns of Penalties in a Nuclear Incentives Deal," *The New York Times,* 14 June 2006; [newspaper on-line]; available from http://www.iranfocus.com/modules/news/article.php?storyid=7607).

76. Daniel Gallington, "Nuclear Brinkmanship," *The Washington Times*, 15 June 2006; [newspaper on-line]; available from: http://www.washingtontimes.com. Richard Perle, "Why Did Bush Blink on Iran?" *The Washington Post*, 25 June 2006; [newspaper on-line]; available from: http://www.washingtonpost.com.

77. Gallington, "Nuclear Brinkmanship." *Jerusalem Post,* "German FM: Iran Nukes at Decisive Phase," The *Jerusalem Pos*t, 24 June 2006; [newspaper on-line]; retrieved 24 June 2006 from: http://www.jpost.com/servlet/Satellite?cid=1150885839099&pagename=JPost%2FJPArticle%2FShowFull. Tony Karon, "Behind Washington's Turnabout on Talks With Iran*," Time, 31 May 2006;* [news magazine on-line]; available from: http://www.time.com/time/world/article/0,8599,1199684,00.html.

78. As previously stated, the three options are conversion, acceptance of dhimmitude, or death by war. "Dhimmitude embraces the condition of the *dhimmi*"—those who are given "*dhimmi* status" in falling under the "protection" of Islamic law by virtue of payment of a designated tax (See Bat Ye'or, *Islam and dhimmitude: Where Civilizations Collide*, Miriam Kochan & David Littman, Trans. [Lancaster, UK: Gazelle Book Services, Ltd., 2002].

79. Gallington, "Nuclear Brinkmanship." Sciolino & Broad, "Iran Quietly Learns of Penalties in a Nuclear Incentives Deal." Kenneth R. Timmerman, "Slippery Slope in Iran," *The Washington Times*, 19 June 2006; [newspaper on-line]; retrieved 19 June 2006 from http://www.washingtontimes.com.

80. Dareini, "Ahmadinejad Seeks Chinese, Russian Support." Gallington, "Nuclear Brinkmanship." Tony Karon, "Waiting for Iran's Answer," *Time*, 22 June 2006; [news magazine on-line]; retrieved 30 June 2006 from: http://www.time.com/time/world/printout/0,8816,1207140,00.html**.** Perle, "Why Did Bush Blink on Iran?" Reuters, "U.S.'s Bodman Encouraged by Iran Comments," *Iran Focus News*, 16 June 2006; [news service on-line]; available from: http://www.iranfocus.com/modules/news/article.php?storyid=7636.

81. Reuters, "Germany Cannot Wait Until Aug 22 for Iran," *Iran Focus News*, 26 June 2006; [Online]; available from: http://www.iranfocus.com/modules/news/article.php?storyid=7730.

82. The Sunday Times, "Focus: The Nuclear Fanatic."

83. See Bernard Lewis, "August 22: Does Iran Have Something in Store?" *The Wall Street Journal*, 8 August 2006; [newspaper on-line]; retrieved 8 August 2006 from: http://www.opinionjournal.com/extra/?id=110008768 and The Sunday Times, "Focus: The Nuclear Fanatic." There seems to be a difference of opinion over whether this tradition as specified by Lewis is important within the Shi'a belief system (see DEBKAfile, "Iran's Military Exercise and Apocalyptic Plans for Israel and World," *DEBKAfile*, 20 August 2006; [news service online]; available from http://www.debka.org/article.php?aid=1203 as compared to Lewis, "August 22: Does Iran Have Something in Store?" But, if Furnish and Cook

are right, apocalyptic traditions are increasingly similar and based more on popular apocalyptic literature than on historic scriptural interpretation.

84. Kelsay, *Islam and War,* p. 35.

85. Iran Focus, "Iran Threatens to Reject Nuclear Package if UN Takes Action," *Iran Focus News*, 30 July 2006; [news service on-line]; available from: http://www.iranfocus.com/modules/news/article.php?storyid=8093.

86. Associated Press, "Mike Wallace Says Iranian President an 'Impressive Fellow'," *FoxNews.com, 9 August 2006;* [television news on-line]; retrieved 9 August 2006 from http://www.foxnews.com/story/0,2933,207664,00.html. CBS (ed.), "Iranian Leader Opens Up: Ahmadinejad Speaks Candidly With Mike Wallace About Israel, Nukes, Bush," *CBS News, 13 August 2006;* [television news on-line]; retrieved 18 August 2006 from http://www.cbsnews.com/stories/2006/08/09/60minutes/main1879867.shtml?CMP=ILC-SearchStories.

87. CBS (ed.), "Iranian Leader Opens Up: Ahmadinejad Speaks Candidly With Mike Wallace."

88. It seems very possible that the only reason Ahmadinejad "summoned [Wallace] to Iran for the interview" was to issue the "message" to President Bush (see Associated Press, "Mike Wallace Says Iranian President an 'Impressive Fellow'"). It is especially interesting that the interview occurred within a couple of weeks of the Ahmadinejad's self-imposed response date for the coalition's package of incentives. If Bernard Lewis is right, perhaps Ahmadinejad wanted to give Bush one last chance to change his mind prior to the response he had planned for the 22nd of August.

89. Reuters, "Iranian Missiles Ready to Hit Tel Aviv Says Cleric," *Iran Focus News*, 15 August 2006; [news service on-line]; available from http://www.iranfocus.com/modules/news/article.php?storyid=8247.

90. Iran Focus, "Iran Threatens to Reject Nuclear Package if UN Takes Action." Maddox, "Clever Moves May Become a Dangerous Game for Iran."

91. (See Fabonline.com, *The Rising of the Imam al Mahdi.*) This sword may have originally belonged to the Prophet himself, as traditions regarding the sword with which *al-Mahdi* will return have varied. Dr. Samuel Shahid, for instance, states that *al-Mahdi* is to be wearing the Prophet's sword (see Shahid, *The Last Trumpet,* p. 120-121).

92. Maddox, "Clever Moves May Become a Dangerous Game for Iran," paragraph 4.

93. Bill Gertz, "Pentagon Calls Iran Missile Claim an Exaggeration," *The Washington Times*, 4 April 2006; [newspaper on-line]; available from http://www.iranfocus.com/modules/news/article.php?storyid=6570. Clifford Kupchan, "Tehran's Trump Card," *The Los Angeles Times*, 23 April 2006; [newspaper on-line]; Retrieved 20 August 2006 from: http://www.iranfocus.com/modules/news/article.php?storyid=6873.

94. Update as of 25 August: It appears that with the exception of Iranian officials blocking access of International Atomic Energy Agency (IAEA) inspectors to a facility in Natanz, nothing "cataclysmic" or even out of the ordinary occurred by or on 22 August—at least, nothing that has been reported within the unclassified arena. The Iranian regime did, as promised, forward a lengthy and complicated response to the coalition while stating that they would continue uranium enrichment. The coalition is currently reviewing the response, but initial reactions indicate that it is "unsatisfactory." Almost simultaneous to the delivery of Iran's response, unsubstantiated reports surfaced of the existence of at least 15 "advanced uranium enrichment machines" (P-2 centrifuges) owned and run at a "secret site operated by the Iran Centrifuge Technology Co[mpany]" (see Brian Knowlton, "Germany, Too, is Unsatisfied by Iran's Proposal," *International Herald Tribune*, 25 August 2006; [newspaper on-line]; available from: http://www.iranfocus.com/modules/news/article.php?storyid=8368). It is worth noting that Ahmadinejad claimed in April of 2006 that Iran was conducting research on P-2 centrifuges (see also David R. Sands, "Inspectors Kept Out of Key Site Ahead of Deadline," *The Washington Times*, 22 August 2006; [newspaper on-line]; available from http://www.washingtontimes.com/world/20060821-101825-8356r.htm and Criag S. Smith, Smith, "Foes Say Tehran Builds Fast Uranium Centrifuges," *The New York Times*, 25 August 2006; [newspaper on-line]; available from: http://www.nytimes.com).

95. See Broad & Sanger, "Iran Joins the Space Club, But to What End?" and Broad & Sciolino, "Iran's Secrecy Widens Gap in Nuclear Intelligence," *The New York Times*, 19 May 2006; [newspaper on-line]; available from http://www.nytimes.com.

96. It could be argued that Ahmadinejad already has nuclear weapons (see Ayers & Cammons, *Ahmadinejad's Strategic Communication*). In fact, a Jerusalem Post article of 24 June stated "Iran insists its nuclear program is limited to peaceful energy uses. Still, two weeks ago, its defense minister warned that it would use nuclear means to defend itself if attacked" (Jerusalem Post, "German FM: Iran Nukes at Decisive Phase").

97. See Ayers & Cammons, *Ahmadinejad's Strategic Communication,* Karon, "Waiting for Iran's Answer," and Perle, "Why Did Bush Blink on Iran?"

Proteus Insights and the Future of Global Jihadism

Ms. Aidan Kirby and Mr. Shawn Brimley

Five years after the worst terrorist attack in American history, the country finds itself engaged in two counterinsurgencies in the Middle East and an irregular war against a transnational jihadist movement. The strategies and capabilities the United States is employing in pursuit of 'victory' against al Qaeda and its affiliates have changed dramatically since 2001, and the pace of change shows little sign of ebbing. Al Qaeda has changed as well, becoming more diffuse, decentralized, and disconnected than its pre-9/11 incarnation. In some ways, al Qaeda's ideology has become more dangerous than the operational leadership employed by Bin Laden or Zawahiri ever was, as cells with no real connection to al Qaeda have planned, and in some cases succeeded in, attacking targets from Bali, to Casablanca, Madrid, London, Miami, and Toronto. While it is an appropriate time to look back over the last five years to assess the efficacy of choices made and strategies followed, it is also important to look beyond the present to consider the future. This brief attempt to explore the possible future evolution of the global jihadist movement will take two forms. First, seven *Proteus Insights*[1] will be utilized as analytical lenses in order to consider the future of the al Qaeda movement. Second, a short essay will deal with several possible future manifestations of the jihadist threat that, if realized, will pose significant challenges and opportunities to Western leaders and counterterrorism officials. While the authors are fully cognizant of Niels Bohr's observation that "prediction is very difficult, especially of the future," the insights and discussion are meant to be provocative attempts to do just that.

Insight: Starlight

The closest star to our solar system, Alpha Centauri, is 4.35 light years away, which means that every night when we look up at the night sky, we are seeing the past in the present. Our galaxy is a vast and infinitely complex place, and yet we can not know anything about what is going on *right now* – we are hostages to time. To a much lesser degree of course, understanding the secretive goings on of transnational terrorist groups is often as frustrating (and fascinating) as astronomy. Sometimes we simply cannot divine the strategy and capabilities of our enemies until they *do* something, and then we must, like a lonely astronomer happening upon a rare supernova, scramble to record and analyze everything – before the window into the past is lost.

Five years after 9/11, it seems every pundit and commentator is opining on how the so-called 'war on terror' has thus far proceeded – as they should. For those analysts and scholars who have the privilege of devoting much of their professional lives to researching this topic, the evolution of the threat posed by jihadist terrorism and the nature of our response has been a constant debate.

Looking at the night sky helps remind us that context is crucial. One cannot see a black hole for instance – a collapsed star so dense that not even light can escape its gravitational pull – but must detect its influence on surrounding objects to prove its existence. Like astronomers researching black holes,

1. David A. Kier in the "Forward" to *Proteus Insights from 2020*, compiled by Pamela H. Krause, p. vii.

counterterrorism analysts often do not directly observe important events and decisions, but must discover them through careful inference and analysis – while keeping an open mind.

Consider the death of Zarqawi for example. Such an event is clearly a victory for the U.S. and the Iraqi government – but what kind of victory, a strategic success that will turn the tide against al Qaeda in Iraq? A tactical victory against a prominent terrorist with unknown strategic ripples? Also consider the history of the modern jihadist movement – the crucial debates that took place in Sudan and other places in the mid-1990s, as Bin Laden and his followers faced a choice between targeting the 'near enemies' of Egypt and Saudi Arabia, or the 'far enemies' of the United States and its Western allies. While some analysts were attuned to the danger of a newly global jihadist doctrine, the strategic significance of these debates was not fully apparent to the intelligence community until the 1998 bombings of the U.S. embassies in Kenya and Tanzania.[2] Considering all that has occurred over the last five years, and the relevance of Iraq and the recent war in southern Lebanon to potential shifts in jihadist strategies, it will be very important for analysts to make accurate inferences and estimates – to find the black hole in the night sky.

Finally, the 'starlight' insight can usefully remind us that context is critical when attempting to assess the threat of al Qaeda and its affiliates. Thanks to Einstein's theory of relativity, we know that light can be 'bent' by the gravity wells of large celestial bodies. When one considers the various ways the jihadist movement is shaped and affected by the ongoing conflicts throughout the Middle East, the analytical challenge becomes even more difficult to meet. How are strategic and operational opportunities for jihadists constrained or, more likely, enhanced by what is going on in Afghanistan, Iraq, and now, Lebanon? If the center of gravity in the war on terror is al Qaeda's ideology, how does this narrative evolve or get 'bent' by its passage through the lands of jihad?

On every level, the conflicts in Afghanistan, Iraq, and now Lebanon, will influence the global jihadist community and shape the resulting threat in ways that will tax our ability to even perceive changes, much less act on them. We must remain attuned to the reality that in analyzing the present, we often are simultaneously discovering the past.

Insight: Sanctuary

In all of the Proteus futures, the problem-set of 'hiding' and 'finding' in 2020 is more pervasive and complex than today. It is also clear from the last five years of global operations against al Qaeda and its affiliates that preventing our enemies from finding *sanctuary* is among the most difficult tasks facing the United States and its allies.

While the process of globalization will help many nations improve living standards and future prospects by helping them connect to the global economy, it will also create and exacerbate 'losers' – failed states and regions of the world that are essentially ungoverned spaces. 9/11 constituted dramatic proof that, in a globalized era, failed states can serve as incubators of the most dangerous threats. The number of people living in weak or failed states has been estimated to be as high as 2 billion.[3] Western intelligence agencies find it extremely difficult to operate effectively in anarchic regions, and developing capabilities to do so will take much time and resources.

2. See Michael Scheuer [Anonymous] *Through Our Enemies Eyes* (Washington, D.C.: Brassey's, 2003). Also see Fawaz Gerges, *The Far Enemy: Why Jihad Went Global* (New York: Cambridge University Press, 2005).

3. See "The Failed States Index," *Foreign Policy* (July / August 2005): 56-65.

In the years since 9/11, it is no longer possible for states to openly harbor terrorist groups that pose significant threats to U.S. interests without risking the regime's survival, or at the very least its other interests. Instead, states like Iran and Syria will likely choose to retain covert, or at least deniable, ties to groups with leadership cadres and operational capabilities in other states or regions. In an era defined by connectivity, it is no longer necessary for terrorist groups to converge in order to find physical sanctuary. Moreover, state-sponsors of terrorism no longer need to provide physical sanctuary in order to retain that unsavory title.

While physical sanctuary will continue to constitute an important goal of transnational terrorists, their ability to find safe havens in cyberspace will pose ever increasing challenges to intelligence and law enforcement agencies. Cyber-sanctuaries are no longer simply the preserve of sympathizers and dabblers pontificating on strategy and jihadist 'philosophy', but constitute operational and tactical-level assets that can greatly enhance the capabilities of even the most amateur terror cells. From secure chat-rooms, virtual 'dead-drops' via email, online videos and how-to manuals, to overhead satellite imagery and GPS navigation, sanctuaries in cyberspace need to be considered a significant battle-space in the war on terror. There is a debate in the counterterrorism community between those who argue that the benefits of monitoring jihadist cyber-sanctuaries are outweighed by attempts to disable the sites through hacking or pressuring service-providers. At the very least, the CT community needs to develop ways to fight in cyberspace when it is deemed advantageous to do so.

It is not as if the problem of sanctuary in the 21st century is entirely new. The fight against the Soviet Union was, in important ways, analogous to the challenge of countering transnational terrorists who utilize sanctuaries and ideologies that are global in scope. In George Kennan's famous 'X' article for example, he concluded: "[The Kremlin's] main concern is to make sure that it has filled every nook and cranny available to it in the basin of world power. But if it finds unassailable barriers in its path, it accepts these philosophically and accommodates itself to them."[4] Al Qaeda and their jihadist brethren have adapted well to a 21st century paradigm in which physical and virtual sanctuary is paramount to its effectiveness – the counterterrorism community needs to ensure it evolves as effectively.

Insight: Herds

In our attempts to understand and counter the spread of radical Islamic ideologies, a number of crucial concepts emerge. As a 'Proteus Insight' *herds* refers to the movement of ideas – the channels by which transmission occurs – and the many factors shaping this exchange. Two crucial concepts to consider when examining this issue in the context of global Jihadism are that of *diaspora* and *deterritorialization*. Increasingly relevant for the United States and its allies are the dynamics driving radicalization outside of the Muslim world.

One of the interesting phenomena identified in contemporary anthropological and sociological study of the Islamic diaspora, is the tendency toward, a universal and somewhat culturally-generic vision of a global umma[5]. Rather than a traditional diaspora, built upon a pattern of identification with one's country of origin (or parent's country of birth) there has been a marked trend, especially among second and third-generation Muslims toward a focus on the 'Islamic peripheries' – the regions where Muslims are

4. George Kennan, "The Sources of Soviet Conduct," *Foreign Affairs* (July 1947).
5. The term umma or ummah refers to the worldwide Muslim community.

minorities, are perceived as being oppressed, displaced or persecuted.[6] These regions often include Iraq, Afghanistan, Palestine, Bosnia, Chechnya and Kashmir. In this sense, membership of the global diaspora community is defined more as a transnational religious community, collectively responsible for the plight of Muslims everywhere, than it is defined in relationship to any specific cultural or ethnic heritage.

In recent cases of radicalized youths, like those who carried out the attacks on the London Underground last summer and in the case of the disrupted plot in Toronto in June of this year, their rhetoric conveys this reality.[7] This focus on the 'universal' grievance is perfectly constructed to downplay cultural divisions and remove context while highlighting the alleged outrage as shared experience, vicariously felt by all Muslims. Some argue that, in fact, what is emerging is not so much a diasporic movement, which is inherently defined in reference to a country of origin, but more accurately described as deterritorialzed or *stateless* community.[8] Integral to this development is a process of reassessing what Islam means and a recasting of identities.

As in the case of the other Protean scenarios, the emergence of a global umma, with Islamic peripheries acting as a reference point, represents a re-shaping of loyalties and affinities along unconventional lines. The influence and significance of the traditional sources of identity; heritage, nation-state, ethnicity have given way to a more inherently global entity that implicitly defines itself by its diffusion and a shared feeling of insecurity.

Insight: Parallel Universe

The emergence of these new alliances has, without doubt, has been profoundly shaped by the Internet. The Internet has fundamentally changed the nature of human communication and in doing so, has created new social realities, including the formation of virtual communities.

As scholars of radical Islamic movements have explained – the Internet has impacted the nature of the global jihad by redefining the relationship between individuals and this perceived virtual community or virtual *umma*. In many respects, the Internet – and the style of social interaction is facilitates, favors the Salafi ideology, as Marc Sageman explains in *Understanding Terror Networks*.[9] It appeals to the isolated by offering an opportunity to interact with those sharing common concerns or grievances. In doing so, it also gradually undermines conventional social interactions which might otherwise dilute radical messages, and encourage a feeling of identification with local community. Over time, this tends to foster a globally-oriented attitude. As a technological medium, the Internet is working in tandem with the herd developments described above which are, in part, a byproduct of contemporary migration patterns and demographic change; most notably, the establishment of significant Muslim minorities across much of Western Europe. This is the ideological power of the Internet: the ability, when exploited properly, to make globally disparate issues, conflicts and figures, immediately relevant to the broadest possible audience.

The emergence of the Internet as a parallel universe has been equally transformative operationally, to the global jihad. Since Osama Bin Laden was confronted militarily in Afghanistan shortly after

6 Maj. Tara Leweling, "Exploring Muslim Diaspora Communities in Europe through a Social Movement Lens: Some Initial Thoughts," *Strategic Insights*, vol.4,iss.5, 2005.

7. Jonathan Calvert and Nick Fielding, "Tape links Al-Qaeda to London," Times Online (September 04, 2005)

8. See Olivier Roy, *Globalized Islam: The Search for a New Ummah,* (New York: Columbia University Press, 2004)

9. From a historical standpoint, the Salafi ideology rejects nationalism and prioritizes the global goal of fighting the 'far enemy'. For further discussion, see Marc Sageman, Understanding Terror Networks, page 161.

9/11, al Qaeda has been deprived of any uncontested physical sanctuary. What is so remarkable about the last five years is the pace with which al Qaeda and its affiliates have retreated to virtual space to develop and strengthen their global movement.

The operational opportunities for accessing instruction in tradecraft and urban warfare techniques are vast. Everything from weapons training (including IED construction, suicide belts, the mixing of chemical explosives) to surveillance and targeting strategies is available online for the aspiring jihadist. Beyond written instructional products, much of the material is interactive and multi-media and these enhancements have largely diminished, if not in some cases removed, the need for formal physical training camps. The result is a larger, more diffuse association of individuals bound by their common convictions and by a sense of mutual alienation, empowered with powerful operational knowledge.

From strategic perspective, the Internet has effected a de-formalizing of the global jihad. It has so effectively circulated both the message and the means that an aspiring jihadist must rely far less on the formal channels to 'join' the jihad, or to become operational. Many of the social processes which bound jihadist fighters in past conflicts have been replaced by virtual interaction – as has the transfer of knowledge. Now, thanks to the Internet, one need not be recruited, or trained in any systematic way to transcend the dividing line between wanna-be and terrorist.

Insight: Bedfellows

As the complexity of the global system increases, so does threat environment it creates. In a system that depends on linkages and alliances to perpetuate economic growth and political security, it should come as no surprise that our 21st century foes depend on such functions as well. While the original *Proteus* text used the bedfellow metaphor to argue for functional and organic reform of the intelligence community, is also effective in describing threats.

One especially disturbing mid-term possibility concerns the extent to which al Qaeda's ideological leaders see utility in aligning their interests with Shiite terrorist groups like Hezbollah. While any such alliance would be a complex and controversial affair considering the horrendous sectarian violence in Iraq (not to mention more than 1000 years of conflict), there are some indications that such a relationship is at least possible.

In the days and weeks following the onset of hostilities in southern Lebanon, al Qaeda has not remained silent. In a taped message aired in late July, Ayman al Zawahiri told Muslims in Lebanon and the Palestinian territories, "Stand with us and we will stand with you." Several prominent analysts have warned against reading too much into statements by al Qaeda leaders, instead interpreting them as attempts to compete with Hezbollah for leadership of the jihad. The authors concede that al Qaeda is likely jumping on the bandwagon with, rather than becoming a bedfellow beside, Hezbollah – but with the Middle East clearly on a geopolitical rollercoaster for the foreseeable future, can such a development be entirely disregarded?

One of the interesting conversations to monitor in the coming years will be the debate over the 'near' and 'far' enemy ' doctrine that lies at the heart of Bin Laden's philosophy. Five years after 9/11, al Qaeda seems no closer to crippling the United States or advancing a resurgence Caliphate stretching from Spain to Indonesia. With Hezbollah proving that it can advance its standing by striking at its local adversary, it will be interesting to watch whether al Qaeda modifies its strategic agenda. If 'cutting of the head of the American snake' seems in 2006 or further to be beyond the realm of the

possible, 'realists' within the al Qaeda movement may seek to strike closer to home. It is possible that the 'near enemies,' those so-called apostate regimes of the Middle East, may again become primary targets of the jihadist movement. Were such a strategic shift to occur in the coming years, al Qaeda may shift to local alliances with regional groups in lieu of attempting to continue a global war against the United States.

Insight: Power

Five years after the 9/11 attacks, the United States doesn't appear to have improved its strategic position in the Middle East or with the Muslim world. Afghanistan is perpetually unstable, Iraq is experiencing elements of civil war, and the situation in Lebanon has threatened to heighten existing regional instability. Recent arrests of al Qaeda-inspired groups from Toronto, to Miami and London seem to indicate that the jihadist narrative has increased its influence since September 11th, 2001. At the core of the long war is the fight over the type of power most relevant to 21st century conflicts. Has the United States and its allies used their power efficaciously? Do we have the instruments of power necessary to compete with transnational groups? Two statements from *Proteus: Insights from 2020* are highly relevant when thinking about the current strategic picture in the context of *Power*:

- "When *Power* erodes or it is an inappropriate match to an adversary, the best case is a sort of strategic impotence. The worst case is that you are open to strategic surprise."
- "Failure to understand the full dimensionality of *Power* risks blindness to instruments of power that can threaten you."[10]

As Hezbollah fighters and supporters emerge from the rubble of southern Lebanon with what appears to be enhanced credibility and influence, the power of this group to affect the strategic landscape grows as well. With access to the technological means to attack a regional power like Israel, and the ability to survive any conceivable response, Hezbollah appears to be the best guerrilla force in the world.[11] Indeed, Richard Armitage stated in 2002 that "Hezbollah may be the A team of terrorists," while "al Qaeda is actually the B team."[12] It appears that Israel's power has eroded after they suffered both a strategic surprise and their response could be argued as strategically incompetent. This is not to argue that there were many good options for Israel, but to advance the idea that the lack of available instruments to wage what Frank Hoffman calls 'complex irregular warfare' is a pernicious and common problem among states threatened by non-state terror groups.[13]

The characteristics of power are changing as globalization opens new avenues to those interested in confronting strong regional powers and global hegemons. Western reactions to the provocations of ideologically motivated non-state actors have not, it seems, been adequate. The 'long war' will require better strategic thinking and operational tools than currently exist.

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10. *Proteus: Insights from 2020.* Pamela Kruase (ed), (Copernicus Institute Press, 2000): 69.

11. See Edward Cody and Molly Moore, "The Best Guerrilla Force in the World," *The Washington Post* (August 14, 2006): A01

12. Quoted in Daniel Byman, "Should Hezbollah Be Next?" *Foreign Affairs* (November / December 2003). See also Nicholas Blanchard, "Syria Worries U.S. Won't Stop at Iraq," *Christian Science Monitor* (September 9, 2002): 6.

13. See Frank Hoffman, "Complex Irregular Warfare: The Next Revolution in Military Affairs," *Orbis* (Summer 2006): 395-411.

Insight: Threat-Opportunity Continuum

The notion of threats and opportunities sharing opposite ends of the same continuum can be a useful analytical tool. In an adversarial context, security challenges often present themselves this way. In a conventional conflict the metrics often amount to a zero-sum game; strategic opportunities for one side almost always imply threats to the other, just as gains for one side amount to losses for the other. Of course, elements of this relationship still exist in the war on terror, but what is most important to recognize is the way in which the asymmetric nature of the conflict has inverted and complicated this relationship. What has become characteristic of the struggle against al Qaeda – and will likely continue to define it in the years to come – is the way in which strength, power and opportunity have been consistently undermined by the radical divergence in the desired end-states by either side of the conflict.

This theme has been present since 9/11, when America's openness was exploited and attacked from within. Since the United States went on the offensive, a series of unexpected innovations by the jihadist movement have complicated its efforts and have steered perceived opportunities back into threats. The expulsion of Osama Bin Laden from his physical sanctuary in Afghanistan encouraged the adoption of the Internet by al Qaeda as a virtual sanctuary – a safe haven in which the United States is profoundly less equipped to confront them. And the decision to invade Iraq has created a real-time, authentic experience for jihadist fighters which probably offers more sophisticated opportunities for training and networking than the simulated camps in Afghanistan ever could have. Our progress in tracking, arresting or killing known al Qaeda operatives has been encouraging, but while this hunt has been underway, a transformation of the movement has been occurring. The rapid decentralization and emergence of autonomous groups has made the enemy increasingly amorphous and diffuse and has underscored the ideological dimension of the conflict.

While the asymmetry of the war on terror has fundamentally altered the meaning of strength and vulnerability, real strategic threats and opportunities still exist. Unfortunately they may often be concealed by their simultaneity. While al Qaeda has effectively exploited the Internet to wage their ideological battle, and to share operational insights, the openness of this forum presents opportunities for counter-exploitation. And while the rise of self-starting cells present new challenges for intelligence, law enforcement and community-based actors, it also presents a corresponding opportunity. This phenomenon reveals crucial realities about the sociological, psychological and anthropological factors that drive the dynamics of radicalization which have often been obscured. These challenging developments present crucial opportunities to better understand the nature of the adversary that threatens us. What is required to exploit them is a willingness to step outside of prevailing paradigms and to conceive of the threat in news ways.

The Future of Global Jihadism

Five years after 9/11, the United States has managed to avoid another catastrophic attack on one of its cities. Significant investment in intelligence and homeland security capabilities have helped to keep us safe. But considering the history of the global jihadist movement, it would be folly to become complacent or to embrace, as some did after the Cold War, a 'return to normalcy'. As recent events have shown, the post-9/11 era will continue to be defined by a diffuse threat environment complicated by a perpetually unstable Middle East. While there will always be a significant level of uncertainty regarding how the al Qaeda movement will evolve, some jihadist threats are more likely to materialize than others. Of the range of likely possibilities, there are three that are both likely and dangerous.

First, the 'al Qaeda brand' is becoming more adaptable to local circumstances, offering both challenges and opportunities to intelligence and law enforcement. Second, the eventual exodus of foreign fighters from Iraq back to their home countries will herald the emergence of 'hybrid cells' – groups with local wisdom and worldly experience. Third, the recent conflict in southern Lebanon has solidified Hezbollah as a guerrilla group *par excellence*, but has raised the possibility of shifts in al Qaeda and other Sunni-jihadist doctrine. All three possibilities are threatening to U.S. and allied interests, but also offer certain opportunities that, if utilized adroitly, will advance the fight against global Jihadism.

The Al Qaeda Brand

When trying to project the future direction of the jihadist threat, one must confront the difficult question of what role al Qaeda will play in the years to come. This question is inherently complex, as it is often difficult to determine the role, significance and operational capabilities of al Qaeda (as in the network, led by Osama Bin Laden) in even the current context. The anatomy of the jihadist threat is far more sophisticated then it was five years ago. The removal of al Qaeda's Afghan sanctuary and the damage done to al Qaeda's leadership and key operatives has changed the nature of the organization radically. Simultaneously, the growth of al Qaeda as global social movement, and the rise of unaffiliated groups executing large scale attacks have obscured elements of the original organization's status. Furthermore, despite the prevailing misconceptions that al Qaeda is basically synonymous with *jihadism* or with militant radical Islam, it is important to remember that in fact al Qaeda is one part of a much broader movement, which embodies many conflicting ideologies and goals.[14]

A number of important issues will determine the endurance and power of the al Qaeda 'brand name' in the years to come – to what extent is Bin Laden and his network controlling the strategic direction of their own movement, and to what extent are their decisions merely reactive? What does the evolution of 'al Qaeda in Iraq' suggest about Bin Laden's strengths and weaknesses as a leader and the strategic value of adopting local conflicts? Lastly, what is the most likely long-term direction of the global jihadist ideology and among what groups is it most likely to endure?

A number of current events shed some light on the first question. In the midst of the mounting violence between Israel and Hezbollah in the conflict of July-August 2006, interesting rhetoric has emerged from al Qaeda's second-in-command Ayman al-Zawahiri. His strategic framing of this conflict, (which threatened to shift the global public's attention away from Bin Laden, al Qaeda and the war in Iraq), was illustrative of al Qaeda's enduring strategy, both from a theological standpoint and from a public relations perspective. In a video aired on July 27th, Zawahiri called for Muslims to join the fight underway in Lebanon and Gaza.[15] The video included a clip of Zarqawi discussing the fight in Iraq in the context of the fight for Jerusalem. Zawahiri's rhetoric was clearly aimed at a pan-Islamic audience, making reference to both Sunni and Shia historic and religious leaders.

Zawahiri's efforts to rally Muslims and al Qaeda followers around the Shia Hezbollah were surprising to some analysts. At fist glance the move might be seen as incompatible with the Sunni Salafi-basis of al Qaeda's ideology. In reality this move is entirely consistent with Bin Laden's long-standing emphasis on the 'far enemy' as the most important focal point of the global jihad and his pattern of downplaying

14. For a detailed discussion of the broader radical Islamic movement, see Emmanuel Sivan, "The Clash Within Islam," *Survival* vol.45, no.1 Spring 2003.

15. Associated Press, "Zawahri tells Muslims to join Mideast conflict," (July 27, 2006).

the internal divisions within Islam.[16] A remaining question is what Bin Laden and Zawahiri essentially hoped to gain from this media maneuver. Was the momentary diversion of media attention threatening – or perhaps the event was recognized as an opportunity for an effort at sectarian reconciliation, given the increasing rift and spiraling violence in Iraq?

Another interesting development following the outbreak of the Israel-Hezbollah conflict was the announcement by Zawahiri that the Egyptian group Al-Jamaa Islamiya had joined al Qaeda to "form one line, facing its enemies."[17] (This announcement was particularly interesting given Zawahiri's history as founder of the Egyptian Islamic Jihad, and his career of promoting the 'near-enemy' jihad of religious nationalists, prior to his defection to Bin Laden's globalist movement.)[18] Almost immediately following this announcement the realignment was denied by the group's senior leaders and publicly dismissed as "sheer fabrication and lying."[19] This outright rejection by Al-Jamaa Islamiya of Zarqawi's claims highlights the enduring tension that exists between al Qaeda's globally-oriented strategic vision and the position of many other jihadist groups that still seek primarily to topple their own 'apostate' governments, and many of whom oppose Bin Laden's movement and it's goals.

The evolution of al Qaeda in Iraq is an interesting case-study in both the strategic opportunities of al Qaeda's expansion of their 'brand name' into local conflicts – and its many risks. The nature of the relationship between the organizations currently fighting under the banner of 'al Qaeda in Iraq' to Bin Laden himself is much less direct than many are aware. Of course, the analytical tendency to treat these Iraq-based groups as part of al Qaeda is natural – and the actors in question likely anticipated this impulse. In reality, prior to the agreement between Abu Musab al-Zarqawi and Bin Laden in late 2004 to adopt a cooperative arrangement, there were very few ties, operational or strategic, between the Iraqi jihad and the al Qaeda network, led by Bin Laden. But the centrality of this conflict in the global public consciousness, and mounting signs that Zarqawi's reputation was beginning to rival Bin Laden's, pressured the al Qaeda leadership to take action. This move was likely also an attempt to increase the status and visibility of al Qaeda in the Arab world – a region where its influence had been waning.

In an October Internet statement Zarqawi announced that his group would become known as 'al Qaeda in the Land of the Two Rivers' and he pledged his allegiance to Bin Laden. Shortly thereafter Bin Laden announced the partnership and he endorsed Zarqawi as both his deputy and the 'emir of Al Qaeda in Iraq'.[20] Since that time however, this marriage of convenience has clearly bred internal conflict in the movement. Many of Zarqawi's tactics have been at odds with Bin Laden's ideology and goals, and now, the spiraling sectarian violence has taken the Iraq conflict in a direction that is largely incompatible with and may ultimately undermine the global jihadist movement. The frustration with this aspect of the conflict was evident in the Zawahiri-Zarqawi correspondence of July 2005.[21]

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16. "If warding off the aggressive enemy becomes impossible without all Muslims of all walks and ranks getting together, then that is their duty and they should in that case overlook some disputed issues. Overlooking such disputes at this stage is less harmful than the continuation of the great heresy afflicting the countries of the Muslims." Bin Laden is as quoted in *Through our Enemies' Eyes: Osama Bin Laden, Radical Islam and the Future of America* by Anonymous, (Washington: Brassy's Inc, 2003.)

17. CNN, "Al-Zawahiri: Egyptian Militant Group joins al Qaeda," (August 5, 2006).

18. Fawaz Gerges, *The Far Enemy: Why Jihad Went Global* (New York: Cambridge University Press, 2005):119-125.

19. Nadia Abou El-Magd, "Egyption Group Denies It's in al-Qaida," (*Washington Post*, August 6, 2006).

20. Gerges, The Far Enemy, 258.

21. "Letter from al-Zawahiri to al-Zarqawi," October 11, 2005, ODNI News Release No. 2-05: http://www.dni.gov/press_releases/letter_in_english.pdf .

Whether this strategy of re-branding existing groups will continue remains unclear. Although smaller groups with distinct and often locally-grounded agendas will be vulnerable to co-option, perhaps the direction of events in Iraq and the unapologetic rebuttal from Al-Jamaa Islamiya will undermine Bin Laden's confidence in the aggressive adoption of autonomous groups. Conversely, the tendency of the media to consistently reference such a wide array of groups as 'affiliates' of al Qaeda, and tactics as being 'hallmarks' of al Qaeda operations, is likely to continue to promote the al Qaeda brand name regardless of the actual operational linkages that may or may not exist. But ultimately, these events do highlight the limitations of al Qaeda's strategic control of direction of currents events.

Based on these observations – what is the likely direction of global jihad and the endurance of the al Qaeda 'brand name'? In the heart of the Arab world, this grandiose and apocalyptic vision is now competing with the growing forces of sectarianism and the religious-nationalist agendas of other groups. In some circles, Bin Laden's war against the 'far enemy' clearly does not hold the same urgency and immediacy as some of the rivaling religio-political forces. Meanwhile, the global-jihadist world view seems to be rapidly gaining ground in the Muslim diasporas. The attacks on the London Underground last July, the disrupted plot in Toronto this June, and the recently uncovered Heathrow plot all point to the impact of an ideology and narrative that has successfully captivated significant numbers (albeit a small minority) of alienated young Muslims in the West. Clearly, Bin Laden's pan-Islamic vision, which places sect, ethnicity and nationality as secondary markers of identity is a powerful message to some living outside the Muslim world, who are desperately seeking a mode of expression for their frustration and conflicted identities.

Hybrid Cells

The most dangerous form of future Islamist terrorism will be practiced by *hybrid* cells – a potent mixture of home-grown extremists and battle-hardened veterans of Iraq, Afghanistan, and other fields of jihad. In a field of scholarship increasingly dominated by discussions of how Al Qaeda has become 'decentralized' or 'organizationally crippled', the likely emergence of a new form of jihadist terror cell will cause such debates to seem antiquated and irrelevant. Five years into the war on terror, unrealized victories in Afghanistan and Iraq are helping to cultivate the next wave of global terrorists. Hybrid cells will constitute a common and dangerous form of Al Qaeda-inspired terrorism in the mid to long-term future.

While Al Qaeda's evolution is a complex and controversial subject, the movement really only operates on two dimensions: from without and from within. Jihad from without describes the violence seen on 9/11. Individuals who plot, train, infiltrate, and prosecute attacks against foreign targets fit the classic terrorist paradigm. Jihad from within describes the type of threat posed by home-grown terrorism. The Casablanca and Madrid attacks were performed by individuals with no known experience or direct operational connection to other terrorist groups. The arrest of 17 people in Toronto earlier this summer also appeared to unravel a serious 'home-grown' terror plot. There are some analysts who argue that the 7/7 London cell may have had a connection to Al Qaeda by virtue of several trips to Pakistan that two of the bombers took prior to the bombings, and indeed, the British government's official account suggests such a connection is likely, but the evidence is too weak to make any definitive conclusions.[22] This debate also glosses over the growing ease by which motivated individuals can access sufficient

22. See Peter Bergen, "Al Qaeda, Still in Business," *The Washington Post* (July 2, 2006): B1. Also see U.K. Home Office, *Report of the Official Account of the Bombings in London on 7th July 2005*. Available online at: http://www.homeoffice.gov.uk/documents/7-july-report.pdf?view=Binary

material and information to produce explosives or other destructive technology – what Fareed Zakaria calls the 'democratization of violence.'[23]

Islamic terrorism, especially the type inspired by Bin Laden, is also not a monolith. There is a spectrum of jihadist terror along which one can plot several different styles. On one extreme there is the 9/11-style cell: highly connected, professional, technically competent, and organized. On the other extreme lay the home-grown terrorists: not connected, generally younger, sharing bonds of friendship, community and often ethnicity.[24] Daniel Benjamin and Steven Simon call this form of cell 'self-starters', and include within their description the possibility that these groups could "find their way to the global jihadist network and receive help from it."[25] Hybrid cells occupy a middle ground between the two extremes, and for counterterrorism officials are the worst of both worlds. Hybrid cells contain individuals with tactical experience gained from urban guerrilla warfare in Baghdad, Kandahar, or elsewhere. Their operational planning, tradecraft, and security skills gained from conflict with highly professional U.S., British, or Canadian soldiers make them more than a match for local policeman, many of whom lack real tactical experience. Hybrid cells would also contain the 'home-grown' members with unmatched awareness of the urban geography, the populace, and the vulnerabilities of regional targets and the weaknesses of law enforcement units. 'Home-grown' components also have the power of anonymity which makes them difficult for security services to detect. In contrast to the 'bunch of guys' or 'self-starter' cells, who are either entirely self-contained or seek out and pull information or expertise from local or global jihadist networks, the hybrid phenomenon will have a jihadist veteran involved from the very beginning. In an era of hybrid cells, worldly experience and local wisdom will fuse and produce extremely dangerous terror plots.

As the recent Heathrow plot reinforces, the threat of indigenous radicalism leading to 'home-grown' terrorism is very real. While there is little evidence this specific breed of cell is presently operational, their presence has certainly been felt in the past. The aftermath of the anti-Soviet jihad in Afghanistan during the 1980s led to hundreds of veterans returning to North Africa and the Middle East and sewing seeds of instability and extremism.[26] Given the dynamics of jihadist radicalism and the ongoing wars in Afghanistan and Iraq, the emergence of hybrid cells will only be a matter of time.

While there is a significant level of uncertainty regarding the number of foreign fighters that have traveled into Iraq to fight, the existence of foreign jihadist units is clear. Estimates of the number of foreign fighters in Iraq range from several hundred to several thousand, and while they constitute a very low percentage of the overall strength of the insurgency, they are reportedly responsible for a disproportionate level of violence.[27] The operational environment is dynamic, challenging, and a source of tactical learning. From ambushes, sniper attacks, and construction of improvised explosive devices, the extent to which foreign fighters can learn advanced urban warfare techniques in Iraq is

23. Fareed Zakaria, *The Future of Freedom* (Norton: New York, 2004): 16.

24. Marc Sagemen refers to this form of cell as a "bunch of guys". See Marc Sageman, *Understanding Terror Networks*, (Philadelphia: University of Pennsylvania Press, 2004): 115.

25. Daniel Benjamin and Steven Simon, *The Next Attack: The Failure of the War on Terror and a Strategy for Getting it Right*, (Times Books: New York, 2005): 29.

26. See especially Steve Coll, *Ghost Wars* (Penguin Books: New York, 2004): 221-239.

27. See Anthony Cordesman and Nawaf Obaid, *Saudi Militants in Iraq: Assessment and Kingdom's Response* (Washington D.C.: Center for Strategic & International Studies, 2005): p.5. Also see Dan Murphy, "Iraq's foreign fighters: Few But Deadly," *Christian Science Monitor*, September 27, 2005, Jonathan Finer, "Among Insurgents in Iraq, Few Foreigners are Found," *Washington Post*, November 17, 2005, and Dexter Filkins, "Foreign Fighters Captured in Iraq Come from 27, Mostly Arab, Lands," *The New York Times*, October 21, 2005.

unmatched. Moreover, there are some indications that operational tradecraft techniques that are being developed in Iraq are being utilized in Afghanistan. According to the Defense Intelligence Agency, the number of IED attacks doubled between 2004 and 2005, and the number of suicide bombings increased "almost fourfold."[28] There are even reports that some Taliban unit commanders have traveled to Iraq to learn from their jihadist counterparts.[29]

The notion that 'Al Qaeda in Iraq' or other like-minded guerrilla groups have no regional or international ambitions is naïve, but seems to constitute the core assumption behind the 'fly-paper' strategy sometimes articulated by Bush administration officials. The late Abu Musab al-Zarqawi after all was behind the 2005 bombing of three hotels in Jordan, and is suspected of having connections to numerous support networks in Europe.[30] There are also reports that, prior to his death, Zarqawi began to train foreign fighters in Iraq before sending them home to await orders.[31] While it is difficult to assess with any confidence the future of the conflict in Iraq, it is possible that the dynamics of the insurgency will enable 'Al Qaeda in Iraq' and its affiliates to focus on using the country as a terrorist training ground. With the level of sectarian violence at an all-time high, and the re-deployment of thousands of U.S. troops into Baghdad from elsewhere in Iraq, it seems reasonable to assume that foreign fighters will have increased capacity to train and hide amidst the chaos.

The emergence of hybrid cells seems highly likely whatever the mid to long-term outcome in Iraq or Afghanistan. If the nascent Iraqi government manages to avoid civil war and consolidate its hold on power, the foreign fighters will pose an immediate threat to the region as they leave for their home countries. The more likely scenario sees a level of perpetual sectarian violence and instability in Iraq that will allow motivated individuals and groups to train in Iraq for prominent roles in the global jihad. Returning jihadists will likely participate in a wide variety of missions ranging from pre-planned operations that are 'connected' to jihadist leaders in Pakistan, Afghanistan, or Iraq, to more opportunistic roles as local influencers, teachers, and force-multipliers. When one considers the threat posed by 'home-grown' terrorists, it doesn't take much imagination to conclude that the introduction of jihadist veterans into the equation may dramatically increase both the capacity for violence, and the likelihood that local sympathizers will turn latent aspiration into actual terrorist violence.

The emergence of hybrid cells will pose serious and continuing challenges to Western intelligence and law enforcement agencies. Media reports are filled with European and American intelligence officials who are expressing their growing concern.[32] Former CIA Director Porter Goss testified in February 2005 that, "Those [jihadists] who survive will leave Iraq experienced in, and focused on acts of urban terrorism. They represent a pool of contacts to build transnational terrorist cells, groups and networks."[33]

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28. Quoted by Walter Pincus, "Growing Threat Seen in Afghan Insurgency," *The Washington Post*, March 1, 2006: Sec. A, p.8. The prepared statement of Lieutenant General Maples is available on the website of the Senate Armed Service Committee at http://armed-services.senate.gov/

29. Sami Yousafzai and Ron Moreau, "Unholy Allies," *Newsweek* (26 September 2005). Also see AFP, "Afghan, Iraqi Insurgents Collaborating in Fight Against U.S.," *Middle East Times*, October 18, 2005.

30. See Daniel Benjamin, "Spillover to Jordan," *Slate Magazine* (November 11, 2005), Jonathan Finer and Naseer Mehdawi, "Bombings Kill Over 50 At 3 Hotels In Jordan," *Washington Post*, (November 10, 2005): p.1.

31. Michael Slackman and Scott Shane, "Terrorists Trained by Zarqawi were Sent Abroad, Jordan Says," *The New York Times* (June 11, 2006): 1.

32. For example, see Rod Nordland, "Terror for Export," *Newsweek*, (November 21, 2005): p.38-40.

33. U.S. Congress, Senate, Select Intelligence Committee Hearing: 109th Congress 1st session, Testimony of Porter Goss, February 16, 2005.

The extent to which hybrid cells will redefine the landscape of jihadist terrorism seems likely to dominate counterterrorism analysis for the foreseeable future.

Shiite Revival, Sectarian Rift

Much ink has been spilled in recent weeks over the geopolitical implications of both civil war in Iraq, and the Hezbollah-initiated war in southern Lebanon. The image of a "Shiite crescent" stretching from Lebanon to Iran, is invoked by those who perceive the rising regional influence of Iran and its proxies. Indeed, the concern that sectarian conflict in Iraq combined with the possibility of another civil war in Lebanon could inflame the entire region is fully justified.

The fall of Saddam Hussein has, for example, allowed hundreds of thousands of Shiite pilgrims to visit shrines and holy cities like Najaf. The opening of southern Iraq has, according to Vali Nasr, helped to create "transnational networks of seminaries, mosques, and clerics that tie Iraq to every other Shiite community, including, most important, that of Iran."[34] While Tehran was likely to have at least encouraged or at most directed Hezbollah to provoke Israel in to the current conflict, it is also likely that the revival of Shi'a identity since 2003 has created a collective momentum that has given the community a sense of destiny not felt since the Iranian revolution of 1979.

While one can only speculate, it is interesting to ponder the dangerous possibilities of an increased Sunni militancy in response to the ascendance of Tehran-backed Hezbollah. Considering the successful export of Wahhabism by Saudi Arabia since the 1970s, and the role this puritanical brand of Sunni Islam has played in the creation of radical groups throughout the Muslim world (especially in Pakistan and Afghanistan), it seems possible that these extensive networks may turn overtly violent towards Shi'a interests. Indeed, Arab leaders openly talk of building a 'Sunni wall' through Iraq to contain an expanding Shiite region.[35] Considering Iran's successful use of proxies to increase its status as a regional power, it is possible that Saudi Arabia and other Sunni-led regimes may attempt to use similar approaches as a counterweight.

The implications of an increasingly fractious Middle East are disturbing. Not only does the changing geo-sectarian landscape seem likely to cause perpetual instability inside Iraq, but it is possible that transnational networks like Hezbollah and various Sunni-Wahhabist groups will become more influential throughout the region. "If fundamentalist groups continue to gain the upper hand in the Middle East," concludes Mamoun Fandy in an analysis for the *Financial Times*, "tribal and religious passions will become the main drivers of political life."[36] The consequences of increasingly powerful transnational sectarian networks will make the Middle East even more unstable that it is currently.

Such a development also threatens to have profound implications for the future of Bin Laden's global jihad. Although Bin Laden's particular brand of militant Sunni ideology contains anti-Shiite foundations, his ultimate goals depend more on sectarian unity than they do on sectarian loyalty. As the political climate in the heart of the Arab world re-orients itself towards a more pronounced sectarian schism, the focus of al Qaeda's core audience and potential recruitment pool may be diverted to the conflicts closer at hand. If the Sunni-Shiite rift continues to grow there are a number of possible outcomes.

34. Vali Nasr, "When the Shiites Rise," *Foreign Affairs* (July / August, 2006) Also see Neil MacFarquhar, "Hezbollah's Prominence Has Many Arabs Worried," *The New York Times* (August 4, 2006): 8.

35. See David Hirst, "Down a Dangerous Road," *The Los Angeles Times* (April 14, 2006): 13.

36. Mamoun Fandy, "Beware the Contagion Spreading in the Middle East," *Financial Times* (August 10, 2006): 13.

One may see splintering in the ranks of al Qaeda leadership, with key leaders moving away from the global agenda back to a more local or regional-focus of confronting the near enemy and containing the emerging Shiite revival. If this were the case it would be costly to Bin Laden and his movement. In the absence of another spectacular attack on the United States, Bin Laden's reputation would soon risk being eclipsed by other charismatic leaders in the broader movement – whose achievements are more current and closer to home.

On the other hand, perpetual instability in Iraq, driven by sectarian hatred and ongoing violence could play into al Qaeda's hand as well. With the goal of a stable, unity government still far off, the reigning chaos provides a unique opportunity for continued training, networking and launching of attacks beyond the countries borders. Alliances of convenience could emerge to create the safe haven for Bin Laden that has been missing since the invasion of Afghanistan. A strategic base for the global jihadist movement could be contained within an Iraq occupied by various militant networks, with al Qaeda elements seeking only de facto control over certain areas. After all, Bin Laden conducted a successful enterprise in the failed state of Sudan while it was gripped with political instability and civil unrest.

But ultimately, an altered sectarian balance of power in the region is more likely to undermine al Qaeda's global agenda than to advance it. If Sunni regimes feel the need to begin more directly supporting proxy groups to address the Shiite revival and the threat of Iran's increasing ambitions, al Qaeda's global interests could be marginalized. In which case, one might expect to see al Qaeda either adopting a more explicit Sunni agenda or diverting its efforts towards courting the sufficiently radicalized among the vast Muslim Diaspora, where sectarian battles may not evoke the same passion.

At the core of this discussion lies the fundamental question of what the long-term future of al Qaeda is likely to be. For the last five years the United States has been struggling, often stumbling to rapidly re-invent its military, intelligence and national security capabilities to better confront the threat posed by al Qaeda. Much of this work has been done in the absence of a clear understanding of who or what this movement actually represents. But the closer we come to understanding the allure of Bin Laden's ideology, the more we are forced to acknowledge the limitations of these conventional tools. And although in some respects we may have made ourselves less vulnerable, other policy decisions have clearly provoked unintended consequences – infusing Bin Laden's narrative with new relevance for global audiences.

The outcome of the war in Iraq will have profound consequences for the future of this movement, but perhaps not definitive ones. The long term future of the al Qaeda movement will not be determined militarily, but politically. This is not to say al Qaeda will be destroyed through an invigorated public diplomacy campaign – but rather to suggest that the greatest hope for its demise lies in its own self-destruction. Al Qaeda and its appeal is an inherently global phenomena and in the medium-term its virus may prove most resilient in the West. But globally, al Qaeda now operates in a dramatically different global climate. The political forces in the Muslim world have changed since the invasion of Iraq. To survive, al Qaeda will not only need to delicately navigate the changed political landscape in the Middle East, but it will have to convince potential followers that it offers a greater and more compelling strategic agenda then perpetual jihad and the unrealizable goal of destroying the United States. The immediacy of the security threat it presents often conceals the deeply flawed and unsustainable character of Bin Laden's ideology and distracts from the complicated politics of the broader jihadist movement.

A New Angle on the U.S. Military's Cultural Awareness (CA) Campaign

Connecting In-Ranks' Diversity to CA[1]

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Part of the U.S. military's contemporary transformation focuses on enhancing cultural awareness, particularly of foreign cultures relevant to actual and potential global deployments and operations. An emphasis on increasing understanding of different people, especially Middle-Eastern, Islamic groups, clearly is a salient and important aspect of this cultural initiative. As one example of this on-going transformation, the U.S. Army Intelligence Center, at Fort Huachuca, Arizona, recently developed a Cultural Center.[2] One of the center's major charters entails training Army intelligence soldiers (and other military members) on Middle-Eastern culture. Despite the absolutely necessary initiatives directed towards heightening the military's understanding of foreign people, issues stemming from the very diversity of the members of the armed forces present another seemingly untapped opportunity to bolster cultural processing skills.

The fundamental aspects of processing cultural diversity effectively apply to all of the U.S. military's charters. These responsibilities include building unit cohesion among the diverse members of the force, influencing foreign populations, performing joint, interagency operations, conducting multinational campaigns with foreign military partners, and the potential to perform domestic disaster relief missions where U.S. civilians would significantly impact operations, to name a few. This paper's main argument is that the U.S. military must improve its ability to process cultural diversity effectively—what I call the cultural imperative—and by focusing on and ameliorating diversity concerns in its own ranks, the armed forces will enhance crucial skills that apply to all situations and missions. This essay discusses how human thought and behavior constitutes a contemporary center-of-gravity (COG), defines culture and the fundamentals of effectively processing cultural diversity, discusses the salience of the civil-military gap debate, analyzes three internal diversity problems in the military, shares some preliminary ideas on how to address these issues through a bolstered educational program, and concludes with a reflection on the cultural imperative that faces the U.S. military today.

Human Thought and Behavior as a Contemporary Center-of-Gravity

People's thought and behavior represent a COG in military operations today, which illuminates the criticality of the cultural imperative. One group of people that often represents a COG in contemporary operations includes foreign populations that the United States needs to influence to achieve its national political and military objectives. For example, a recent piece on Operation Iraqi Freedom (OIF) identifies the "fence-sitters"—that is, those Iraqis (especially in Baghdad and urban centers) that seem neutral with regards to supporting either coalition sponsored nation rebuilding or

insurgent campaigns—as the operational COG.[3] The 1940 U.S. Marine Corps Small Wars manual identifies another COG that remains salient: Marines' own mindsets, impressions, attitudes, and behavior constituted a pivotal aspect of mission accomplishment in small wars during the interwar period.[4] Expanding this idea, it seems reasonable to argue that the thought processes and behaviors of military members represent another COG today. To a great extent, the military profession's collective mind-set, including its degree of genuine open-mindedness towards diverse people, is an equally important but sometimes overlooked COG in many contemporary missions today. Insofar as military members' attitudes and conduct towards diverse people play a pivotal role in whether the force succeeds or fails in current campaigns, the assertion that military constituents' own thought and behavior constitute a COG illustrates the significance of the cultural imperative that confronts the U.S. armed forces.

What Is Culture and the Cultural Imperative?

An important part of the cultural imperative entails a thorough understanding of the complex concept of culture, and how culture impacts the military in all of its responsibilities. Culture consists of the collective values, beliefs, norms, underlying assumptions, languages, behavioral expectations, and artifacts that shape and define the social life of a group. Culture is to the group what personality is to the individual. Culture serves as an internal radar that enables us to discern similar and different people. We learn culture through an on-going process of socialization; we learn customs, mores, rules, laws, and other codes from the groups we enter in life. We join some of these collectivities by choice, and become members of others by virtue of our particular life circumstances, such as the family, community, race, ethnic group, social class, sex and gender, nation and state, religious membership, and other associations greatly defined and molded by our family of origin and early life experiences. Within each of these groups, we learn to imitate socially appropriate behaviors and adopt accepted attitudes based on the normative expectations transmitted in each of these collectivities. We eventually internalize many of these well-entrenched social codes and thought processes in order to gain and maintain group acceptance. Culture serves as a critical social boundary that divides accepted from unaccepted behaviors, beliefs, occupations, marital partners, lifestyles, etc. In sum, culture significantly shapes how we act, feel, think, and live.[5]

Two additional factors that contribute to an understanding of culture also show relevance to the military profession's cultural imperative. First, culture is a process that changes over time. Emile Durkheim proposed that deviance is functional for society in that it challenges the culture and laws of society, and as it does this, deviance either leads to changes or reinforces cultural patterns that enable a group or society to survive and flourish.[6] So culture is not a stagnant thing but rather a dynamic process that is always subject to change, albeit a group's most deeply held values and beliefs usually require significant time and influence to change. Second, everyone exists in several cultures and subcultures simultaneously! For example, U.S. Army soldiers exist in an overarching professional culture, but also work in distinct units that possess unique subcultures. A Marine's personal demographics illustrate a set of cultural variations that distinguish her from peers, including sex or gender, race, ethnicity, religious affiliation, social class background, and age. An Air Force captain might belong to civilian clubs, sports teams, or other non-military organizations; each of these memberships transmits a distinctive subculture that impacts the officer. Thus, military leaders must take into account that multiple, dynamic cultures influence the diverse members of their organizations, which illustrates the leadership challenge to create a functional unit subculture based on military values that builds

cohesion and also shows appreciation and respect for members' differences and varying identities. Building a functional unit subculture that integrates unique, diverse people and creates a well-bonded team that performs effectively is a vital part of the cultural imperative that faces U.S. military leaders and the profession.

The other part of the cultural imperative is that the U.S. military needs to work effectively while partnered with diverse people (not on active duty status) to accomplish its missions. These diverse people include the growing number of Department of the Army civilians and contractor hires, interagency partners, foreign soldiers in multinational coalitions, and the people who inhabit the contemporary operational environment (COE), such as the neutral members of the indigenous population in OIF. These different groups of people all possess cultural diversity to a certain degree, and the U.S. armed forces must hone its ability to effectively process these differences and bolster solid working relationships with these important, unique people in order to accomplish its missions. Thus, the contemporary cultural imperative of the U.S. armed forces focuses on the need to foster greater effectiveness in processing cultural diversity of many groups of people, including its own members, military and non-military partners, and the unique people in its COE.

What are the Fundamentals of Effectively Processing Culture?

The fundamentals of processing culture effectively include knowledge of the meaning and complexity of the concept of culture; a refined sense of objectivity and genuine self-awareness—including how one's deeply held values, beliefs, and biases impact thinking and can cause harmful ethnocentrism; and awareness, understanding, acceptance, appreciation for, and, ideally, a thirst to learn about diverse cultures and people—practicing open-mindedness and cultural relativism. The first basic part of effectively processing cultural diversity entails possessing a thorough understanding of the complex and multifaceted concept of culture, and how culture deeply influences human thought processes and behavior, which the previous section discussed.

The second fundamental aspect of processing cultural diversity effectively stems from a sufficient level of self-awareness of how one's own cultural memberships contribute to a person's deeply held life values, philosophies, morals, beliefs, and potential biases. Military professionals must possess this essential knowledge of self in order to possess enough open-mindedness when conducting military missions. Accurately identifying and mentally managing potential biases and preconceived notions present an enormous challenge. Since everybody possesses and applies thousands of mental categories or labels for different types of people and cultures, this cognitive structuring oftentimes causes selective perceptions where people "see certain things and remain blind to others."[7] To the extent that peoples' minds possess powerful labels for people of differing cultural backgrounds, these labels can at times "overpower us with emotions and block out rational thought about the people to whom they refer."[8] The U.S. military's cultural imperative demands that it brings greater open-mindedness to the workplace where a diverse population constitutes its own ranks, and where contemporary missions will place the military in more frequent and intimate contact with unique people. An accurate knowledge of self and effective management of one's potential mental impediments to open-minded thinking is essential to effectively process culturally diverse people to achieve the mission.

U.S. military members must employ cultural relativism, and avoid ethnocentrism, in order to effectively process culture. Ethnocentrism means judging another culture using one's own culture and

related beliefs as a yardstick, with strong superiority and inferiority biases damaging the perceptions of the different culture.[9] Contrarily, cultural relativism means avoiding judging a culture based on one's own beliefs, but rather viewing a different culture based on its own unique belief system, values, history, norms, artifacts, customs, and idiosyncrasies.[10] Cultural relativism does not mean completely shedding one's own personal beliefs or succumbing to an "anything goes" frame of thinking and acting, but rather it means that military professionals must avoid rushing to judgment about diverse people and cultures. An essential part of the cultural imperative requires military professionals to possess a genuinely open mind and a strong sense of cultural relativism towards diverse people to accomplish the mission. Military leaders, in particular, must set the example by seeking understanding and appreciation for diverse peoples' cultural practices and beliefs so as to bolster unit effectiveness.

For example, when coalition forces assign women military members to interact with indigenous Muslim women in OIF and Operation Enduring Freedom (OEF), this effective norm or technique shows appropriate awareness and sensitivity for important cultural customs associated with proper relations between the different sexes as practiced by many Muslims. It seems reasonable to argue that success in OIF, OEF, and future nation-building campaigns will require hundreds, if not thousands, of similar culturally intelligent actions to effectively influence people to accomplish the mission. On the other hand, cultural ignorance and closed-minded ethnocentrism can degrade mission performance. An American soldier deployed to Iraq recently lamented the problematic, negative use of the term "Haji" by peer Army soldiers to refer to Iraqi people and culture. He asserts that, "at best, calling local nationals hajis is an uneducated use of Islamic terminology…at worst, it is a racial slur that could marginalize the very people we're trying to win over."[11] These examples show the significance of the cultural imperative to enhance the force's capability to effectively process cultural diversity.

The Civil-Military Gap Debate Relates to the Cultural Imperative

The on-going debate over the potential danger of an excessively large gap between the U.S. military and American society sets the stage for discussion of cultural diversity issues in the armed forces. Commentators at one extreme end of the debate argue that an excessive fissure between the military and the greater U.S. society threatens the national fabric, with some critics citing civilian authorities' supposedly waning control over the armed forces.[12] Scholars at the other extreme end of the spectrum state that today a sufficient, healthy, necessary civil-military gap exists in the United States, and that it supports democratic, American ideals.[13] This scholarly debate—which discusses the differences between the military's unique culture and the greater national culture—presents an important contextual point for the cultural imperative argument. The civil-military gap debate brings attention to a salient point for this paper: a solid majority of the officer corps possesses primarily Christian-based spirituality and conservative, partisan orientations.[14]

To add to this cultural homogeneity, and despite the increases in the diversity of the officer ranks over the past several decades, a clear majority of the U.S. military officers is male, Caucasian, middle-class, and heterosexual. This similarity among the majority of the officer corps presents a few important, timely questions for the profession to ponder. First, does this high degree of likeness among officers pose an increased risk for dysfunctional groupthink and discouragement of truly innovative, creative thought (particularly if it emanates from diverse people)? And second, does this significant level of cultural homogeneity among officers create the conditions for a sufficient level of collective open-mindedness towards diverse others, which this paper argues is a requisite ingredient

to effectively processing different people and cultures? Some current problems stemming from issues of diversity within the ranks of the U.S. military shed some light on this question of whether the military profession—particularly its commissioned leaders—collectively possesses open-mindedness and influences such thought processes and associated behaviors in the cultures of individual units across the branches of service.

Cultural Diversity Challenges in the U.S. Military Provide an Opportunity

Although there have been many cultural diversity success stories in the U.S. military's history, contemporary problems in this vein face the armed forces. Before proceeding with a discussion of some of the more challenging issues confronting the U.S. armed forces today, it must be acknowledged that the military has accomplished some noteworthy achievements in increasing the diversity of and cultural intelligence within its ranks over the past several decades. For example, the profound achievement of effective racial integration—including African and Hispanic Americans—stands as an illustrative example, though race relations continue to present some culturally based tensions in the force.[15] This paper explores three current internal challenges, which illustrate a golden opportunity for the U.S. military to learn to process cultural diversity more effectively. These areas include religious intolerance, continued resistance towards women service members, and anti-homosexual attitudes and conduct.

A Christian Force and the Cultural Imperative

The U.S. military profession—similar to the society it serves, but generally to a greater collective extent—possesses a dominant Christian spiritual emphasis, which presents certain benefits and costs to the armed forces. On the one hand, having a Christian umbrella as the dominant faith of choice in the military facilitates cohesion among military members and military families of similar spirituality, particularly when Christian-based activities and services bring these families together. This spiritually generated camaraderie forges strong in-group bonding, which certainly fosters a degree of healthy, functional cohesion in the U.S. military. On the other hand, this prominent spiritual emphasis in members of the U.S. military carries certain costs. One downside includes potential out-grouping of spiritually diverse people, or faulty processing of spiritual diversity in the U.S. military. In extreme cases, a failure to process this type of cultural diversity can create unprofessionalism, harassment, and even abuse of spiritually diverse members of the force.

A contemporary example of ethnocentric, religious intolerance in the U.S. military recently emerged at the U.S. Air Force Academy (USAFA). One part of the USAFA problem involved several cases where cadets harassed and abused non-Christian cadets, such as Jewish cadets who were called Christ killer and told that the Holocaust occurred out of some form of revenge for the slaying of Christ.[16] Another part of this problem stemmed from overly exuberant, aggressive campaigns to proselytize cadets to Christianity.[17] In addition to these problems, some senior adult leaders (both military and civilian) at USAFA exhibited narrow-minded conduct with regards to spiritual diversity, which may have influenced an academy culture that set the conditions for the cadets' unprofessional, abusive behavior. For example, Coach DeBerry, the head USAFA football coach, after consulting with cadet team captains, once posted a prominent Fellowship of Christian Athletes' Competitors Creed banner in the team locker room, which included a line that stated, "I am a member of Team Jesus Christ."[18] These recent problematic developments at the USAFA illuminate a clear example of

ethnocentrism and closed-mindedness. The resulting initiatives directed towards rectifying these problems and promoting increased tolerance and appreciation for spiritual diversity at the USAFA (and some associated directives emerged for the U.S. Air Force as a whole) speak to the importance of learning to effectively process spiritual diversity, which creates the conditions for greater inclusiveness, cohesion, and professionalism in the military.

Although the recent events at the USAFA illustrate a rather extreme example that most likely does not frequently emerge in the U.S. military as a whole, the lesson for the predominantly Christian military profession (especially its leadership) is that part of today's cultural imperative entails the need to remain sensitive and respectful to spiritually diverse people. Some subtle spiritual-based issues may sometimes compromise professionalism in the military today. For example, any military members—particularly those in leadership positions who are communicating with subordinates through any medium in an official capacity—who make public, frequent statements about their particular faith invite potential alienation, out-grouping, feelings of discomfort, and even perceptions of coercion among members of the force. As a specific example, a senior leader at the U.S. Military Academy (USMA) who advises both USMA as well as the U.S. Army at large on issues of diversity identified the inappropriate use of religion-based email signature lines (e.g., biblical quotes), and advised the academy to disallow (all) personal quotes on official emails.[19] This example might seem trivial, but to the extent that military members feel uncomfortable or even alienated when reading official emails with spiritual messages from their chain-of-command, this is a relevant, contemporary example of closed-minded conduct in the vein of spiritual diversity.

Not only will in-ranks' cohesion rise through leader-driven, respectful, congenial, open-minded behavior towards people of differing spiritual convictions, but also the military's ability to work with religiously diverse people outside of its ranks will improve. For example, referring back to OIF and the crucial fence-sitters among the Iraqi population, a salient question that emerges is whether a sufficient number of U.S. military members deployed to Iraq today practice open-minded cultural relativism when trying to win communities' support in an overwhelmingly Muslim land. A foreign peer flag officer with significant experience in counterinsurgency operations recently provided a mixed account of the U.S. Army's effectiveness in interacting with the Iraqi population in OIF. He noted that in some cases, U.S. Army soldiers' "cultural insensitivity, almost certainly inadvertent, arguably amounted to institutional racism."[20] After discussing the topic of religious intolerance, a minister very recently told the author that to promote effective processing of spiritual diversity, military leaders should lead by example and try to see beyond their ideas of religious superiority or even arrogance, so that "the other" is no longer "them," but rather they become real people. Effectively processing spiritual diversity—a key part of the cultural imperative that faces the U.S. military—interrelates with other cultural diversity concerns in the military that impact cohesion and readiness.

Continuing Problems with Women Membership in the U.S. Military

A second area of concern involves the continuing mixed acceptance of women military members. On the whole, the military's level of structural and cultural acceptance of women in its ranks falls behind most areas of mainstream U.S. society.[21] Some contemporary evidence shows that significant levels of resistance towards women members continue to surface in the armed forces. In one study, 48 percent of Army women reported crude and offensive behavior directed towards women members, and also 64 percent of women reported gender harassment.[22] Often overlooked, gender harassment

means harassment that is based on resistance towards the changing roles of men and women in society, and this problem persists in the military today.[23] And some relatively recent debacles illustrate how extreme problems can ensue amidst a military culture that continues to have sizable pockets of resistance towards women membership. Scandals at Tailhook, Aberdeen Proving Grounds, and most recently, the USAFA, which involved large-scale instances of sexual assault and in the latter two cases, multiple rapes, provide evidence for the military's continuing problems associated with women service members. These specific fiascos stemmed from military subcultures that at best mildly resisted women, and at worst culturally pardoned, condoned, and even encouraged physical, sexual, and psychological abuses towards women members, such as in the most recent scandal involving women cadets at the USAFA. Resistance towards women members hinders team building in a mixed-sex force, decreases cohesion, and ultimately can negatively impact mission performance.

Part of this ethnocentricity involving closed-mindedness and resistance towards women military members may stem from traditional views on the proper place for women in society, generated in part by some member's spiritual orientations. Whatever the background reasons that contribute to the insufficient processing of cultural diversity along sex and gender lines may entail, the profession must clarify that its core values fully embrace women membership, and that these values condemn resistance towards women. As a potential starting point, an improved educational initiative that included regular, professional conversations (instead of standardized policy lectures) in the ranks of the military on sex and gender differences, the role of women in the military, and how to more effectively process the cultural differences among men and women (and ideally leverage them) would prove beneficial. The U.S. military needs a rejuvenated self-examination of its collective level of open-mindedness towards women membership, which is a fundamental requisite to effectively processing sex and gender differences. Furthermore, as the military continues to work more frequently alongside different entities that include women (e.g., interagency partnership; women among key populations; foreign military partners where women serve in and lead infantry and armor units), it must learn to process culture along sex and gender lines more effectively to bolster mission performance. This constitutes another important aspect of the cultural imperative that faces the U.S. military today.

Attitudes towards Homosexuality

The third contemporary cultural diversity issue that faces the U.S. military is its generally intolerant attitude and conduct with regards to sexual minorities, that is, large elements of the armed forces possess and act on anti-homosexual mind-sets. This paper does not aim to address the controversial law associated with the military's "Don't Ask, Don't Tell, Don't Harass" (DADTDH) policy, but it does intend to discuss how effectively processing diversity in the realm of sexual orientation presents another cultural imperative for the military. A major contemporary study captured significant numbers of military members' firsthand experiences of anti-homosexual behavior among professional peers. In a 2000 study conducted by the Inspector General that collected data from 71,570 service members across all branches of the U.S. military, 80% of military members reported hearing anti-gay remarks and 39% reported witnessing or experiencing targeted incidents of anti-gay harassment.[24] Some of the actions that fell into the category of anti-gay harassment in this study included offensive speech and gestures, threats or intimidation, graffiti, vandalism, physical assault, denying opportunities, and biased punishments.[25] Across the military, each branch had a unique number of members that reported witnessing or experiencing anti-homosexual harassment: Army 46.1%; Marines 44.2%; Navy 39%; and Air Force 27.1%.[26] One theory offered to explain this variation by branch suggests that the

more traditional, institutional ground forces in the Army and Marines create unit cultures that possess significant intolerance of sexual minorities.[27] On the whole, this particular study highlights the fact that anti-homosexual behaviors occur pervasively throughout the U.S. military, and that the culture of the armed forces generally condones this conduct.[28]

A military culture that condones or transmits ethnocentric, anti-homosexual values can degrade mission performance. First, the tragic murder that occurred in 1999 illustrates an extreme example of an anti-homosexual incident. At Fort Campbell, Private Barry Winchell was bludgeoned to death with a baseball bat due to the perception that he was a sexual minority.[29] A duplication of this particular incident seems more likely in military units with cultures that allow or perpetuate anti-homosexual values and behaviors. Second, a recent study of OIF and OEF veteran homosexual soldiers provided a view of an officer corps (from across the U.S. military) with some membership that either failed to enforce the "Don't Harass" element of the military's policy by ignoring anti-homosexual language and harassment, or who personally took part in such conduct.[30] A relevant question is whether this harassment caused any soldiers (regardless of sexual orientation) to feel a lower level of trust and confidence in their chain-of-command and units during these combat deployments, and whether this anti-homosexual behavior negatively impacted unit performance in any way. It seems reasonable to think that tainted trust and confidence among members of a combat deployed unit is not conducive to optimizing cohesion or mission performance.

Third, as a less extreme but also concerning issue, based on the author's experience in various units since joining active duty in 1989, the U.S. Army seems to tolerate and in some cases reinforce the use of unprofessional, loose language related to sexual minorities.[31] The specific words include "homo," "fag," "queer," and most notably, "gay." In almost every instance, the loose use of these words signified something deviant, questionable, negative, unapproved, weak, or otherwise of a derogatory connotation, which shows a noteworthy resemblance to the casual use of the word "Haji" by some U.S. Army soldiers in OIF to disparagingly refer to Iraqi people and culture.[32] Even in the author's recent Command and General Staff College (CGSC) experience with mature 32- to 45-year old field grade officers who are generally at the top of their particular year groups from across the branches of the U.S. military, and who will soon serve as the next generation of battalion-level commanders, the frequent, loose use of anti-homosexual language problematically manifested (it also manifested among some retired officer members of the CGSC faculty).

Some people might argue that the loose use of anti-homosexual language in the military fails to present a problem and tends to mirror norms from mainstream U.S. society. In certain hyper-masculine environs, such as some all male sports teams and other male-dominated organizations, this particular behavior might manifest itself in similar proportion to many military units. However, how many of these civilian entities face life and death situations where open-mindedness towards diverse people and the subsequent group cohesion or influence on people can often mean the difference between mission success and failure? Furthermore, how many of these other organizations that condone significant anti-homosexual attitudes and behaviors purport to serve the nation as a genuine profession as does the U.S. military? This distinction as profession presents a unique, challenging set of standards for personal conduct that includes a sufficient level of open-mindedness towards diverse people so that the military can most effectively carry out its professional duties and responsibilities on behalf of the nation it serves.

This seemingly wide-scale anti-homosexual aspect to U.S. military culture—which to a certain extent may stem from some members' spiritual beliefs that question or denounce homosexuality, as well as from specific unit cultures that transmit hyper-masculine values—damages the force. To the extent that the U.S. military increasingly works with foreign soldiers,[33] interagency members, nongovernmental organizations, Department of Defense civilians, and other civilians (e.g., foreign or U.S. populations) not bound by the dictates of DADTDH, its members (especially the officer corps) must become more open-minded and effective when processing cultural diversity in the realm of sexual orientation. Ethnocentric, anti-homosexual conduct can degrade mission performance insofar as it can hinder the establishment of mutual trust, teamwork, and cohesion to accomplish the mission. For example, in cases where U.S. military members harass peers who are perceived to be a sexual minority, these victims can become alienated and less committed to the unit. Regardless of the veracity of the perceptions, and also in contradiction to the "Don't Harass" element of the military's policy on homosexual members, anti-homosexual harassment and ethnocentricity decreases unit cohesion and ultimately can harm mission performance.[34] Anti-homosexual beliefs and behaviors comprise an important area where the profession needs to influence change and educate the force as a whole—beginning with its officer and noncommissioned officer leadership and especially in ground combat units—to more effectively process cultural diversity in order to better accomplish the mission.

Preliminary Ideas on Educating the U.S. Military to More Effectively Process Cultural Diversity

All three aforementioned disconcerting issues regarding cultural diversity, including some indications of spiritual intolerance, continuing resistance towards women service members, and anti-homosexual attitudes and conduct, illustrate problems that require attention as part of the military's cultural imperative. The U.S. military establishment requires enhanced educational programs to teach its members how to more effectively process cultural diversity. The first crucial step of such a program entails educating members of the military to gain a more complete understanding of the meaning of culture and the tremendous influence that cultural memberships have on human values and thinking. The next part of a revamped program would help the force to develop a greater awareness of and ability to manage the mental roadblocks to open-mindedness towards different people. The ultimate aim of such a program would entail arming the U.S. military with enhanced abilities to apply cultural relativism in the performance of professional duties.

After educating the military on the fundamental principles of how to effectively process cultural diversity, then the stage is set to discuss and address specific in-ranks' concerns, such as the three topics explored in this paper. The cultural imperative calls for an improved educational program that requires sufficient time on units' training schedules (including effective classes in military schools)[35] where service members can learn more about how these problems damage the unit and the military at large, talk about their thoughts and exchange ideas, and receive subject matter experts', leaders', commanders', and the military's contemporary ideas and guidance on these topics. Beyond mandated lectures that dictate military policies to service members, the profession must establish a powerful, continuous educational program and dialogue among its members on a variety of relevant topics that contribute to the military's ability to process cultural diversity effectively in support of the mission. This revitalized educational campaign would teach the force the fundamental ingredients to effectively

process cultural diversity, which in turn would enhance its internal cohesion and also build vital skills necessary to accomplish missions worldwide among diverse people.

Final Thoughts: Internal Diversity Concerns Connect to the Military's Ability to Successfully Influence People Outside of Its Ranks

One of this paper's core arguments is that a connection exists between effectively processing cultural diversity within the ranks of the armed forces to applying the same skills with diverse persons who do not wear the U.S. military uniform. Should a force with large pockets of its membership harboring and practicing closed-mindedness towards diverse military peers expect collective open-minded thinking and associated behaviors when it works with culturally different people outside of its ranks? The fundamentals of processing cultural diversity apply similarly regardless of the context of their application. By building a stronger base of basic culture processing skills, including an understanding of the complexity of culture, heightened self-awareness, knowledge of the dangers of ethnocentrism, and sufficient open-mindedness and cultural relativism in the performance of professional duties, the military will better accomplish its multiple charters. By answering the contemporary call of the cultural imperative, the armed forces can bolster in-ranks' cohesion as well as its ability to forge solid working relationships with diverse people outside of the military. As America and its national leadership call on the military profession to transform and increase focus on nontraditional, unconventional operations that demand culturally intelligent behavior among growing numbers of diverse groups and people, the cultural imperative becomes of paramount importance.

Endnotes

1. The author wishes to thank Charlie Moskos, Aaron Belkin, Ted Thomas, Marvin Nickels, Will Johnson, and Tom Wieczorek for their thoughtful reflections and recommendations regarding this project.

2. The new Cultural Center at the U.S. Army Intelligence Center (USAIC) stood up in the summer of 2005. The Cultural Center's main purpose is to support USAIC development and training, and also to disseminate relevant cultural training, knowledge, and products across the Army. Its vision includes cross-cultural training, education, research, collaboration among military and civilian scholars, physical and virtual organizational features, and to potentially influence the rise of new cultural centers across the Army, military, and Department of Defense. Some preliminary, on-going charters of the center include the production of Middle Eastern and South East Asia cultural products (with heavy emphasis on the Middle East), developing training standards as well as proficient trainers to teach culture (at the USAIC as a starting point), ongoing virtual initiatives including a digital library and a cultural web site to support the "Military Intelligence University", and building partnerships with military and civilian institutions that will contribute to the center's mission.

3. See Peter Chiarelli and Patrick Michaelis, "Winning the Peace: The Requirement for Full-Spectrum Operations," *Military Review*, July-August 2005, p. 6.

4. See United States Marine Corps *Small Wars Manual*, 1940.

5. Several sources influenced this conceptualization of culture, including Remi Hajjar, "Leveraging Culture to Effectively Lead in the U.S. Army: Lessons for All Leaders," *Leader-to-Leader Journal*, Spring 2005; Maxie McFarland, "Military Cultural Education," *Military Review*, March-April 2005, pp. 62-63; and a lecture delivered by Professor James Jacob, "The Importance of Understanding Culture," to the Command and General Staff College, Fort Leavenworth, Kansas, on August 26, 2005.

6. See Emile Durkheim, *The Division of Labor in Society*. George Simpson, trans. (New York, NY: Free Press, 1933). First published in 1893.

7. See James Henslin, *Sociology: A Down-To-Earth Approach* (New York, NY: Allyn and Bacon, 2003), p. 355.

8. Ibid., p. 355.

9. Ibid., p. 40; Lee Gardenswartz and Anita Rowe, *Managing Diversity* (New York, NY: McGraw-Hill, 1998), pp. 164-165.

10. Henslin, *Sociology: A Down-To-Earth Approach*, p. 41; McFarland, "Cultural Education," pp. 68-69.

11. See Spencer Case, "'Haji' Disrespects Iraqis," *Army Times*, Vol. 66, No. 31, February 20, 2006, p. 52. Case voices his concerns of his firsthand experiences of hearing and witnessing U.S. Army soldiers (officers and enlisted) deployed to OIF using the term "Haji" as a negative label for all Iraqi people. He heard soldiers use "Haji" (a significant word in Islam associated with the pilgrimage to Mecca) as a synonym for insurgents, terrorists, or "the enemy," among other derogatory meanings linked to Iraqi people and culture. The author has also discussed this issue with OIF veterans—including several officers—who confirm that a tension exists in the U.S. military's deployed ranks regarding the use of "Haji" by soldiers.

12. See Richard D. Hooker, "Soldiers of the State: Reconsidering American Civil-Military Relations," *Parameters*, Winter 2003-4.

13. Ibid.

14. Hooker, "Soldiers of the State: Reconsidering American Civil-Military Relations," p. 8; Jason K. Dempsey and Robert Y. Shapiro, "A Divided Team: Understanding the Underlying Ideology and Content of the Partisan Affiliations of Members of the U.S. Army," presently unpublished manuscript that draws on and updates the findings from the 1998-1999 Triangle Institute for Security Studies (TISS) study. TISS found that 67.4% of Army Majors and above identified with the Republican Party, and Dempsey and Shapiro's study found that 69.5% of Army Majors through Colonels self-identified as conservatives (p. 11). Dempsey and Shapiro further found that the ratio of Republican to Democrat self-identifiers in the Army officer corps as a whole is five to one, and among Lieutenant Colonels and Colonels, it is six to one (p. 19). Dempsey and Shapiro expressed concerns with the finding of a generally polarized partisanship in the officer corps including the potential for group think, biased appraisals of world events that can create faulty military policy, out-

grouping of non-conservatives, and the potential for the Army to gain an even greater reputation as a conservative body, which would impact those who self-select into the commissioned ranks (thereby exacerbating the problem).

15. See Charles C. Moskos and John Sibley Butler, *All That We Can Be: Black Leadership and Racial Integration the Army Way* (New York, NY: Basic Books, 1996).

16. See Sally Jenkins, "Football's Religious Kick," *The Washington Post*, May 21, 2005, p. D01.

17. See Barry S. Fagin, "Faith and Tolerance at the Air Force Academy," *Air Force Print News*, July 29, 2005; Jim Garamone, "Air Force Addressing Problems of Religious Intolerance," *American Forces Information Service News Articles*, June 22, 2005.

18. Jenkins, "Football's Religious Kick," p. D01.

19. The head of the U.S. Military Academy's Working Group on Diversity sent out a letter to USMA faculty and staff delineating concerns over personalized quotes and signature lines on official emails, particularly quotes of a spiritual nature (May 2005).

20. See Nigel Aylwin-Foster, "Changing the Army for Counterinsurgency Operations," *Military Review*, November-December 2005, p. 3.

21. See Mady Wechsler Segal and Chris Bourg, "Professional Leadership and Diversity in the Army," in Don M. Snider and Lloyd J. Matthews, *The Future of the Army Profession* (New York, NY: McGraw Custom Publishing, 2005), pp. 711-712.

22. bid., p. 711.

23. See Laura L. Miller, "Not Just Weapons of the Weak: Gender Harassment as a Form of Protest for Army Men," *Social Psychology Quarterly*, Vol. 60, 1997; Segal and Bourg, "Professional Leadership and Diversity in the Army," p. 711.

24. See Kirby L. Bowling et al., "Analyzing Questions That Cannot Be Asked of Respondents Who Cannot Respond," *Armed Forces & Society*, Spring 2005, p. 416; Segal and Bourg, "Professional Leadership and Diversity in the Army," p. 713.

25. Bowling et al., "Analyzing Questions That Cannot Be Asked of Respondents Who Cannot Respond," p. 417.

26. Ibid., pp. 432-433.

27. Ibid., p. 434.

28. Ibid., p. 433.

29. Segal and Bourg, "Professional Leadership and Diversity in the Army," p. 713.

30. See Nathaniel Frank, "Gays and Lesbians at War: Military Service in Iraq and Afghanistan under, "Don't Ask, Don't Tell." Presently unpublished manuscript presents the results from a study performed with the support of the Center for the Study of Sexual Minorities in the Military, University of California, Santa Barbara, September 15, 2005. The study uses data from thirty interviews with gay, lesbian, and bisexual service members from across the U.S. military that were deployed to either OIF or OEF between October 7, 2001, and September 1, 2004.

31. This section uses the author's military experience to reinforce the findings of the 2000 IG Study referenced in the paper. This study found that 80% of military members had recently witnessed anti-homosexual remarks in the workplace.

32. Case, "'Haji' Disrespects Iraqis," p. 52.

33. See Aaron Belkin, "Don't Ask, Don't Tell: Is the Gay Ban Based on Military Necessity?," *Parameters*, Summer 2003. Belkin discusses how 24 nations allow homosexuals to openly serve in the military, and only a small handful of NATO members continue policies that ban gay and lesbian soldiers.

34. See Steven L. Myers, "Survey of Troops Finds Antigay Bias Common in Service," *New York Times*, March 25, 2000, Section A, p. 1. The article cites the Secretary of Defense's assertion that anti-homosexual harassment "seriously undermines the good order and discipline that is critical to an effective fighting force."

35. For example, the CGSC at Fort Leavenworth, Kansas, recently implemented a culture course in its core curriculum and also incorporates culture in many different classes across its academic departments. This cultural awareness education initiative is a positive preliminary step. The effectiveness of the culture education would improve if greater emphasis was placed on self-analysis and self-reflection regarding culturally ingrained values and potential biases (for faculty and students), and how to effectively identify and manage potential mental roadblocks that could hamper professional mission-related performance. The cultural imperative requires professional military education programs across the armed forces to undertake similar initiatives.

Intelligence Collection on Terrorism in Failed States

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Background

This author's thesis for the last 15 years has been that the main reason for the success and the spread of international terrorism since the end of the 1960s has been the support of most Arab states to the Palestinian terrorism in Europe, South America and South East Asia and the support given by Iran to Hizballah, Shi'a terrorist groups in the Gulf and a wide range of Sunni terrorist groups in Palestine, Turkey, Egypt, Algeria. Although no theoretical framework has been developed to demonstrate this paradigm there is a host of empirical information which supports the thesis.

It should be stressed that contrary to the impression given by the media and some analysts concerning its so called diffuse independent networking character, al-Qaeda began life and long continued its operations with the support of states: 1980s, phase one—activity in Afghanistan with the support of Pakistan, Saudi Arabia and the United States; 1990-96, phase two—work alongside the Islamist revolutionary regime in Sudan to export revolution to Egypt, Algeria, Saudi Arabia, and Eritrea; 1996-2001, phase three—operations from Afghanistan, as an ally of the Taliban government.[1] Even today the organization is "state-centered" in the sense that its goal is to take power in an Islamic state, specifically in Iraq, and establish a new form of authoritarian government, a caliphate, as a basis for the continuation of jihad.

But since the beginning of the 1980s, failed states have become a new hotbed for terrorist groups with an international reach. The Soviets were the first to be challenged by such a situation, during their occupation of Afghanistan, and the United States witnessed it when its Marines were killed in Beirut in 1983 or later in 1993 when it tried to impose peace in Somalia.

The American demise in Somalia was considered by the al-Qaeda leadership as the first strategic victory against the United States:

> The Muslim victory in Somalia over the America has profound implications ideologically, politically, and psychologically that will require lengthy studies…[T]here is an important observation that we must not ignore, which is that the Americans were not defeated militarily in Somalia. Effective human and economic losses were not inflicted on them. All that happened was that the Somali battle revealed many of their psychological, political, and perhaps military weaknesses. The Somali experience confirmed the spurious nature of American power and that it has not recovered from the Vietnam complex. Somalia represents a victory for Al-Qa'ida on the periphery. The hour for regaining the heartland has arrived, but much training is required before this phase can begin.[2]

And then the Taliban conquered Afghanistan and sponsored the implantation of al-Qaeda on its territory as the main basis for the fight against the United States, the West and the moderate Arab regimes.

The question of failed or weak states has been studied by researchers and by the U.S. administrations mainly in the attempt to understand the causes of the falling apart of states and the necessity to prevent or the least to have early warning on what has been defined as "state failure."[3] CIA's "Worldwide Threat 2001: National Security in a Changing World" asked the international community to help "tame the disintegrative forces spawned by an era of change" and "the growing in potential for state fragmentation and failure." Analyzing the impact of globalization and the emerging security paradigms that resulted from the end of the Cold War, the U.S. Commission on National Security/21st Century identified failed and weak states as specific challenges the United States will face with increasing regularity in the next twenty-five years.[4]

According to Susan Woodward, while the culprit for both poverty and violations of human rights since the early 1980s had been the strong state, the problem by the 1990s had become the weak state. She sees a remarkable international consensus in the past two years that all "concrete threats to security, including terrorism, nuclear proliferation, mass violations of human rights, poverty, armed conflict, and refugees, are viewed as the responsibility of states and the consequence of state weakness."[5]

It is not always easy to predict where threats may emerge. In the 1990s, few anticipated that remote, poor, and war-ravaged Afghanistan would be the launching pad for the most devastating attack on the United States in the nation's history.[6]

After the September 11 attacks, Secretary of State Condoleezza Rice declared that nations incapable of exercising "responsible sovereignty" have a "spillover effect" in the form of terrorism, weapons proliferation, and other dangers. Al-Qaeda's ability to act with impunity from Afghanistan convinced President George W. Bush and his administration that "America is now threatened less by conquering states than by failing ones." In the European Security Strategy, drafted in December 2003 by the European Union's High Representative for the Common Foreign and Security Policy, Javier Solana, failed states are also referred to as one of the central threats to international security.[7]

According to Susan E. Rice, the United States is severely under-resourced in covering failed states. With the exceptions of Afghanistan, Bosnia, Pakistan, and Colombia, where U.S. forces are deployed, U.S. intelligence collection and analytical resources devoted to failing states remain woefully inadequate. In Africa, intelligence collection has steadily diminished since the end of the Cold War. The loss is particularly severe in human intelligence following the closure of a number of CIA stations.[8] In a recent paper, Rice argued that the U.S. intelligence community should be directed to substantially increase the resources it devotes to collection and analysis of the internal, regional and international dynamics that impact the stability, governance and development of weak states.[9]

Stewart Patrick stresses that the present lacking U.S. strategy toward weak and failing states should be based on a deeper intelligence collection and analysis on the links between state weakness and transnational threats.[10]

This paper does not deal with the complex problems of defining a failed or weak state nor with the huge political, economic, social and humanitarian issues such a situation involves, but rather considers that the state failure has already happened, it has created an ungovernable country or territory and

there is the need to evaluate and constantly monitor the threat such a situation represents for the United States and the international community at large.

Failed states and territories and gray zones

According to some analysts, state failure is predominantly a Third World phenomenon much concentrated in Africa where the majority of the 49 sub-Saharan states seem currently at risk. A 2001 survey reported no less than ten cases of state collapse and more than twenty where state authority is being severely threatened. As cases of complete collapse Congo (formerly Zaire), Liberia, Sierra Leone, and Somalia immediately come to mind, states such as Sudan, Chad or Guinea-Bissau may be less obvious and more controversial cases of failure.[11]

Other authors consider that failed states or regions with severe civil wars are only of limited use for terrorist networks—with the significant exception of Afghanistan. According to Ulrich Schneckener, more relevant are countries such as Saudi Arabia, Yemen, Pakistan, Indonesia and the Philippines that accommodate, to varying degrees, the infrastructure needs of al-Qaeda's transnational networks. By contrast, states south of Sub-Saharan Africa that are usually assigned to the category of failed states have so far not yet generated international terrorism. However, these states might not be directly responsible for the emergence of transnational networks, but they are used by such networks. Al-Qaeda and related groups are active in Sudan, Djibouti, Kenya and Tanzania or have suspected business connections in Sierra Leone, Liberia, Angola, Nigeria and Congo. These countries are more commonly characterized by warlords and organized crime than by terrorism, and they favor the continuing existence of transnational terror structures.[12]

For example, an important resource of terrorist groups is the indirect or direct participation in the trade of diamonds, gold and minerals from West Africa and Angola, to which both Hizballah and al-Qaeda are linked in various reports.[13] Both organizations obviously made use of similar routes and to some extent even the same contacts. Hizballah has been active in this field since the 1980s and principally relied on the Lebanese Diaspora (especially in Sierra Leone and the Ivory Coast).[14]

Stewart Patrick agrees that weak capacity per se cannot explain why terrorist activity is concentrated in particular regions, particularly the Middle East and broader Muslim world, rather than others such as Central Africa. Similarly, not all terrorism that occurs in weak and failing states is transnational. Much is self-contained action by insurgents motivated by local political grievances, such as the Revolutionary Armed Forces of Colombia (FARC), or national liberation struggles, such as the Liberation Tigers of Tamil Eelam (LTTE) in Sri Lanka. Fears that weak and failing states may incubate transnational terrorism merge with a related concern: that poorly governed countries may be unable or disinclined to control stocks of nuclear, biological, or chemical weapons, or prevent the onward spread or leakage of WMD-related technology. Revelations about the extensive international nuclear arms bazaar of Abdul Qadeer Khan suggest that poor governance may be the Achilles' heel of global nonproliferation efforts.[15]

Commenting on ethnic and "tribal" conflicts in the post-Cold War era Gurr claims that:[16]

1. The increase in serious ethnopolitical conflict since the late 1980s is a continuation of a trend that first became evident in the 1960s. The deconstruction of the Soviet bloc nudged the trend upward.

2. The principal issue of the most intense new conflicts is contention for state power among communal groups in Third-world societies. Some conflicts intensified after the superpowers disengaged from what at the outset were left-right conflicts, like in Afghanistan and Angola.
3. New secessionist conflicts are confined almost entirely to the Soviet and Yugoslav successor states. In other world regions such conflicts have declined in salience and intensity since the 1980s.
4. Power transitions within states have been the principal, immediate condition of civil and communal warfare, past and present. Two kinds of power transitions have increased in the aftermath of the Cold War: 20 new or redesigned states have come into existence; and a number of states are experimenting with new democratic institutions.
5. Communal conflicts that occur across civilizational and religious fault lines have in the past proved to be more intense than others and probably will continue to be so in future. Of the 10 "civilizational" conflicts that began after 1987, six followed power transitions and the other four, including the Intifada and Hindu-Muslim rivalries in South Asia, evolved from long-standing ethnonationalist disputes.

Rachel and Michael Stohl evaluate that even if the flames in Macedonia are extinguished the entire region will remain a trouble spot for the United States. In Presevo Valley, part of Serbia adjacent to Kosovo, Albanian nationalists clash with the Serbian police with dozens of casualties. In Kosovo itself, violent incidents between the Serbs and Albanians have marred NATO's peacekeeping mission from its inception. Bosnia remains divided into three antagonistic regions along ethnic and religious lines. Another area of concern is the Sudan. The fighting there has contributed to more than 2 million deaths from violence and hunger. The third country that closely interests the U.S. is Colombia. Peace talks with the FARC have stalled, right-wing paramilitaries, often also linked to drugs, have become the fastest-growing military force in Colombia and neighboring countries worry that Plan Colombia will push refugees, violence and drugs into their countries. That is already happening in Ecuador, which is economically and politically fragile.[17]

Indigenous rights are subsiding as an issue generating serious ethnopolitical conflict. The only deadly new conflict to make explicit use of the symbolism of the global indigenous rights movement began in the Mexican state of Chiapas in January 1994. According to Gurr, it seems unlikely that indigenous peoples will become involved in protracted and deadly conflict in the near future, unless they are mobilized to fight wars of independence as in Kurdistan and the uplands of Burma, or revolutionary wars as in Guatemala and Peru.[18]

In 1991, French criminologist Xavier Raufer advanced the concept of the "gray area phenomenon" to try to accommodate the evolution, combinations and permutations of terrorism now extant in the world.[19] Raufer has drawn the attention to the vast anarchic urban sprawls in the developing world (Karachi, Lagos, Rio de Janeiro, Sao Paolo, etc.), where entire districts and suburbs are effectively controlled by organized criminal groups, terrorists, and traffickers. Karachi and Rio de Janeiro are striking examples of urban sprawls as terrorist or criminal strongholds. Karachi is actually a gigantic shantytown approximately as large in area and population as the whole of Belgium. In Karachi, fanatical Islamist supporters of bin Laden have organized demonstrations by more than 300,000 protestors and, interestingly, it is in this city that in September 2002 Ramzi Binalshibh, one of the masterminds of the September 11 attacks, was arrested.[20]

To understand the possible transformation of a criminal gang into a quasi-terrorist group one has to analyze the latest riots in Brazil's prisons. The First Command of the Capital (PCC) began as a prison soccer team in 1993, growing from a small group of rebellious inmates to a now-formidable force numbering 85,000 to 125,000, making it the largest gang in the Western Hemisphere. At the beginning of August 2006, PCC gangs have launched at least 100 attacks against security forces, public buildings, banks and buses in Sao Paulo state, killing at least 130 people. The PCC has staged simultaneous riots in the state's prisons and in Sao Paulo, three other times during the past three months, leaving 160 people dead.[21] Brazilian academics claim the gang has electoral ambitions and knows exactly what it is doing, and for what purpose. Because of its alleged commitment to politics and prison-rights over drug-trafficking, it has also secured greater support for its controversial actions. The gang describes itself as "'the party,"' and its members as "brothers." It adopted "Liberty, Justice and Peace" as its slogan, the same as its Rio de Janeiro counterpart the Red Command.[22]

The problem of early warning

According to Gurr, the structural model for ethnic war, one of the main reasons for state failure, includes factors reflecting group incentives for collective action (lost political autonomy, active political, economic or cultural discrimination); group capacity for collective action (strength of identity, militant mobilization); and opportunities for collective action (recent regime transition, support from kindred groups). Gurr proposes the following principles and priorities for the development of conflict early warning:[23]

1. High priority should be given to identifying and monitoring latent and emerging crises well in advance of the outbreak of war or related forms of humanitarian crisis.
2. An inventory of ethnic, religious, national and political groups at risk from adverse discrimination or potential conflict should be compiled.
3. Explicit models specifying what risk factors are known or thought to be associated with what types of conflict or crisis should be used to aid interpretation of available information.
4. Long-term risk assessments from structural factors should be supplemented by near-real-time tracking of events in unstable (high-risk) areas to anticipate escalation of crises.
5. Monitoring and analyses should be done outside the reach of political control and considerations, to ensure that results are, and are seen to be, objective. This can be accomplished by engaging non-government and academic participants in an early warning network.
6. Use of standard protocols for generating risk assessments and early warnings.
7. It is essential to develop close and regular communications between early warning analysts and officials with operational responsibility for preventive action and humanitarian response.
8. Early warnings and risk assessments should be widely circulated, most urgently to those in a position to contribute to collaborative preventive initiatives, and also to other NGO's, scholars, activists and journalists within and beyond the region.

Missions concerning characteristic threats of failed states

There is a huge difference between collecting intelligence in states sponsoring terrorism compared to failed states. Generally the sponsoring states, like Iran, Syria, or Libya at its time, are difficult to

penetrate by foreign intelligence agencies, because they have authoritarian or totalitarian regimes with strong security services and are closed to the outside world.

By contrast, the problem with failed states is the great number of diffuse and unclear constituencies and targets to be covered, the difficulty to decide on priorities and to have a clear picture of the overall situation in the country, as nobody is controlling it.

Internal and external actors, both state and non-state, impact the state today. While state actors are fairly well defined, non-state actors may be as widely diverse as environmental groups, or criminal elements that use the state as a staging ground for their activities and thus have a vested interest in a weak state government. They may seek to provide public goods which the state is not providing, such as education or health care, or they may seek self-aggrandizement and engage in criminal activities. They may be non-profit, legitimate organizations, or they may be rentiers who generate revenue from illicit activities.[24]

It is clear from the above that an intelligence agency responsible for the risk assessment represented by a failed state and the rogue elements and organizations acting in and from this entity should be first and foremost well informed as to the conditions and events which led to the state failure.

In this framework, Gurr's model is an important benchmark for the beginning of the intelligence assessment of a failed state. Actually, the agency responsible should be part of the state mechanism which monitored the early warning signs of the state failure and the research department should be well acquainted with:

- The inventory of ethnic, religious, national and political groups which were active prior to the disintegration of the state.
- The crises and the political, military, economical and social events which led to this situation.
- The geographical and geopolitical conditions of the state concerned, the interests and the input of the neighboring countries involved.

Covering terrorist and guerrilla organizations

The intelligence effort relates to the basic information on the organizations/groups prior to the failing of the state and continuous updating as the situation on the ground evolutes and the central government loses control:

- The structure, hierarchy and personnel of the organization.
- The ideology of the organization, historical background, local and foreign influences.
- The strategy:
  - Political goals, front organizations, propaganda methods and tools, the open and clandestine ties between the political level and the terrorist-military one
  - Terrorist methods, activity, past experience, moral and political constraints
  - Guerrilla strategy, doctrinaire influences
  - The names, detailed personal files and inter-personal relations of the leaders, superior and medium echelons of the organization:

- On the political level and organizational level
- On the terrorist operational and logistic level
- On the guerrilla military and logistic level

- The basis of activity of the organization: geographical location, detailed rural or urban environment, social background, in what measure does it fit its ideological precepts and strategic goals.
- The real estate assets possessed by the organization, open and clandestine: buildings, publishing houses, printing companies, farms, terrains, etc.
- Operational assets: airstrips, planes, private harbors, boats, trucks, buses, cars.
- Command and control structure and facilities: communication equipments, use of sophisticated methods (satellite communication, Internet, ciphering).
- Financial and commercial assets: front and bona-fide companies, bank accounts, evaluated cash sums.
- Weapons: small arms (guns, automatic weapons, bazookas, night-vision devices), heavy arms (missiles, artillery, helicopters), explosives (military, home-made).
- Training: camps, names and professional preparation of the instructors, their origin (local, foreign mercenaries, state provided), number of people which received professional training.
- The terrorist modus-operandi: assassinations, use of explosives, car-bombs, use of indiscriminate terrorism, level of sophistication in planning and professionalism in execution, attempts to achieve non-conventional capability (chemical, biological, nuclear).
- The relationship with the local social and political environment: support of the social group to the goals and methods of the organization, economic advantages for the environment, actions of coercion against the local population, the level of influence in the economic fabric of the region and of the country as a whole, and political participation or integration in local/state frameworks.
- Relations with the central government: level of control of the organization on a given territorial area; the level of police, economic and military activity developed by the government against it, its leaders and its assets; are there negations for an agreement with the central authorities; are there international agencies involved in mediating or finding a formula for the solution of the conflict.
- Influence of the political, terrorist and guerrilla-military activity on the political, economic, social and security stability of the country.
- Political, financial and propaganda infrastructure in foreign states where there is a diaspora of the ethnic population the organization represents; the level of financial, logistic and operational support provided by front-organizations and humanitarian funds.
- Relations with ideologically similar organizations, local, in neighboring countries and in other foreign countries:

– Political and propaganda cooperation, common front organizations, the militants involved in the contacts

- Logistical support (who supports who) in weapons, safe-haven, documentation, financial support, training
- Operational cooperation, exchange of intelligence, participation of militants in common operations, common planned operations inside the country, through the borders, abroad

- Relations of the organization with local criminal organizations: the nature of the relation (who is controlling the area, who possesses more important operational assets); what are the reasons for cooperation between the two; what are the issues of contrast between the two; what agreements of cooperation exist between the gang and the terrorists and in which measure they are implemented.
- Relations with foreign supportive states: political and propaganda support, military support in weapons and training, support for terrorist activity inside and outside the country, use of diplomatic facilities for terrorist activity, safe-haven for personnel or economic assets, political asylum, political and military pressure on the local government in support of the subversive organization.
- Relations with foreign enemy states: the nature and level of police and military cooperation with the central government, the financial and economic activity against the organization, the law enforcement agencies and the methods used against the terrorist activity and the front organizations on the territory of the enemy state.
- International agencies acting against the subversive activity: United Nations agencies and forces, international regional organizations (OAS, NATO, ASEAN, etc.), international police and military cooperation.

Covering organized crime and narco-terrorism

- The structure, hierarchy and personnel of an organized crime gang.
- The names, detailed personal files and inter-personal relations of the leaders, superior and medium echelons of the gang.
- The fields of activity in which the gang is involved (narcotics, protection, smuggling of goods, laundering of money, etc.).
- The basis of activity of the organization: geographical location, detailed rural or urban environment, social background.
- The real estate assets possessed by the group: buildings, farms, terrains, etc.
- Operational assets: airstrips, planes, private harbors, boats, trucks, buses, cars.
- Command and control structure and facilities: communication equipments, use of sophisticated methods (satellite communication, Internet, ciphering).
- Financial and commercial assets: front and bona-fide companies, bank accounts, evaluated cash sums.
- Weapons: small arms (guns, automatic weapons, bazookas, night devices), heavy arms (missiles, artillery, helicopters), explosives (military, home-made).
- Training: camps, names and professional preparation of the instructors, their origin (local, foreign mercenaries, state provided), number of people which received professional training.

- The violent methods used by the gang to further their goals: physical violence against or assassination of adversaries and of establishment authorities, terrorism against the local population, terrorism or guerrilla warfare against the government (local or central, methods, level of activity).
- Relations of the gang with local terrorist organizations: the nature of the relation (who is controlling the area, who possesses more important operational assets); what are the reasons for cooperation between the two; what are the issues of contrast between the two; what agreements of cooperation exist between the gang and the terrorists and in which measure they are implemented.
- The relationship with the local social and economic environment: sympathy of the social group to the goals and methods of the gang, economic advantages for the environment, actions of coercion against the local population, the level of influence in the economic fabric of the region and of the country as a whole.
- Relations with the central authorities: level of control of the gang on a given territorial area, the level of police, economic and military activity developed by the government against the gang, its leaders and its assets, the methods and the level of corruption used by the gang in its dealings with the central authority.
- Local NGOs and organizations fighting against the influence of crime and narco-terrorist groups: social or ideological voluntary groups, vigilante groups, church or educational bodies.
- Influence of the gang's activity on the economic and social situation of the country: sectors favored by such activity, sectors hurt by it, the overall economic balance as result of the internal and external influences, the level of general criminality and appearance of new kinds of criminal activities.
- Influence of the organized criminal activity on the political and security stability of the country by the support it gives to subversive, terrorist and guerrilla activities against the central government.
- Relations with foreign gangs, in the neighboring countries, in the chain of activity towards western markets and in the United States and Western countries: the field of common activity and cooperation ("division of labor" between two or more gangs), the operational support given by foreign elements, the level of dependence on foreign support, the financial arrangements.
- Relations with foreign terrorist groups (see detail above).
- Relations with foreign supportive states: military support in weapons and training, safe-haven for personnel or for financial assets, "official" transit route for smuggling of narcotics and goods, relations with the local corrupted level or at the central authoritative level.
- Relations with foreign enemy states: the nature and level of police and military activity against the gang, the financial and economic activity against the gang, the law enforcement agencies and the methods used against the gang, the level of cooperation with the central or local authorities where the gang is active, international cooperation against the gang activity.
- International agencies acting against the criminal activity: United Nations agencies, international social and environmental NGOs, economic international organizations, international police and military cooperation.

Covering proliferation of small weapons

Like state actors, non-state actors have to develop force structures to engage their enemy forces. Weapon acquisition is critical for a militant group to develop its military capability and capacity to oppose the state. Often, a militant group will attempt to procure small arms, gradually shifting towards light weapons, and increasingly towards more sophisticated armaments. The classic objective of a group at an early stage is to survive. Thereafter, the group is to invite state-repression on its support-base by using hit and run warfare in order to generate public support. Such a course of action will transform a small-scale insurgency into a large-scale insurgency. There are varieties of methods to acquire weapons and all these channels must be identified and monitored.[25]

- Acquisition by a militant group from the law enforcement authorities of the state—the police and the armed forces—by theft, use of local criminal and corrupted elements, attacks on small military contingents or on defended or undefended weapons storage facilities: identification of the weak points in the defense forces which permit this kind of acquisition and of the personnel involved in the process, including the criminal elements; inventory of the weapons provided by this method, including their technical details and serial numbers.
- Weapons provided by a supportive state: directly to the organization by smuggling through land, sea and air; by third commercial bona-fide or criminal intermediaries; identification of the routes, methods and involved intermediaries, their financial channels and practices.
- Acquisition from local and foreign arms dealers specialized in this kind of operations: identification of the dealers involved, their contacts with weapons producers, the smuggling channels, the kind of weapons provided and their quantity, technical and serial details.
- Production of light or heavy weapons by the organization itself: technical details and quantities of weapons produced; facilities and laboratories used for production; personnel involved in the planning and the production of weapons; ways for dissemination of the weapons to the terrorist or guerrilla forces; details of providers of bona-fide dual-use materials and equipment.
- Details about professional smugglers, their methods and channels of smuggling; prices and contacts with other criminal elements or gangs.
- Details about official land, harbor and airport facilities and transport route and means which can serve as channels for smuggling.
- Information concerning neighboring countries which can provide a route for the smuggling: geographical and topographical information, criminal and subversive elements active in the border area; contacts with these elements; support they receive from local corrupted authorities.
- Identification of representatives or offices of the organization abroad involved or responsible for the procurement effort, the personnel involved and the cover and methods used.
- Cooperation with other ideologically close local and international groups in the procurement, smuggling and production of weapons.
- Cooperation with criminal local and international groups in the procurement, smuggling and production of weapons.

Conduits and tools for intelligence in failed states

From the above picture it is clear that the work of intelligence agencies in failed states necessitates a major collection effort divided among a large number of disparate military but also civilian targets and populations and therefore often infringe on other national and international entities' work. These entities have nothing to do with intelligence and their involvement in or support of intelligence activities could be perceived as ethically opposed to their primary mission.

Therefore, the intelligence activity should take in consideration the sensibilities and the values of potential supportive entities and should convince them that the main task of the intelligence missions is to provide decision makers the information which will, on the one hand, permit the effective humanitarian, social, economic and political support for the recovery, stability and well-being of the populations involved, and on the other hand to suppress or minimize the destabilizing effect of gangs or organizations that represent a security threat to those same populations and at the same time to the international community and its humanitarian effort. What follows is a non-exhaustive list of potential conduits for information on failed states.

The academic community

Some analysts doubt the efficacy of academic researchers or think tanks to effectively evaluate the situation in failed states. Thomas Dempsey claims that independent researchers, basing themselves on statements of government officials but lacking access to the classified intelligence are not in a position to fully assess their assertions and policy statements because as agents of the state these officials are by definition pursuing political agendas on behalf of their respective administrations.[26]

This author believes that the academic community could have an important role in supporting the state authorities in their evaluations and risk assessments of failed states. Political and social scientists, historians, economists, as well as ethnologists, researchers in the fields of language, natural resources, climate, specializing in the specific area of the failed state can bring a major contribution not only on the strategic level, but also on the tactical level.

An interesting comparative example is given by Martin Doornbos. He cites Somalia and Uganda among the countries in Africa that have become most often associated with major political upheavals and traumatic conflicts in the post-colonial period in Africa. However, he claims Somalia as such never attracted many researchers when it embarked on its own path of "progressive" transformation in the 1970s. By contrast, Uganda much later (after 1986) attracted widespread international attention not only because it represented the first instance in which an oppressive military regime in Africa was overthrown not from within its own ranks but through a sustained and popularly supported guerrilla movement. He also claims that in recent decades the research relationship has become much more complex due to the increasingly dominant role of international agencies, notably the main international financial institutions, setting the terms for policy-making as well as for policy-oriented research in most parts of Africa, who have effectively eclipsed the role of progressively oriented academic researchers, mainly economists who act in advisory capacities for governments.[27]

Organizations of expatriates abroad and local fraternities in the West or other countries

Large immigrant communities currently live in metropolitan areas throughout the United States, like for instance the Somali, Liberian, and Sierra Leonean ones in eastern United States. Police officers who

are familiar with those communities, and who have patrolled in them and developed relationships with their members, should be highly effective in the failed state from which those communities immigrated. Members of immigrant communities from failed states typically remain in close touch with families in their country of origin. They may very well provide information of value to police officers deploying to those countries in support of counterterrorism efforts. The communities also can provide a source of interpreter-translators whose reliability is already known to law enforcement, and who will probably regard favorably the opportunity for lucrative employment with U.S. Government agencies.[28]

Educational institutions

There is a need to cover the educational, mainly religious, institutions which represent a hotbed for recruitment, indoctrination and sometimes training for radical militants, such as the *madrasses* in Pakistan, Indonesia and Malaysia. Since the mid-1990s about 60,000 Pakistanis, three-quarters of whom trained in Koran schools, are supposed to have fought with the Taliban.[29] According to official statistics, there are still about 35,000 foreign students, half of whom come from Arab countries, who are active in Pakistani *madrasses* or Islamic charitable organizations. Similar developments can also be observed in Yemen and Indonesia—important recruiting countries for al-Qaeda and Jemaah Islamiyah. The number of Koran schools in Indonesia (called *pesantren* or *pondoks)* is estimated to be over 14,000. Of those, only a minority can be classified as radical, but they serve as important breeding grounds for the network of Jemaah Islamiyah network.[30]

Providers of weapons and ammunition

The networks that supply the terrorists are, in fact, the Achilles heel through which U.S. and allied intelligence and security services can potentially gain access to groups of interest by exploiting the latter's need to purchase the arms from international dealers. Likewise, since most, if not all, the major international arms dealers are in the business for profit, rather than ideological commitment, intelligent intelligence services will undoubtedly find it easier to recruit agents in these networks than they would among bona fide terrorists. Furthermore, more direct influence on the supply side of the international trade in arms opens the door to all manner of activity including tracing—electronically and otherwise—weapons flows and eventually even sweeping up the terrorists networks that make up the demand side of the business.[31]

Private security providers

They are not a new phenomenon, but what is new is the development of international private security providers, whose size and expertise are equivalent, if not superior, to those of state security providers. Securitas, a Swedish security company, employs for example 230,000 people around the world and claims a global security market share of ten per cent. In September 2002, the U.S. State Department announced that it would engage the services of a private company to protect President Hamid Karzai of Afghanistan. Estimates place the number of these companies at one hundred worldwide. These multifunctional organizations offer a full range of services to nongovernmental and governmental clients. They have found a booming market in weak and failing states, where economic actors are willing to purchase products and services that hold the promise of reducing those risks and uncertainties that hamper their economic activities.[32]

Humanitarian NGO's and charities, churches or religious orders, the Red Cross

The support for nongovernmental and humanitarian organizations is increasing. These are expressions of human concern shared globally. These are concerns that go beyond the state, but impact on the policies of state. It is, from a peace perspective, a positive development. State failure inherently attracts humanitarian intervention even when no strategic interest is present.[33] The use of the knowledge and presence of these organizations on the ground must be done in a way that does not interfere or damage their neutral stand and image among the local population that need their aid and support.

Watch Africa!

Lately, a covert effort by the CIA to finance Somali warlords has drawn sharp criticism from American government officials who say the campaign has thwarted counterterrorism efforts inside Somalia and empowered the same Islamic groups it was intended to marginalize. Officials say the decision to use warlords as proxies was born in part from fears of committing large numbers of American personnel to counterterrorism efforts in Somalia, a country that the United States hastily left in 1994 after attempts to capture the warlord Mohammed Farah Aidid and his aides ended in disaster and the death of 18 American troops.[34]

This failure must not stop the efforts to regain the control of and promote stability in failed states, particularly in Africa, where a renewed effort by al-Qaeda is on its way. According to his ex-guard, the Yemeni Nasser Al-Bahri (Abu Jandal), bin Laden had wanted to remain in Sudan as part of his plan for al-Qaeda to move south from the Arabian peninsula and into Africa, considering the Yemen war in 1994 and the Somali crisis. He also had plans for Liberia and Eritrea, and his top Egyptian aide, Abu Ubaidah Al Banshiri (who drowned in Lake Victoria in 1996), was designated to make use of African conflicts such as Burundi and Rwanda to facilitate the infiltration of al-Qaeda in Africa. Bin Laden spoke about Darfur in his April 2006 video and called upon his sympathizers to resist the crusaders in that troubled region. He told the Sudanese people that the treaty with popular movements in the south is invalid and encouraged young supporters and members to study the tribal and geographical situations of Darfur.[35]

Recently, a new article published by a virtual magazine of supporters of global Jihad—Sada al-Jihad (Echo of Jihad)—very clearly sketched the new direction of al-Qaeda or global Jihad towards Africa. The article in Arabic, titled "Al-qaeda Is Moving to Africa," by Abu Azzam al-Ansari provides an analysis of the advantages of Africa as a battlefield and greenhouse for global Jihad, especially on three main desired fronts: Palestine, Europe, and Egypt. Recent months have seen a rapidly growing level of participation by supporters of global Jihad in providing information about the "hottest" African conflicts, such as in Somalia and Sudan. Thus, al-Ansari's article is an attempt to direct the interest of the Jihadists towards Africa as a geopolitical strategy. In radical Jihadi eyes, Africa is therefore just a base, maybe even a future alternative base to Iraq or Afghanistan. It might become a much bigger threat to the Arab world, Israel, Europe, and Western interests than other present arenas of Jihadi activity.[36]

The appendix to this paper contains al-Ansari's interesting analysis of the advantages of using the weak African states for al-Qaeda's operational needs. This analysis highlights the need to invest in the intelligence coverage of failed and weak states and territories and to permanently monitor suspected and potential activity of terrorist organizations threatening the strategic interests of the international community as a whole.

Appendix: Abu Azzam al-Ansari, "Al-Qaeda is moving to Africa"[37]

The interest of the Mujahidin of al-Qaeda in Africa is an old one but has progressed slowly. Al-Qaeda has always been aware of the importance of this huge continent and since its emergence attempted at "feeling its pulse." Al-Qaeda has carried out there many operations and had a presence there. This all proves the awareness by al-Qaeda of the importance of this region from many dimensions, as seen also by observers. We can find the following operations that reflect the focus of the Mujahidin on Africa:

- Many operations against Western targets such as in the U.S. embassies in Kenya and Tanzania.
- The big campaign in Somalia where they managed to deport the American occupier.
- Al-Qaeda has been active in the Sudan for a period of time, where it was involved in military operations against the infidel John Garang.
- After September 2001, Al-Qaeda and its supporters carried out number of attacks, such as in Mombassa, in Jerba/Tunisia, in Casablanca, and in Sharm al-Sheikh and Sinai.

There is no doubt that Al-Qaeda and the Mujahidin perceive the significance of the African regions for the military campaign against the Crusaders. Many people sense that this continent has not yet found its proper expected role and the next stages of the conflict will see the presence of Africa in the battlefield. Among the most significant advantages of Africa over other regions we can find the following:

- The Jihadi doctrines are spread in many African countries—Egypt, Algeria, Sudan, Mauritania, Morocco, Libya, Somalia, Eritrea, and Chad. These countries and others produced many Mujahidin who irrigated the lands of Islam with their blood and sacrificed themselves for the sake of Allah. This Jihadi expansion has old roots in many of the African countries.
- The political and military conditions in most of the African continent, the broad weakness of its governments, and the internal fighting and corruption of these regimes, ease the ability of the Mujahidin to move, plan, and organize themselves far from being seen. They enjoy in Africa easier operational abilities than in other countries, which have effective security, intelligence, and military capacities.

This general weakness brought about numerous situations of tribal conflicts in many African countries, and hotfired civil wars that produced groups and individuals willing to heroically sacrify themselves. If these people could be channeled into the line of the Jihad they will have enormous effect in the defense of Islam and the Muslims.

- The wars and conflicts in Africa provide a gold opportunity for the Mujahidin to easily move between different African countries, without any surveillance, and in most cases need only the finance.
- The above mentioned conditions provide huge amount of weapons and military equipment easy to obtain and in most cases much cheaper than in other regions. Weapons are found all over Africa in larger numbers than in any other continent. In many African countries there is no house without a variety of weapons for either offensive or defensive objects.
- The geographical position of Africa is unique and may ease the way for the Mujahidin to take advantage of it, especially that Africa is linked to other continents. It is easy to operate from it through the straits, rivers, and seas, and the continental and maritime routes. If the Mujahidin take advantage of this geography it would have an immense effect on the campaign against the

enemy. The Crusaders use this region to transfer weapons and equipment, they control the straits and seas, and use these routes to shift oil to the rest of the world. Targeting these routes will be fatal for the Crusaders, and will harm their efforts and energies.

- We should also bear in mind that Africa is also one of the closer routes to Palestine, which might serve as direct and indirect support for this conflict. The violent conflict in Darfur against the Crusaders will no doubt create the emergence of the Jihadi trend in Egypt, which will affect the general atmosphere in Egypt, which is a neighbor of Palestine and maintains solid links to the Jews and the Crusaders. It might ease the shift of the Jihad into the regions close to Palestine. It might promote the struggle in Sinai and serve as a motive for more people to join the Jihad. Alongside the growth of the Jihad there will be developments on the doctrinal field from targeting only the Jews in Sinai to targeting them within Palestine, through smuggling weapons and warriors and carrying out operations. It might take a relatively long period but it is the time to start hotfiring a circle of fire around Palestine from every side. Iraq is also close to Palestine, and the wars there support at present the Jihad in Palestine as well, and will turn in the near future into a direct support and practical involvement in this Jihad.
- One of the prominent advantages of Africa is the general condition of poverty and the social needs in most countries. It will enable the Mujahidin to provide some finance and welfare, thus, posting there some of their influential operatives.
- Many of the African people have broad education and scientific progress. If they join the ranks of the Mujahidin they could contribute a lot to the Jihad.
- Most of the people of this continent are Muslims. The most famous Islamic trend, which the Mujahidin can approach, is the various Sufi groups. The Sufis have no doubt a huge presence in Africa, more than in any other continent. Many Mujahidin in other countries have learned that working with the Sufis is easier than working with any other trend, such as the Shi`is or the Communists. The Christian presence in this region is weak, they are not able to attack the Muslims, and if they did so it would be easy to defeat them.
- There are in Africa nests of continuing conflicts between the true Muslims and their rivals, such as in Somalia, Algeria, or the Christians of Southern Sudan. There is potential of the renewal of the conflict in Egypt, especially if the government goes on with its oppression as a reply to the operations. It might lead to an explosion, whose signs are already seen.
- Another advantage is the links to Europe through North Africa, what eases the move from there to carry out attacks.
- Last advantage is the fact that Africa is rich in economic sources, oil and raw materials. This is very useful for the Mujahidin in the medium and long term.

In general, this continent has an immense significance. Whoever looks at Africa can see that it does not enjoy the interest, efforts, and activity it deserves in the war against the Crusaders. This is a continent with a lot of potential, advantages, and exploiting this potential will benefit the Jihad a lot. It will promote achieving the expected targets of Jihad. Africa is a fertile soil for the advance of Jihad and the Jihadi trend.

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Keeping It All Together

Present and Future National Cohesion in Saudi Arabia

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Introduction[1]

As we look back from the 21st century, Saudi Arabia seems to be a tremendous success story. Awash in oil selling today at over $70 a barrel, Saudi Arabia is expected to earn about $154 billion in oil revenues in 2006.[2] Each year, it runs perhaps the largest social gathering in the world, the Muslim pilgrimage (*hajj*), playing host to around two million pilgrims. Foreign companies vie with each other for Saudi contracts. For 2005, the government reported a thirty-fold increase in foreign investment, to the tune of SR200 billion (about $53.3 billion).[3] Mighty nations attempt to curry favor with it; even the United States, which suffered tremendously at the hands of Saudi citizens in the attacks of September 11, 2001, does little to anger the oil giant. Relations remain good, if slightly strained.

With all its money, it is spending more on education and development, paying down its public debt, increasing security expenditures as a response to domestic terrorism, increasing salaries to the military and the government bureaucracy, and raising payments to the population at large through subsidies for health care, welfare, education and housing.[4]

Saudi Arabia would seem to be sitting pretty, but is all really right in Riyadh? Two questions need addressing: To what extent does a coherent, state-centered territorial identity exist? Do sub-national and supra-national identities exist and still play a role, and do they present a threat to present and future national cohesion?

The states of the modern Middle East are all new creations. Scholars familiar with the history of the formations of the states in the region after World War I know how they were cobbled together and, as a result, have often eulogized them. They know that the Ottoman Empire lasted for over 400 years. But in fact, these states, for the most part, have staying power. That said, there is a very serious danger that the Iraqi territorial state may fall apart, and there may not be anything, particularly the U.S., can do about it. And there is Lebanon, where large chunks of the state territory are controlled by a non-state actor, Hizballah.

But most of these have already been around for a long time. They are flexible, they are adaptable, and after being around for so long, they *have* achieved a degree of permanency. They may not be performing well, as evidenced by the UN Arab Human Development Reports (and this relates to the question of state effectiveness), but they are here to stay. People may have other loyalties that are sometimes even stronger, but the state is their political frame of reference. Today, only the state of Iraq is in jeopardy, and this due to the U.S. invasion.

As for the monarchies in the Middle East, of which Saudi Arabia is one, the literature is rife with articles describing their staying power.[5] The main reason why Persian Gulf monarchies survive is because they are good at it. And we are not talking simply regime survival. These regimes embody the states they created. They survive because they have created an economic system, an historical narrative, and a kind of political tribalism or a tribe-state symbiosis that meshes well with their societies. We also cannot ignore that because of their oil wealth, they have enjoyed the support of outside powers, particularly Britain and the U.S., which has contributed significantly to their staying power. One need only look at the huge international coalition put together by the U.S. to liberate Kuwait in 1990-1991.

Saudi Arabia emerged in 1932 after the Saudi family final defeated several tribal states in central Arabia, the Hijaz, the border with Yemen, and the eastern area of al-Hasa. One of the keenest historians of Saudi Arabia, Madawi Al Rasheed, has observed: "The twentieth century witnessed the emergence of a [Saudi Arabian] state imposed on people without a historical memory of unity or national heritage which would justify their inclusion in a single entity."[6]

The Saudi family, is only one of two families in the world to gives its name to a state.[7] The Saudi narrative implanted in people the idea of modern Saudi Arabia as first the birthplace of Islam, and then as the continuation the "rightful" rule of the Saudi family which began in 1744, and which is portrayed as an Islamic revival in the spirit of the origins of Islam. An association is drawn, inculcated, and implanted in a myriad of ways between the Saudi family and Islam, since Islam is the main loyalty framework of the residents of Saudi Arabia. A civic myth or national narrative comes into being that creates a shared historical memory. [8]

A certain type of political economy exists today in Saudi Arabia that is hegemonizing and homogenizing. It forms the basis for a coherent state in Saudi Arabia today. It is a distributive or allocative relationship between the state and the populace, known as the rentier system, which has tribalistic[9] underpinnings and is fostered by the media and education. Expressed simply, this system involves the state, embodied in the Saudi family, as a distributor of resources and the subjects, the citizens of the state, as receiver of them.

An understanding of this system is predicated on an appreciation of the rapid social change that Saudi society has undergone in the twentieth century. The Mecca-born Saudi Arabian researcher Mai Yamani, daughter of the famous former Saudi Minister of Petroleum, Ahmad Zaki Yamani, has determined that the Al Saud, the Saudi Royal Family, was successful at creating a Saudi national identity. She tells this story via three generations of an archetypal Saudi family, or an ideal type, to use the Weberian term.[10]

The grandparents were born in the 1930s, the decade of Saudi territorial consolidation, in which the major areas, such as the Hijaz in the west, Najd and al-Hasa were united. Each of these areas had their own political and cultural heritages based on their unique history. Identity frameworks were regional, family and tribally based. There was a distinct type of dress, social behavior, dialect, jewelry, and even food.

Travel was rare beyond the home region. Transportation was restricted, and the people were poor. Significant trade was limited to Jeddah on the Red Sea, and al-Hasa on the Persian Gulf. The grandfather most likely could afford only one wife, who was also most likely to be from the same

lineage, and from the same region. Gradually, contact began with non-Muslim foreigners who came to work in the oil industry.

During the active lifetime of the grandparents, rudimentary national schooling was set in place, as was the beginnings of the modern oil industry. But economic benefits were still a long way off.

The parents, the second generation born in the 1950s, were already exposed to a more homogenizing government. It was this generation, Yamani argues, that began to adopt the Saudi Arabian identity. "National homogeneity became the norm," she writes, with nearly all Saudi men dressed in the white *dishdasha* and the red checkered *ghutra*, and all women wearing the black *abaya*. People were encouraged to wear what became known as the "national dress," which was essentially Najdi dress, and they wanted to because to be like the Najdis was to identify with the successes of the royal family, who were from Najd, and who were bringing more prosperity to the country via oil wealth. If one dressed this way, he was also more likely to get ahead in the expanding, Najdi-controlled bureaucracy.

Oil money facilitated the building of an infrastructure, such as roads and air travel, which helped the process of political integration. People moved to different regions for employment. National newspapers, radio and printed press contributed to a further sense of national cohesion. Also important was the homogenization of religious practice, under the Wahhabi version of the Hanbali school of Islamic jurisprudence which pushed out all others. The father became loyal to the Saudi state.

During this period the bureaucracy grew as the government became the biggest employer in the country. Employment was guaranteed to everyone, and the Saudi state assumed the role of provider, a function that fit in well with earlier tribalistic practices. The standard of living increased. As Yamani argues, the "state acquired legitimacy and loyalty through the distribution of wealth." Citizens felt gratitude to the royal family for the economic prosperity they were enjoying.

The third generation was born in the 1970s and 1980s. They do not remember anything before oil, and they take oil wealth for granted. Yet this is also the generation which has been exposed to globalization, to the Internet, and to satellite television. These influences militate against the homogenizing trends in dress, Saudi culture, and the Saudi version of Islam.

The Saudi Rentier State And The State-Tribe Symbiosis

As noted above, Saudi Arabia is known in the literature as a "rentier state."[11] In its most narrow meaning, a rentier state refers to a state which gains most of its revenue not from taxes, but rather from income ("rents") resulting from the sale of natural resources, in this case—petroleum. In the Saudi case, the state *distributes* much of income to the populace, instead of taxing it. Saudi Arabia has (as have other wealthy Gulf states) a kind of unwritten "social contract" between the Saud family and its subjects: the family runs a cradle-to-grave social welfare system and promises employment in the public sector; in exchange, the subjects are expected to be loyal without being represented in any significant way. It is a system of "no taxation, no representation."

This system dovetails quite nicely with the tribalistic character of Saudi Arabia, and to great extent even duplicates it. Although the tribe, as a discrete social unit has weakened in Saudi Arabia,[12] the structure of the relations between the Saudi family and its subjects operates to a great extent according to tribal patterns and values, and thus contributes to national coherence and cohesion.

In this manner, certain groups develop a corporate sense not unlike tribes, and they behave like them. These groups are termed *`asabiyyat*, and they are at the core of the social cohesion of Saudi Arabia.[13] These are patron-client groups that have a tribal, regional, family, or ethnic basis, which are used to obtain jobs or resources from the central government. The central government uses these relationships to get what it wants from these groups, which is primarily loyalty. In this manner, the state is the extension of tribal politics.

Tribalistic patterns of behavior carry a high degree of personalization and are based on personal relationships. For instance, the main ministries are headed by major figures in the Saudi royal family, who represent various "circles of power."[14] If one wants a job in one of those ministries one must ally oneself with that faction of the family, or someone associated with it. The Al Salman (connected to Salman, the governor of Riyadh province), the Al Abdallah (associated with the present King), the Al Fahd (connected to Fahd, the recently deceased king), the Al Na'if (connected to the Minister of the Interior), and the Al Sultan (connected to the Heir Apparent and Minister of Defense and Aviation) are the most powerful circles of power.[15] These circles act as corporate groups, looking out for one another. They consist of blood relatives and their associates.

Like the head of a tribe, the state is responsible for protection of it subjects. The state protects one's physical and financial safety. And the state is personified in the Saudi family, which functions as the head of the tribe. Like a tribal leaders, the royal family mediates disputes, and keeps the peace.

In Saudi Arabia, the state also provides legitimate religious leadership. Although the practice has fallen into disuse, early Saudi leaders were called *imam*, a political-religious title suggesting the supreme leadership of the Muslim community after the death of the Prophet.[16] Although the Saudi king does not have religious powers *per se*, he does enjoy the support of the establishment clerics, who give him authority to rule. In 1986, then-King Fahd arrogated unto himself the title of Custodian of the Two Holy Places (*khadim al-haramayn al-sharifayn*), a title previously in use only by the Caliph.

Just as the tribe is based on personal relationships, the state is personified in the Saudi family. It dispenses largesse, and has brought economic benefits and progress. It also upholds Islam. As Kostiner has written, the "intimate, neo-patrimonial manner in which Bahraini, Kuwait, or Saudi rulers treat their citizens and appoint high officials, attests to the significance tribal, family-like principles in shaping the political field, administration and economies of Gulf states."[17]

The personal and therefore tribalistically informed nature of the relationship of the state/Saudi family to the subject can be illustrated by several examples, all taken from the past year. In March 2006 Saudi Arabia's fledgling stock market plummeted. To understand the meaning of this for many Saudis, one must know that since the inauguration of the market a few years ago, it has been on a remarkable climb. It seemed as if everyone got in on the act, dropping huge sums into the market with little consideration for the consequences of such a risky investment. Many became day-traders, spending hours in front of their computers moving their money around. And it kept going up and up, fueled by the rise in oil prices. In 2005 the main stock index rose by 103 percent. But then the bubble burst and it dropped by more than 20 percent.[18] People were tearing their hair out about their losses.

But the Saudi family, which is the state, was there for the rescue. The first to do something was one of the richest, Walid bin Talal. All he had to do was say something, and he did: he announced

that he would invest $2.7 billion in the Saudi stock market, and the price of shares began to rise immediately.

The next day, it was the turn of the king. King Abdallah announced that he would study the possibility of opening the Saudi stock market to foreign investment, which until now has been prohibited. Immediately, the stock market rose again.

In May 2006, Abdallah announced the creation of a "risk-free fund." He announced that the "fund will be for people of limited income, employees, and others…this group matters the most to me." He concluded: "If they win then this is their luck, with God's will, and if they lose, then their capital is preserved with us."[19]

As a result of the personal intervention of the royal family, hundreds of thousands found financial relief. One cannot overemphasize the personal dimension of this type of behavior. In other states, of course, statements by financial officials carry tremendous weight, but in this case it is all personal, the Saudi *family*, personified in the state, is the one who protects and even uses its *own funds* to save the finances of its subjects.

The Saudi family is not mistaken in its assessment that the financial well-being of its subjects is essential to its rule. When the stock market took another hit in November 2006, many Saudis had already learned the lesson of the previous drop. Nevertheless, one Saudi caught with too much in the market wrote on a blog: "Believe me I have lost more than three quarters of my money and all there is silence…my sense of nationalism has disappeared with my money."[20]

Populist decrees are a favorite with the Saudi family's subjects. While most of the western world was suffering from huge increases in gasoline prices, in May King Abdallah issues a royal decree lowering already low domestic gas prices by thirty percent, to around 60 U.S. cents a gallon. According to the king, the decree was meant to ease the "cost of living burden on Saudi citizens.[21]

The Saudi royal family/state also functions as a genealogical organizer of society, as tribes did in the past. It determines who can marry whom. It is hard for Saudis to marry non-Saudis. This

> contributes toward shaping of the myth of the whole country under Saudi domination as one vast exclusive tribal family patronized by the Al Sa'ud. Since admission to the tribal family—Saudi citizenship—confers entitlement to the largesse of the shaykh, the Saudis have created powerful incentives for their citizens to buy into the myth of Saudi national identity, an identity fused by religion, in which membership is in fact a coveted privilege bestowed by birthright.[22]

The Construction Of Civic Myths

The economic benefits of the rentier/allocative state, and the symbiosis between the state and tribal values, are greatly aided by the construction of civic myths, or legitimizing historical and hegemonic narratives.

The main goal of this is to take the most basic form and precious form of identity in Saudi Arabia—Islam—and fuse it organically to the Saudi family, so that from birth to death, the Saudi citizen will

feel as though living in Saudi Arabia and being led by the Saudi family is the best possible situation for a Muslim.

The process whereby this has occurred is best described by Madawi Al-Rashid.[23] Narratives create a framework in which to place the relationship to the state. The domineering narratives remove competing ones, whether they be tribal, religious, or regional. Narrative is form of cultural inculcation that allows the dominating group to make further inroads into the popular consciousness and thereby extend their control, while also generating compliance.

In order to weld the primary identity, Islam, to the royal family, the time of the Prophet is first established in textbooks as the ideal Muslim community. These school texts explain the danger of sectarianism, or groups that do not subscribe to the Wahhabi version of Islam, such as the Shi`a, to whom we will return later.

Even though the political economy is based on tribalistic values, the curriculum defines tribal solidarity as divisive. It emphasized that just as in the time of the Prophet, loyalty should not be to the tribe, but to the *umma*, or community of believers. It is implied that just as the Prophet created a community of believers out of tribes, so did the founder of modern Saudi Arabia, Ibn Saud.

According to the hegemonic narrative, the first Wahhabi state, from 1744-1818, was essentially a reincarnation of the original Islamic movement. Just as the Prophet Muhammad had brought an end to the ancient *jahiliyya*, or period of ignorance, so did the Saudi family when it allied with another Muhammad, Muhammad bin `Abd al-Wahhab, to bring an end to the *jahiliyya* which was pervasive in the Arabian Peninsula in the eighteenth century. The Wahhabi revival brought people back to true Islam, as in the time of the Prophet.

This revival took place in Najd, in central Arabia, and the narrative asserts the political and religious supremacy of Najd. The implication is that other regions, like the Hijaz, should be grateful for their rescue from ignorance. They are also expected to be grateful for the prosperity that Najd has brought them.

The formation of the present Saudi state, from 1902, is presented as a unification of the Arabian Peninsula. Unification in Arabic is *tawhid*. Wahhabism stresses the ultimate unity of the godhead. A semantic interface is thus placed between unification of the country and unification of god, under the stewardship of the royal family.

The Saudis are the saviors, who while restoring their native patrimony, rescued the population from ignorance, and gave them financial well-being. The least that can be expected, it is implied, is loyalty and gratitude.

The Saudi family is placed at the head of a figurative tribe, and the people are told that is was the Saudi family who provided the foundation for the Islamic state and the prosperity which they now enjoy. His sons now lead you. The reason for saying this is to inspire loyalty, and provide an explanation and purpose for political life.[24] The narrative controls and explains the past, present, and future of Saudi Arabians.

The Persistence Of Sub-National And Supra-National Identities

The system described above functions well and contributes to a sense of national cohesiveness in the country. That said, during times of crisis, such as the economic crisis of the 1980s, Saddam Husayn's invasion of Iraq in 1990, and after September 11, 2001, sub-national and supra-national identities come to the fore. These may be religious, tribal, or regional.

Regional

The region with the most highly developed sense of regional identity is the Hijaz, a strip of land along Saudi Arabia's Red Sea coast stretching from the border with Jordan in the north nearly to Yemen in the south. In it are situated the two holiest places in Islam, Mecca and Medina.

In the Hijaz the elite are quite aware of the status they enjoyed before what the Saudis call unification, and some Hijazis calls occupation, or annexation. When they feel that they are being treated as second-class citizens, as they often are since Najdis have most of the government and religious jobs, they begin to seek respect, asserting their distinctiveness as the elite of Islam's holiest places.[25]

One recent manifestation of this is the periodical *al-Hijaz*, which is published in London by the Hijazi National Organization (*al-Jam`iyya al-Wataniyya al-Hijaziyya*). Most of the articles are not signed. It is extremely anti-Saudi and seeks to celebrate Hijazi culture and distinctiveness. The articles refer not to the "unification" of Arabia under the Saudis, as stated in the official narrative, but refer rather to the capture or occupation of the Hijaz.

The issue of April 10, 2003 features a banknote on the cover from 1924, when the Hijaz was still under Hashemite control. The Hashemites today rule Jordan, and once ruled Iraq. The headline reads: "This Currency Is Witness to the Disappearance of a State that Was the Most Developed in the Arabian Peninsula." Another headline on the cover reads: "The Hijaz: A State that Was Swallowed up by the Najdi Octopus."

A closer look at the bill reveals that it says "The Arabian National Bank of Hijaz," and carries the coat-of-arms of the Hashemite royal house. This coat-of-arms is extremely close to the Hashemite coat-of-arms used today.

In this manner, there are Hijazis who begin to assert their distinctiveness, whether through writing about Hijazi customs and food,[26] or by wearing Hijazi dress. Indeed, lately, there seems to be a revival of Hijazi dress. Those who choose to wear Hijaz dress do so at some risk, since Najdi dress is referred to as the national dress and worn by most of those in or close to power. What one wears is immediately seen and the statement is made. Some Hijazis are demonstratively reverting to their own regional (albeit urban) dress, which includes a tighter-fitting robe called a *jubba*, and a turban, or *`amama*.

Najdi dress, or what the Saudis call national dress, consists of the usually white *dishdasha* and the white or red-checked headgear known as the *ghutra* and the *`iqal* (a headband to hold the ghutra in place). A considerable amount of attention is paid to the wearing of national dress in the press, and there are articles condemning those, particularly young men, who wear western dress, particularly baggy pants and shirts and baseball caps. These young men are constantly implored by the authority to return to the "national dress."

If there is one man who is leading the Hijazi cultural movement, it is Sami al-Angawi, an architect who has made it his life's work to preserve the customs, dress, and architecture of the Hijaz against Najdi attempts to eliminate them. He demonstratively wears Hijazi dress. Moreover, he openly declares that he is a Sufi, a mystic, a stream of Islam which is forbidden by the Wahhabi clerics that monopolize religion in Saudi Arabia.

He has protested the destruction of Hijazi archicture and Hijazi holy sites by jealous Wahhabis who see the worship of these sites as unlawful religious innovation (*bid`a*). Several of these sites have been destroyed. The most recent architectural site to be destroyed was the Jiyad fortress, built by the Ottomans in the 18th century and destroyed in 2002. This fortress was the place from which Husayn bin `Ali started the Arab revolt in Mecca by firing the first shot. It overlooks the Ka`aba, and was removed to make way for a massive, five story project. The developers, by the way, are the Bin Ladin Company, which has close ties to the royal family.[27]

Tribal

Tribal identities also come to the fore in time of crisis, even though there is an attempt to suppress them by the Saudi royal family. During the crisis which followed the Iraqi invasion of Kuwait, tribal voices were heard calling for Islamic reform.[28] One of the major complaints by opposition forces is that the Saudi royal family has an unfair monopoly over land. This complaint found a tribal outlet in July 2004, when 3,000 people identifying themselves as being from the tribe of Quraysh violently protested the public auction of land they claimed was theirs. Amid cries of "this land belongs to Quraysh," the crowd put several security personnel in the hospital.[29] Quraysh is the tribe of the prophet Muhammad, and it appears that this is not the kind of identity people give up easily. Internet sites have been also been developed by tribes as meeting places to discuss issues of mutual concern.[30]

Recently, members of the Rashidi dynasty living in exile have issued a challenge to the Saudi family. The Rashidis ran an amirate comprised mostly of the Shammar tribe in central Arabia in the 19th and 20th century, finally succumbing to defeat by the Saudis in 1921. Talal Muhammad al-Rashid, the son of the last ruler of the Rashid amirate announced the establishment of the "Saudi Democratic Opposition Front." He called upon the Saudi family to either introduce democracy or give up power. Talal said that the Shammar were backing his movement.[31]

Religious

The Shi`is represent about 12 percent of the Saudi Arabian population, and are found primarily in the oil-rich Eastern Province. They are discriminated against by the Saudi state, which follows the Wahhabi belief that they are polytheists (*mushrikin*). While they have never been a mortal threat to the regime, they do call into question the Wahhabi monopoly on religion and therefore the Saudi national narrative. Over the years they have held demonstrations, particularly after the Islamic revolution in Iran, and some Iranian-backed Shi'is have been responsible for terrorist attacks, such as the June 26, 1996, bombing of the al-Khobar Towers complex in Dhahran, which housed U.S. Air Force personnel from the 4404th Fighter Wing (Provisional) enforcing the UN-sponsored "no-fly zone" in southern Iraq. That notwithstanding, a certain accommodation has been reached with the Shi`i community since a similar reconciliation was reached with Iran in 1996. Shi`is have also been included in the various "National Dialogs" sponsored by King Abdallah.[32]

The Shi`i question in Saudi Arabia was recently brought forcefully to the fore in July and August 2006, when Shi'is turned out in force to demonstrate in favor of the Lebanese Shi`i leader of Hizballah, Hasan Nasrallah as he fought to defend his state-within-a-state against an Israel angered by his attacks. After several demonstrations, the last one was put down harshly.

Intellectuals representing the Shi`a of the Eastern Province have written about the undermining of their rights and offense to their honor by the anti-Shi`i policies of Najd. They rail against what they call Najdization, or *siyasat al-tanjid*. They attack the Saudi narrative as a hegemonic myth, maintaining that what has happened when the Saudis captured the area in 1913 was not unification, but occupation. The Saudis, these intellectuals claim, replaced the traditional interdependence of regions with dependence on Najd.[33]

Islamists also challenge the Saudi hegemony, particularly during times of crisis. Following the U.S. invasion of Iraq, a group of Saudi clerics knows and the "Awakening Shaykhs" challenged the regime, stating that it was not Islamic enough, and calling into question the Saudi monopoly on Islam in Saudi Arabia. They did not attack the royal family's right to rule, but rather sought a decentralization of religion in the county.[34] While critical of certain Saudi policies, they do not challenge the central narrative of Saudi history. During the 1990s, these Islamist oppositionists wanted change, but did not call into question the entire system. They were the radicals of their time however, until the appearance of Usama bin Ladin. Now they assume a middle position, often mediating between the government and the jihadists.[35]

Islamic terrorists influenced by Usama bin Ladin have been carrying on an insurgency in Saudi Arabia since May 2003, although isolated attacks occurred even earlier. These call into question the right of the Saudi family to rule and directly threaten the regime. Contradicting the official narrative, they refuse to use the term "Saudi" Arabia and simply refer to the area as the Arabian Peninsula. The degree of support of Usama bin Ladin is hard to determine, but nearly half of 15,000 Saudis polled in 2004 expressed support for his sermons and rhetoric, although not for his tactics.[36]

Islamists have varying degrees of alienation from the Saudi government, but those who identity with Bin Ladin identify with the global jihad as their main loyalty framework. This is aided by the lack of state control over the new public information space brought about by the Internet, where global jihadis communicate, and by satellite television. A new, global community of dedicated Muslims is thus formed. In this way, the jihadists overcome modern state divisions and feel part of one community, or Muslim *umma*, free from the modern shackles, so to speak, of corrupt governments.

How Well Is The System Working, And Will It Continue To Work?

In general, the state-tribal-family system is working, and it will continue to work for the foreseeable future. Of course, there are problems. For instance, the use of Islam as a legitimizer can be dangerous when the regime is not perceived as being Islamic enough. As time goes on, people are demanding more representation and accountability, but the Saudi family seems well positioned to handle these demands, particularly in the era of rising oil prices. This system is the basis of the state's cohesion, and it will remain so. This is not national cohesion or nationalism as we usually understand it, since we usually mean by nationalism a loyalty framework which requires a civil solidarity that goes beyond primordial loyalties.

In Saudi Arabia there is a cohesion that is not defined as a nation. It is instead a matrix of many loyalty frameworks, which are not a nation, but are national in scope. They are tribalistic in form, based on personal relationships.[37] The main identity is Islamic, and the state has succeeded in fusing this identity to the royal family which maintains the system of political tribalism and provides resources through the rentier state system.

So a national community has been created, with all the physical and symbolic manifestations of a nation, but still not a nation as we traditionally conceive of it. It still coheres, without being a nation.

We have already discussed some of the challenges to this cohesion. The old narrative is getting harder and harder to inculcate with the younger generation, because the government no longer controls communications. The younger generation is more questioning, and these are without jobs. In good times, this is manageable, but in bad times, trouble may return. As in the past, in a bad economy there are more demands on government, as people feel that the social contract is being violated. There will be more demands for political participation, and there will be a political dynamic of sorts, but not of the sort that sees any real limitation on the power of the Saudi family.

The U.S. Energy Information Administration (EIA) warns as follows:

> In spite of the recent surge in its oil income, Saudi Arabia continues to face serious long-term economic challenges, including high rates of unemployment (around 13 percent of Saudi nationals, possibly higher), one of the world's fastest population growth rates, and the consequent need for increased government spending. All of these place pressures on Saudi oil revenues….Saudi Arabia's per capita oil export revenues remain far below high levels reached during the 1970s and early 1980s. In 2004, Saudi Arabia earned around $4,564 per person, versus $22,589 in 1980. This 80 percent decline in real per capita oil export revenues since 1980 is in large part due to the fact that Saudi Arabia's young population has nearly tripled since 1980, while oil export revenues in real terms have fallen by over 40 percent (despite recent increases). Meanwhile, Saudi Arabia has faced nearly two decades of heavy budget and trade deficits, the expensive 1990/1991 war with Iraq, and total public debt of around $175 billion. On the other hand, Saudi Arabia does have extensive foreign assets—around $110 billion—which provide a substantial fiscal "cushion."[38]

While problems remain on the horizon, the Saudi state is resilient. It has experienced shocks, but it has weathered them well. The regional, religious, and tribal affiliations discussed in this paper do not at present represent a threat to national cohesion, but are offered here as a schematic of possible lines of fracture should severe problems develop in the future. This is one of the lessons of September 11, 2001. Until then, very few had heard of an Islamic opposition in Saudi Arabia, even though a few scholars had been following and publishing on the subject for years prior.[39] Forewarned is forearmed.

Endnotes

1. This article owes a debt to the research and syntheses of Joseph Kostiner and Madawi Al-Rasheed, particularly Joseph Kostiner, "The Nation in Tribal Societies—Reflections on K.H. al-Naqib's Studies on the Gulf," in *Tel Aviver Jarbuch f ür deutsche Geschichte*, Vol. 30 (2002), pp. 212-222, and Madawi Al Rasheed, *A History of Saudi Arabia* (Cambridge: Cambridge University Press, 2002), particularly pp. 188-217.

2. U.S. Energy Information Administration (EIA), "Country Analysis Brief: Saudi Arabia," August 2005, online at www.eia.doe.gov/emeu/cabs/saudi.html.

3. www.albawaba.com/en/countries/Saudi%20Arabia/195595.

4. EIA, "Country Analysis Brief: Saudi Arabia," August 2005.

5. Daniel Byman and Jerrold Green, "The Enigma of Political Stability in the Persian Gulf Monarchies," *Middle East Review of International Affairs*, Vol. 3, No. 3 (September 1999), pp. 20-37; Lisa Anderson, "Dynasts and Nationalism: Why Monarchies Survive," in Joseph Kostiner (ed.), *Middle East Monarchies: the Challenge of Modernity* (Boulder: Lynne Reinner Publishers, 2000), pp. 53-69; Gregory Gause, "The Persistence of Monarchy in the Arabian Peninsula," in Kostiner, *Middle East Monarchies*, pp. 167-186.

6. Madawi Al-Rasheed, *A History of Saudi Arabia*, p. 3.

7. The other is the Hashemite Kingdom of Jordan.

8. Al-Rasheed, *A History of Saudi Arabia*, pp. 188-199.

9. The use of term tribalistic instead of tribal is meant to suggest that while the importance of discrete tribes as social units has declined, tribal modes of behavior and social organization—as will be seen—continue.

10. Mai Yamani, *Changed Identities: The Challenge of the New Generation in Saudi Arabia* (London: Royal Institute of International Affairs, 200), pp. 4-9.

11. See Hazem Beblawi, "The Rentier State in the Arab World," in Hazem Beblawi and Giacomo Luciani, *The Rentier State* (London: Croom Helm, 1987), pp. 49-62.

12. Indeed, the founder of Saudi Arabia, Ibn Saud, sought to weaken tribes in order to form a centralized state. That said, a strong tribal identity pops up from time to time.

13. Kostiner, pp. 212-222.

14. Madawi Al-Rasheed, "Circles of Power: Royals and Society in Saudi Arabia," in Paul Aarts and Gerd Nonneman (eds.), *Saudi Arabia in the Balance: Political Economy, Society, Foreign Affairs* (London: Hurst, pp. 185-213.

15. "Al" here means "family of," and not the definite article.

16. W. Madelung, *Encyclopedia of Islam*, 2nd ed.

17. See Hisham Sharabi, *Neopatriarchy: A Theory of Distorted Change in Arab Society* (Oxford: Oxford University Press, 1992). Kostiner, pp. 216.-217.

18. *Arab News*, March 14, 2006.

19. "Saudi King Plans 'Risk-Free Fund'," May 16, 2006, news.bbc.co.uk.

20. Reuters, November 20, 2006.

21. "Saudi King Slashes Gasoline Prices at Home by 25%," AP, May 1, 2006.

22. Eleanor Doumato, "Gender, Monarchy, and National Identity in Saudi Arabia," *British Journal of Middle Eastern Studies*, Vol. 19, No. 1 (1992), pp. 31-47.

23. Madawi Al-Rasheed, *A History of Saudi Arabia*, pp. 188-204.

24. Madawi Al-Rasheed, "God, the King, and the Nation," *Middle East Journal*, Vol. 50, No. 3 (1997), pp. 359-71.

25. Mai Yamani, *Cradle of Islam: The Hijaz and the Quest for an Arabian Identity* (London: Tauris, 2004), p. 11.

26. Mai Yamani, "You Are What You Cook: Cuisine and Class in Mecca," in Sami Zubaida and Richard Tapper (eds.), *A Taste of Thyme: Culinary Cultures of the Middle East* (London: I.B. Tauris, 2000), pp. 173-184.

27. www.savethehijaz.org.

28. Joshua Teitelbaum, *Holier Than Thou: Saudi Arabia's Islamic Opposition* (Washington, DC: Washington Institute for Near East Policy, 2000), p. 21.

29. *Al-Watan*, July 15, 2004.

30. For the Harb tribe, see www.harb-net.com; for the `Utayba tribe, see www.otaibah.net. For the Shammar tribe, see www.allshammar.com. Thanks to Bernard Haykel for drawing my attention to these sites.

31. AFP, August 8, 2006. Madawi Al-Rasheed, the Saudi Arabian historian, is the daughter of Talal.

32. Teitelbaum, *Holier Than Thou*, pp. 83-98; Tobey Craig Jones, "The Shiite Question in Saudi Arabia," International Crisis Group, September 19, 2005, www.crisisgroup.org

33. Al-Rasheed, *A History of Saudi Arabia*, pp. 199-200.

34. Teitelbaum, *Holier Than Thou*, pp. 25-71.

35. For details, see Joshua Teitelbaum, "The Next Generation of Saudi Ulama: A New Pillar of Support for the Regime?," in Asher Susser (ed.), *The Middle East: The Impact of Generational Change* (Tel Aviv: Dayan Center, 2005), pp. 135-143.

36. For details, see Joshua Teitelbaum, "Terrorist Challenges to Saudi Arabian Internal Security," *Middle East Review of International Affairs*, September 2005; UPI, CNN, June 9, 2004.

37. Kostiner, pp. 220-221.

38. EIA, "Country Analysis Brief: Saudi Arabia," August 2005.

39. See Joshua Teitelbaum: *Holier Than Thou: Saudi Arabia's Islamic Opposition* (Washington, DC: Washington Institute for Near East Policy, 2000), and his chapters on Saudi Arabia in *Middle East Contemporary Survey*.

Profiling International Change Processes

Introducing A Holistically Integrative And Socio-psychologically Grounded Approach To Emerging Trends Prediction

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Introduction

Black paint. White paint. Bring also to the easel red, blue, and yellow paint plus some brushes with a few basic tools and you have everything necessary to paint like a master; lacking only ability.

This perhaps unwelcome observation, together with the notion that one does not paint masterly by committee, lies at the heart of the following argument regarding our too frequent current inability to predict emerging international trends and futures.

As convenient as it might be for bureaucratic purposes were this otherwise, neither the admitted lack ability to adequately predict complex system's futures—the reason for the Proteus Complex Systems conference and for its discussions—nor its solution lies solely within the tools but lies also, perhaps primarily, within the nature of the painter (Werther 1997, Werther 2000a, Werther 2000b).

Of course, modern technology makes certain things possible today which were never before possible, and this idea is discussed. Integrating needed human analyst capacities with technical capacities in a particular way is central, but it is not herein the technology tail—nor bureaucracy and its bureaucratic needs—that is wagging the predicting dog.

The form of presentation for the coming argument is not linear, because one cannot think synthetically linearly. I layer issues on, deepening and synchronizing as we proceed.

A synthetic, holistically integrated mindset moves recursively and constantly from core to consequent as from seed and its expression within the changing environment as it finds it; and as it expects to find it at every future in time. It is constantly projective via 'path' within its environment, so that its internal nature is thusly in constant communication with its externals. Consequently, the visualizations and metaphors that I present at the end of the argument—when profiling international change processes is discussed—use terms such as 'clash of claims', 'micro- and macro-structuring', 'theme', 'bias', 'dance', and 'harmonic' to describe what is projectively occurring. Wholes move among and within wholes, and are assessed as biased wholes in motion. Prediction thus arises.

A Cliff Notes visual summation of profiling international change processes might conjure the visualization of holistically integrated analysts surfing a holistically integrated wave—going their ways in biased, recursive communication with each other and an environment.

Similarly, one might conjure the view of a dance, where each dancer constantly projects the expected actions of the other dancers within the dance.

The problem and legitimacy of attributing psychological characteristics, and thus applying normative concepts such as bias, nature of, and character and motive to synthetically constructed wholes—groups, cultures, societies, nations and the like—that are, when strictly considered, seemingly attributes only of natural individuals—is discussed and methodologically addressed. Individuals act. Groups act.

Yet, all is in motion. Everything is at every point seen as holistically integrated while projecting a distinct bias path in communication with the present moment and the expected future.

How can we find therein any stable grounding, and any analytical safe harbor?

Analytical Capacity and the Nature of the Analyst

Analysis is a core area of lack, and thus a realm of solution, partly because as a nation we have for the past half century—at least—focused primarily upon tools (technology and technical methods) to the systematic denigration within education, research, and analysis of those broad social science skills and perspectives of a holistically integrative kind; comparative history, comparative philosophies, religions, politics, economics, cultures, comparative literatures, sociologies, and the like. These capacities cannot be downloaded, easily transmitted, reverse engineered, archived, or formed into algorithms; they must be individually learned through considerable effort and likewise individually wielded.

It is precisely in the area of social sciences competence that the USA scores lowest among modern nations; being as we are more than most in love with technology and are as a society disinterested in cultures, whether ours or others. This costs us dearly (Hashim 2006). But technophilia when in communication with a relative exclusion of broad, humane learning within the analyst is also a modern problem quite general to the times.

Fortunately, we also have for the first time, precisely because of technology (especially information technology), an opportunity for a new and better kind of predictive intelligence capability, but it is my argument that this potential can only be brought to general fruition when the societal lack of competency described above is ameliorated.

It is not either-or, but about technology and wide learning being properly used within their respective areas of comparative advantage that is to be sought and achieved.

We have latterly added to the above error an encyclopaedist enterprise of gathering together vast volumes of data and raw information within computers and hoping that other technical means can render it humanly decipherable and thus practically useful. This has been at best only very partially successful. Perhaps more to the point, and mirroring the previous observation, we have invested heavily in "rational" mathematical and natural science-based competencies and worldviews, greatly to the denigration of softer ways of knowing, pretending perhaps that the natural science-technology-mathematics realm can interpret human action without humane studies being brought too centrally to the table. This would be convenient, were it not impossible.

Aristotle long ago rightly and wisely observed "…it is the mark of a trained mind never to expect more precision in the treatment of any subject than the nature of that subject permits…" (Aristotle, Ethics, Book 1, iii). I read this caution as fundamentally conditioning explanations of human and societal action, including predictions of emerging international trends—the primary subject of this discussion—among them.

Nevertheless, the kind of trained mind that is necessary to emerging international trends prediction has a broadly integrative humane aspect. It is compositive and synthetic, as we shall learn, more than analytic (Hayek, 1952, 65-68). It sees synchronies amid change.

This necessity stems from the problem. Human affairs are 'complex' affairs—that is, they are always embedded within a wide array of hard and soft considerations too commonly studied separately through various disciplines, and rarely holistically comprehended. Human affairs, among them emerging international trends prediction, are also typically of such a nature that frequently the best that can be attained is a "broad outline of the truth; that is, in arguing from premises which are for the most part true we must be content to draw conclusions that are similarly qualified…"(Aristotle, Ethics, Book 1, iii).

I proceed therefore at the outset not from a mathematical, econometric, or objectively rational natural science based view toward analysis, but from a comparative, socio-psychologically grounded, and integrally holistic conception of the task necessary, which places at its center the synthetic view that it is human bias—including those systems of bias and human nature called cultures and societies—that ought to centrally inform our inquiries and methodologies. The foundation is not rational man, but biased man acting.

Build outward from this ground of understanding things from within and among bias, to a focus upon *actions*—that is, focus on the change process rather than upon states or static situations—and we are approaching nearer to the predictive realm. Before we can predict emerging international change however, a further discussion of the linkages between individual and societal dynamics, elsewhere phrased as a "clash of claims," "harmonics" and a "dance," is necessary; and then the stage is set (Werther 2000a, Werther 2006b).

Arriving at this last competence achieves for the analyst merely a level of mastery preceding emerging trends prediction capability. It presumes that the individual analyst possesses a broad awareness of forms, styles, species, and natures of human and societal action, a topic to which I shall return in more detail further along in the argument.

It is also at this juncture that modern technology, taken together with such a synthetic and holistic capability within the analyst, permits for the first time in human history—because of our access to sufficient nearly real time information about ongoing (and past) changes within many cultures, societies, and nations simultaneously—that we can even hope for holistically integrative predictions of emerging international change; insights of the kind that I have denoted profiling international change processes. The solution is within this integration, and that quest leads us further along into the realm of conflicting harmonies.

Please notice that it is not technology that *does* this, but rather technology in proper communication with an adequately composed analyst that permits international emerging trends prediction. Pre-modern thinkers, no matter how broadly educated they were, could not see international change happening in the immediate way that we can do so today.

A Caution and Limitation on the Matter of Timing

Referring again to Aristotle's warning about "achieving such clarity as the subject matter allows; for the same degree of precision is not to be expected in all discussions…," the best I have been able to achieve is to profile international change processes leading to often correct inferences about emerging national, regional, or international trends with respect to the coming direction(s) of change, changing dynamics and methods of change, and reasons for change and its implications.

Not infrequently the timing of emerging international trends that were otherwise correctly seen has been misjudged, and it is my hope that some of those present—or those who otherwise and in other times will consider using a profiling change processes orientation to emerging trends prediction—may have a solution to this mistiming problem.

It nevertheless remains my prejudice that the eventual best practice regarding emerging international trends prediction will stem from a fruitful marriage of—perhaps a partial integration of—socio-psychologically grounded change profiling orientations with technical methods extant; but it *IS* my strong opinion that the former will be and ought to be the proper grounding since we are after all dealing in *human* action, and hence fundamentally with socially, culturally, psychologically, politically, economically, and otherwise humanely nuanced complex matters. We are consequently concerned with a constantly flowing and shifting realm of multiple interacting bias systems (cultures, societies, nations) that cannot be captured merely mathematically or technically.

Summing These Preliminary Considerations

Just as advanced mathematics and natural science requires substantial mastery of fundamental topics, just so holistically integrative predictive thinking of the type I have labeled 'profiling international change processes' requires a simultaneously broad and sufficiently deep mastery of disparate social science and humanities disciplines as mere preamble. More to the point, basic mastery requires an internalized *individual* capacity to see how one discipline influences another: structurally, within the realm of ideas and their justifications, and also dynamically to form the normative and empirical complexes that constitute various societies and nations. Within pre-modern Western traditions, as within the pre-modern Eastern traditions, it is precisely upon such generalist humane capacities, plus knowledge of their root issues and consequences, that the "gentleman" works.

It is also precisely these generalist humane capacities which Western societies have latterly disparaged in favor of narrow, specialist technical mastery, leading too frequently to an almost astounding inability to understand history, geography, culture, philosophy, politics, economics, and so forth among even highly educated individuals; a condition which at its too-common extreme renders world events mysterious (Werther 2000b).

The argument is decidedly not that technology is bad—indeed, I have said that technology is critical to building the emerging international trends prediction capability sought—but rather that technology is insufficient when sufficient mastery of the humane disciplines is not present at the core, and when this humane core is not properly configured with respect to abilities found within many individual analysts.

The amelioration of this unfortunate state—to the extent that it is currently general—must attend any forward movement as to improving emerging trends predictive ability within society. It is necessary

but not sufficient to have individually attained a broad generalist perspective before anything further of consequence can be accomplished.

Secondary Considerations Expanded Upon

Arriving at the point of mastering generalist humane capacities, the analyst will still only have mastery of relatively static interrelationships sufficient to intuit more or less correctly forms and species of humanly composed complexes. Little in such an accomplishment permits prediction of emerging trends within and among the complexes, real-time information or no. For this ability to flower, another capacity must be achieved.

We now need to draw sustained attention to the *movement* of the various and different complexes that constitute different societies and nations, and more specifically to their internal and external movement according to their biases (values, norms, beliefs, customs, and national styles). The capacity enabling task to be *initially* accomplished was—as the Analects of Confucius, Book VII, 8, framed it—to return with the other three when one corner is given. That is, to have developed as *preamble*—as was said above—within the individual analyst the generalized capacity to understand how differently interpreted histories, philosophies and religions, politics, legal systems, and economic systems variously interact to form the biased complexes that do the moving, so that when one disciplinary understanding is provided, a generalized view of the whole can be intuited with some degree of accuracy. Societies, cultures, and nations are not innumerable in their basic forms, nor as we *now* need to see, in their strategies and ways of acting. There are indeed patterns within patterns, but they can be understood.

Like any human composition, there is theme and harmony animating groups, and within *this* realm each normally acts. At the higher level of analyst ability, it is a capacity to see those whole themed compositions that is to be attained. What is now being expressed is that in their normal relationships, cultures, societies, and nations exhibit bounded norms of behavior within which perceived problems are typically solved, and that these bounded norms are relatively stable and definitive features of those cultures, societies, and nations.

Seeing this is no small task, but it is not an unattainable task. Indeed, one could argue that achieving this ability—within the relatively scant and outdated data usually available to them regarding current affairs—was a primary focus within Western traditions defining the well educated gentleman, as also in those of the Asiatic Taoist and Confucian gentlemen during the periods of their high culture. Burke and John Adams, among many others of their era, correctly and immediately foresaw the consequences of the French Revolution, and an even passing reading of pre-modern works will give some sense of what we have too often lost in terms of the ability to move in a borderless way across disciplines to form valid and insightful conclusions that are holistically integrative attainments of rigor. The American Constitutional Convention was nothing but a debate about how power flows under various arrangements and views of human nature.

Arriving at this ability, one can proceed. Otherwise not.

More Advanced Considerations Expanded Upon

There are many among us, and I am one, who cannot paint, dance, golf, sing, or achieve a desired goal masterly for the sufficient reason that we have not the talent for it, nor studied and practiced sufficiently. That is the merit and demerit of it—nothing more.

Holistically integrative thinking is likewise a taught skill animated within a found talent.

To the extent that as a society, we have built into ourselves this current incapacity to see things whole, we have systematically reduced our opportunity for finding such talents, and thus for building up their holistic predictive mastery. Frankly, for decades we were barely interested in finding them or having them about, as any consideration of past academic and bureaucratic prospects involving the generalist as compared to the specialist will attest. These are public choices we made. Bad ones.

There is reason to think that as a society we are now repenting of the error. The Wall Street Journal recently noted "MBA Programs Blend Disciplines to Yield Big Picture" (Alsop, 2006), although the proposed instant solutions give one more than a little pause. Rome was not built in a day, nor guided by reformed specialists. Nevertheless, there is again societal movement toward finding proper holistic talents and teaching them.

Thomas Bender's recent work, *A Nation Among Nations,* asks us to "recognize the historical interconnections and interdependencies that have made America's history global even as it is national…" (Bender, 2006 p. ix). It is a necessary work.

Earlier, Robert A. Kann's (1974) *A History of the Hapsburg Empire 1526-1918* notes, "The problems of the Hapsburg Empire can be fully understood only if equal attention is given to the various political entities and ethnic groups that formed it. There is no one stage of action but several stages, which have to be presented in a synchronistic view. This does not mean that all areas are necessarily of equal importance, and certainly not at the same time. The part of the stage where the action takes place is illuminated, and then falls back into darkness when history shifts to some other place. It is necessary, however, to keep in mind that that specific aspects of history have to be viewed in the first place from the angle of particular groups. This method applies to national and cultural problems but also to political and socioeconomic ones….These are important aspects of the history of the Hapsburg Empire but not the essence of its history. It rests in the synthesis between the supranational and national problems. In correlating them as seen from different angles this study has tried to break new ground" (Kann 1974, xii).

Kann's is a fine achievement, and in terms of my own thinking about future oriented matters, I am sad to have discovered it only recently. Could one project forward much what Kann has done looking backward, we would be nearer the task necessary for emerging trends prediction. Notice his language, with mine from previous works given in parentheses; "fully understood" (holistically integrative), "several stages…synchronistic view" and "the stage where the action takes place is illuminated, and then falls back into darkness…" (clash of claims, change process, dance), "…to be viewed in the first place from the angle of particular groups." (thinking within bias), "the essence of" (nature of), "It rests in the synthesis…correlating them as seen from different angles…"(clash of claims, integrative, holistic, synthesis, harmonic, dance, micro and macro-structuring).

It is to the problem of better projecting forward from such a holistic, synchronistic, bias-centered, and synthetic mindset that we now turn our attention, and that task requires an exposition of the history of these ideas and of their rejection in dominant modern thought.

An Analytical Perspective Short Circuited

Several eighteenth and nineteenth century Germanic thinkers, before their school fell into nationalist chauvinistic barbarism during the twentieth century, were on the track of something called national styles, which emerged from their observation that various human societies and cultures have different but characteristic ways of behaving with respect to common human problems. It was, in part, also a negative reaction to the bald external Newtonian and Cartesian empiricism that was growing dominant during the Age of Reason, coupled with their emerging recognition and statement of how inward nature normally reflects outward in worldly actions. Schopenhauer (1969, 141) says of his time "…everything is ascribed to things working from the outside, and nothing to the inner nature of things. If we could actually succeed in this way, then, as we have already said, an arithmetical sum would ultimately solve the riddle of the world." This these Germans, and a few others, did not believe, and so they looked inwardly for another way of knowing human action.

Having come into contact by then with the major schools of Oriental thinking—Hinduism, Buddhism, Confucianism, and Taoism—the cross fertilization with their Western perspectives seemed to produce a focus on both empirical and intuitive aspects of knowing and on human action according to influences of inner nature in contact with external reality. Herder went considerably down the road of national styles, but it was Schopenhauer who most elegantly stated the problem of finding a proper grounding relevant to knowing emergent futures within action, including human and societal action.

Proceeding from the position that "every organism represents the Idea of which it is the image or copy" (Schopenhauer 1969, 146), and that this "Idea" is formalized in a species (defined as a natural form and simultaneously a natural strategy for existence). A species thus represents a normalized strategy of action for survival. It acts, via Schopenhauer's willing—a concept not to be simplistically or crassly understood—according to its "Idea."

Schopenhauer commented too generally, that "We know the psychological character of the species, and from this we know exactly what is to be expected from the individual" (Schopenhauer 1969, 131). Although overstated as to exactness, this general observation about the importance of psychological character, including traditions, norms, customs, and so forth, as a valid predictor of future action within forms builds the potential groundwork for a broad behavioral solution to out inquiry.

Herder intuitively applied character to the actions of nations and societies in the form of their national styles. His was an inward-oriented, romanticist alternative to the mostly external mechanical explanations of the era. Of course, for human individuals, and thus for actions within and between their societies, the problem of behavioral prediction is—as was said—eminently more complex than Schopenhauer's comment implies, but the basic orientation of action stemming from one's psychological character differentiates this perspective entirely from the externally oriented and objectively rational empiricism of other schools. And do notice that psychological character is stable, whether for an individual or for society (Schopenhauer 1969, 114)—if we can say this of societies.

Considering Prediction Within And Among Human Complexes

In the realm of future-oriented prediction, one can usefully consider the nature of the human action problem to be solved as it is described by another eminent scholar who was cautious of the ability of natural science and mathematics, over more humane approaches, to solve it; Sir Isaiah Berlin, a student of the history of ideas.

According to Sir Isaiah Berlin, enterprises should show "a capacity for integrating a vast amalgam of constantly changing, multicoloured, evanescent, perpetually overlapping data, too many, too swift, too intermingled to be caught and pinned down, and labeled like so many butterflies." (Berlin 1996, 46). Berlin is a realist cure for the Romantics.

Enterprises, meaning both human actions and judgments based upon them, ought to practically reflect human experience as it really is; as being dynamically complex systems "too many, too swift, too intermingled to be caught and pinned down." No catching and pinning them. We are to deal with movements as they move: on the fly.

The problem is to integrate effectively Berlin's data driven complex systems realism with inwardly motivated action styles. I have suggested this be done for humanly constructed wholes by profiling their change processes according to socio-psychological natures. Such biased "change process" are always exhibited—never hidden—and thus permit projecting future action which there-from proceeds, rather than mistakenly pinning down various butterfly facts. But this former effort requires some very difficult syntheses.

Predictive solutions are not in the facts, but in their intermingling amid constant change.

Berlin continues "What makes statesmen, like drivers of cars, successful is that they do not think in general terms—that is, they do not ask themselves in what respect a given situation is like or unlike other situations in the long course of human history…Their merit is that they grasp the unique combination of characteristics that constitute this particular situation—this and no other…that communicate to them the specific contours and texture of a particular political or social situation…. To integrate in this sense is to see data…as elements of a single pattern, with their implications, to see them as symptoms of past and future possibilities, to see them pragmatically…Above all this is an acute sense of what fits with what, what springs from what, what leads to what…It is a sense for what is qualitative rather than quantitative, for what is specific rather than general; it is a species of direct acquaintance…It is a capacity, in the first place, for synthesis" (Berlin 1996, 45-47).

How can we achieve these necessary thought syntheses regularly, and what limitations exist with respect to deal with constructed, composed wholes such as are cultures, societies, and nations? What is it that we can change profile?

Studies In The Abuse Of Reason

Nobel laureate F. A. Hayek, who is perhaps best known for his advocacy of free market systems, in no small part because of his skepticism of the encyclopaedism currently embraced so enthusiastically with respect to information, its proper use and management, and attempt to apply to predictive analysis, wrote early on a very fascinating book; *The Counter-Revolution of Science: Studies in the Abuse of Reason* (Hayek 1952). His ideas have importance to emerging trends prediction.

Therein Professor Hayek (1952) explained the forms and functions of Western capitalist democracies versus communist totalitarianisms (and related systems) according to their "Idea"—to import Schopenhauer—of the nature of science and of science thinking within human action. In essence, Professor Hayek displayed the diverse shapes and forms of action among societies by considering their idea bias regarding science-based thinking.

The 'As a man thinketh…' notion of psychological motivation in human action is by no means original to Professor Hayek, or to the scholars I have so far discussed. Indeed, I hazard that before the Age of Reason, when natural science-based notions of 'rational, empirical man' took hold, this was the predominant form of intellectual discourse; being certainly a foundation idea in all the great civilization religion/philosophies according to my reading and understanding of them, whether Christian, Buddhist, Hindu, Confucian, or Taoist. Similarly, Nietzsche's seminal *The Birth of Tragedy from the Spirit of Music* is a study in how man's changed beliefs about life and nature/gods alter subsequent societal orientations and behaviors. The discourse from this socio-psychologically grounded perspective is vast, residing deep in time and human experience; indeed, it is, as Nietzsche elsewhere says, all too human. It largely defines humans and their associations.

Admitting this, we require something actionable as a predictive aid for quite mundane emerging trends predictions; predictions of complex systems in action in the near term.

The sources of the abuse of reason cited by Hayek as they impact my profiling change processes arguments are considerably narrower than the general critique. They are: 1) The abuse of believing that natural science processes are substantially the same as social science processes (Hayek 1952, 88-90), and 2) To abuse notions of psychological character as they are found in individual natural beings by wrongly assigning a similar psychology or character to what are always synthetically constructed wholes, including abstract human mental constructions such as social classes, cultures, societies, nations, and the like (Hayek 1952, 96-104).

These are dangerous waters. It is not far to notice that were natural sciences and their scientific worldviews and techniques for studying them applicable substantially and in the same way to complex social science matters, what I propose would be mostly or entirely worthless. Of course, were this the case, natural science based scientific methods would likely exhibit a far better track record in dealing with human 'complexes' such as cultures, societies, tribes, nations, their 'complex systems' interactions, and in predicting the emerging patterns of change and emerging outcomes within and among them.

The first difficulty Professor Hayek himself deals with by noticing that "While in the former [social sciences] it is the *attitudes of individuals* (my emphasis) which are the familiar elements and *by the combination of which we try to reproduce complex phenomena* (my emphasis), the results of individual actions, which are much less known—a procedure which often leads to the *discovery* of principles of structural coherence of the complex phenomena which had not been (and perhaps could not be) established by direct observation—the physical sciences necessarily *begin with the complex phenomena of nature* (my emphasis) and work backward to infer the elements from which they are composed… While the method of the natural sciences is in this sense, analytic, the method of the social sciences is better described as compositive or synthetic. It is the so-called wholes, the groups of elements that are structurally connected, *which we learn to single out from the totality of observed phenomena* (my emphasis) only as a result of our systematic fitting together of the elements with familiar properties, and which we build up or reconstruct from the known properties of the elements…[the purpose

of which is to] distinguish the possible types of elements with which we shall have to reckon in the construction of different patterns of social relationships" (Hayek 1952, 65-68).

It is these different culturally, societally, and nationally definitive aspects of "the different patterns of social relationships *in action*—in action as complex wholes—that a compositive or synthetic process of profiling change processes seeks to illuminate.

A "Path" Forward

Speaking of such wholes within the realm of individual choices and actions, Hayek notices "At first everyone will seek for himself what seems to him the best path. But the fact that such a path has been used once is likely to make it easier to traverse and therefore more likely to be used again; and thus gradually more and more clearly defined tracks arise and come to be used to the exclusion of other possible ways...but from our *general knowledge* (my emphasis) of how we and other people behave in the kind of situation in which the successive people find themselves who are to seek their way *and who by the cumulative effect of their action create a path"* (Hayek 1952, 70-71).

Every culture, society, nation is—in Schopenhauer's sense—a will, an idea, and a whole who's normalized set of individual choices is constructed so that "by the cumulative effect of their action [they] create a path" (Hayek 1952, 71). Schopenhauer saw the species' (a natural form plus its strategy for survival) idea creating the way and applied this to humanly constructed forms, whereas Hayek posits that the cumulative effects of individual actions create the "way" or "path" that is definitive over time for that particular social form. The combination of these perspectives seems rather recursive.

Path-like thinking and perspectives of human action based upon 'paths' that are distinctive of cultures and societies is not new: it is probably among the oldest motivational conceptions going.

Dhammapada means true path (Dhamma = field of truth; pada = path). Similarly the Muslim Sunna means the way and teaching, in Christianity, Jesus says He is "the Way," Confucius speaks in the *Analects* of the superior Way and the Way of Heaven, and Lao Tzu speaks of *The Way of Life*. These are projective norms from which "right" action is to proceed according to these complex systems. Tribes and clans have 'ways' and 'paths' in just this sense (Shultz Jr. and Dew 2006), although Werther (1990) placed these 'tribal' and ethnic national ways within their different synthetic societal environments to posit and predict various styles of disputing and forms of outcomes: who wins, why, and how.

All human complex systems have internal ways, and we *know* them according to their different demonstrated paths and ways *as they interact with the environment*. This last point is critical. Focusing upon different internal socio-psychological attributes without integration into the environments within which they act is as great an error as ascribing behavior to externals without respect to internals (ie. a singular "rational" man view).

Secularly, Nietzsche (1978, 58-60) has commented—and one ought to particularly separate Nietzsche's thought and work from the misplaced barbarism to which it was later misapplied—that "A thousand goals have there been so far, for there have been a thousand peoples…and once you have recognized the need and land, and sky, and neighbor of a people, you may also guess the law of their overcomings, and why they climb to their hope on *this* [emphasis added] ladder." "This ladder" is and no other is, Nietzsche's poetic language aside, the numerous chosen systems of right and wrong

such that for each people, as Nietzsche says in *La Gaya Scienza*, "…a morality trains the individual to be a function of the herd" (Nietzsche, 1974). Schopenhauer rendered this idea yet more bluntly but not less poetically: "Every nation mocks at other nations, and all are right" [note: Careful with one's interpretation of meaning of the "right" part] (Schopenhauer 1969, 58). Human herds, cultures, societies, and groups of all kinds do, upon this view, *operate within the world according to their biases*; a matter, which Sir Isaiah Berlin, F. A, Hayek, and others denoted as created wholes and synchronous paths.

The solution to the second difficulty raised by Hayek, if such commonly agreed to speculations about the importance and societal uniqueness of internal factors from uncounted centuries of human thought are to be believed, is that synthetic and constitutive 'wholes' do exist, that they exhibit distinctive ways and psychologies, and that these are to be differentially and definitively known by a synthetic and compositive process —which is an integrative inwardly *and* outwardly formed process—*with respect to how they act and why they act so*.

On Building Change Processes Profiles

The bad news first: If the synthetic, constitutive, and integrative process by which wholes may be known and their actions projected is correct as described, then the solution to our dilemma is neither quick, nor is it a mere matter of breaking "academic silos" by "working across boundaries and drawing resources from different parts of the company" (Alsop 2006). Nor is it a matter of Yale (or any other university) introducing a "cornerstone" course—an event, by the way, which my university achieved in the mid 1990's. Nor is it sufficient that "professors of marketing and economics might teach together now," while "Senior faculty meet at least weekly to hash out course details and craft new case studies and other teaching materials" (Alsop 2006). The thing to be done is not nearly that simple.

The chance that several specialized professors can—as described in the Wall Street Journal article on MBA teaching reforms "…Blend Disciplines to Yield the Big Picture"—in a mere moment of reform produce meaningful integrative solutions in this manner is, however devoutly it is to be hoped for, not to be expected. The task is synchrony.

Second, because of the fluid and shifting nature by which complex events move, and because of the various normalized solutions resulting as "…successive people find themselves who are to seek their way *and who by the cumulative effect of their action create a path*" (Hayek 1952, 70-71), our focus is properly directed to a highly contextually sensitive procedure grounded in these path-like actions. We change profile these.

Schopenhauer's "Idea," which is the definitive solution set of any species (and its constituent individuals) to its complex environment, gets at this precise notion of moving from the inside out *in each and every context* (my emphasis). There are likely infinite (or at least very, very many) particular situational cases, but in each case the various species (and their members) definitively respond according to their nature—according to their "idea," and thus move upon their "path." This is not a single thing captured in any single case study, but an endlessly changing contextual one. Such an observation means that the case study is not the thing to be studied per se, but is rather the thing that is being worked upon at that instant as a means of projecting successive instants as it moves. Every case is a snapshot of a moment, or at best some few moments, upon a path. Similarly, history's lessons are not

mainly *in* the particular facts (which are a record of that moment), but more likely *in* the characteristic way of addressing problems which each group adopts.

Third, no algorithm or merely accretive data gathering process—hence no machine solution—can achieve such complex integrations between path and situational environment because "To integrate in this sense is to see data…as elements of a single pattern, with their implications, to see them as symptoms of past and future possibilities, to see them pragmatically…Above all this is an acute sense of what fits with what, what springs from what, what leads to what…It is a sense for what is qualitative rather than quantitative, for what is specific rather than general; it is a species of direct acquaintance… It is a capacity, in the first place, for synthesis" (Berlin 1996, 45-47).

That is a lot of bad news.

This conundrum leads however—according to the argument—to an interesting solution style, which is not incommensurable with all the necessary elements discussed.

Rather than focusing per se upon the case, or the problem, or the discipline(s), we instead treat *each instance as something to be illuminated* as though it were a kind of changing 'thing': a *now* encountered complex system within and upon which various paths (internal constructions and external constructions) work variously, each according to their biases. This orientation upon that which has been previously described as a clash of claims with micro and macro-structured environments, as a dance, and as a harmonic, yields in due course the change profile. A profiling of change processes is an illumination of paths—perhaps conflicting—in action within their environment according to their respective natures.

Such an illumination and profiling perspective is holistically integrative from the beginning; moving as it does recursively between idea kernel and expression. There is no point at which things are considered separately outside their contexts.

I call this a harmonic, and harmonies are interesting things to study: dueling harmonies the more so.

When specific facts change within a harmonic, that is one thing. When the harmonics themselves shift or change, whether internally with respect to themselves or with respect to each other, that is another matter entirely. Especially in the former instance, foundational things are moving. When this is perceived, emerging trends are forming.

Profiling change processes is useful mainly for identifying harmonics holistically, so that one can see when they change. Emerging international change prediction is, at its core, a study in interacting and shifting harmonics; whether from internal harmonic alterations that manifest outwardly, or from interaction changes among the various harmonics that manifest potentially both inwardly and outwardly. Change among change: to this reality the profiling of change processes is endlessly focused and applied. Emerging trends predictions emerge synthetically from such studies; that is to say, they are so constructed from this kind of an endless study of change processes.

When considering matters in this way, we adopt for the most part a flexible intercourse between case and comparative styles of analysis (historic and current), but the focus is always upon fluid action and not upon states. The question is 'How will this move?'

What Moved?

This summary highlights a few—among many—holistically oriented projections with respect to expected shifting harmonics that were presented over the years; mostly to Fortune 100 corporate clients. Although presented here separately, the examples highlighted are better thought of integrally; that is, as mutually interacting changes. I do not, when thinking, consider them separately or in isolation. It is a moving picture.

During February 2006, a paper titled *The Other War: resurgent socialism and insurgency in the age of globalization* (Werther 2006a), projected an emerging trend of Latin socialism linking for mutual support to a variety of anti-American and anti-globalization groups within the Middle East and elsewhere, concluding after a technical discussion of the unstable nature of Latin indigenist-socialism linkages, that this emerging harmonic thus "…presents, in my view, far broader and deeper emerging national security concerns than the indigenist-socialist developments within any particular government" and that "…the path of emerging insurgency development is thus clarified. The 'Other War' mechanism is the core, and—as a considerable irony—we in the West are the ultimate financiers via 'globalization.'"(Werther 2006a).

This then-emerging path has matured considerably since the February publication (see Grandin, Greg, May 11, 2006; Nyquist J. R., May 24, 2006; Zeller, Frank, August 1, 2006, BBC July 25, 2006; BBC May 14, 2006; Hayton, Bill, July 31, 2006). Indeed, quoting an Associated Press article of July 28, 2006 titled *Al Qaeda Leader calls for Holy War Against Israel,* wherein Ayman al Zawahira, al Qaeda's number two man, calls on Muslims to join non-Muslims to fight "Western tyrannical civilization and its leader, America," Kamal Habib, a former member of Egypt's Islamic Jihad, said that this "appeal to non-Muslims was unprecendented and reflected a change in tactics."

Shortly after distributing this article within police intelligence circles (both here and in the Middle East), and publishing online with homeland defense and military groups, Mr. Ahmadinejad of Iran telephoned Mr. Castro of Cuba, Mr. Chavez of Venezuela, and Mr. Morales of Bolivia, and subsequently signed some meaningful trade and strategic deals. These included major weapons purchases by Venezuela from Russia, as the latter declined to list Hezbollah and Hamas as terrorist organizations.

More interestingly, Mr. Chavez has since gone on a world tour of an anti-American and anti-globalization (anti-imperialist in his parlance) coalition building type; including to North Korea, Belarus, Russia, Qatar, Mali, and Iran (Kermanau 2006; Zeller 2006; Folkmanis 2006). The Presidents of Iran and Venezuela have declared themselves brothers in arms with a beaming Mr. Chavez declaring that they will cooperate in all things. Venezuela has also since joined MERCOSUR with the stated intention of diversifying the trade group away from the USA. Mr. Chavez sealed business deals in Vietnam while denouncing American style capitalism as a threat to humankind (Folkmanis, J., August 1, 2006), and soon after recalled Venezuela's ambassador to Israel, threatening the ending of relations (Israel Today 2006).

This emerging trend of Latin socialists linking to Middle Eastern and anti-American groups is, sadly, for the United States, only starting.

The above profiling change processes conclusion stems from several earlier seen and reported emerging international trends, some of which are briefly described below.

Because this paper involves "…*introducing* a holistically integrative and socio-psychologically grounded approach to emerging trends prediction," I do not substantially address herein the typically difficult internally compositive and synchronous complex systems considerations that influence the holistically integrative *national* emerging trend reported for each example. As a rule, such matters involve knowing what links to what at various sub-national levels, and thus is a more complicated iteration of the analyst capacities previously discussed. Since the task here is only to introduce profiling international change processes, the discussion is mostly at the national level.

The synthetic 'path' that Mexico manifested for over seventy years under Institutional Revolutionary Party (PRI) domination was jolted in 1994 by the pro-business and pro-globalization reform of the North American Free Trade Agreement (NAFTA), and by the regional—then national—ascendance of the pro-business National Action Party (PAN) at the expense of PRI.

There was an overt attempt to change the basic nature of Mexico via democratization and market friendly reforms. The basic nature of Mexico, however, with respect to how it addresses challenges, especially via corruption and caudillo rule, did not initially alter, with NAFTA thus being, as it were, thrust upon Mexico with a hopeful public expression that this event would itself bring middle class growth and general well being. Seen from various indigenous community perspectives, NAFTA generated change was seen as a systemic threat. Similarly, since from our experience greater global competition at least initially rewards talent and flexibility far more than localized unskilled labor, I projected, beginning in 1993, an increasing left-shifting of Mexican politics (especially in the urban areas due partly to unskilled rural labor moving in) and rising indigenous unrest in rural areas where indigenous peoples are considerable. Both occurred, though the latter considerably faster than anticipated. For complicated reasons, which are elsewhere clarified, growing Mexican indigenous unrest would not be institutional in nature but rather general (Werther 1992); thus projecting unrest into the general political system. This occurred, and with the near election of Mr. Obrador, is still occurring.

In like fashion, beginning about 2000, externally facilitated pro-globalization changes within the Andean Rim countries of Ecuador, Peru, and Bolivia—especially outwardly imposed democratic and economic liberalization pressures, expansive petrochemical development and mining development within indigenous areas, an anti-drugs policy favoring almost total coca eradication, and, in Bolivia, a water system privatization scheme by Bechtel—facilitated the general political mobilization of the previously mostly quiescent indigenous Andean population; again under traditional elitist caudillo political arrangements with ample corruption.

This initially involved specific issues such as coca growing rights, water issues, and oil and gas related conflicts at the local level. Eventually, the indigenous populations linked potentially quite unstable Incan and socialist motifs into a vision that set their movement on a trajectory which resulted in the "indigenization" of the entire Andean Rim; that is, for the first time in modern history indigenous persons control the state (Werther 2006a). Beginning in 2002, mostly in a series of Washington University–St. Louis sponsored salons, I projected forward this growing "indigenization" process as a growing threat to regional instability and state collapse, including in a series of quite unsuccessful warning email communications with National Defense University. One stunning comment by a senior military officer from Chile about one year before Bolivia fell to indigenous-socialist political groups was to the effect of "Yes, there are Indians in the Andean Rim."

My speculation is that, until far too late, they never saw indigenization coming; groups of indigenous persons having been essentially powerless within the region for over 400 years, and thus never more than sources of instability but never powers of government.

Finally, with respect to globalization generally, I posited in a long series of Fortune 100/500 corporate lectures after 1994, and in an article of the same name as the seminars—*Doing Business in the New World Disorder* (Werther 1997)—that particular emerging social, cultural, and political trends would undercut the whole globalization enterprise not primarily from an economic set of concerns, but due to rising societal unrest; and that this would shift globalization toward internal stability concerns. A number of regional failures, the U.S. supported free trade area of the America's among them, socialist governments subsequently arising all through Latin America, and the current WTO Doha round collapse support this notion of growing international socio-cultural-political strain.

Country specific projections varied, but among them, in February 2005, for example, I warned my client Cisco Systems at a Vice Presidents' only seminar that both India and China would shift toward a pro-internal stabilization policy over their preferred strong growth policy, with coming anti-globalization internal reforms designed to thwart rising growing unrest in the ascendant. By then, India's voters had already removed the pro-globalization BJP from power in favor of a Congress-Socialist-Communist coalition.

Also highlighted was a rising extra-legal insurgent movement (specifically mentioning that Lashkar e Taiba [LeT] and Naxalite groups in India would target high technology business) that would accentuate a growing internal security threat linked to legal political reforms of growing socialist strain. Thereafter, India halted planned privatizations, shifted resources to rural make-work schemes accompanied by a new extensive affirmative action requirements, and had its technology industry targeted attacks by LeT amid increased Naxalite insurgent violence nationally; the latter being co-variant with increased communist-socialist government power within India.

China has since also focused its growing stability concerns inward (including greater information controls), invoked a development rule requiring greater new investment into the interior, formed over thirty five 500 man urban SWAT teams, seen major rural unrest grow (80,000 major incidents in 2005), and has sought to control super-heating of the economy via a targeted, but not achieved reduced growth rate target linked to China's growing internal stability concerns interacting with external growth and foreign direct investment needs.

This summary highlights a few—among many—holistically oriented projections with respect to shifting harmonics; emerging international changes that are themselves interacting in complex ways with other changes. With these few examples in hand to lend some reality to the effort, we consider the change profiling orientation more specifically.

Profiling Change Processes

The task at hand is, as was mentioned, an endlessly recursive synchronous procedure. We do not stop building, from kernel to consequent(s), increasingly complex systems change analyses of an holistically integrative kind.

This being so, we begin with the kernel.

The basic framework, which is "provided solely as a guide to thinking at various levels about complex problems [and which is] is not programmatic in nature nor an algorithm" is provided and discussed in my January-March, 2000 article in Competitive Intelligence Magazine titled *Profiling 'Change Processes' as a Strategic Analysis Tool* (Werther 2000a, 20). It is not my intention to repeat this or other arguments entire, but to highlight aspects of them within the context of this discussion.

Recalling that the approach is holistically integrative and recursive, one generally begins by gaining knowledge of the societal kernel through "A broad knowledge of comparative values, religions, philosophies, traditional ways of relating; studies of societally validated goals and strategies; interpretations of political and historical reality, etc." to form a "societal behavioral/values profile (continually updated)" (Werther 2000a, 20).

Practically, sometimes an international event arises, and one wonders why this occurred in the way that it did. Beginning from either end, whether via Schopenhauers' idea or Hayek's path, one is brought to a study of internal norms, history, valid ways of acting, deciding, and disputing, and so forth in order to build a basic socio-psychological ground.

One can see that this task will be difficult with respect to any culture, society, or nation without the individual preamble competencies discussed early in the paper. With them, it is not that difficult a task as a basic grounding exercise. Consider, as a parallel illustration, the task of learning an unknown music composition as seen from the perspective of a trained, experienced musician versus one who—like me—scares the cat.

With this *basic* societal behavioral/values profile in hand, one moves—again recursively and integrally—to "comparative evaluations of this society's reaction to change pressures & processes (most similar system designs, most different system designs, historical analyses of change processes" which when yield a "societal change profile (continually updated)" (Werther 2000a, 20). The focus is on the analytical target's reaction to change pressures, comparatively considered (see Werther 1992).

Generally speaking, the value of the comparative most similar system design is that it highlights key differences among most similar systems, while the comparative most different system design evaluates the action of found key factors within most different contexts. The historical analyses of change processes illuminate how the target has responded to change pressures in the past. It is important to mention that this is not a one way or one time inquiry, but rather one moves among forms of analysis in a relatively borderless way to. The synthetic task is to illuminate the path, internal and external. There is no shortcut here either.

This task requires the second analyst capacity previously mentioned; a deep and broad knowledge of what goes with what to produce what. This is Confucius' knowing the other three corners when one is given.

As analogy, it is an ability to recognize different tunes; your target's among them.

At this juncture, we can usually begin to see emerge from the background the outlines of that which F. A. Hayek called the composite and synchronous path built up by common usage, but integrating this usefully requires greater detail and context than comparison typically affords. Remember, this is about projecting forward in terms of the idea bias path in communication with a current change pressure.

Again recursively and integrally, one does multiple "targeted case studies of change processes and traditional ways of relating (context, detail, and inter-relationships)" to form, recursively and integrally with all that has come before "Tentative conclusions about societal patterns & reactions to current change pressure" (Werther 2000a, 20). That is, we place this *tentative* knowledge of reaction paths (recall Aristotle) into the situation—seen as an immediate contextually nuanced presence—from which the projective emerging path proceeds. Remember that the normal societal path is stable, being as it is grounded and embedded within the societal idea. Also, these ideas are neither random nor endless; definitive yes, but random and endless—no.

This is mere background work. It is like getting to know your neighbor.

The bad news is that you cannot achieve an meaningful international emerging trends analysis via such a so-far limited profiling change processes procedure since you have only considered one complex system within a world of complex systems that constantly interact. Basically, at best you have illuminated a basic harmonic. Aristotle's warning comes to mind here again on the nature of the discipline proceeding from things that are for the most part true to conclusions similarly conditioned "achieving such clarity as the subject matter allows..." (Aristotle, Ethics, Book 1, iii).

Still, being slightly wrong is better than totally surprised. Think of this as building depth and breadth simultaneously via a kind of layering on of insights about how this target moves within its environment, and why it does so in this way.

More complicated concepts discussed in my 1992 work about there being a "clash of claims" within a macro- and micro-structuring environment that is not to be seen merely as institutionally expressed, but also to be seen as expressed within the realm of ideas and the claimant's respective strategic mode(s) of expression, permits more detailed study of the actual process of forming the compositive paths that eventually become national and societal norms (Werther 1992). These harmonic compositions are societally distinctive.

It is these preferred strategies in communication with a shaped and changing environment which form, via Schopenhauer's idea, or Hayek's path, or Berlin's compositive capacity for integration, that which I have termed a "harmonic"; seen now in motion as a "dance" of harmonies (Werther 2006b). As mentioned earlier, sometimes the target's harmonic shifts, like Mexico, China, and India's inward changes. Usually harmonics shift with respect to each other. Rarely, the whole internal harmonic changes its nature—and this is big news—as in the "indigenization" of the Andean Rim countries. Thereafter, things are not done in the same way because a new path has been constructed; this is being in the Jeffersonian meaning of that term also a revolution, or better, a revolving of relationships.

In plainer English, when holistically viewing change processes and when profiling them, various complex systems are seen holistically interacting according to their respective natures within the current environment. This movement according to their natures is what is holistically profiled when profiling change processes.

Such understandings build upon and reinforce each other as one watches the dance. An intelligence process of this kind is like adding layers onto the various kernel-consequent relationships extant: learning advances are not as linear or fact based knowledge events properly filed and catalogued, but seems—as best I can describe it—to be as a constant broadening and deepening and interpenetration of change relationships seen in motion. One of the things one particularly looks for are newly deviating

harmonics—changing integrated paths—because the learning is in watching of change under stress. The main examples of this kind as previously given are indigenization of the Andean Rim, NAFTA impact responses, globalization impact responses, and democratization impact responses.

One can usually keep several such harmonics in mental play with respect to each other. The question is where are they respectively heading, why, and how? The focus is never on facts in isolation but on the synthesized harmonics (paths) within their dance.

If one can say this without being accused of counter-culture tendencies, it is a bit like surfing—successfully and immediately intuiting where waves are going with respect to the current, weather, wind, *other surfers*, and the total environment as it changes—rather than trying to enumerate the molecules of sand and water (encyclopaedism); and thereby model the total system. Properly talented people can easily surf (together even) such a 'complex system' in synchronous motion by predicting as they go; a system natural scientists can barely model, and which data gatherers can never enumerate as to its parts.

The individual capacities necessary as preamble for profiling international change processes are not inconsiderable, but they are not unattainable. It is the case that we have long discouraged and discounted these necessaries, to our considerable national cost.

Toward A New Intelligence Analysis

Notice that nothing is secret!

All things are quite openly known according to claims, biases, actions and interactions, which themselves arise both from and as visible 'paths' constructed according to the natures and experiences of groups over substantial periods of time. It is a stable analytical grounding always immediately in communication with experience.

This seems far better than currently common capabilities regarding emerging international trends prediction; especially with respect to seeing emerging patterns of change.

It is not far to go to find Congressional, professional, public, and services agency criticism of our national intelligence and private business incapacity to better judge emerging international trends and changes. Within my corporate experience, I have had senior vice presidents of Fortune 100 firms describe their predictive deliberations—to general knowing laughter within the room—as "white smoke, black smoke" enterprises. Such Papal humor among the higher business clergy is not really that funny. Among governments, according to whose decisions people may die, it is not funny at all.

Within my limited exposure to the intelligence services, I have had the opportunity to ask deputy director and above people whether they can do emerging international trends predictive work very well. In the one instance, I received a blunt expression that this was not really the focus within his office (a national directorate). A more general expression of this stance with regard to emerging trends prediction has appeared from other sources within the public press as criticism of intelligence agency's focus generally. In the second instance I received an impressive bureaucratic "dance" about having access to the very best people, followed by an overheard, though privately expressed "no."

Within the profiling international change processes framework introduced here—having barely introduced it—a number closing considerations stand out that seem to lead to substantial improvement on this state of affairs.

First, a key national focus ought be on analyst improvement within the area of holistically integrated synchronous thinking. Non-transferable skills are necessary as preamble, and there is no way to rapidly acquire them. We need to find people with a talent for seeing things whole, and then train them to do so better.

Second, the holistic focus is upon the change process, which is to be seen recursively, dynamically, and in a qualitatively integrative way. This is not a machine friendly production, but neither is it mere ungrounded intuition. It is in fact quite solidly grounded within socio-psychologically *expressed* paths that are constitutive societal constructions.

Third, this is about seeing things other than merely as mathematically and natural science based knowable operations. The focus is constantly upon the internal in communication with the external. I have used the imperfect illustrations of theme and harmonics (path), dance (forward oriented expectation made manifest in mutually recursive actions), and of surfing (going with and knowing the continually changing environmental flow; including also the projective actions of other surfers). It is always a matter of direct—not theoretical or ideological—communication that is today broadly possible in detail and in near real time (for the first time in history) due to advances in technology, especially information technology. There is a great opportunity for improvement if these capacities could be organized according to their respective comparative advantages to prediction.

Fourth, it is neither from *our* bias (ideology) nor from the elimination of bias (natural science) that things are to be considered, but from the perspective of various biases and conflicting biases (seen as *expressed* complex systems paths) in communication within a shifting complex environment. Profiling is an endless study in bias flows and their paths.

Fifth, future human actions are not—and never can be—known via encyclopaedism. Were that true, the communist central planning path would have been a rousing success. Comprehensive data will bury you; but a simple deer still moves through its environment according to its nature at every moment of every day. So also for people, and associations of them. This is seeing 'path' according to 'idea' as expressed in a 'form' (species); as constitutively built and constantly maintained by the members of each particular group.

Profiling these change processes is a doable holistically integrated manner of synthesis.

Sixth, an qualitatively nuanced change profiling intelligence effort of this type is also a constructed thing, just as is the kind of currently dominant encyclopaedism and empiricism that cannot apparently accomplish that which it hopes to do—actually predict emerging international trends with some degree of confidence.

Finally, the time dimension is not solved. It seems plausible that this is an area of fruitful discussion among persons of my orientation and the mathematical, natural science based, and computer modeling communities; but I retain the prejudice that this emerging trends prediction enterprise must be grounded, because it is there properly grounded, within the humane sciences. Hopefully I have not, within this brief discussion, done others injustice.

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CHAPTER FOUR

Future Technology: Threats and Opportunities

We're entering an age of acceleration. The models underlying society at every level, which are largely based on a linear model of change, are going to have to be redefined. Because of the explosive power of exponential growth, the 21st century will be equivalent to 20,000 years of progress at today's rate of progress; organizations have to be able to redefine themselves at a faster and faster pace.

—Ray Kurzweil, 2003

Overview

The following seven essays and one case study examine several existing and emerging technologies that will significantly impact on future. They specifically address certain processes and strategies in several distinct areas: technology foresight, information and biological threats, centrality of the mind and its science, and composite (mind-body-spirit) opportunities. We have seen expediential improvements in these areas and have witnessed remarkable breakthroughs in the last century and during the first six years of this new millennium. New and emerging technologies plus rapid changes to current ones will provide both a multiplicity of threats, and most importantly, opportunities for the future. The question becomes twofold: what are the future challenges that face the United States and its allies in the near and far term, and how do we methodically keep pace in order to search for, find, and use these technologies to the greater benefit mankind? Our ability to harness and effectively use these advances will dictate the strategic sustainability of the United States.

Three Proteus Insights: Parallel Universe, Threat and Opportunities, and Small Stuff, serve as guideposts for exploring new ideas, ideas that will be needed to address future threats and seize opportunities that technology offers in an ever-changing world where complex challenges will abound.

In setting the stage for the following essays, Mr. Jack Smith, Director, Science and Technology Foresight, Office of the National Science Advisor, first reviews recent experiences in Canada designed to engage Federal and Provincial departmental policy authorities in a broad, long-term, and interdisciplinary consideration of prospective impacts of S&T innovation possibilities and scenarios. Focused on key public policy domains, such as health, economic development, security, environment, energy, food safety, and transport, the Office of the National Science Advisor has supported the development of a nascent collaborative foresight capability across the federal government that seeks to influence the framing of S&T related policy domains so that they can be more cognizant of emerging developments and better prepared for potentially transformative technologies and applications that appear to be transcending traditional policy boundaries. In this context of promoting a new capacity for forward anticipation beyond the normal one to five year governance time frame, foresight can be

regarded as a potential provocateur for innovation policy framing. The paper analyzes this experience to date and derives some lessons for foresight and policy practitioners.

Richard J. Kilroy, Jr., University of East Carolina, reviews the U.S. military response to cyber warfare, and assesses whether the organizational and doctrinal changes made to confront the threat (as well as cultural and career force changes that have impacted forces structures, resources, and the warfighting capability of the armed forces) are appropriate in the context of future cyber-terrorism threats to homeland security. He also addresses the military's role in conducting cyber warfare within the broader Joint, Interagency, Intergovernmental, and Multinational (JIIM) environment and possible scenarios for evaluating a national response against a cyber terrorist threat.

In his first of two essays, Mr. Tim Rosenberg, President, White Wolf Security Incorporated, argues why the Digital Pearl Harbor analogy should be abandoned and replaced with a more accurate Digital Blitzkrieg. The paper fully explores a hypothetical Digital Blitzkrieg scenario. Further, this paper demonstrates how the creation of government-funded, civilian-staffed Red Cell teams can operate with the necessary freedom on U.S. soil to help identify possible Digital Blitz scenarios. These scenarios can then be used for enhanced training operations as well as assessments that will help secure the critical infrastructure. The essay also includes a sample Red Cell team attack plan that shows how a small team of broadly trained individuals can successfully integrate physical and cyber attacks along with offensive information operations into a sustainable multi-domain attack cycle.

In his second essay, Mr. Rosenberg explains how to bring Computer Network Attack (CNA) and Computer Network Defense (CND) into a martial training and operational setting. Furthermore, once the martial CNA/CND foundation is complete, the traditional aspects of Body-Mind-Spirit (BMS) training will be added into the CNA/CND space for complete integration. There is an abundance of published literature on the benefits of Somatic Training and the blending of body, mind, and spirit into a "fully integrated individual who embodies athletic prowess, emotional maturity, and a spiritual sensibility" (Somatics and Cyberspace, pg 3, Strozzi-Heckler, 2001). There are several avenues that one may take to learn how to live an integrated life. Mr. Rosenberg is most familiar with the avenue provided by the martial arts. Besides teaching you how to work BMS into one, the martial arts also impart useful skills, especially to those in the military. It is against this backdrop, the integrated individual, the high stress, varied mission world of the military, and the martial arts that we now add a new tool: technology.

Professor Shawn Cupp, U.S. Army Command and General Staff College, uses a case study methodology to improve the understanding of a Homeland Security domestic incident during the conduct of consequence management. The paper presents a future incident that takes place within the USNORTHCOM area of operations; participants are part of a standing Interagency Operational Planning Team (IOPT) within the Joint Task Force-Civil Support (JTF-CS). The participants represent Department of Homeland Security (DHS), Department of Justice (DoJ), Department of Agriculture (USDA), Department of the Interior (DoI), Department of Transportation (DoT), Department of Defense (DoD), and Department of Commerce (DoC) action officers. This case study is conducted within the JIIM environment.

This consequence management case study involves an incident affecting U.S. agriculture. There are several ideas within the case study that have direct connection to the Proteus Insights across the planes of influence. These include Starlight, Sanctuary, Veracity, Herds, and Wealth. This case study

takes place in the not so distant future. Although it takes place in the future, the case study elements are all based on fact. Actual places, events that could happen, and the impact of the incident are all possible. Apects of the U.S. agricultural system, including exports, transportation, genetically modified foods, imports, production, and policies are described in accurate detail. Students are given enough information to conduct analysis and then identify, evaluate, recommend, and discuss implementation of future actions based on the case.

Colonel Brian Rees, MD, USA, explores the application of Strategic Stress Management (SSM) to assist future strategic leaders in mitigating the effects of the infectious ideology of the enemy on counterinsurgency operations. This process focuses on reducing and if possible eliminating entity stress and frustration needed to fuel future insurgency and Islamist terrorism, which are enemy critical vulnerabilities. SSM, in the form of groups practicing a meditative technique called the TM-Sidhi Program, can be applied to reduce hostilities in targeted populations. The underlying hypothesis is that consciousness is a field and that effects generated in the field of consciousness can affect the brain chemistry, the thinking, and the subsequent behavior of potential belligerents who are not engaged in, or even aware of, the practice.

Rand D. LeBouvier, Bluefin Robotics Corporation, addresses the future of unmanned systems from both a technological and a humanities perspective. The paper proposes that any system capable of destruction will continue to require active human oversight and participation. A vision story is offered to illustrate how that human-machine interface might look and to demonstrate the immense complexity of the problem. While all the technological pieces are either currently achievable, or will be in the near future, the incorporation of these pieces into a systemic whole is the greatest challenge. It will require an interdisciplinary approach that combines scientific skill with philosophical and ethical foundation.

S&T Foresight: Provocateur for Innovation Policy?

Mr. Jack E. Smith
Director of Science & Technology Foresight for the Office of the National Science Advisor, Industry Canada

Introduction

In 2001–02 the National Research Council of Canada initiated a new capability for examining the emerging horizons of science and technology in the context of a set of tools and approaches that are derived from foresight experiences around the world.

This new Office of S&T Foresight was given a mandate to explore how foresight as a flexible, multi-disciplinary and technology based approach, could add perspective and additional S&T awareness to the policy processes associated with federal S&T, R&D and funding allocations in support of Canada's longer term innovation horizons and opportunities.

Since 2002, the Office has facilitated eight collaborative projects spanning a wide range of technical domains and subject areas. In each project, federal policy authorities from the key sectors affected – health, natural resources, economic development etc. have been participants and often contributing partners.

The Office of the National Science Advisor (ONSA) was created in 2004 after an absence of some 30 years, during which S&T advice was primarily left to the various science based Ministries and Departments. Understandably, the dominant emphasis for federal S&T during this period was on resolving single agency based issues, negotiating interface issues through non-science focused central agencies, and largely advising on policy and regulatory choices from within existing policy-domain boundaries.

Diagram 1 reflects the new mandate for the National Science Advisor. Diagram 2 lists the key mandate elements for the Foresight component of the ONSA. Diagram 3 defines foresight as a flexible and forwardly provocative series of key societal lenses or perspectives.

This paper will review the eight project areas and briefly evaluate the impacts and learning processes that can be discerned from the different engagement levels and institutional responses that the foresight activity has prompted. The overall objective of the paper is to outline some of the key factors, cautions and lessons learned from applying foresight, and its relatively long term time horizons and strategic considerations, to the complex factional dynamics of interdepartmental policy systems, which tend to be short term and transactional in character.

Finally the paper concludes with some observations about how foresight might strengthen and improve its provocative effectiveness, for the benefit of more robust policy capacity.

Role of National Science Advisor

1. **To provide sound, independent, non-partisan advice on the government's directions and priorities for science and technology.**
2. **To provide input on priorities for future investments in science and innovation—balancing the need to support excellence in S&T with benefits to society and the economy.**
3. **To advise on the commercialization and innovation gap in Canada and mechanisms to close it.**
4. **To examine Canada's role in international S&T and work with the research community to bring the benefits of our R&D to bear on the challenges of the developing world.**
5. **To find mechanisms to remove barriers to horizontal collaborations and build partnerships between various departments, agencies, institutions and foundations, between the public and private sectors.**
6. **To develop a framework for the evaluation and funding of big science projects.**
7. **To help build a stronger science culture in Canada and to serve as a science ambassador for Canada whenever possible, to help convey to the world that we are a scientifically and technologically sophisticated nation.**
8. ***To provide sound foresight on future challenges, opportunities and impacts of S&T in Canada.***

Diagram 1. Role of National Science Advisor

S&T Foresight Mandate

1. **Understand drivers, pace and implications of S&T derived change.**
2. **Stimulate anticipatory capacities, contingent views, agility and adaptiveness of organizations and individuals.**
3. **Identify gaps and needs for institutional preparedness.**
4. **Elaborate potential threats, vulnerabilities and opportunities.**
5. **Construct multiple scenarios and explore the policy and technology implications of prospective futures.**
6. **Strengthen horizontal alignments of decision makers and organizations to enable future R&D collaboration strategies.**
7. **Identify specific candidates for R&D that can add flexibility to government capacities through partnerships with SBDAs.**

Diagram 2. S&T Foresight Mandate

Foresight is...

A set of strategic tools for anticipating the fundamental uncertainty of the future, to become more prepared for diverse challenges with adequate lead time. These tools help us...

Examine prospective developments in the 5–25 year horizon;

Understand the range of key factors and drivers of change;

- **Accomodate risk, contingency & diversity;**
- **Anticipate multiple, plasible futures;**
- **Highlight emerging opportunities & threats;**
- **Offer a rehearsal for potential crtitical challenges;**
- **Create transition strategies to move towards preferred futures.**

Diagram 3. Foresight Defined

Eight Horizon Derived – Policy Envelope Pushing Domains

The eight domains listed on the next page represent a compilation of projects organized by two successive organizations: from 2001-2004 as the NRC Office of Technology Foresight (NRC-OTF), and from 2004-2006 as the S&T Foresight directorate of the Office of the National Science Advisor. The author headed both of these organizations, and the transfer of functions was part of the establishment of the National Science Advisor's new mandate in 2004. The significance of this transfer will be referenced later in the paper.

The outcomes from these eight topics have provided a background against which policy authorities have been challenged to think ahead, to consider multiple, plausible and contingent pathways that their future assumptions and present directions could be surprised by change, or altered by new developments.

How is this done? The next section briefly outlines the foresight methods that have been applied in most of these topic areas.

The eight domains and their policy reference areas are summarized in table 1 on the next page.

Project Topic	*Description*	*Relevant Policy Areas*
1. Bio-Systemics (BIOSYS)	Systemic implications for biotechnology evolutionary scenarios and their impacts on traditional "stove-pipe" policy lenses	Health, security & defence, natural resources, economy, environment, social
2. Geo-Strategics (GEOSTRAT)	Strategic directions and capabilities of emerging location based geo-information systems and their hardware architectures	Security & defence, transport, natural resources, commerce
3. Bio-Health Stewardship & Innovation (BHSI)	Technology impacts from novel and integrative bio-technologies and their impacts on public and private health innovation, management and delivery	Health, innovation and commerce, social, environment
4. Bio-Products Industrial Economy (BPIE)	Scenarios and policy measures for advancing preparedness and positioning of sustainability enhancing bio-based products	Environment, social, transport, energy, health, economy
5. Animal & Human Health Foresight (AHHF)	Scenarios and disease-pandemic readiness measures to enable animal optimization and create effective human threat mitigation	Food inspection, health, environment
6. APEC Future Fuels Foresight (AFFF)	Technology roadmaps and scenarios for the replacement of conventional hydrocarbon fuels with unconventional ones, bio fuels and hydrogen-fuel cells and other novel technology alignments	Energy, economy, environment, trade
7. Understanding Converging Technologies Foresight (UCTF)	Identifying and elaborating technologies emerging from bio-info-nano and collaborative design origins that have distinctive converging and integrative characteristics and their ethical questions	Biotechnology, health, social, energy, environmental, energy, R&D granting
8. Prospective Protective Security Futures (PPSF)	Applying S&T Foresight to all hazards and public safety risk assessment and the S&T development challenges to ensure strategic and operational readiness	Defence & security, social, privacy, innovation-R&D, emergency preparedness

Table 1. Foresight Projects and Policy Areas

Foresight as a Provocative Place Setting for Policy Planning

In approaching foresight, situating the present and its vulnerabilities is a critical first step. Most foresight processes follow a two-pronged approach that combines developing some consensus or alignment around the most critical drivers-uncertainties with a diverging set of scenarios designed to capture the effects of trends, drivers and shocks in multiple boundary conditions for prospective policy challenges. Participants are then challenged to back-cast from these scenarios to derive policy recommendations and inflection points where strategic decisions could have enabled or altered policy directions and outcomes.

Foresight is...

- **Critical Drivers and Uncertainties:** i.e *discernible patterns that are causing change:* e.g. global society and security; political geometry; resources demands; major S&T developments and their societal impacts; new international agreements and strategic S&T investments.
  - *These are areas that change from year to year and may be amenable to stakeholder's actions.*

- **Strategic Trends:** i.e. *factors that shift as a result of change patterns:* e.g. decline in state sovereignty; complex militiary challenges; new politico-military alliances; Islam-est antagonism; space and cyber conflicts; more nuclear-equipped nations; more humanitarian demands; inter-state migration; failing states proliferate; powerful new technologies.
  - *These are broad impacts of change, and most stakeholders are powerless to affect the trend with actions and they tend to endure as influential shapers for at least 4–5 years.*

- **Possible Shocks:** i.e. *wild card, high impact, low probability events that alter the fundamentals:* e.g. Gulf Stream shift; fusion power; major earthquakes-tsunamis; infectious pandemic; fertility decline; secular reversal; cyber collapse; human aging breakthrough; solar flare, asteroid impacts; financial collapse; sustained deflation; autonomous computers.
  - *These are the unpredictable but life-altering events and situations that create new challenges and opportunities that most stakeholders have not considered or prepred for.*

Source: UK DOD Joint Doctrine and Concept Centre

Diagram 4. Strategic Drivers, Trends, Shocks

Diagram 4 describes a typical typology for assigning change factors from the readily observable to the unanticipated.

Diagram 5 (following page) outlines foresight steps that are taken to elaborate the detailed application of foresight methodology to broad policy issues.

The challenge at each step is to frame the questions and the *what if* foresight measures so that policy issues and implications, especially in terms of critical choices that will shape diverse futures are clearly evident and that those representing policy authorities acknowledge this. Effective foresight requires that each participant partakes as an active player rather than being a passive observer or spectator.

As an example of how foresight extracts technical possibilities from the environment of leading edge science and emerging technology, Diagram 6 (page 193) illustrates some potential applications derived from the Bio-Health foresight for the area of tissue engineering within the two time horizons of 10 and 20 years.

Foresight Influencing Policy: A Continuum of Capability

A starting point for the analysis of prospective impact is how we view the context of the principal economic and social policy expectations held for government performance. Diagram 7 (page 193)

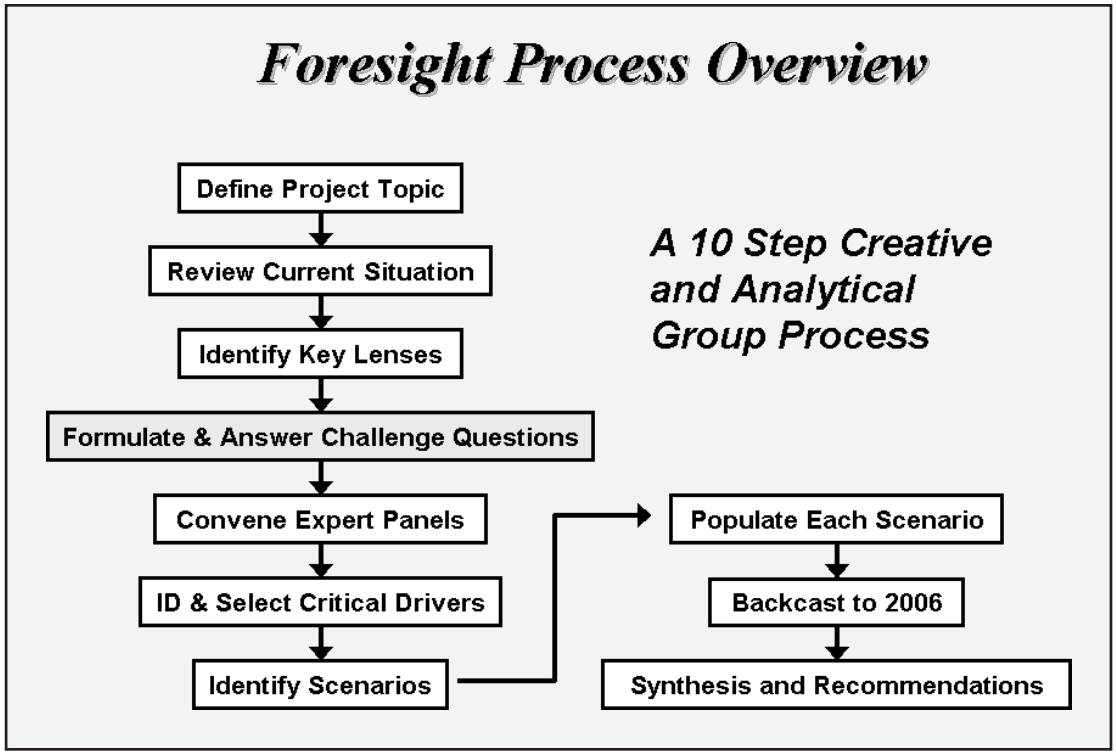

Diagram 5. Foresight Process Overviews.

describes the complex relationships that typically govern this broad performance measure. To disaggregate the ultimate goal of a high and sustainable quality of life, with its implied continuous augmentation of our societal wealth creation capacity, we can identify five key forms of innovation capital. These include the major public functions of education, environmental protection, R&D supported risk sharing and the social institutions and network efficiencies made possible by public infrastructure investments. They can also be thought of as foresight dimensions of public interest since they represent recurring policy challenge areas that clearly affect societal opportunities and national competitive challenges when viewed from and international perspective. We shall come back to these innovation domains in examining the ways that foresight to date has been able to address the thorny questions of linking insights to future value prospects and proposals for innovation preparedness.

What differentiates foresight from policy may be principally the time-urgency and choice requirements; what unites them is their joint commitment to strengthened awareness and decision making by having better intelligence about prospective impacts of public actions.

Before advancing too many assertions about the nature of foresight contrasted with policy, it may be useful to suggest that not all policy is created equal. Some policy is highly prescriptive and regulatory based or deployed. Other policies tend toward the domain of strategy where resilience and agility are valued, and positioning is more important than consistent alignment.

The policies that foresight can influence tend to be those that are the result of collective learning processes and/or choices that are arrived at through sense-making dialogue with stakeholder communities. What is relevant for this interface is that policy and foresight are both situated along

Tissue Engineering

Widely used in 10 years	Ten years and beyond
• Human skin • Artificial blood, kidney, liver, nerve cells, synthetic bone • Cells for targeted detoxification • Probiotics, prebotics Nutraceuticals in food	• Molecular pharming of wide range of large therapeutic molecules (proteins, lipids, enzymes, etc.) • For wide range of diseases (cancer, heart, stroke, diabetes • In-body drug manufacture

Diagram 6.Potential Applications Derived from the Bio-Health Foresight

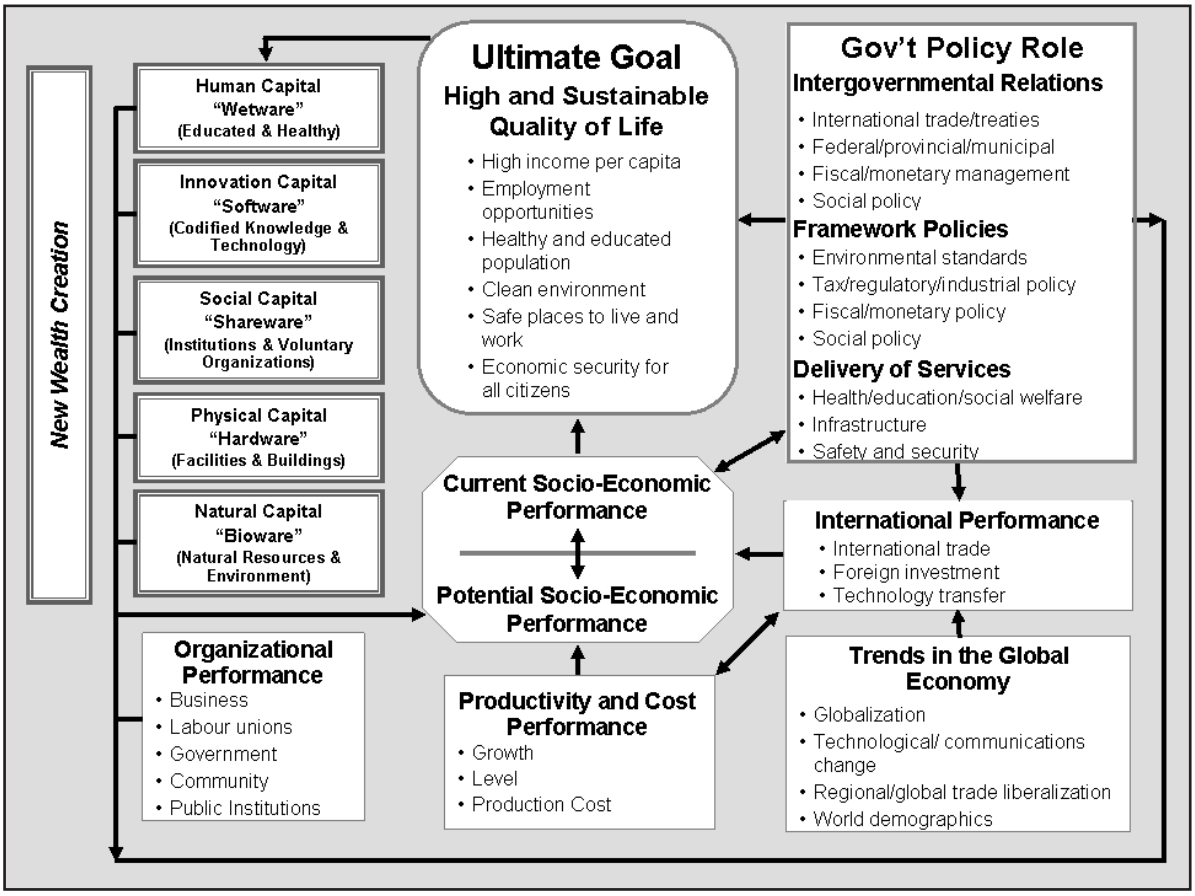

Diagram 7. A Policy Context for Foresight Applied to Innovation

a spectrum of actions that governments can invest in to guide their interventions and supports to other players in the society, as they contend with economic, social, environmental and adaptive skills challenges. So returning to Diagram 7, both foresight and policy approaches are typically required to ensure optimal societal performance. At the level of supporting effective innovation systems elements, foresight is important for anticipative awareness and policy is important for directing strategic resources to growing the sources of capital needed to succeed.

Following this line of complementarity further, Diagram 8 provides a more succinct overview of the linkages between foresight and the national innovation policy system. Here the focus is not only on the supports foresight can accord to public functions, but also how foresight is a necessary asset for helping private innovators contend with longer term intelligence and readiness for change in global competitive environments.

Table 2 lists a range of near term impacts that we estimate the application of foresight has made on the Canadian federal policy process and infrastructure. Chief amongst these is probably the foresight replicating structures being introduced within some of the major Ministries and Departments. If nothing else these allocations of resources, additions to mandate and recruitment of talent, suggest that these organizations do not themselves want to be surprised by similar research and collaborative activity elsewhere, whether from Central Agencies or other line agencies. On a more positive note, there is now a loose community of foresight practitioners across the federal policy system from which a more robust capacity for new foresight investments can be expected. Considering the small scale and modest funding levels associated with Canadian federal foresight, these estimated impacts are not inconsiderable.

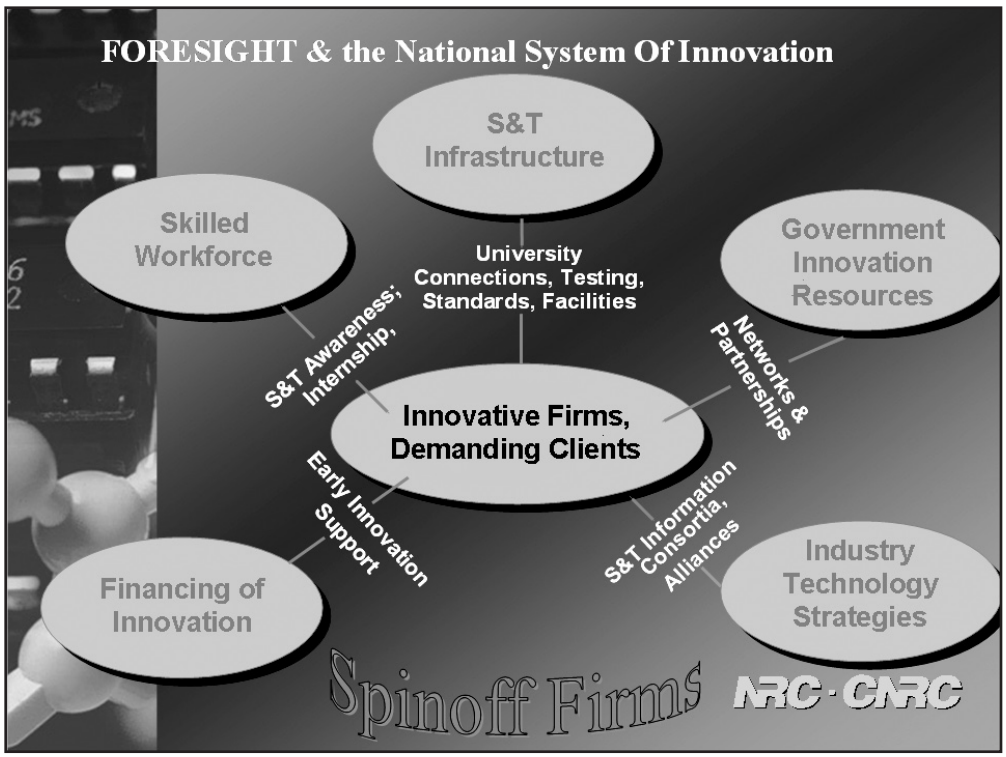

Diagram 8. A Policy Context for Foresight Applied to Innovation

Elaborating the Foresight–Innovation and Sector Policy Interface

Table 3 (page 196) portrays the relative role of foresight and policy activities as mediated by strategic functions within a government context. As foresight methods become more robust and the bank of useful exercises and practice is extended, and as the policy enterprise becomes more comfortable with simulation, modelling and mapping tools, the distinction grows weaker and the main differentiator becomes the time frame and application of findings. Foresight typically is carried out looking ahead 5-25 years, while policy tends to focus on the 1-5 years.

Project Topic	*Observable-Short Term*	*Potential – Long Term*
1. Bio-Systemics (BIOSYS)	Recognition by EC-EU R&D Framework planners as original contribution to EU Knowledge Society discussions; lead into broader definition of health, resource and defence forward policy scanning and categorization of innovative S&T phenomena.	New alignments of disciplines and the catalytic role of biotechnology as an organizer of human adaptive capacities broadly within ecological systems
2. Geo-Strategics (GEOSTRAT)	Support for policy initiatives by Geo sector of NRCan to accelerate strategic investments in federal geo-spatial data infrastructure management and more coordination, links to wider policy array	Vision for future of geo-spatial data utility articulated, and commercial, Canadian potentials described
3. Bio-Health Stewardship & Innovation (BHSI)	Health Canada established a new unit for biotech regulatory foresight; SARS pandemic scare seen as exhibiting small world emergent networks structure; direct advice from industry obtained on barriers to commercial innovation in health system	Major opportunity identified by a cross section of stakeholders for Canada to lead world in adaptive, technology and patient enabled health and disease prevention
4. Bio-Products Industrial Economy (BPIE)	Guidance from knowledgeable stakeholders group about how to tie pragmatic bio-products development to issues and opportunities associated with rural communities viability, green energy, innovative environmental systems products and processes; several Provinces and some communities moving ahead to define green development strategies	Prospects for diversified bio-products strategy as sustainable substitution for many inefficient industrial practices; source of economic revival for selected rural communities
5. Animal & Human Health Foresight (AHHF)	Food safety and disease outbreak practices now can be managed more proactively with animal optimization and human health protection both as key policy pillars	Clear case for widespread introduction of new monitoring and response technologies
6.APEC Future Fuels Foresight (AFFF)	Forum for strategic awareness and Canadian source validation of advice on off-oil options accessible for hard hit oil dependent APEC economies	Roadmaps and scenarios developed that highlight long term Canadian assets for energy partnerships
7. Understanding Converging Technologies Foresight (UCTF)	Recognition by EC-EU Commission on Converging Technologies for European Knowledge Society; path breaking work to define a National Dialogue on convergence with several Provinces, Federal agencies and industry partners	Prospects for lead in developing technology niches; innovative opportunities to address enduring Canadian assets management issues and challenges – e.g. water.
8. Prospective Protective Security Futures (PPSF)	DRDC and others recognizing importance of foresight as critical for new Public Safety Departmental capabilities	Likely formative role for foresight in supporting PSTP Vision 2015

Table 2. Foresight and Prospective Policy Impacts

Attributes	Foresight Character	Policy Character
Time Horizon	5-25 years	5-55 months
Range & Scope	5-10 scenarios, pathways	3-4 options
Data Focus	To describe emerging signals, indicate relative magnitude	To validate current and projected domain trends
Sources	Outside-looking in scans, drivers identification, what if models, scenarios and weak signal literature-web reviews of new and emerging trends, technologies & linkages	Inside-looking out studies, landscape models, pilots, statistics, cost and stakeholder impact projections
Key Tenets	Multiple, plausible, contingent perspectives, described in rich stories	Comparative analysis of relative robustness, evaluated for impacts
Outcome	Objective then normative and non preferential	Objective then normative and preferential
Benefit	Provides alerts and early warning signals for adaptiveness – thereby helping seed readiness and positioning for future policy choices	Ability to make choices and focus activities on currently or near term productive domains

Table 3. Foresight and Policy Contrasts

Concerging Technology Tools: Example of a Table of +/- Impacts on Possible Applications

Impact On	Bio & Nano	Info & Commun
Environment	- Nano-particle toxicity + Energy-efficiency +/- Personal fabrication + CO2 scrubbers	+ Reality browsing + Sensor nets + Integrated landscape models
Economics	+/- Personal fabrication - High-cost interventions	+/- IP as major repository of value +/- IP easily violated thru security defeats
Public Safety	- GMO hazards - On-line virus building - replicator tasks	+ Disaster response nets - Information security, privacy
Health	+ Smart drug delivery - Incredible medicine for very rich only +/- Aging slowed down	+ Health informatics - Privacy of personal genomes - Genetic predetermination

Diagram 9. Example of a Table of +/- Impacts on Possible Applications

Diagram 9 summarizes some of the early insights that the ONSA-STFD foresight project on Understanding Convergence is raising for foresight exploration to anticipate prospective applications and impacts. These are also likely to be substantive policy generators during the next 5-10 years within the sector-policy categories noted.

Conclusion and Lessons Learned

Foresight should be seen as a useful learning tool for policy researchers, as a forward planning and exploration asset for policy advisors and as a context setter for policy makers. By identifying early alerts and emergent developments, foresight can provide necessary agility that enhances the resilience and robustness of policy framing, and can expand the range and robustness of policy options. In a world where innovation has become more intense, faster, global in scope and more technologically dependent, the broadly based insights that foresight examines help create agility and preparedness which in turn can be highly effective as inputs to innovation policy.

From the experiences of conducting the eight foresight projects listed above emerge several lessons for enabling and strengthening these important linkages;

1. Start from a collaborative base of several complementary partners
2. Use adequate preparatory and dialogue tools to ensure clarity of purpose, alignment on expected outcomes and consistency with long term policy motivations where these are evident
3. Involve policy advisors and researchers early in the scoping of the topics
4. Ensure that senior policy authorities are informed about the process and the results
5. Build in a significant amount of communications early and as follow up to ensure the important findings and learning is received by stakeholders
6. Set clear rules such as: require policy participants to be as actively involved as all the others- no spectators, no mere analysts, no individual attributions of ideas, and seek explicit commitments to integrate foresight into policy framing discussions
7. Designate a principal client for each foresight – ideally a senior decision maker-receptor that also has policy responsibilities
8. Be adventuresome and boundary pushing, using experts and challenging them to reach beyond their normal comfort zones
9. Be alert to the popular policy drivers and societal anxieties that may intensify as more and better information becomes available, and seek to focus foresight to provide this if applicable
10. Employ the best gaming and simulation tools that can be afforded – these are rapidly developing into the most capable tools for complex modelling and dynamic understandings of impacts
11. Structure foresight panels to involve a diversity of players that is at least equal to the diversity expected for policy analysis and stretches even further in age range to enable youth perspectives a stronger voice – since it is their future that is being discussed

With these insights in mind, and because foresight pushes participants to contend with plausible, contingent scenarios, and evaluate their prospective policy implications, it is our proposition that foresight can be a valued provocateur for innovation policy.

Relooking the Cyber-terrorism Threat and Military Support to the National Cyber-warfare Response

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Note from the Author: Since this essay was delivered at the Proteus Workshop in August 2006, selected portions will appear in two forthcoming book chapters, one to be pubished in a text titled *Cyberware and Cyberterrorism* by IGI Global and the other in *Threats to Homeland Security: An All Hazards Perspective*, by J. Wiley and Sons, Inc. Therefore, please contact the author at kilroyrj@vmi.edu for permissions for any further dissemination of this essay.

Introduction

In the 1992 Hollywood movie, *Sneakers*, the antagonist, Cosmo (played by Ben Kingsley), made the comment that power and future conflict would all be about information—who controls it also controls what we see, think, hear, and do. In the past, such information control remained in the hands of the 'gate-keepers' such as the media, government, and educational institutions. Today, information is more diffuse, and the means to use it, both positively and negatively, have grown considerably in the last couple decades. Whether we like it or not, we are citizens of a digitized world and the ability to collect, store, retrieve, and process information is critical to our lives, as well as our nation's survival. Yet, as our dependence on information systems grows, our ability to protect ourselves from attacks against these information systems, by terrorists or even nation-states, appears to be diminishing. One would think the opposite was true, that we would be getting smarter on how to defend "cyberspace." Rather our adversaries are the ones who are learning the most, how to use our technologies against us (witness 9/11), and exploit the weaknesses our dependence on information has created.

This paper will explore the "problem" we face today—why we are so vulnerable to information-age cyber-threats to our nation's critical infrastructures, by first identifying exactly what the "problem" is and how the loss of critical infrastructures can impact our lives. Second, we will look at the "threat"—nations and transnational actors that possess the ability to conduct cyber-warfare using information weapons and how they can do it. Third, we will look at the "consequences" of a cyber-terrorist incident or cyber-warfare. Last, we will look at the "response"—what our nation is doing today to protect against cyber-terrorism, primarily our military response, as well as our own ability to conduct cyber-warfare against our adversaries. The paper will conclude with a futures assessment—what should our national cyber-warfare response look like, given the threats we may face in the future.

The Problem

Dorothy Denning defines *cyber-terrorism* as the use of computer-based operations by terrorist organizations conducting cyber-attacks which "compromise, damage, degrade, disrupt, deny and

destroy information stored on computer networks or that target network infrastructures" (Denning 2004:91). The 'tools' cyber-terrorists employ in such attacks include simple denial-of-service hacks to complex uses of viruses, worms, Trojan horses, and other more technical tools. Terrorists can also use 'sniffers' or other cyber-espionage tools which steal information from computer systems, while remaining undetected to the users.

What makes cyber-terrorist acts difficult to detect is that, for the most part, computer attacks are anonymous, making it difficult to determine the source of an attack. While most computer intrusions thus far have been attributed to self-proclaimed computer hackers or possible criminal elements, there is a possibility that some of these intrusions have been probing actions—cyber-reconnaissance, conducted by terrorist organizations to detect our defenses and responses. Such actions would likely be performed before a full-scale cyber-assault on our banking system, for example. Since the volume of cyber-incidents grows each year, determining which could be terrorist-related becomes more problematic. For example, the Department of Defense's (DoD) Joint Task Force for Computer Network Operations (JTF-CNO) reported that there were 780 cyber-incidents against DoD information systems in 1997, rising to over 28,000 incidents in 2000 (Denning 2004:92). Much of that increase has to do with better detection tools and awareness, but the implications are enormous—we don't know what we don't know.

The term *cyber-warfare* connotes conflict between nation-states, using cyber-based weapons. For example, during both the First and Second Gulf Wars, the United States military conducted cyber-warfare against the Iraqi military, using conventional electronic warfare tools (radar jamming, etc.), as well as computer-based tools to attack Iraqi communications and command and control infrastructure, such as air defense systems. Cyber-warfare can be used to target both military and civilian infrastructure during a military conflict, or as part of operations prior to actual hostilities. In other words, following the teachings of Sun Tzu, an ancient Chinese philosopher, it is better to win wars without having to fight, by convincing your adversaries of the futility of their efforts. For this reason, cyber-warfare can have its greatest impact before conventional military operations, as it attempts to influence the decision-making of those key adversary leaders. An example of this application of cyber-warfare occurred during the NATO air campaign against Serbia in Kosovo in 1999. While NATO air forces used the hard power of military air strikes to destroy the Serb military, cyber-warfare efforts used "soft power" to target Serb leader Slobodan Milosevic's inner circle of advisors, business contacts and family, in an attempt to get him to capitulate to NATO's terms.

Cyber-terrorism and cyber-warfare are both focused on information systems and using the many means available, electronic, human and otherwise, to cause both physical effects and psychological influence. Our society is a networked society, completely dependent on information systems for processing and storing data related to practically every aspect of our daily lives. Even minor disruptions can have major consequences. When a homeowner in Indiana recently received a tax bill for $8 million dollars on a house worth $122,000, the 'glitch' also impacted the state tax budget, reflecting a $3.1 million dollar shortfall for the year (Astahost 2006). Such glitches can also have life and death consequences, for example, when one such error left five Pacific Island nations off of a tsunami warning list (Song 2006).

One key sector of our economy which depends on information technology is the banking and finance industry. Imagine the impact globally, if a computer glitch (either intentional or not), suddenly

caused a 'bank error in your favor' and every account holder suddenly had $5000 more dollars in their account. Hopefully, if it were your account, you would call the bank before spending it, but many would not, leading to multiple financial problems for the bank, consumers, and merchants when those checks bounced. On a larger scale, banks and businesses do report losses every year due to computer glitches or computer hacking, having broad economic impact. Dorothy Denning (2004:93) notes that in 2000 alone, computer viruses and computer hackers were responsible for the loss of $1.6 trillion dollars in the global economy, about $266 billion on the U.S. economy alone.

Could terrorists or other nations target our banking system with a cyber-attack aimed at crippling our economy and destroying public confidence in our financial institutions? The federal government thinks so, as well as the banking sector. As a result of such concerns, the Clinton Administration established a system of Information Sharing and Advisory Councils (ISAC) in 1998 in an attempt to foster public-private partnerships in all sectors of our nation's critical infrastructures, to include banking and financing. The ISACs were just one recommendation which emerged from a study of our nation's vulnerability to cyber-based threats. In 1997, the President's Commission on Critical Infrastructure Protections (PCCIP) published its findings on the vulnerability of our nation's critical infrastructure to terrorist threats, primarily using cyber weapons. In the report, the Commission identified eight critical infrastructures. In the follow-on implementation plan, Presidential Decision Directive (PDD) 63—Critical Infrastructure Protection (May 1998), the Clinton Administration assigned each to a federal agency for oversight and coordination with the private sector through the ISACs.

- Information and communications—Department of Commerce
- Banking and finance—Department of Treasury
- Water supply—Environmental Protection Agency (EPA)
- Aviation, highways (including trucking and intelligent transportation systems), mass transit, pipelines, rail, waterborne commerce—Department of Transportation
- Emergency law enforcement services—Department of Justice
- Emergency fire service and continuity of government services—Federal Emergency Management Agency (FEMA)
- Public health services, including prevention, surveillance, laboratory services and personal health services—Department of Health and Human Services
- Electric power, oil and gas production and storage—Department of Energy (PDD 63, 1993)

The Commission's report also led to the formation of the Critical Infrastructure Assurance Office (CIAO), under the Department of Commerce and the National Information Protection Center (NIPC), under the Department of Justice. The CIAO became the center for coordinating the ISAC process and encouraging the private sector to cooperate with the federal government on ensuring it was protecting itself against threats form cyber-terrorism, as well as other threats from both man-made and natural disasters. In other words, cyber-terrorist threats were one of many threats to these critical infrastructures, ranging from insiders, such as disgruntled employees, to cyber-warfare by nation-states, to environmental disasters, such as floods.

The CIAO played a crucial role in coordinating the government response to the Y2K scare. Since it was located in the Department of Commerce, it provided accessibility to both government agencies

(local, state, and federal), as well as private sector corporations responsible for running our nation's power industries, financial centers, telecommunications systems, and transportation systems—all of which were concerned with a possible cyber-shutdown due to a computer programming error. After the 'end of the world as we know it' did not occur on January 1, 2000, most people returned to business as usual in both the public and private sector. Much of the work of the CIAO, although successful, transferred to the new National Infrastructure Protection Center (NIPC), stood up in the J. Edgar Hoover FBI Headquarters building in Washington, D.C. The NIPC became the operations center for tracking cyber-attacks against the nation's critical infrastructures, utilizing people from the FBI, Department of Defense, Intelligence Community, Department of the Treasury and Department of Energy. The component which was now missing was the private sector, since most corporations in America, due to the use of proprietary information, did not want to be as open with their company's operations and possible vulnerabilities with the military, law enforcement, or intelligence agencies, as they did with their Commerce Department colleagues.

One of the areas of greatest concern with regard to cyber-threats and critical infrastructure is something referred to as Supervisory Control and Data Acquisition (SCADA). Most of the computerized switching that occurs in industry, transportation, telecommunications, etc. is done by the use of SCADA systems. In other words, to keep trains from colliding, computers are programmed to automatically switch tracks through the use of SCADA systems. Another example of such a system would be a filtration unit on a water treatment plant. If a computer detected a filter had not been changed when it was programmed to do so, the SCADA system would automatically shut the plant down in order to prevent non-potable water from entering a city's water supply. If a cyber-attack targeted a SCADA system and changed programming data, you can image the potential consequences.

The Threat

The Intelligence Community determines whether a nation-state or non-state actor poses a *threat* to the United States based on two variables: capability plus intent.[1] If a nation has a capability to use nuclear weapons, like Great Britain, but does not show the intent to use them against us, it is not a threat. Similarly if a nation does not possess a capability to do us harm, even though their rhetoric indicates a desire to do so, it is not a threat. During the Cold War, the U.S. Intelligence Community categorized countries by the level of threat (Tier 1, Tier 2, etc.) based on the degree they threatened the United States, according to these two criteria of capability and intent.

With the end of the Cold War and the demise of the Former Soviet Union and its satellite states, the new threat of Global Terrorism emerged, to include state-sponsors of terrorism and non-state actors, such as al Qaeda. Intelligence analysts continue to use a similar threat spectrum in assessing the level of threat based on the criteria of capability plus intent. This model also pertains to cyber-terrorism and cyber-warfare, with the greatest threat still being a nation-state which has both a cyber-warfare capability and the intent to use it against the United States and its allies.

Yet, the more likely threat in cyberspace is the damage that can be done by insiders, trusted individuals who work at a plant, facility, organization, etc., who have access to critical information architecture, such as an information technology expert or systems administrator. Such an individual, if they are bent on causing damage or destruction (intent) clearly possesses the capability to do so.

1. Cohen (1999) argues that a better formula adds in the variable of Vulnerability and Consequence to the Threat, in order to determine the Risk assessed from cyber-terrorism.

However, the level of threat can vary depending on the motivation. Most insider threats are considered lower tier threats, since they are motivated by revenge due to being fired, demoted, etc.—typically not the same threat posed by an apocalyptic terrorist with insider access, bent on greater destruction or disruption.

To date, the threat from terrorist groups, such as al Qaeda, using cyber-based weapons has yet to materialize, although the evidence exists that they are aware of the capability. We suspect that terrorist groups use the internet for communication and cyber-reconnaissance of suspected targets. We also suspect they are familiar with the use of standard hacking tools and believe they have been probing our nation's cyber-defenses, looking for weaknesses that could be exploited. In fall 2001, an FBI investigation of cyber-activity turned up significant probing of critical infrastructures in the United States, such as emergency telephone systems, electrical power generation, water facilities, nuclear power plants, etc. (Gellman 2002). Also, captured computers from al Qaeda training sites in Afghanistan showed a greater level of interest by terrorists in the feasibility of conducting cyber-terrorism; possibly in conjunction with a physical WMD attack. That is the reason Y2K caused so much concern, since it did expose many weaknesses in the information systems involved in operating our nation's critical infrastructures. Also, recreational hackers and institutional hackers can expose vulnerabilities which terrorist organizations can learn from and possibly exploit.

To the banking and finance industries, there is more concern over institutional hackers linked to criminal activities, more than terrorists. Criminals, using identify theft and other cyber-means to gain personal information are routinely robbing banks of millions of dollars each year. Knowing that federal law enforcement officials are not concerned with small dollar amounts (less than $50,000), these criminals go for less conspicuous activity. They also use the terrorist threat to gain information, using social engineering tricks (impersonating FBI agents, etc.) to gain access to financial records (Sullivan 2005). The link to terrorists became clear after 9/11 investigations, where fraudulent accounts were used by the terrorists for transferring funds to support the terror attacks. Bank officials also believe that terrorists are gaining financial support through criminal activity—using the vulnerabilities in the information system, rather than attacking the system—but, that could only be a matter of time.

The greater concern at the national level has been (and remains) the threat of cyber-warfare conducted by a nation-state against the United States, either as an act of war, in conjunction with military action, or conducted asymmetrically, attempting to negate America's military superiority by preventing the United States from even being able to deploy its forces overseas. By attacking our critical infrastructures using both conventional acts of sabotage and cyber-warfare, an adversary could do such harm to our nation, that our military and economic power could be negated. One such series of incidents which raised these concerns occurred in 1998, as the United States prepared for Operation Desert Fox in Iraq. Just prior to initiating combat operations, the DoD noticed increased cyber-activity targeting DoD information systems, which appeared to be coming from a Middle-Eastern country, possibly Iraq. The incidents, termed *Solar Sunrise*, caused the DoD to take a number of precautions, to protect critical information related to the planning and execution of Desert Fox.

Despite the results of the *Solar Sunrise* investigation (which turned out to be a couple of teenage hackers, with an Israeli mentor), the cyber-threat from nation-states is real. Beginning in the mid-1980s, foreign intelligence agencies, such as the former Soviet KGB and East German STASI, were conducting cyber espionage, using third parties. The first documented case occurred in 1986, when

a group in West Germany, know as the Hanover Hackers, and their ring leader, Markus Hess, were arrested and charged with espionage. They had hacked into a number of DoD computer systems, stealing classified information and selling it to the KGB and STASI. They were only discovered when a University of California employee, Cliff Stoll, noticed a .75 cent billing error on their computer accounts and decided to investigate. He tracked it to an unauthorized account accessing the Lawrence Berkley National Laboratories, which was conducing classified work for the DoD. Stoll's pioneering work in computer security and the resulting arrest of Hess are documented in a book, *The Cuckoo's Egg: Tracking a Spy Through the Maze of Computer Espionage* (Stoll 1986).

An unclassified Defense Science Board report issued in 1996 identified ten countries that were developing capabilities related to Information Warfare, which included the use of information and computer security. These countries included: Russia, China, India, Iran, Iraq, North Korea, Cuba, Libya, Syria, and Egypt. Although it mentioned varying degrees of sophistication, the study concluded that each nation recognized its own vulnerability to cyber-warfare, thus demanding an increase in defensive capabilities, as well as an interest in developing offensive capabilities (Defense Science Board 1996: Appendix A).

Today, intelligence estimates indicate more than 120 nations are suspected of having some form of offensive cyber-warfare capability (Bayles 2001). Termed Computer Network Attack (CNA), the offensive component of Computer Network Operations (CNO), is often a simple turning of a switch or keystroke, which changes the intelligence and espionage function, called Computer Network Exploitation (CNE), into a hostile action. CNE is considered a passive activity, since the cyber-sleuth's goal is to remain anonymous and undetected. By going offensive, the "cover" is blown and a known vulnerability in a computer system used to gain intelligence and information now becomes the same means by which an offensive, cyber-attack, takes place.

In the future, countries will develop more complex and sophisticated CNA capabilities as a means to offset the overwhelming military superiority of the United States. Seen as a 'cheap fix,' nations such as China will employ asymmetric tactics to defeat the United States by crippling our nation's ability to even wage war. In a book published in 1999, two Chinese Colonels advocated employing such an approach, using cyber-warfare and other means to attack the United States in a future conflict (Liang and Xiangsui 1999). The tactics they advocated to undermine our support networks and destroy critical infrastructure digitally, were very much in line with classic Eastern military philosophy, seen in Sun Tzu's classic, *The Art of War,* where the ultimate military goal is to defeat an adversary's will to fight without having to actually enter into military combat (Armistead 2004). What is interesting in the Chinese Colonels' text is the assertion that it is not a matter of *if* China goes to war with the United States, but simply *when*.

The Consequences

On March 23, 1996, the Rand Corporation ran an exercise in Washington, D.C. with over 60 participants, using a scenario developed by David Ronfeldt and John Arquilla called "The Day After in Cyberspace." The purpose of the exercise was to assess how our national decision-makers would respond to a series of acts related to cyber-warfare, coming from an unknown source. What began as cyber-reconnaissance, soon developed into cyber-attacks on the nation's banking and financial infrastructure, leading to more targeted attacks on our defense and intelligence communities. The

exercise ended with the United States launching a pre-emptive nuclear strike on China, the supposed source of the cyber-attacks, only to realize after that it wasn't China at all, but rather cyber-terrorists, whose goal was to precipitate a global conflict (Anderson 1996).

The above could be considered a 'worse case' scenario of what cyber-warfare or cyber-terrorism could lead to, given the difficulty in actually determining the source of any cyber-attack. Computer forensics is a new and growing discipline, leading to some intelligence agencies coining the phrase *COMPINT* or Computer Intelligence—what we can lean from analyzing computer traffic, email, and website hits, hard drives, etc. Yet, even though we are learning more about the technology involved, it appears the 'bad guys' are also becoming more sophisticated at covering their tracks and using commercial off-the-shelf hacking tools which are readily available (one such tool is called "anonymizer" which allows you to remain anonymous), leaving less of a signature to follow. An on-going cyber-sleuth investigation continues under the codename, *Moonlight Maze*, where the ultimate source of a series of cyber-intrusions into sensitive government computer files has yet to be detected.[2]

Much of the discussion to date on whether or not a terrorist organization would conduct an incident of cyber-terrorism deals with an analysis of the motivation of terrorist groups. An underlying assumption is that terrorists want to create a media spectacle, like 9/11, creating as many casualties as possible. Thus much of the intelligence focus has been on WMD effects and preventing terrorist groups from obtaining chemical, biological, or nuclear weapons. Yet, kinetic weapons (conventional explosives) can create a WMD effect if the target is a chemical plant, nuclear facility, or even a 'dirty bomb.' For this reason, a better term for assessing possible weapons effects is CBRNE (chemical, biological, radiological, nuclear, and explosive). Getting past the WMD description may, therefore, be a better indicator of the potential damage a terrorist organization can inflict, using any one of these means of destruction. Adding the cyber-dimension as either a stand-alone effect or as a 'force multiplier' only increases the potential for a truly catastrophic event. Being able to turn off the lights in Houston may not be that big a deal, but combine a cyber-attack on the power grid with a conventional explosives attack at the port of Houston, against a chemical storage facility (benzene for example), then there is the potential for much higher casualties and confusion. Benzene is a highly toxic chemical which can release a plume cloud that would have the same effect of a chemical weapons attack on the city of Houston, due to prevailing winds. If a cyber-terrorist attack occurred at the same time, cutting off power to local hospitals bracing for casualties, or water supplies feeding firefighters putting out chemical fires, you can imagine the results. In this case, cyber-terrorism becomes a 'casualty multiplier' increasing the effect of a conventional weapon attack.

One consequence of a cyber-terrorist attack is the residual financial impact. For example, the airline industry today is still trying to recover from the effects of 9/11. Immediately after the attacks, both passengers and air crews refused to fly. Many smaller airlines went bankrupt or were forced to merge with larger carriers to survive due to fear of a follow-on attack. Insurance companies also went bankrupt, due to the large number of claims and some smaller businesses went out of business since

2. "Moonlight Maze refers to a highly classified incident in which U.S. officials accidentally discovered a pattern of probing of computer systems at the Pentagon, NASA, Energy Department, private universities, and research labs that had begun in March 1998 and had been going on for nearly two years. Highly placed sources told FRONTLINE that the invaders were systematically marauding through tens of thousands of files – including maps of military installations, troop configurations and military hardware designs. The Defense Department traced the trail back to a mainframe computer in the former Soviet Union but the sponsor of the attacks is unknown and Russia denies any involvement. Moonlight Maze is still being actively investigated by U.S. intelligence." (http://www.pbs.org/wgbh/pages/frontline/shows/cyberwar/warnings/)

they couldn't afford insurance against acts of terrorism. Wall Street shut down, temporarily. President Bush, in an effort to ease the economic blow of 9/11 on the U.S. economy told the American people the best thing they could do to support their country was shop. A cyber-attack on the banking and financial sector would have an even greater financial impact, since it would also impact the public's perception of the safety and security of their investments.

Thus, another key residual effect of a cyber-terrorist attack is psychological. Banks today do not want to admit to the public how much money they actually lose due to computer glitches, much less criminal or terrorist cyber-robberies. They fear panic and the loss of public confidence. The government has similar concerns over the loss of public confidence in their ability to provide protection and basic human services after a terrorist incident. We are still assessing the damage done by Hurricane Katrina, a natural disaster, particularly with regard to the poor response by the New Orleans city government, as well as state and federal agencies, such as FEMA. When the public losses confidence in the institutions established to provide basic protective services in a crisis, such as the police, or their elected officials, the ability to regain that trust can have a long term effect. Terrorists can further exploit those seams of public confidence creating a cascading effect by playing on public fears which are already established. The concern expressed by state and local officials over the federal government's proposed response to a possible Bird Flu epidemic in summer 2006 reflects just such a scenario.

While the openness of our democratic society is one of our nation's greatest strengths, it is also one of our greatest weaknesses when it comes to cyber-defenses and protecting ourselves from cyber-terrorism. Information systems and architecture are built for efficiency, not necessarily security. Also, due to the highly competitive commercial market place, most companies attempt to get systems and programs out to consumers quickly, before their competition, resulting in the later need for a number of software 'fixes' or 'patches' to correct operational problems or vulnerabilities. Also, most companies prefer not to spend the extra time and money to enhance computer security, knowing that the average replacement cycle is 3-5 years, anyway, given how quickly technology changes. At the end of the day, profit trumps protection.

The nature of the internet itself also has inherent vulnerabilities, which were not really anticipated when the technology moved from the government into the private sector. When the internet was invented by analysts at the DoD's Advance Research Projects Agency (DARPA) in the 1960s, it was designed as an open architecture network operating within a closed system (DoD). It was based on a system of trust, that those with access also had a 'need to know' the information that would be shared through computer-based information systems. The 'language' of communication designed to allow the sharing of information packets over the internet was through something called Transmission Control Protocol/Internet Protocol (TCP/IP). Today, this could be considered the most widely spoken 'language' in the world, since the internet is now the means of global communication.

Because the internet has global connectivity, it remains highly unregulated, either by individual governments or by industry. For this reason, it is considered a truly 'democratic' entity influencing nations and individuals around the world. It is also considered a legal 'wild west' in the sense that there is little in terms of legal precedent over content, access, and issues regarding privacy rights. For example when the USA Patriot Act became law immediately after the terrorist events of 9/11, a great deal of controversy arose over the right of government to monitor internet activity, particularly in public libraries (since the Federal Bureau of Investigation [FBI] suspected terrorists were using public

library computers to communicate and do research). Today, controversy still rages over any government attempt to either restrict internet access or monitor activity of private citizens. There is also some disagreement to the extent that the internet is used by terrorists for communication through the use of special coding, called steganography, or the embedding of messages or files in computer websites. Knowing that law enforcement and intelligence officials are prevented from accessing pornography sites at the workplace, terrorists are suspected of using steganography in images on restricted sites, avoiding detection (Kessler 2004).

The same openness principle applies in the use of SCADA and DCS, as previously discussed. Since access to the computer commands used to manage controls and switches using this technology were originally meant for a closed system, safeguards were minimal, not expecting someone to actually hack in and access them. Cyber-terrorists, bent on attacking the United States using a computer and modem, clearly have the intent and capability to do so, because the playing field is wide open. Only since 9/11, have both the private sector and government institutions begun to seriously look at our vulnerabilities and determine ways to better defend ourselves from the threat of cyber-terrorism.

The Response

Our nation's first attempts to protect itself in cyberspace occurred during the final days of the Reagan Administration, in December 1988. DARPA provided the charter to the Software Engineering Institute (SEI) at Carnegie Mellon University, Pittsburg Pennsylvania, to establish our nation's first national Computer Emergency Response Center (CERT), as a result of a computer virus (the Morris worm incident) in November of that year, which affected ten percent of the entire internet system at that time. Even then, computer experts recognized the danger posed to information systems from the effects of viruses, even though the focus at the time was not necessarily on terrorist or nation-state threats, due to the nature of the technology and its connectivity. They also recognized that the task of cyber-protection was beyond the scope of any one agency as well, as noted in the following quote:

> Because of the many network, computer, and systems architectures and their associated vulnerabilities, no single organization can be expected to maintain an in-house expertise to respond on its own to computer security threats, particularly those that arise in the research community. As with biological viruses, the solutions must come from an organized community response of experts. The role of the CERT Coordination Center at the SEI is to provide the supporting mechanisms and to coordinate the activities of experts in DARPA and associated communities (DARPA 1988).

Under the Clinton Administration, our nation first began to organize its cyber-defenses across various federal government sectors as a result of the findings published in the President's Commission on Critical Infrastructure Protection (PCCIP), as discussed earlier. One organization stood up in 1997 to meet a shortcoming identified in the report was the National Infrastructure Protection Center (NIPC), located in the FBI building. Because it was comprised of FBI, Intelligence Community, and DoD personnel, the NIPC went beyond simply cyber-defense to providing an inter-agency response to cyber-attacks. The NIPC served as an Indications and Warning (I&W) center, providing proactive alerts and advisories intended to prevent cyber-incidents from spreading throughout government computer systems. The NIPC coordinated its efforts with the CERT at Carnegie Mellon, and was also linked to DoD cyber-defense efforts (discussed later).

On the policy side, President Clinton also took the initiative to establish the office of National Coordinator for Security, Infrastructure Protection, and Counter-terrorism, under Richard Clarke. In this capacity, Clarke also served as the Administration's 'cyber-security czar' responsible for overseeing the nation's cyber-defenses from cyber-terrorist incidents. Clarke was a hold-over when the Bush Administration came into office in January 2001, though his position on the National Security Council was less visible under the National Security Advisor, Condoleezza Rice. After the terrorist attacks of 9/11, Richard Clarke testified before the 9/11 Commission and became a popular media figure, due to his pointed criticism of the Bush Administration and the President's lack of response to his reported warnings of imminent terrorist threats. Clarke also accused the Bush Administration of pressuring him to provide evidence of Iraqi complicity in the 9/11 incidents, in order to justify going to war with Iraq.

In February 2003, the Bush Administration issued *The National Strategy to Secure Cyberspace.* One of the first critiques of the plan came from the former cyber-security czar, Richard Clarke, who claimed that the Administration's plan would leave a significant gap in cyber-protection. Yet, three years later, with the normal bureaucratic issues facing any massive government reorganization, the new Department of Homeland Security (DHS) now assumes many of the previously disparate cyber-security functions performed by the CIAO, NIPC and other Clinton-era agencies under their National Cyber Security Division (NCSD). The NSCD is responsible for the implementation of the President's Cyberspace Strategy. *The National Strategy to Secure Cyberspace* further calls for a national effort to accomplish three principal strategic goals:

- Prevent cyber attacks against America's critical infrastructures;
- Reduce national vulnerability to cyber attacks; and
- Minimize damage and recovery time from cyber attacks that do occur.

(Cyberspace 2003)

In order to accomplish these goals, a four-step process helps explain the current national cyber-warfare strategy: Protect, Detect, Restore, and Respond.

The first step, *Protect,* involves proactive measures taken to prevent a cyber-attack, whether it is from terrorists or nation-states. Protection involves mainly passive measures taken to safeguard information systems and critical infrastructures. These can be both technical means and non-technical means. For example, a firewall is a technical means to protect an individual computer workstation, as well as a computer server. Computer passwords, anti-virus and spy-ware programs are other examples of technical means to protect information systems. A non-technical means would be providing physical security around a computer workstation or server complex by locking doors, using cipher-locks for accessing mainframes, user education and awareness training, etc. All these are means to prevent an attack from having negative consequences on individual users' systems. At the national-level, prevention takes on a larger significance with regard to safeguarding critical infrastructures and their associated information systems. In this case, preventive measures to protect information systems must be assessed within the larger context of the associated information environment. In other words, risk-based assessments must occur, since we can't protect everything.

The next step, *Detection*, is more complex in cyberspace, involving our nation's ability to even know it is being attacked by a terrorist, nation-state, teenage hacker, or possibly even a construction

worker's backhoe! Former Deputy Secretary of Defense, John Hamre, was once quoted as stating that in cyberspace, we may not know we are under attack until it is too late and an "electronic Pearl Harbor" occurs (Connelly 1999). Detection of cyber-incidents, whether they are actual cyber-attacks or not, requires 24 hour a day, 7 day a week monitoring, in order to provide adequate indications and warning of an attack. The Intelligence Community maintains their Indications and Warnings (I&W) centers to track hostile activities by nation-states deemed to be a threat to U.S. security interests. In cyberspace, since the source of the attack may not be known, both the government and private sector have established a number of Network Operations Security Centers (NOSC) to provide the I&W capability.

The DoD originally established their NOSC within the Defense Information Systems Agency (DISA), located in Arlington, VA. Since it looked at the global information infrastructure, it was called the Global NOSC, or GNOSC. As will be discussed in the next section, the military reorganized after 9/11 to create new command and control organizations to deal with cyber-threats, to include changing the GNOSC to the Joint Task Force—Global Network Operations (JTF-GNO). Each of the military service components established NOSCs for their operational commands, in order to provide immediate I&W of an attack on that particular unit's information systems. These service NOSCs were linked to regional and larger operational NOSCs, which were eventually linked to the GNOSC, as a means to quickly send information both up and down the chain of command.

The civilian NOSC-counterpart was initially the NIPC. It was from this location that the various government agencies could detect cyber-attacks, both on government infrastructure as well as the private sector. After 9/11 and the stand-up of DHS, the NIPC detection function is now embedded in DHS's US-CERT Command Center, which is also linked to the national CERT at Carnegie-Mellon University, described earlier. These public and private sector centers serve as the conduit of information to first, determine whether in fact there is a cyber-attack or cyber-terrorist incident or not and then second, to be able ascertain the nature and severity of the attack in order to determine the appropriate response. But before that occurs, remedial action may be necessary to restore basic services impacted by the incident(s).

Depending on the complexity of the cyber-attack, the ability to *restore* operational capacity could be as simple as shutting down and rebooting a computer, to implementing a complex contingency plan for restoring power, for example, by rerouting the power grid. If the attack involves the use of computer viruses, the affected CERTs may issue patches or Information Assurance Vulnerability Assessments (IAVA), directing system administrators of the necessary remedial actions required to restore the effected information systems. Because incidents of cyber-warfare or cyber-terrorism could lie beneath the radar scope, meaning they may not be visible to most end-users, many remedial actions also fall within the same category, where fixes are also made without public awareness. Cyber-warriors, those in both the public and private sector charged with defending our nation's critical infrastructure from the effects of these attacks, pride themselves on their ability to find solutions and fix problems quickly without disruption of basic services that put Americans at risk.

The final step in defending information systems is to determine how to *Respond* to a cyber-attack. Once the attack is detected, and a determination is made that it was a hostile action, by either a nation-state or terrorist organization, then a decision must be made on how to respond or not. The first determination is often whether the incident is domestic or international and whether a U.S. or

multinational response is necessary. Since there are no international boundaries in cyberspace, other nations can be affected by incidents detected on U.S. information systems. For this reason, CERTs are connected globally in order to facilitate communication and cooperation.

The nature of the response may further involve an interagency approach, which could include elements of national power (diplomatic, economic, or military) other than informational. For example, in 2001, when a U.S. reconnaissance aircraft collided with a Chinese Air Force fighter jet off Hainan Island, Chinese hackers launched an information assault on the United States, involving both overt and covert actions. The U.S. government response was diplomatic, trying to release the U.S. aircrew and assuage Chinese concern that the incident was intentional. Meanwhile, U.S. citizens, in this case "white-hat" hackers, responded to the Chinese information assaults with "hack-backs" of their own without U.S. government complicity, targeting Chinese government websites. (Wallace 2001). While most of the attacks were simply a nuisance, aimed at defacing websites and making a political statement, they did demonstrate that when it came to cyberspace, anything goes, and the government has little ability to control the private sector. Also, the uncoordinated response to the incident, further demonstrated the need for increased cooperation, through influence rather than coercion. The potential for a private citizen's actions to provoke a governmental response could increase tensions and lead to physical and not just cyber-confrontation.

Since the internet and cyberspace remain generally unregulated terrain, with little governmental control, the Bush Administration's *National Strategy to Security Cyberspace* recognizes that any response system must involve a public-private partnership, to include soliciting the support of those 'white-hate' hackers to aid in our nation's cyber-defense. For this reason,

> The National Cyberspace Security Response System is a public-private architecture, coordinated by the Department of Homeland Security, for analyzing and warning; managing incidents of national significance; promoting continuity in government systems and private sector infrastructures; and increasing information sharing across and between organizations to improve cyberspace security. The National Cyberspace Security Response System will include governmental entities and nongovernmental entities, such as private sector information sharing and analysis centers (ISACs) (Cyberspace 2003:20).

The Military Response

Turning toward the U.S. military contribution to cyber warfare response, in the mid-1990s, the DoD recognized the growing threat to its informational architecture, as well as the nation's critical infrastructure from cyber-warfare. Since DoD installations in the United States were dependent on civilian infrastructure for communications, transportation, energy, water, and the full range of logistical support, the DoD recognized that a threat to any of these critical systems would directly impact the military's ability to deploy forces overseas against foreign threats and actors.

In 1995, the Chairman of the Joint Chiefs of Staff, Army General John Shalikashvili, released an unclassified document, *Joint Vision 2010*, which laid out the Chairman's strategic goals for the military looking out 25 years. The document identified four key operational concepts which the Chairman viewed as essential for the ability of the U.S. military to fight as a joint force in an uncertain future. "This vision of future warfighting embodies the improved intelligence and command and control available in

the information age and goes on to develop four operational concepts: dominant maneuver, precision engagement, full dimensional protection, and focused logistics" (Shalikashvili1995:1).

To achieve such operational success in any future battlefield, military planners realized that their ability to maneuver forces, engage adversaries, protect the force, and even deploy the force to any future conflict, was completely dependent on a complex civilian infrastructure, which the DoD had little control over. Critical infrastructures, such as transportation networks, telecommunications, power generation, and even health care and financial resources, were outside of federal oversight when it came to assessing national security and the potential threats to those infrastructures. To make matters worse for military planners, the operational environment for these infrastructures was not a series of buildings or hard sites which could be secured with concertina wire and a guard force. Rather, these infrastructures were comprised of complex information systems, which presented a whole new set of challenges for security planners who were now faced with the difficult question of how to defend critical infrastructures 'over here' in order to even begin to get military forces deployed 'over there' for the next conflict.

Recognizing these new challenges, the DoD began a series of training exercises aimed at testing the vulnerabilities of our nation's critical infrastructures and the information systems on which they depended. The first operational-level exercise conducted in June 1997 was called Eligible Receiver. The exercise involved using National Security Agency (NSA) 'hackers' operating as an adversary (red-team) to attack defense and other government information systems, while also conducting simulated attacks on civilian infrastructure (Robinson 2002). The lessons learned from the exercise showed serious problems with defending critical information systems and infrastructures, on which the DoD (and the nation) depended, against cyber-attacks by adversaries using asymmetrical means to defeat (or simply neutralize) our nation's military strength indirectly. The U.S. Atlantic (later Joint Forces) Command in Norfolk, Virginia, also ran an exercise labeled Evident Surprise which continued to explore vulnerabilities in DoD information systems to cyber warfare. One example involved a simulated attack on the DoD's electronic medical records, tracking blood supplies.

If Evident Surprise and Eligible Receiver were not enough to convince defense planners that cyber-warfare was a real threat to military operations, a series of incidents in early 1998 provided additional proof. As we discussed earlier, *Solar Sunrise*, an investigation into intrusions into DoD information systems which appeared to be originating from a Middle Eastern country, coincided with operational planning for Dessert Fox, a series of military attacks against Iraq in February 1998. The cyber-intrusions impacted multiple service components and DoD agencies; such that investigators believed they were deliberate attacks being perpetrated by a foreign government. Further criminal investigations later turned up two California teenagers being mentored by an Israeli man, Ehud Tannenbaum, as being behind the attacks (Robinson, 2002). Although no real security breeches of critical DoD information systems occurred, the incidents did further identify significant vulnerabilities which, if exploited, could have had a significant impact on operational planning and execution utilizing the military's integrated command, control, communications, computers, and intelligence (C4I) architecture.

In December 1998, the DoD took the initiative to stand up an operational unit to specifically deal with the threat toward DoD information systems posed by cyber-warfare. The Joint Task Force—Computer Network Defense (JTF-CND) was formed as a field operating agency, based in Arlington, Virginia at the Defense Information Systems Agency (DISA). The JTF-CND would later

move to operational control of U.S. Space Command (SPACECOM) in Colorado Springs, Colorado as a result of changes to the DoD's Unified Command Plan which took effect on October 1, 2000 (Verton, 1999). The JTF-CND originally focused only on the defensive aspects of what would be called Information Operations (IO) in the military's evolving information warfare doctrine. The JTF-CND would eventually evolve into the JTF-Global Network Operations (GNO) in May 2005, responsible for both offensive and defensive aspects of IO, as part of the organization's realignment under operational control of the U.S. Strategic Command (STRATCOM) in Omaha, Nebraska. The JTF-GNO, also integrated DISA's former GNOSC and serves as the focal point for the DoD's CERT operations.

Before these operational changes took place, the DoD was moving forward with the development of military doctrine to deal with information age cyber-warfare threats. Although individual service components began considering information warfare as a viable mission area in the mid-1990s (such as the Army's Field Manual FM 100-6), it was a couple years later before the DoD recognized the need to issue joint doctrine with regard to IO. DoD had previously issued IO policy guidance in the form of a classified DoD directive in 1996. Yet, it was not until the release of Joint Publication 3-13, *Joint Doctrine for Information Operations* on October 9, 1998, that joint commands began to organize their staffs around the need for IO planning and execution, as well as education and training.

Information Operations emerged from previous joint doctrine (JP 3-13.1) involving Command and Control Warfare (C2W), based on lessons learned after the first Gulf War and the effectiveness of new information-based technologies for intelligence collection and targeting. IO expanded on the traditional 'pillars' of C2W (Psychological Operations, Military Deception, Electronic Warfare, Physical Destruction, and Operations Security), by adding Computer Network Defense, and two 'related' activities of Public Affairs and Civil Affairs (JP-13, 1998). IO became the means by which DoD elements would conduct cyber-warfare, initially focused on defensive aspects of the cyber-threat, but later expanded to include offensive cyber-warfare planning and execution under the broader category of Computer Network Operations (which would also come to include the intelligence gathering required under Computer Network Exploitation in order to actually conduct both offensive and defensive operations).

In June 2000, the Chairman of the Joint Chiefs of Staff, General Hugh Shelton, U.S. Army, issued a follow-on document to *JV 2010*. Titled *Joint Vision 2020*, the Chairman sought to build on the previous strategic view of his predecessor, while taking into consideration the changes which had occurred organizationally and operationally as a result of the information revolution. For example, as a reason for issuing the new strategic vision, *JV 2020*, states, "the continued development and proliferation of information technologies will substantially change the conduct of military operations. These changes in the information environment make information superiority a key enabler of the transformation of the operational capabilities of the joint force and the evolution of joint command and control" (Shelton 2000). With Information Superiority as the DoD's strategic enabler, IO is the chief means by which the DoD will take offensive and defensive actions to maintain Information Superiority over the nation's adversaries, and achieve the broader goal of Full Spectrum Dominance, as defined in *JV 2020.*

While the joint commands were beginning to organize themselves to function in the information battlespace, the military service components had already begun the transformation doctrinally and

organizationally. The Army was the first service component to develop military doctrine with regard to IO and the conduct of cyber-warfare. FM 100-6, Information Operations, first appeared in August 1996, two years before the joint community published JP 3-13 (Since then, the Army reissued its Field Manual to reflect the joint community numbering system—it is now FM 3-13). The Army's approach to IO, however, was more along the lines of viewing the informational component of warfare as an enabler to further enhance the 'hard' power of Army weapons systems, rather than a 'soft' power alternative. As one Army officer, once noted, "IO simply helps us to do a better job putting steel on target."

Yet, the Army did make organizational changes reflecting the new doctrine and the integration of IO planning into military operations. The Army's Land Information Warfare Activity (LIWA), located with the U.S. Intelligence and Security Command (INSCOM) at Ft. Belvoir, VA, was stood up on May 8, 1995 (Sizer 1997). It proved its value immediately, providing Field Support Teams to Army components deployed to support the NATO Implementation Force (IFOR) in Bosnia. The Army's first IO planners were a mix of combat arms, signal, and intelligence officers. Field Artillery training and the use of the Attack Guidance Matrix using 'information weapons' proved particularly useful in planning IO in the theater, since the use of 'hard' power, such as physical destruction was restricted due to the peacekeeping nature of the mission. The LIWA also included the Army's first Computer Emergency Response Team (CERT) to help defend Army communications networks against the threat of cyber-warfare, as well as other Army elements which would provide the offensive cyber-warfare capability. The Army later changed the LIWA to a new designator as the 1st Information Operations Command, to bring it in line with organizational changes under the new Unified Command Plan in 2002, which will be discussed later.

The Army also developed a new career field, Functional Area (FA) 30, Information Operations, for its officer corps. Army officers designed as FA-30s received training in IO at either Joint or Army schools and were assigned as IO planners on both Army and Joint staffs. Army IO officers filled new positions designed for IO cells on Division and Corps-level staffs, as well as in the newly formed Independent Brigade Combat Teams. On joint staffs, these officers typically served within the J-3 Operations Directorate, rather than as a separate staff section designated for IO.

The other military services (Air Force, Navy, and Marines) initially chose not to create new career fields for IO officers, but rather developed special skills identifiers or 'codes' to designate certain officers with IO-specific skills and abilities. The Air Force stood up its own training course for teaching IO (to both officers and enlisted personnel) at Hurlburt Field in Florida. The Navy stood up the Fleet Information Warfare Center (FIWC) at Norfolk, VA, which included IO training programs. Most Navy officers working in IO-related positions came from the cryptology community. In 2005, the Chief of Naval Operations decided to recode certain cryptology billets in the Navy to Information Warfare billets, recognizing the growth of IO as a core competency for all military services (CNO 2005). The Marines still leverage the other service and joint schools teaching IO for its needs.

Of all services, the Air Force took the most dramatic steps, organizationally, to accommodate the need for IO capability in its operational units. Looking at IO as a weapon system, rather than simply an enabler, the Air Force stood up Information Operations Squadrons (IOS) to provide the numbered air forces their own organic IO capability. The IOS provided each unit an integrated IO capability with specialists in each of the IO capabilities, according to the joint and air force IO doctrine. The

Air Force also stood up the Air Force Information Warfare Center (AFIWC) at Lackland Air Force Base in San Antonio, Texas, as its lead operational unit for IO. The AFIWC further integrates the Air Force's Computer Emergency Response Team (AFCERT), linked with the various Network Operations Security Centers (NOSC), designated to monitor and protect Air Force C4I systems from cyber attacks. For example, the NOSC at Langley Air Force Base in Hampton, Virginia, monitors all of networks for the Air Force's Air Combat Command (ACC) units deployed both in the United States and overseas.

The Navy's FIWC (name changed to Navy Information Operations Command [NIOC] in November 2005) also serves a similar function to the AFIWC and Army's 1st IO Command, as the operational component for all naval fleet IO activity. In addition to training Navy personnel to serve in IO-related positions in the fleet, the NIOC also contains the Navy's Computer Incident Response Team (NAVCIRT) capability for coordinating the Navy's defensive response to the cyber-warfare threat. The NIOC reorganization came about as a result of standup of the Naval Network Warfare Command (NETWARCOM) in Norfolk, Virginia in 2002, also as a result of organizational changes at the joint command level. NETWARCOM reflects the 'operationalizing' of the Navy's Network Centric Warfare operational concept, which was first proposed by Admiral Arthur Cebrowski in 1998, who recognized then that networks were a 'weapons system' and a key component of information-age warfare (See Cebrowski and Gartska 1998).

The terrorist attacks against the Pentagon and the World Trade Center in September 2001, provided the impetus for broader DoD organizational changes which impacted the military's ability to prosecute and defend against cyber-warfare. The threat posed by al Qaeda and other international terrorist groups to the U.S. homeland, caused the DoD to create a new joint command, U.S. Northern Command, dedicated to the Homeland Defense mission of the DoD, in support of the nation's overall Homeland Security effort. This change to the Unified Command Plan (UCP), signed by President Bush in May 2002, further eliminated the U.S. Space Command in Colorado Springs, Colorado, moving most of the Space and Information Operations roles of the military to U.S. Strategic Command (STRATCOM) in Omaha, Nebraska.

The military's information-age transformation signals recognition that threats to the nation's (and military's) information systems will remain. Whether the threat of cyber-warfare comes from a terrorist organization or a nation-state, the DoD's reorganization at the joint combatant command level, as well as service component level, will better position the military to face these information age threats. One significant problem, however, remains: the DoD does not control access to, nor does it defend, the nation's critical infrastructures on which military power 'rides.' Whether it's the nation's rail and transport system, global telecommunications architecture, or our nation's power grid, the DoD is dependent on having access to these systems. Even the DoD's logistics system cannot function in getting troops and supplies to Iraq or other future conflict areas without the help of commercial transportation and private companies like FEDEX or UPS. A cyber-attack on any of the information systems which manage these critical infrastructures would have devastating effects on our military's ability to provide for our nation's defense, here and abroad.

Futures Assessment

Because cyber-terrorism and cyber-warfare are relatively new concepts, the nature of the threat posed by terrorists or even nation-states using technology in this manner remains controversial. Some critics argue that our nation's infrastructure is not that vulnerable to these types of attacks, because they are so complex and have multiple redundancies built into them, such as the power grid and telecommunication networks. They also contend that our economy is too resilient to a cyber-attack and such an effort would only prove a temporary set-back, as evidenced by the events of 9/11 (Ranum 2004). On the other hand, members of Congress, the military, and those charged with providing for our nation's defenses against all enemies, do not take the threat lightly and continue to reassess and reevaluate both the capability and intent of our adversaries to do us harm in cyberspace (Hildreth 2001).

Secretary of Defense, Donald Rumsfeld, categorized the threats our nation faced in the future as "known knowns, known unknowns, and unknown unknowns." (Rumsfeld 2006). With regard to threats in cyberspace, much remains within the "unknown unknowns" category, since the most significant attacks we have experienced to date, may still be unknown. The consequences may only come to light, after the fact or after a policy or operational decision is made based on insufficient knowledge. Not that such a situation has not happened before, but in cyberspace, the consequences may not become "known knowns" until it is too late and the repercussions of those actions could have far-reaching implications.

With regard to the organizational changes which have occurred since the 1990s, particularly within the defense community to combat cyber-warfare (both offensively and defensively), the question to ask is, are we preparing for the right threat? In other words, are we preparing for the next war, or continuing to fight the last one? One of the best means to try to answer that basic question is to examine the changes which have occurred to joint doctrine for Information Operations. The original Joint Publication 3-13 appeared in October 1998, before the terrorist attacks of 9/11. The revised edition appeared earlier this year, released in February 2006. What's changed? What hasn't? Since IO includes the military's strategy on how to conduct cyber-warfare, a brief summary is in order.

One of the main criteria for revision of the original JP 3-13 was to bring the new doctrine in line with the DoD "IO Roadmap," released in October 2003. Originally classified as SECRET, Not Releasable to Foreign Audiences, the document was reclassified as UNCLASSIFIED in January 2006 through a Freedom of Information Act (FOIA) request by the National Security Archives (Adair 2006). While the main focus of the FOIA request and subsequent reporting by the Archives' staff was primarily on the role of Psychological Operations (PSYOP) in the IO Roadmap, there was also much revealed about the role of the DoD in conducting cyber-warfare, both offensively and defensively, which was later reflected in the revised JP 3-13.

The main organizational change for the DoD called for in the IO Roadmap was the further consolidation of the IO mission support under STRATCOM. Operational control for all aspects of IO, to include Computer Network Attack and Computer Network Defense, were consolidated into new organizational structures and responsibilities. The JTF-CNO came under STRATCOM's control, for example. Each of the services transformed existing IO organizations into IO 'commands' in order to provide the service components in support of the joint command structure.

To provide operational control over the diverse components of IO, STRATCOM developed various joint functional component commands. The Joint Functional Component Command (JFCC) for Space and Global Strike includes the Joint Information Operations Center (JIOC), located at Lackland Air Force Base in San Antonio, Texas. The JIOC was previously under the Joint Forces Command prior to the Oct 2002 UCP change. The JIOC is responsible for "the integration of Information Operations (IO) into military plans and operations across the spectrum of conflict" (Strategic Command 2006). The JIOC routinely deploys support teams to the other combatant commands (such as U.S. Central Command) to assist their staffs with developing their IO plans and operations. Another component command created by STRATCOM is the JFCC for Network Warfare. This component command is commanded by the Director of the National Security Agency, signaling the merging of computer network defense, offense, and exploitation (intelligence collection) under one functional command for computer network operations.

Yet, with the publication of JP 3-13 in February 2006, the DoD recognized that by putting all the "IO eggs" in the STRATCOM basket, they were possibly limiting the ability of the supported Combatant Commands to do their own IO planning and conducting IO training and exercises. Thus, a key provision in the revised JP 3-13 states, "Commander, United States Strategic Command's (USSTRATCOM's) specific authority and responsibility to coordinate IO across area of responsibility (AOR) and functional boundaries does not diminish **the imperative for other combatant commanders to employ IO"** (emphasis included) (JP 3-13 2006: xii). In other words, since "cyber bullets" do not respect geographic boundaries, having a functional command with overall authority to conduct cyber-warfare at the national level, did not preclude regional commands from planning for the full integration of IO (to include computer network operations) within their sphere of influence. This was a key distinction, since much of the confusion over the conduct of offensive cyber warfare continues to deal with command authority—who can authorize using the offensive "tools" of computer network attack.

Also, the new JP 3-13 recognizes the need for combatant commanders to plan for full integration of multinational partners, as well as interagency players in IO planning and operational efforts. This is a significant change in scope and recognition that IO efforts cannot be conducted in the typical DoD 'box.' Whereas in the past, commanders often gave lip service to the need for full disclosure and cooperation in military planning efforts with their civilian and international partners with regard to IO, the new doctrine, reflecting the IO Roadmap goal of educating and training new senior leaders in IO, assumes a level of knowledge by commanders on what IO is and how to use it effectively. This is particularly relevant concerning Computer Network Operations capabilities. Many senior officers are fond of saying, in essence, "I don't know what that IO 'stuff' is, but I want some of it." The intent of JP 3-13 is to better equip IO planners (and commanders) at all levels to understand the IO 'stuff' that is available, how to get it, and what to do with it.

Another change in JP 3-13 which signifies the increased need for broader cooperation for cyber warfare planning in the Joint, Interagency, Intergovernmental, and Multinational (JIIM) environment is reflected in figure 1. By emphasizing the fact that it is "individuals, business, government, and military" which conduct Computer Network Operations (both offensively and defensively), the new joint doctrine further expands on the need for increased cooperation, across disciplines when considering national-level cyber-warfare responses. The DoD only provides part of the national capability to deal with cyber-threats, and it is still extremely vulnerable to effects to our nation's critical

INFORMATION OPERATIONS INTEGRATION INTO JOINT OPERATIONS (NOTIONAL)						
Core, Supporting, Related Information Activities	Activities	Audience/ Target	Objective	Information Quality	Primary Planning/ Integration Process	Who does it?
Electronic Warfare	Electronic Attack	Physical, Informational	Destroy, Disrupt, Delay	Usability	Joint Operations Planning and Execution System (JOPES)/ Targeting Process	Individuals, Governments, Militaries
	Electronic Protection	Physical	Protect the Use of Electro-magnetic Spectrum	Security	JOPES/Defense Planning	Individuals, Businesses, Governments, Militaries
	Electronic Warfare Support	Physical	Identify and Locate Threats	Usability	Joint Intelligence Preparation of the Battlespace (JIPB)/ SIGINT Collection	Militaries
Computer Network Operations	Computer Network Attack	Physical, Informational	Destroy, Disrupt, Delay	Security	JPIB/JOPES/Targeting Process	Individuals, Governments, Militaries
	Computer Network Defense	Physical, Informational	Protect Computer Networks	Security	JOPES/J-6 Vulnerability Analysis	Individuals, Businesses, Governments, Militaries
	Computer Network Explotation	Informational	Gain Information from and about Computers and Computer Networks	Security	JPIB/Targeting Process	Individuals, Governments, Militaries
Psychological Operations	Psychological Operations	Cognitive	Influence	Relevance	JOPES/Operation Planning	Businesses, Governments, Militaries
Military Deception	Military Deception	Cognitive	Mislead	Accuracy	JOPES/Operation Planning	Militaries
Operations Security	Operations Security	Cognitive	Deny	Security	JOPES/Operation Planning	Businesses, Governments, Militaries
Supporting Capabilities	Information Assurance	Informational	Protect Information and Information Systems	Security	JOPES/J-6 Vulnerability Analysis	Businesses, Governments, Militaries
	Physical Security	Physical	Secure Information and Information Architecture	Usability	JOPES/Defense Planning	Businesses, Governments, Militaries
	Physical Attack	Physical	Destroy, Disrupt	Usability	JOPES/Joint Operations Planning	Governments, Militaries
	Counterintelligence	Cognitive	Mislead	Accuracy	JIPB/Human Intelligence Collection	Governments, Militaries
	Combat Camera	Physical	Inform/Document	Usability, Accuracy	JOPES/Joint Operations Planning	Governments, Militaries
Related Capabilities	Civil Military Operations	Cognitive	Influence	Accuracy	JOPES/Joint Operations Planning	Governments, Militaries
	Public Affairs	Cognitive	Inform	Accuracy	JOPES/Joint Operations Planning	Businesses, Governments, Militaries
	Public Diplomacy	Cognitive	Inform	Accuracy	Interagency Coordination	Governments

Figure 1. Information Operations Integration into Joint Operations (Notional), Replicated from JP 3-13, 2006, I-7

infrastructure. By following the IO Roadmap and educating and training senior leaders on what IO is and does, the potential exists for a more unified national cyber-warfare response, as envisioned by the Bush Administration's *National Strategy to Secure Cyberspace.*

Final Thoughts

Since 9/11, significant changes have occurred in our nation's cyber-warfare response and the ability to leverage technology, not only to protect critical infrastructure at home, but also to take the offensive against our nation's adversaries. The DoD has taken the lead in developing organizationally to fight a war in cyberspace, with the recognition of IO as a core competency, requiring commanders to understand it, as they would fire and maneuver. Yet, winning the war in cyberspace also requires recognition that the 'information' environment is as critical as the 'physical' environment and current terrorist groups, as well as future adversaries may understand this principal better that we do. While many of the changes in JP-13 correct previous doctrinal and definitional shortcomings, there is one area where the new doctrine comes up short. Emery, Werchan, and Mowles (2005) correctly identify that non-state actors use actions in the physical environment to shape perceptions in the information environment, whereas the continuing focus in joint IO doctrine remains the principle that operations in the information environment help shape operations in the physical environment. In other words, many military commanders still see IO as a "means" to the "ends" of better placing "steel on target."

Recognizing that terrorist groups and other non-state actors see the information environment as the true "ends" rather than the "means" will help cyber-warfare planners better grasp the consequences of the residual (informational) effects of operations in the physical environment. Being able to coordinate our national response across the Joint, Interagency, Intergovernmental, and Multinational environment will further enhance our national ability to provide the **right** response to the **right** threat. Just as the Rand Corporation "Day after in Cyber-Space" exercise proved, providing the **wrong** response to the **wrong** threat could be catastrophic.

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Digital Blitzkrieg

Updating the Pearl Harbor Analogy and Combating it Multi-Domain Civilian Red Cells

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The Flaw of the Digital Pearl Harbor

As anyone will tell you, on December 7, 1941, the Japanese navy launched a surprise attack against United States naval ships docked at Pearl Harbor. 50 years later, Winn Schwartau coined the phrase 'electronic Pearl Harbor' to refer to the potential for a similar surprise attack on our nation' critical infrastructure through electronic or digital weapons. A quick troll of the Internet will show anyone that while the press loves the term, there are few professionals happy with it. As the Crypt Newsletter puts it:

…in the real world, [digital Pearl Harbor] is a cue for the phrase "Watch your wallet!" since those wielding it are usually doing so in an attempt to convince taxpayers or consumers to fund ill-defined and/or top secret projects said to be aimed at protecting us from it."[1]

This author couldn't agree more. The phrase has been over used and worn out and worse still, is fundamentally flawed. There are several primary flaws in the digital Pearl Harbor analogy:

1. The attack did not include any new technologies
2. The attack was one dimensional in scope and therefore the damage was not long lasting

New Technologies

According to the U.S. Navy's website entitled 'A Brief History of Aircraft Carriers,' the first U.S. carrier was the USS Langley. The Langley was converted from the collier USS Jupiter and placed into commission March 20, 1922.[2] The year prior, the Japanese launched its first purpose build aircraft carrier, the Hosho in 1921.[3] By the time the attack on Pearl occurred the U.S. Navy had been landing and launching aircraft off ships for nearly 30 years.[4] Furthermore, the first use of carrier launched aircraft in battle was off the HMS Furious in July of 1918 against the German Zeppelin base at Tondem.[5] In short, the Japanese carriers at Pearl Harbor did what carriers are supposed to do: project air power to targets you normally couldn't reach from land based aircraft. While the target and timing may have been a surprise, the method of delivery and technologies used were nothing new.

1. http://www.soci.niu.edu/~crypt/other/harbor.htm
2. http://www.chinfo.navy.mil/navpalib/ships/carriers/cv-hist1.html
3. http://en.wikipedia.org/wiki/Imperial_Japanese_Navy#Interwar_years
4. 1910, Curtiss plane takes off from the USS Birmingham, and 1911, a Curtiss pusher lands on the USS Pennsylvania; http://www.chinfo.navy.mil/navpalib/ships/carriers/cv-hist1.html
5. http://en.wikipedia.org/wiki/Aircraft_carrier#Genesis

One Dimensional Attack

The attack on Pearl was intended to neutralize U.S. naval power in the Pacific. That being the case, the chosen targets and method of attack were ill-suited toward that goal. According to several references, only three ships were permanently disabled. Furthermore, no attacks were made on the submarine pens, repair facilities or the headquarters building. All three of the U.S. aircraft carriers were likewise untouched as they were all absent. While the attack was nonetheless devastating from a casualty perspective, it made little strategic impact in the overall war in the Pacific. As evidenced by the short list of engaged targets, the Japanese attack was one dimensional; ships in the harbor. The attack shows no understanding of the interconnectedness of various dimensions required to keep a navy operational. If the goal of the attack was to create a U.S. navy without ships, then complete and utter destruction of the physical ships is only the starting place of the attack, not the end point. Every domain that is necessary to keep a ship afloat must be targeted. That means:

- Repair facilities
- Refueling depots
- Aircraft and submarines
- Command and control sites and personnel
- Any other facility even collaterally associated with the fleet:
  - Personnel barracks and housing
  - Training facilities
  - Food storage sites

Failure to attack cross domains results in the ability for rapid recovery from the attack. Only three ships were permanently destroyed. Several others were back in operation within several months. The carriers and submarines were untouched. As the attack demonstrates; single domain attacks result in short term single domain victories, NOT sustained strategic impact. The United States ultimately won the war in the Pacific.

The Digital Blitzkrieg – Multi-Domain Attacking

In studying the German Wermacht's Blitzkrieg through Western Europe, there has much (some would say too much) emphasis on the use of armor. As John Ellis states:

Of course, these armored forces did play a somewhat more important role in operations than the simple proportions might indicate, but it still has to be stressed that they in no way dominated the battlefield or precipitated the evolution of completely new modes of warfare.[6]

While armor did play in important role, it did not, in and of itself create a new strategic battlefield. What makes the Blitzkrieg an interesting case study for current trends is this; the Germans successfully blended advances in several divergent technologies into a new way of fighting war. Case in point is the seizure of the Belgium fortress Eben Emael in 1940.

6. Brute Force, John Ellis, 1990.

In William H. McRaven's book Spec Ops: Case Studies in Special Operations Warfare Theory and Practice, the author examined eight historical special operations missions in an attempt to identify the theory of special operations. Through the development of this theory, McRaven states "if we can determine, prior to an operation, the best way to achieve relative superiority, then we can tailor special operations planning and preparation to improve our chances of victory."[7] What makes McRaven's theory applicable to the Digital Blitz analogy is the primary characteristic of special operations warfare: a small highly trained force engaging a larger, better armed force in a fortified position. This asymmetry is the perfect model for a digital blitz and no more so than the German seizure of the Belgium fort Eben Emael which was the spearhead to the Blitzkreig across Western Europe.

As McRaven points out, Eben Emael was the largest fort in Europe and built to dominate a World War I battlescape. In 1940, a group of 69 men took and held this monolith protected by a group 10 times the size of the assault force.[8] The attack had two firsts: the first use of glider aircraft in combat and the first use of shaped charges.[9] The plan was simple, limited in scope and surprising in nature. While the gliders were spotted prior to landing and even took direct fire, McRaven notes that the real surprise was the use of shaped charges which destroyed the armored casemates and cupolas at the fort within 20 minutes of landing. The fort was built to withstand direct assault. The defenders had interlocking fields of fire and believed the landed paratroopers to be little threat. It was the rapid destruction of their fixed defensive positions that was the surprise.[10]

This tactical portion of the Blitzkrieg illustrates the general model of the strategic Blitz; combining new technologies and new uses for old technologies to create a blended offensive strategy that achieves victory through speed, limited mission objectives and innovation. This provides the basis for the Digital Blitzkrieg when combined with Arquilla and Ronfeldt's concept of swarming. In the book Networks and Netwars, authors John Arquilla and David Ronfeldt define swarming as:

> a seemingly amorphous, but deliberately structured, coordinated, strategic way to strike from all directions at a particular point or point, by means of a sustainable pulsing of force and/or fire, close-in as well as from stand-off positions.[11]

Some key characteristics in swarming include:

- [the ability] "to coalesce rapidly and stealthily on a target, then dissever and redisperse, immediately ready to recombine for a new pulse"[12]
- 'may be most effective, and difficult to defend against where a set of netwar actors do not "mass" their forces, but rather engage in dispersion and "packetization"'[13]

I would add one thing to the swarming concept and that is the multi-dimensional swarm or MDS. An MDS operates in similar fashion to a traditional swarm. Instead of a group of actors aggregating

7. Spec Ops: Case Studies in Special Operations Warfare Theory and Practice, William H. McRaven, pg 1
8. Ibid. pg 55
9. Ibid. pg 62
10. Ibid. pg 66
11. Networks and Netwars, by Arquilla and Ronfeldt, 2001, pg 12
12. Ibid.
13. Ibid.

from multiple directions to engage a target an MDS would involve multiple groups of actors aggregating from multiple directions to engage multiple aspects of a single target along a random variable attack schedule. As with many things, the definition is long, the example is easier.

Multi-Domain Attack Plan – The Digital Blitzkrieg

Let's say you wish to attack the United States. To do so in the physical realm would be costly in lives and materiel and stand little chance of success. Technology has given the United States dominance over the traditional fields of battle; land, sea and air. As with the Eben Emael example, when the old battlefields have been dominated, it is time to create a new battlefield. Eben Emael was built along World War I technology and strategy; direct assault by air and infantry. The Germans created a new battlefield, the roof as accessible by glider. Furthermore, they used new tools to conquer the old. The casemates and cupolas were designed to withstand prolonged heavy bombardment (in fact, one withstood 24 hours of directed air attack[14]). Shape charges were designed to rapidly penetrate and destroy the entrenched defensive positions. So where is the new battlefield of the Digital Blitz…the civilian owned critical infrastructure.

The original eight critical infrastructures of the United States as listed in Presidential Decision Directive 63 are:

1. Water
2. Gas oil storage and delivery
3. Government operations
4. Electricity
5. Emergency services
6. Banking and finance
7. Telecommunications
8. Transportation

While it would be difficult to attack even half of the original eight simultaneously, they do provide a good road map to smaller scale engagements. Furthermore, since they are owned by U.S. corporations on U.S. soil there are limits, as to the involvement of the United States military. Following McRaven's theory of Special Operations, we will narrow the scope of any one attack and keep the operation simple. This helps improve the chance of mission success. Also, keep in mind that a wounded target costs more than a destroyed one. So let's walk through a sample series of attacks.

Step 1 – Pick your target. For the purposes of this paper, we shall be attacking a major national retail chain who has stores in every town of any size as well as a significant on-line presence. The goal is sustainable impact on local economies specifically and the U.S. economy in general.

Step 2 – Pick your general timelines. Use weather as your friend. Attack the west during wild fire season, the south-east during hurricane, the north during winter and the middle during the hottest part of summer.

14. Spec Ops, pg. 56

Step 3 – Choose a random or variable attack schedule. Terrorism breed fear through it sheer randomness and violence of action. The Washington DC sniper attacks held the DC metro area in fear for three weeks in October of 2002. The randomness of the targets and the timeline along with a specific threat against children created a collective state of fear and altered many behavior patterns.

Step 4 – Choose your specific timelines. For physical attacks, choose times that will impact the most people. Rush hour is a great example. Anything that shuts down a major transportation artery will have long lasting and immediate impact. During the DC sniper attacks, a close friend was stuck on the DC beltway for hours while it was shut down to look for 'the white van'.

Step 5 – Choose your target domains. In our attack against the national retailer, we'll go after as many of the eight domains as possible:

1. Water. Water is your friend. Hacking into water controllers to shut off water to the retailer's corporate headquarters is a great way to send everyone home early. After all, if there is no water, you can't flush toilets and that becomes a health hazard. This attack also works well against their data center too.

2. Gas oil storage and delivery – Class 1 data centers require diesel generator backup. If the tanks are above ground, destroy them.

3. Electricity – Deny power through traditional physical attacks as well as digital. Attacking power supplies to the stores at peak shopping hours or high temperatures is key.

4. Banking and Finance – Odds are that the headquarters is well secured from digital attacks against their finances. The trick here is to go after the smaller banks and credit unions of the employees. Digitally siphoning off money, preventing deposits and phishing for employee data to log into their accounts are all effective methods of attack.

5. Telecommunication – Executives and employees all use cell phones. If they are using Bluetooth headsets, we can listen in and even record conversations; a valuable source of intelligence. Also, most of the stores will have satellite or land lines back to headquarters for a variety of purposes (inventory, payroll, etc.) Working to get into the data stream will allow for man in the middle attacks, denial of service and data theft/corruption.

6. Transportation – Trucks move merchandise, cars move people. There are a variety of ways to delay traffic flows from taking over street lights and variable messaging signs to traditional kinetic attacks against roads.

Step 6 – Begin swarming. Attacking two or more target domains simultaneously. The more you can attack at once, the better. With retail outlets all across the country, there are targets anywhere. Furthermore, to simplify support and maintenance, chances are that if an attack works well at one location, it will most likely work again at other locations due to similar or even identical infrastructure. To maximize damage and sustainability, include low resource commitment physical attacks. These include random pipe bombings, bomb scares and shootings.

For those that doubt the power of even just digital attacks, look to the recent case of Blue Security. In the spring of this year, Russian hackers attacked the anti-spam company of Blue Security. After a

multi-day cyberwar, Blue Security decided to close its doors rather than risk an all-out slug match.[15] It is possible to run a company off the Internet using only digital attacks.

The combination of digital and physical attacks against multiple domains of a target is the full realization of a Digital Blitzkrieg. A new form of fighting that takes the best from low intensity operations and computer network attacks and uses them against civilian owned critical infrastructure. Since any single attack requires little resource commitment, the pulse of fire is sustainable over a long period of time. Likewise, any single attack requires few people. The missing piece is someone or thing coordinating the timing of the attacks which is easily accomplished through a variety of chat rooms and cell phones.

Counter Blitz - Civilian Operated Red Cells

Red Cells are in use by every branch of the military, the Department of Homeland Security (DHS) and even in civilian circles. Loosely defined, a Red Cell is a team of professionals hired to test security. In the National Strategy for Homeland Security there was a call for the creation of Red Cells.[16] These cells would be different than any in use today in two key factors.

1. They would focused on combined cyber and physical attacks
2. They would be staffed by civilians and be responsible directly to the federal government

With the advent of technology convergence, it is impossible to separate the physical and digital worlds. Surveillance cameras pump their signals across IP data networks. Vonage is signing up customers for VOIP Internet telephony services. Bluetooth technology is used in automobiles and GPS has replaced traditional navigation skills. While a combined cyber and physical attack is inherently more complex to prepare for, the payoff is extraordinary. Cascading and down stream effects are great. For example, imagine controlling the traffic lights of a major metro area to over-congest an area and then triggering a series of improvised explosive devices (IEDs) at rush hour. The resulting chaos would be catastrophic. To combat this, we need Red Cells to operate on U.S. soil to recon and plan combined attack scenarios.

Furthermore, the teams who operate must be civilian staffed and managed. Law enforcement is not prepared for this type of work, and the military would have legal hurdles that might prevent them from conducting offensive planning operations against U.S. citizens on private property. The benefit of this arrangement would be teams who would be assigned to work up scenarios for various geographic regions. The resulting scenarios would then be turned over to the owner/operators of the affected assets for countermeasures and mediation. Lastly, the same scenarios could be used as starting points for multi-jurisdictional training operations.

Conclusion

The digital Pearl Harbor must be put to rest. In the rapidly converging, ever changing technology landscape, a new analogy needs to be created; one that accurately reflects potential attacks. Unlike some, this paper is not a prophecy, but an extrapolation of trends. Ultimately, I would hope that

15. http://weblog.infoworld.com/techwatch/archives/006432.html

16. National Strategy for Homeland Security, Office of Homeland Security, July 2002

additional resources are spent creating at least one Red Cell to train for combined cyber and physical operations in a simultaneous battlespace. The goal is not to predict the future, but to prepare for as many possible futures as we can.

The Sword and the Network

Combining Body-Mind-Spirit-Technology

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Background

In the 1980's, Richard Strozzi-Heckler and a team of instructors helped run the Trojan Warrior project. Trojan Warrior was a six month experiment wherein 25 Special Forces personnel were taught a wide array of new skills in an effort to make them better warriors. The students were introduced to the practice of Aikido as well as meditation and even neurofeedback training.[1] These skills were an attempt to improve the warrior craft by creating centered, integrated warriors. The project, while not renewed did show some success. The success of the program is a relevant starting point for this paper. The individuals who went through the program were in top physical performance and had access to some of the best training that the United States Army had to offer. Their mental and physical skills would be considered by most to be at the top of the ladder. However, as shown through the final testing, there was still room for improvement.

For six months, a diverse group of instructors provided additional training to the Trojan Warriors. Besides the core of three instructors who would be with them the entire time, other guest lecturers included Dr. Jim Hardt on the topic of neurofeedback, Bira Almeida for Capoeira and Brother Davit Steindl-Rast, a Benedictine monk.

Deep meditation skills, spirituality and other various topics were covered as part of the overall curriculum aimed at creating better warriors. A primary reason for this diverse topic coverage is that it more accurately reflects the totality of the human existence. In other words, there is more to the warrior than just the warrior skills. The citizen soldier may have a regular day job and only solider part time. There are family, church and community pressures that create unique stressors. Whether we choose to acknowledge it or not, we are creatures of the mind, the body and the spirit. Modern Western society chooses to isolate and separate those elements from each other.

While it has been some years since I attended Basic Training and Infantry School at Fort Benning, Georgia, I do not recall much training outside the skills necessary to perform my job as an enlisted infantryman. This is a necessary sacrifice in the 14 weeks of fun, but evidence of the failure to create a more balanced, and therefore more effective warrior. A by-product of this failure to address the warrior in total is that they end up performing sub-optimally. During the Trojan Warrior project there are several references to conflicts that arise in teaching. Awareness disciplines not only make you more aware of yourself, but of your opponent too. This awareness extends beyond the physical senses. The Art of Aikido is about blending with the energy of your opponent, something you cannot do while keeping within your own shell. This concept of blending with the enemy runs very contrary to the

1. In Search of the Warrior Spirit, Richard Strozz-Heckler, pg 240

'meet head-on and defeat with overwhelming force' that is the American culture. The tensions in the Trojan Warrior program illustrate the disconnected existence of the Western Warrior. Sun Tzu puts it succinctly:

- Therefore I say: 'Know the enemy and know yourself; in a hundred battles you will never be in peril.
- When you are ignorant of the enemy but know yourself, your chances of winning or losing are equal.
- If ignorant both of your enemy and yourself, you are certain in every battle to be in peril.'[2]

There are several instances in the history of the United States' military where failure to understand the culture in general and the warrior culture specifically of either or both sides of a conflict have resulted in failed campaigns and excessive casualties.

Computer Warfare as a Martial Art

Using computers to fight computers is analogous to sword fighting. In both cases, you are using like weapons against each other for attack and defense. At the end of the engagement, what determines the winner is skill, not necessarily the person with the best sword. The 15th Century Samurai legend Musashi killed several of his opponents in single combat with a wooden practice sword known as a bokken.[3] While clearly armed with an inferior weapon, Musashi still survived and even excelled at defeating his opponents. The mention of the Samurai at this point is not accidental. The Samurai were arguably the best swordsmen of their time; and not just because of their swords. The Samurai were balanced warriors studying literature, arithmetic and calligraphy. In this context, Musashi wrote; "When you attain the Way of strategy, there will not be one thing you cannot see,"[4] and "...if you know the Way broadly you will see it in everything."[5] It is within this martial context that we begin to see the similarities between martial arts and Computer Network Attack (CNA)/Computer Network Defense (CND).

Attacking

In any sort of physical attack, the aggressor must extend beyond their own boundaries in order to execute an attack. If I keep my hands by my side, it is impossible for me to punch. There is another aspect to this, which is ki or the energy of life itself. Ki can be focused and even projected; for a true master of the Arts, they can win a match simply by showing up. In either case, ki or a physical attack, one concept is paramount; in order for me to attack I must extend my body and my ki beyond myself to do so. In the digital world this extension of energy is analogous to packets on the wire. In order for me to attack one computer from another, I must send traffic. The traffic flows on a wire become the Ki or energy of my attack. The ebb and flow of traffic between systems are no different to the ebb and flow of two individuals locked in single combat. At any point of the engagement attacker becomes the defender and vice versa. The point at when one person's ki stops, then the battle is over. Likewise, when the traffic stops, so to does the digital sparring.

2. The Art of War, Samuel B. Griffith translation, Offensive Strategy 31-33, pg 84
3. A Book of Five Rings, Victor Harris translation, various references in the Translator's Introduction
4. Ibid. Ground Book (One school – two swords), pg. 46
5. Ibid. Ground Book (The Benefit of the Two Characters reading "Strategy"), pg 47

Defending

Under current U.S. and several international laws, it is illegal for the owner/operator of information technology assets to attack other systems on the Internet. This maxim applies even when the owner/operator is under attack. In other words, there is no right to digital self defense. As you put servers on the Internet, you take all reasonable steps to protect them and then hope for the best. In the event that your servers are attacked, you may mitigate the attack, but under no circumstances are you allowed to counter strike. In some ways, this is very similar to some of the softer martial arts. For example, Aikido teaches you to use your opponent's energy against them.[6] That very statement implies that a true Aikido-ist cannot take action until he is attacked. In the same fashion, to master Aikido, you must first master yourself. Likewise, the defender of a network must master their environment and take steps to redirect attacks. Technologies such as intrusion prevention and load balancing help re-direct attack energy (traffic) in the hopes of minimizing the effect of the attack and its resulting damage. Ultimately, the network defender is like the Aikido master; in complete control of their environment and adept at using his opponents' energy against them.

Philosophy and Spiritualism

Those who engage in computer network attacks are colloquially referred to as hackers. Within the realm of hackers there are three general types or hats – black, white and grey. White hat hackers hack for the right side of the law. White hats include contractors, Department of Defense Red Teams and researchers. Black hats are those that hack for the 'other' side of the law. Black hats cover a wide array of individuals including those sponsored by organized crime and foreign militaries. As the name implies, grey hat hackers sit in both worlds; a little bit legal, a little bit illegal. Regardless of the color hat the hacker wears, there is one thing they all share in common and that is the philosophy of hacking.

Hacking is a singular pursuit. The proficiency at which a hacker operates is a direct reflection to the time and discipline they dedicate to their art. While hackers do sometimes work in teams, it is still up to the individual to perform to standard. Most hackers were probably not team sport players during school. The entire philosophy of hacking goes against collective cooperation. When hackers do work as teams, it is similar to a sniper/spotter pair. While a still a team, each member has very clear cut responsibilities and when target engagement is complete, there is no longer any need for a team. While no formal polling exists, it would be my guess that those of us who make a living in the CNA/CND world still function as individuals. We pursue individual sports such as the martial arts, golf, shooting or tennis; activities that, again, speak to your individual dedication and sacrifice rather than 'a great team or quarterback'.

This self-focus lends itself to the martial arts environment very well. Two of the basic tenants of the martial arts are self discipline coupled with the desire to perfect one's art through practice and learning. This is the same ethos found in hackers. There are few formal schools on computer network attacks (outside of those sponsored by various U.S. and foreign militaries). Furthermore, there is no ranking system within the hacker environment. Except for the script kiddies, or newbies, there is little way to distinguish the skills of one hacker from another without seeing them work. Therefore, it is up to the individual hacker to find teachers, self educate and learn by doing. Hackers are always looking to learn more. In a recent chat room, I found myself talking to a Romanian hacker who had compromised one

6. Aikido: The Way of Harmony, October 28, 1998, http://goinside.com/98/10/aiki.html

of my servers in the United Kingdom. Very early on in the conversation he asked if I could teach him. In an effort to provide a classroom he offered me limited access to one of the servers he compromised in Canada to see if I could teach him how to fully take over the system. Not only are hackers interested in learning more about systems, their native curiosity extends across many domains. At the recent Defcon hacker conference in Las Vegas, there were classes in lock picking, false ID's, safe cracking and the law as well as the traditional computer network attack/defend content. In short, hackers are self motivated to learn and do more across a wide knowledge domain. This drive is similar to martial artists who learn multiple styles or weapons. Within the current military establishment, this is similar to the psyche of the career Special Forces team member who is cross-trained in at least two different disciplines.

Conclusion 1

Computer network attack and defense is like any other arts martial and should be taught as such. In basic training I was taught to use my weapon with reasonable efficacy. There was no philosophy, no higher learning other than sight picture, breathing and trigger squeeze. That learning model works for a basic rifleman, but not for a Special Forces soldier or sniper. The mechanics and even the philosophy of the skill must be taught to operate at a higher degree of proficiency. Computer network attack and defense bears many similarities to traditional martial arts. These similarities provide a framework for formalizing attack and defend within a martial setting and give the overall skill set a greater framework. The Samurai became proficient in many diverse things due to an overall mindset; self discipline and self-education through practice. That mindset allowed them to master many weapons and art forms. While the sword holds a special place within the Samurai culture, it is ultimately a tool that is only as good as the person wielding it. United States military culture, especially at the special operations level already cultivates a similar self-discipline and self-education through practice. The conclusion and ultimate recommendation is to add CNA/CND into the regular list of weapons employed by operators and to treat it no different than unarmed or even armed solo combat.

Bringing Technology into the Body-Mind-Sprit Trilogy

Holism and Somatic Training

Before continuing, it is important that we understand some definitions as they relate to this paper. Integration relates to the harmonization of body, mind and spirit within the individual. Modern press calls this Somatics, from the Greek word Somatikos meaning 'of the body.' The use of the word today implies 'a philosophy of mind and body unity.' As Stozzi-Heckler points out:

> This is the human possibility of harmonizing body, mind, emotions and spirit. What somatics proposes is a fully integrated individual who embodies athletic prowess, emotional maturity, and a spiritual sensibility…increase[ing] our ability to be self-educating, self-healing and self-generating.[7]

It is this integrated existence that is the goal when I mention living a balanced life. While traditionally taught through the martial arts, there are now several individuals and companies providing somatic training.

7. Somatics in Cyberspace, Richard Strozzi-Heckler, pg 3

There is no question as to the benefit of somatic training to today's warrior. In fact, most are already familiar with the concept, albeit tangentially. The method of accurately firing a rifle is classic somatic training. Proper sight picture, breathing and trigger squeeze are essential to accurate marksmanship. The shooter must bring everything into synchronicity at the time of complete trigger pull in order to put rounds down range, where and when they are needed. Every time a round enters the 10 ring, the marksman has mastered body mind integration for that round. For most, the integration only lasts for that round, rounds or time on the range. True somatic training aims at having the warrior live and operate in such a state across all their domains of responsibility and functioning. As evidenced by the Trojan Warrior project, there was an overall increase of performance through somatic training and awareness disciplines.[8]

Prior to the advent of high tech war fighting, the body-mind-spirit trilogy represented the entire realm of the single warrior. Everything else was a tool. While the warrior trained in the principles of weapon use, they did so from a position of personal balance. In today's technology-centric conflict space, body-mind-spirit no longer represents the entire warrior realm. The United States has a society that is completely dependent on technology.

The over-reliance on technology extends itself to the warrior class. It is imperative that we find some way to bring technology into the body-mind-spirit arena in order to increase the warriors' efficacy across many operational domains.

Achieving balance and integration of body, mind and spirit is difficult enough. But the payoff of reaching that goal is immeasurable. Against this chaotic backdrop we must also add technology; and ubiquitous technology at that.

The Relationship of Technology to Body Mind Spirit

Ubiquitous technology quickly and easily throws all balance to the wind by its unpredictability and unreliability. Technology has inserted itself into every aspect of our lives. Our over-reliance on technology, coupled with its inherent instability creates great stress and unbalance. For example, think of the number of times your cell phone has dropped calls or how often your computer crashes and needs rebooted. Look at the complexity of cable, TV and home entertainment remotes; the DVD/DVR player at my house actually takes time to boot up before I can use it. In fact, at this year's Super Bowl party, my Window Media Center PC was connected to an LCD projector for the game. During the 2nd quarter it crashed and needed to be hard-reset (drop the power completely, plug in and reboot). Not a pleasant operation in a room full of Pittsburgh Steelers fans. In 1997, the USS Yorktown, a U.S. Navy Aegis Cruiser, had its propulsion systems crashed by an operating system error.[9] In 1998 a Galaxy-4 communications satellite failed. In 1999 a GE-3 satellite likewise failed.[10] Both failures were technology related and impacted paging and other communications for hours and days. This paper could easily focus on the numerous disruptions that technology failures have caused. In every instance, the failure caused great loss and created a great deal of havoc and stress. Even without technological failures, we live in times of unbalance and stress; this affects performance and decision making.

8. In Search of the Warrior Spirit, Richard Strozzi-Heckler, pg 309

9. http://www.gcn.com/print/17_17/33727-1.html. Note that there are conflicting reports as to whether or not the Yorktown returned to port under its own power.

10. http://www.cnn.com/TECH/space/9903/12/satellite.outage.03/index.html

Stressors affect the decision cycle. Research initiatives such as SPAWAR's TADMUS (Tactical Decision Making Under Stress) were created to study stress and its effects on decision making. The results are nothing new; any kind of stress impacts our ability to make sound decisions in a timely manner. Whether the stress is related to combat, family or job issues, financial or personal, the results are the same. While empirical studies are helpful, they are not as meaningful as examples from real life. It is a simple fact that trouble in one aspect of your life impacts your overall ability to operate at optimal performance. When a child is sick or there are family health issues, work suffers. When work becomes burdensome and more time is spent in airports than home, your family life suffers. The less fit you are, the more likely you are to get sick and impact both work and home. The examples continue; finances and job stress are the top two leading causes of stress according to a 2005 LifeCare Poll.[11] Forty three percent of adults suffer adverse health effects from stress (and that's a 1997 statistic).[12] According to some studies, spending on sleep aid drugs rose 19% in 2005, while drugs for treating ADHD in adults likewise rose over 30%.[13] Likewise, according to the HANES 1999-2000 data, two thirds of all adults in the U.S. are overweight with one-third being obese.[14]

The net result of these statistics is the simple truth that failure to maintain a balanced existence is part of our culture. As a culture, we work too hard, sleep too little and eat too much. As such, we operate below our optimal levels. Part of the balancing solution is the conscious integration of the various parts of our lives and acknowledging the interconnectedness of our existence. Conscious integration of body, mind and spirit is the key element to balancing. Once we are balanced, we perform better and maintain a higher quality of life. Furthermore, making decisions from a position of balance (physical or otherwise) is always better than the alternative. Balancing also extends beyond the self. A team built of such balanced individuals will simply perform better. We have all experienced the difficulties of team performance when one member is focused elsewhere or not able to perform at the same level as the rest of the team.

The case is made for the need for a more balanced existence through body-mind-spirit integration. However, we are a technological society with an even more high tech warrior class. The Trojan Warrior project produced remarkable results across many measurable attributes. The net result was a more balance warrior, a better performing team with a greater chance of mission success.[15] As Company Commander Thorne said about the program: "This training is designed to produce changes in lifestyle rather than impart knowledge for future use. In this regard it differs completely from most formal schooling our personnel have attended. Our greatest challenge in the future will be to find ways to prevent the closing of our soldiers' minds."[16]

Add now CNA/CND training as a martial art to the combined integration of body-mind-spirit. The goal is a balanced and centered warrior, confident in their self knowledge and adept on any battlefield, real or virtual. Expand this to a team and the benefits grow exponentially: a team that now has more options for mission completion because they operate from a center of knowledge that encompasses any aspect of a mission, a team that can blend digital and physical attack and defense

11. http://www.lifecare.com/news/archives/finances_stress.html
12. http://www.ontario.cmha.ca/content/about_mental_illness/mental_health.asp?cID=3963
13. http://www.medicinenet.com/script/main/art.asp?articlekey=47163
14. http://win.niddk.nih.gov/statistics/index.htm#preval
15. In Search of the Warrior Spirit, Richard Strozzi-Heckler, pg 309
16. Ibid. pg 310

in a fluid battle sphere. Computer attacks won't be carried out remotely by hackers in basements at Lackland. Digital surveillance and communications networks can be controlled by the same operators on site as part of the entry team.

Conclusion

Technology is a weapon, pure and simple. Just as everyone in the Army is taught the rifle, so too should they be taught the computer. The generation joining the ranks would have no problem making the transition from computer-as-tool to computer-as-weapon. At the basic ranks, simple skill awareness is enough. At the higher level of operators; Ranger and Special Forces, more formal training on the CNA/CND aspects should be integrated. Balancing body-mind-spirit and technology should be taught. Centered and balanced personnel operate from stronger positions.

Technology as a weapon and its relationship to the integration of body, mind, and spirit is very similar to that of the sword to the Samurai. A sword is a weapon, used to fight men holding other swords. The sword is both an offensive and defensive tool. The wielder of the sword who does so from a position of balance holds the advantage against one who is unbalanced. The sword is an extension of the body, controlled by the mind and defined by the spirit.

In the high tech war of CNA/CND, the sword is replaced by the computer. It is the weapon of the new Samurai and as such deserves to be taught alongside other martial pursuits.

The Samurai mastered the pen, the sword, their spirit and their bodies. The same model works today. Balance and center the warriors, teach them the new weapon and bring it into the fold. Create a team with greater operational capacity. We cannot predict the future; but the more futures we prepare for, the better.

The martial arts teach beyond the physical needs of self mastery. There are underlying philosophies and a spirituality that permeates the higher belt ranks. While rarely taught in the United States, the 'softer' sides of the arts are just as important as the kick and punch. One of the ultimate goals of the martial artist is mastery of self. When one operates from a position of balance and a centering that comes from deep introspection, you are not only a better martial artist, but a better person. This centering and balance will bleed over into all aspects of your life. The Samurai understood that one should master many things; body, mind, arts, and fighting. They made no distinction between them and treated them with equal intensity.

U.S. Foot and Mouth Disease Pandemic

Case Study

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"It's Not About Cows, It's the Economy!"

U.S. Agriculture

> Since September 11, the way we view terrorist threats has changed drastically, and the U.S. Government has taken on the task of seeking and destroying the means by which terrorists might try to launch future attacks. The United States is still vulnerable to attack in several areas—(1) governance, (2) telecommunications, (3) transportation, (4) water supplies, (5) food production, (6) food processing and (7) food distribution.[1]

Agriculture makes up between 13-15 percent of the Gross Domestic Product (GDP) of the United States and provides employment for nearly 15 percent of the population directly or indirectly. The average American citizen spends less than 11 percent of their disposable income on food, compared to the global average of 20 to 30 percent.[2] This dependency of the United States on agriculture and the relative inexpensiveness of foodstuffs would allow opportunities for terrorists, domestic or international to wreck havoc on American citizens and the economy. "American agribusiness is a cornerstone of our national security posture."[3] It provides enough food for domestic use as well as a major source of revenue in agricultural exports.

FMD Facts

Foot and Mouth Disease (FMD) is a "highly infectious viral disease which affects cattle, sheep, pigs and some wild animals such as deer, camelids and zoo animals including elephants,"and only infects cloven-hoofed animals.[4] FMD could affect approximately 60 species of wildlife and zoo animals and could have an enormous impact on our food animal production. There is also the possibility of the disease infecting wildlife and creating a permanent presence.[5]

1. O.S. Cupp, DE Walker, J Hillison: Agroterrorism in the U.S.: Key Security Challenge for the 21st Century. Biosecurity and Bioterrorism: Biodefense Strategy, Practice, and Science, Vol. 2, 2004.

2. H.S. Parker. Agricultural bioterrorism: A Federal Strategy to Meet the Threat, Washington, DC: Institute for National Strategic Studies, National Defense University, McNair Paper 65; 2002:x.

3. Agribusiness Group Paper, Industrial College of the Armed Forces, Industry Studies 2002, 21 November 2002, available from http://www.ndu.edu/icaf/industry/IS2002/2002%20Agribusiness1.htm , p. 5.

4. Ibid.

5. Dr. James Roth, DVM, Ph.D., "Hazards to Livestock", presentation during the Prevention Day of the International Symposium on Agroterrorism (ISA), 3 May 2005, Westin Crown Center, Kansas City, MO.

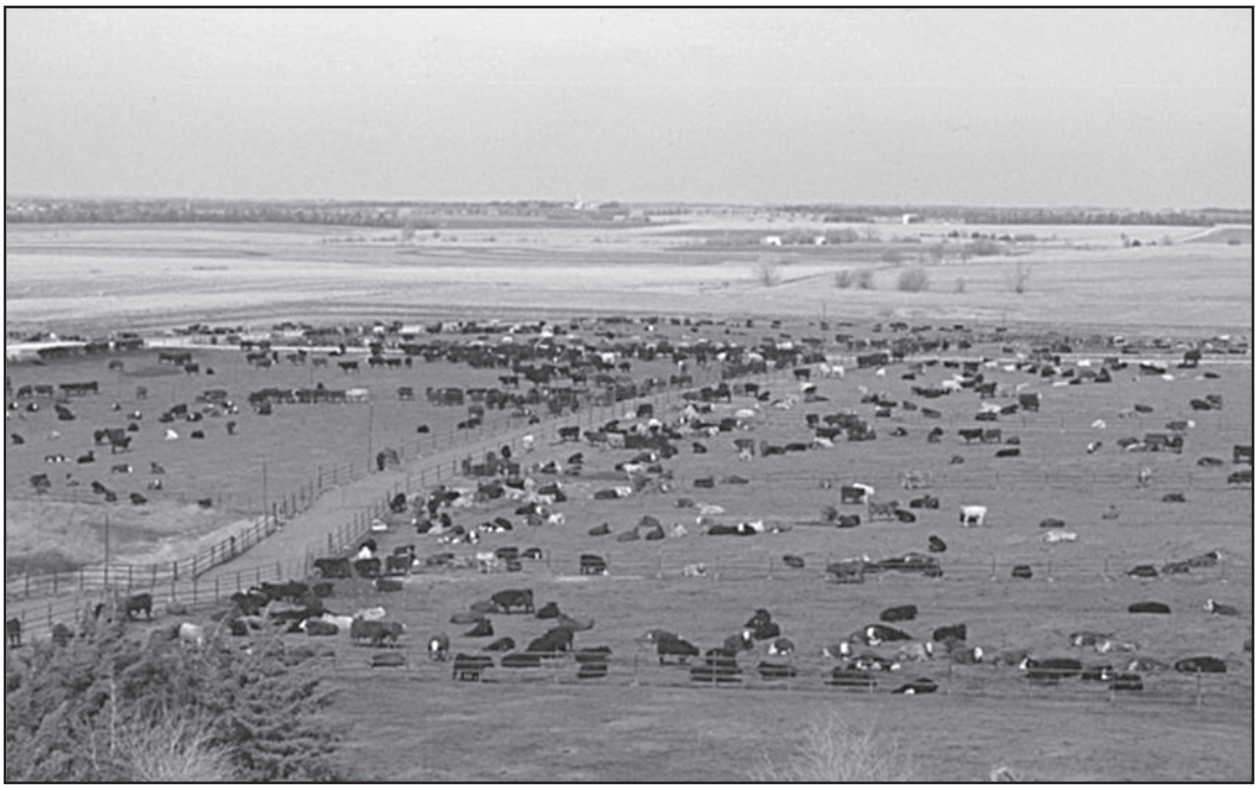

Figure 1. Almost 70% of the beef cattle that are finished for slaughter in the United States are located within a 200-square-mile area.[6]

Food-and-mouth disease (FMD) is an extremely contagious virus. It can spread through clothes, wind, and equipment and birds can carry the disease in their digestive tracts. FMD is resistant to common disinfectants, and can persist for over a year in infected premises and up to 12 weeks on clothing or in feed. FMD, however; is susceptible to changes in pH, sunlight, and heat. FMD is not known to affect humans severely.[7] There are seven major virus types labeled A, C, O, Asia1, Sat. 1, Sat. 2, and Sat. 3.[8]

The disease symptoms of FMD include vesicles (blisters) in the mouth and/or on the feet. It causes the hooves of cloven-hoofed animals to slough off. The animals also stop eating based on the vesicles located within the mouth. FMD is not normally fatal and kills only five percent of infected animals. However; due to the negative long term effects of an infected animal surviving (decreased milk production, decreased pregnancy rates, weight loss and lameness), the animals are usually destroyed.[9] Thus, culling or killing "infected" and "exposed" animals is the primary way of stopping the spread of the disease. Vaccinations exist for the disease but must match the type and subtype of the prevalent

6. R Casagrande, Viewpoint: Biological terrorism targeted at Agriculture: The Threat to US National Security, *The Non-Proliferation Review*, Fall-Winter 2000, p. 96.

7. Livestock and Poultry, FASonline, available from http://www.fax.usda.gov/dlp2/circular/1997/97-10LP/taiwanfmd.htm, p.1.

8 DEFRA, Animal Health and Welfare, available from http://www.defra.gov.uk/footandmouth/cases/1967a.htm , p. 2.

9 The United Kingdom Foot and Mouth Disease Crisis: Impact on Critical Infrastructure, available from http://www.psepc.gc.ca/prg/em/fmd-en.asp , p.2

FMD strain. Currently, there is no universal vaccine against FMD.[10] Much like the human flu vaccine developed every year, the vaccine only protects against one strain of the virus. FMD is also a very small virus that can easily ride air currents, affix to clothes, and is viable in straw and bedding materials.

Domestic Impact

The United States had an estimated "97.1 million head of cattle and calves in 2005."[11] This is up 1.7 percent from a year ago and the largest number since 2001. Nationally as of 1 January 2006, there were a total of 33.3 million beef cows in the United States." The rest of the cattle population includes dairy cattle used to produce milk and milk products. The number of cattle supported by both the United States and world economies produces a large number of pounds of domestically consumed and exported beef. For instance, the number one consumer of U.S. agriculture is McDonald's. McDonald's alone uses almost one billion pounds of beef, and 250,000,000 pounds of pork.[12] Hogs are also cloven-hoofed animals and would be affected by a pandemic of FMD. The U.S. hog inventory was approximately 61 million head as of December 2005.[13]

The per capita consumption of beef, pork, and lamb has increased over the past several years. The average consumption for beef in 2004 was almost 63 pounds per person, the average for pork was almost 50 pounds per person, and the average for lamb was almost one pound per person.[14] The loss of these cloven-hoofed animals for food and meat by-products would be very significant to every American's way of life.

World Impact

U.S. agriculture is responsible for over "$50.9 billion in 2001 to $76 billion by 2010"[15] in exports. It is one of only a few positive trade industries within the entire U.S. industrial base. Part of that trade is meat. Much of that meat is from cloven-hoofed animals including hogs, sheep, and cattle. Beef exports are $3.1 billion and pork exports are $1.3 billion of this amount per year.[16]

An idea of overall meat production is that the United States harvests annually 36 million cattle, 101 million head of hogs, about eight billion broilers, 300 million turkeys, and total exports of those products totaling about $7 billion.[17] Efficient production is another characteristic of U.S. beef production. The "U.S. has less than 10 percent of the world's cattle inventory, but produces nearly 25 percent of the world's beef supply."[18]

10. Foot and Mouth Disease (FMD), Aftosa. Fiebre, Center for Food and Security and Public Health, Iowa State University, 2003, last updated 26 October 2005, p. 3.

11. Livestock Monitor, A newsletter for Extension Staff, Livestock Marketing Information Center, State Extension Service in Cooperation with the USDA, 27 January 2006, p. 1.

12. Nutrition Flyer, "Proud to be US agriculture's #1 customer", 2006, McDonalds.

13. National Agriculture Statistics Service, available from http://www.nass.usda.gov/hi/lvstk/hogs.htm , p. 1.

14. Per Capita Consumption of Principal Foods, available from http://print.infoplease.com/ipa/A0104742.html , p. 1.

15. Agribusiness Group Paper, Industrial College of the Armed Forces, Industry Studies 2002, 21 November 2002, available from http://www.ndu.edu/icaf/industry/IS2002/2002%20Agribusiness1.htm , p. 5.

16. Dr. James Roth, DVM, PhD, "Hazards to Livestock," presentation during the Prevention Day of the International Symposium on Agroterrorism (ISA), 3 May 2005, Westin Crown Center, Kansas City, MO

17. Mike Robach, "Defending the Farm: Challenging Conventional Wisdom", Proceedings of the Institute of Food Technologists' First Annual food Protection & Defense Research Conference, 3-4 November 2005, Atlanta, Georgia, p. 2

18. Cattle Fax, U.S. Beef Council, March 2005, Beef Bytes, p. 2.

7 December 2004

> For the life of me, I cannot understand why the terrorists have not attacked our food supply; it is so easy to do.
>
> —Outgoing Health and Human Services Secretary Tommy Thompson

Background Information: United Kingdom 2001, Foot and Mouth Disease

"It's not a question of if, but a question of when."

Since this case study takes place in the future it is important to reflect on similar recent outbreaks of FMD. One such outbreak took place within the United Kingdom (UK) in the spring and summer of 2001. "The first case of the 2001 outbreak was confirmed in pigs in an abattoir (slaughterhouse) in Essex on 20 February 2001."[19] The slaughterhouse was not the source of the outbreak; it was traced back to the Burnside Farm in Northumberland. Ninety percent of the herd exhibited the severe foot lesions characteristic of FMD.[20] This farm at Heddon on the Wall in Northumberland is considered the most likely source of the primary outbreak. There are two ways the disease spread from this farm. One way was via airborne to sheep on a nearby farm and the other is the slaughterhouse when the hogs were processed. It was confirmed that over 50 farms "were already infected by the initial movement before disease was confirmed on 20 February 2001."[21]

The particular strain of virus identified as sub-type O PanAsiatic, is a highly virulent strain.[22] It is thought that this strain was introduced to the hogs through untreated, imported swill that they ingested. This caused the virus to infect some by not all of the hogs on this farm. "The United Kingdom FMD outbreak in 2001 started on 57 farms and directly cost the taxpayers £3 billion ($5.5 in current 2006 U.S. dollars)."[23] This includes only the direct costs and does not include the costs associated with tourism, psychological costs, and the genetic costs of wholesale culling of the sheep and the cattle.

"That outbreak was the worst experienced by Britain since proper records began and involved 2030 cases spread across the country. Some 6 million animals were culled (4.9 million sheep, 0.7 million cattle and 0.4 million pigs), which resulted in losses of some £3.1 billion to agriculture and the food chain. Some £2.5 billion was paid by the Government in compensation for slaughtered animals and payments for disposal and clean up costs. About 4 million of the animals were culled as part of disease control (1.3 million on infected premises, 1.5 million on farms defined as dangerous contacts not contiguous with the infected premises, and 1.2 million on contiguous premises, many of which were also defined as dangerous contacts). The others died under various types of 'welfare cull.' At one stage, it was suggested that in addition to the six million animals mentioned above there could have been up to 4 million further

19. The Report of the Chief Veterinary Officer, Animal Health 2001, Department for Environment, Food & Rural Affairs, Printed in the UK, May 2002, Chapter C1, p. 50.

20. Foot and Mouth Disease, available from http://www.eden.lsu.edu/issues_View.aspx?IssueID , p. 4.

21. The Report of the Chief Veterinary Officer, Animal Health 2001, Department for Environment, Food & Rural Affairs, Printed in the UK, May 2002, Chapter C1, p. 50.

22. DEFRA, Animal Health and Welfare, available from http://www.defra.gov.uk/footandmouth/cases/1967a.htm , p. 2.

23. National Audit Office, Department for Environment, Food and Rural Affairs, Foot and Mouth disease: Applying the Lessons, Report by the Comptroller and Auditor General, London: The Stationery Office, HC 184 Session 2004-2005, 2 February 2005, p. 1.

young animals killed 'at foot' (i.e. slaughtered but not counted). DEFRA believe that these estimates of additional 'at foot' animals are, however, likely to be high, because at least some of these young animals were included in their original figures. The foot-and-mouth outbreak had serious consequences upon tourism-in both city and country-and other rural industries." (The Royal Society – Infectious Diseases in Livestock, 2002.)[24]

Other Impacts

1. Military called upon to assist in the transportation and disposal of culled carcasses. Over 2000 soldiers (most from the 101st Logistic Brigade)[25] were used combating the outbreak.[26]
2. The concentration of livestock markets and slaughterhouses since the last outbreak in 1967 contributed to the increase in animal movements. This led to the speed at which the disease spread within the UK.
3. Prime Minister Tony Blair delayed general elections. After the elections, Parliament was in recess. More cases of FMD were then discovered. Some citizens felt that the recess allowed politicians to delay acting on the funding and help with future tourism recovery.[27]
4. The United Kingdom Department of the Environment had its named changed to the Department for Environment, Food, and Rural Affairs (DEFRA), and completely reorganized based upon perceptions of inept handling of the FMD outbreak.
5. Farmers often cited bringing infected animals to their farm in order to obtain the FMD infection and subsequent governmental compensation payments.
6. The massive carcass disposal problem with both infected and exposed farms led to problems in disease control, communication, and public perception.[28]
7. The numbers of cases increased exponentially from the beginning; it became clear that logistically, on-farm burial, and burning even supplemented with rendering, was failing

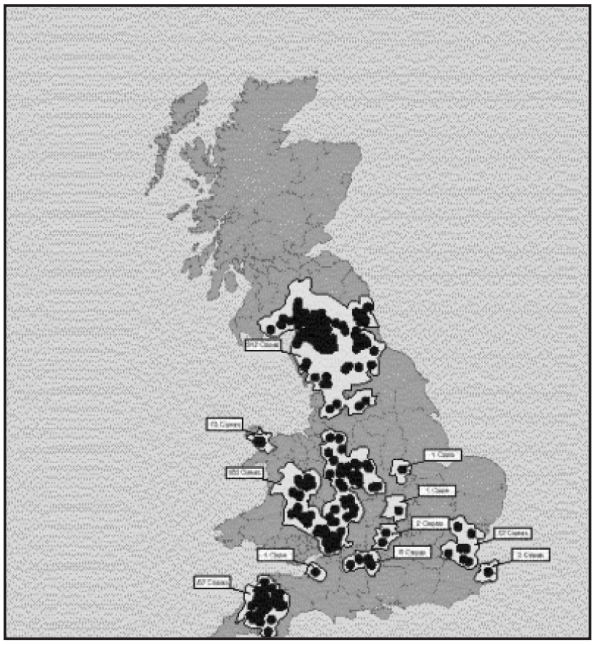

Figure 2. The solid dots represent confirmed cases of FMD as of 31 March 2001.[29]

24. The Report of the Chief Veterinary Officer, Animal Health 2001, Department for Environment, Food & Rural Affairs, Printed in the UK, May 2002, Chapter C1, p. 50.

25. DEFRA, Animal Health and Welfare, available from http://www.defra.gov.uk/footandmouth/cases/1967a.htm, p. 2.

26. National Audit Office, Department for Environment, Food and Rural Affairs, Foot and Mouth disease: Applying the Lessons, Report by the Comptroller and Auditor General, London: The Stationery Office, HC 184 Session 2004-2005, 2 February 2005, p. 1.

27. Foot and Mouth disease, available from http://www.eden.lsu.edu/issues_View.aspx?IssueID, p. 4.

28. DEFRA, Animal Health and Welfare: FMD Data Archive, available from: http://footandmouth.csl.gov.uk/, p. 1.

29. The United Kingdom Foot and Mouth Disease Crisis: Impact on Critical Infrastructure, available from http://www.psepc.gc.ca/prg/em/fmd-en.asp, p. 4.

to keep up with the numbers of culled animals. Mass burn sites and burial sites were then established.[30]

8. The EU banned all imports of UK meat products.

Background Information: Taiwan, 1997, Foot and Mouth Disease

"A safe, cheap supply of meat in the United States will not be cheap anymore."

Taiwan was a major player in the international pork market, ranking as the third largest pork exporter in the world during 1996. The United States and Denmark were the only other countries who exported more pork. Taiwan exported 30 percent of its total production, including 95 percent bound for Japan.[31] That amount made up 41 percent of Japan's total imports.[32] Only 3-4 percent of the U.S. pork production is exported for comparison.[33]

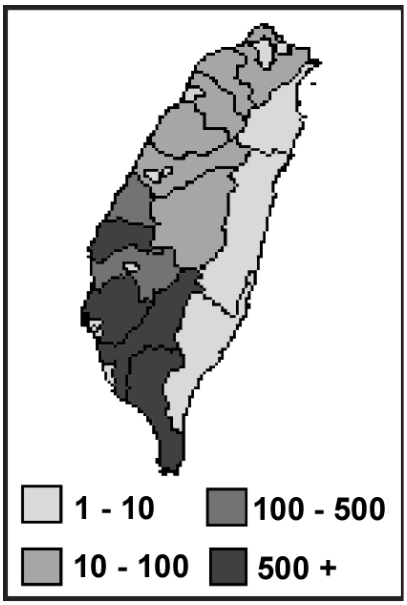

Figure 3. Number of farms affected in the Taiwan FMD outbreak.[36]

The outbreak started with a suspected case reported on a pig farm in Hsinchu Prefecture on 14 March 1997. The second case was in the Prefecture on 17 March, and the third in Taoyuan Prefecture on 18 March. The latter two cases also involved pigs.

On 20 March 1997, Taiwan announced an export ban on its pork once the FMD outbreak was confirmed by the Taiwan Animal Health Research Institute. This strain of FMD only affected pigs.[34] By the end of March, 1300 hog farms scattered in 15 western prefectures and cities were infected.[35] Approximately 3.8 million hogs were destroyed throughout the Spring of 1997.[37] At the time of the outbreak, Taiwan had only 40,000 doses of vaccine on hand to immunize a herd of 10 million head. This was further complicated by controversies over the type and source of vaccine purchased, and over the distribution of the vaccine.[38]

30. Gordon Hickman, Neil Hughes, FMD Joint Co-ordination Centre, Page Street, Carcase disposal: A Major Problem of the 2001 FMD Outbreak, available from http://www.defra.gov.uk/animalh/svj/fmd/pages27-40.pdf , p. 30.

31. Livestock and Poultry, FASonline, available from http://www.fax.usda.gov/dlp2/circular/1997/97-10LP/taiwanfmd.htm , p.1, accessed on 10 August 2006.

32. Taiwan's Hog Industry – 3 years After Disease Outbreak, Agricultural Outlook, October 2000, Economic Research Service, USDA, p.20.

33. Foreign Animal Disease Report, Summer 1998, United States Department of Agriculture, Animal and Plant Health Inspection Service, p.46.

34. Vansickle, US Not Immune to Foreign Diseases, National Hog Farmer, 1 February 1998, p.2.

35. Dr. Happy Shieh, DVM, Ph.D., Permanent Delegate from Taipei, China to the OIE, Update on Foot-and-Mouth Disease Outbreaks in Taipei, China, 22 May 1997, available from http://ss.niah.affrc.go.jp/disease/FMD/taiwan-e.html , p.1, accessed on 24 April 2006.

36. Ibid.

37. Foot and Mouth Disease, Extension Disaster Education Network, www.eden.lsu.edu, page 5, accessed on 12 July 2006.

38. Livestock and Poultry, FASonline, available from http://www.fax.usda.gov/dlp2/circular/1997/97-10LP/taiwanfmd.htm , p.2, accessed on 10 August 2006.

Other Impacts

1. FMD outbreak virtually destroyed the Taiwan pork export market worth $.6 billion per year. This FMD occurrence permanently changed Taiwan from a pork exporter to a pork importer.
2. Pacific Rim countries were required to import pork from other countries to make up shortfall of Taiwan loss as a source of supply.
3. Taiwan consumers were very concerned about food safety and the effect on human health. Despite assurances by the government, consumers were very skeptical and the demand for domestic pork fell.
4. This FMD strain only affected hogs and was named the O/Taiwan/1997. Testing concluded that O/Taiwan/1997 was a strain of virus also present in China.[39]
5. Direct costs included $3.8 billion in vaccinations, disposal of hogs, compensation to farmers, and loss in revenue to export ban.[40]
6. The GDP of Taiwan was reduced by $14.34 billion and the economic growth rate was adjusted by -.5% for 1997.[41]
7. Indemnity payments offered to farmers for swine infected with FMD were often more than the market value of the hogs, leading many farmers to intentionally introduce FMD to their farms.[42]
8. The most damaging impact of the FMD outbreak was that it practically eliminated Taiwanese pork in the Japanese market.[43]

39. Taiwan's Hog Industry – 3 years After Disease Outbreak, Agricultural Outlook, October 2000, Economic Research Service, USDA, p.21.

40. Hui-Shung Chang, Chung-Jen Hsia, Garry Griffith, "The FMD Outbreak in the Taiwanese Pig Industry and the Demand for Beef Imports into Taiwan, University of New England, 2005, p.5.

41. Ibid.

42. Foot and Mouth Disease, Extension Disaster Education Network, www.eden.lsu.edu, p. 5.

43. Expanding Pork Trade Potential In Asia, available from http://www.fapri.org/bulletin/Mar99/ExpandingPork.htm, p. 1.

FMD Case Study

The case study is a future incident that takes place within the USNORTHCOM; participants are part of a standing Interagency Operational Planning Team (IOPT) within the Joint Task Force-Civil Support (JTF-CS). The participants represent Department of Homeland Security (DHS), Department of Justice (DOJ), Department of Agriculture (USDA), Department of the Interior (DOI), Department of Transportation (DOT), Department of Defense (DOD), and Department of Commerce (DOC) action officers.

It is also noted that this scenario will impact the following Proteus Insights:

1. Starlight – insight exaggerating the psychological plane of influence. Leaders must know that managing the information surrounding an agricultural incident would significantly influence the world's view of the United States.
2. Sanctuary – insight across the terrestrial, and especially the psychological planes of influence. The threshold of repercussions to terrorists is low for committing an agroterrorist act.
3. Veracity – insight across the terrestrial and, most definitely, the psychological planes of influence. Natural outbreaks mimic actual possible attacks. The simple act of confirming or denying that an incident impacting the food chain occurred would be an emotionally-filled and high-stakes decision.
4. Herds – insights across the terrestrial, virtual, and psychological planes of influence. People will sympathize more because citizens will not necessarily die in this incident. This reflects the fickle nature of public opinion and how a certain terrorist act may actually cause support or at least tacit acceptance of the attackers.
5. Wealth – insight, it's about the economy, not cows. A safe, cheap supply of meat in the United States will not be cheap anymore. The impact on the economy also travels across the terrestrial, virtual, and psychological planes of influence.

The following situation is what could occur in the initial stages of an outbreak of Foot and Mouth Disease (FMD) in the United States.

A Foot and Mouth Disease Imminent Catastrophe (1st Stage)

Dateline: 15 May 2009

World News

Iraq, Afghanistan, and the Horn of Africa: There are approximately 120,000 United States troops deployed in Iraq. The number fluctuated over the past three years, but has stayed between 110,000 to 130,000 troops. There are plans to reduce this number based on the last presidential election. However, no details on when or how many troops will return to the United States are available at this time. In Afghanistan, approximately 20,000 U.S. troops are in the NATO task force and are still fighting remnants of the Taliban and Al Qaeda. Recently, the Muslim Fundamentalists (Islamic Courts Militia) that took control of Mogadishu, Somalia in 2006 are fighting Ethiopian troops surrounding the city of Baidoa. This is the site where the Somalia Transitional Federal Government (TFG) tried unsuccessfully to establish UN sanctioned control of Somalia after being driven from the city of Mogadishu in 2005. Currently, the U.S.-led Combined Joint Task Force – Horn of Africa (CJTF-HOA) is still conducting humanitarian projects in an around the area of Mandera and Ishmili, both in Ethiopia but near the city of Baidoa. The Department of Defense is evaluating the viability of keeping the troops deployed and continuing humanitarian operations in Ethiopia.

Iran: Tensions with Iran continue to increase based on another round of UN sanctions passed in April 2009. These sanctions are in response to the continued Iranian nuclear research program. The oil revenue for Iran has decreased over 30 percent in the past 18 months. Ayatollah Khamenei, Supreme Leader of Iran became severely ill. This is further complicated by the election of a number of radical members in October 2006, to The Assembly of Experts (the body who elects the Supreme Leader). A large number of them are calling for the President Mahmoud Ahmadinejad to temporarily take over duties as the Supreme Leader based on the current economic and political strains on Iran.

North Korea: North Korea tested its Taepongdong 3 on 15 April 2009 to celebrate the birth of their first leader Kim Il Sung. Kim Il Sung is the communist dictator who passed on leadership of North Korea to his son Kim Jun Il prior to his death in 1994. The missile launch was successful. No details as of now how far the missile actually flew into the Pacific Ocean. Initial reports state that the missile has a range of reaching the U.S. Northwest. It is estimated that North Korea has developed enough fissionable material for 30 nuclear devices of varying yield grades.

US News

Day 7

Several farms around Guymon OK, Amarillo TX, and Dodge City KS have suspected cases of FMD. Samples from these animals are sent to state and federal animal testing laboratories. Since the legislation mandating tagging of all cloven-hoofed animals failed in the House of Representatives in

2008, tracking of most animals that came to and from these herds is difficult at best. This is the first time FMD has affected the continental United States since 1929.

Day 8

Rumors of FMD disease begin to circulate throughout the cable, network, and print media. A number of state, local, and federal elected politicians conduct press conferences to inform their constituents that the rumors are false and try to reduce possible panic.

Day 9

A USDA veterinarian states during an impromptu news conference "that if FMD is here then the United States as we know it will cease to exist." A number of analysts in Washington DC and the Center for Disease Control confirm this scenario.

Day 10

Within 10 days, Plum Island Animal Disease Center (PIADC), NY (A level-4 Biohazard facility) confirms that the three case herds are positive for Foot and Mouth Disease. This is a particular virulent strain identified as subtype Pan Asiatic O. By the time these symptoms are verified as FMD, there are several hundred suspected cases throughout the Southeast, Midwest, and Southwest states. These cases now include beef cattle, dairy cattle, hogs, and sheep.

States React

Upon official notification from PIADC, several Midwest and Southeast governors declared "a State of Emergency" in their respective states and alerted their National Guard assets to begin closing state borders in order to stem the outbreak of the disease. Interstates 95, 80, 70, 35, 29, 64, and 75 are closed at state borders. All vehicles containing meat products or farm assets were stopped and turned around. National Guard troops were inspecting all vehicles. Chief Executive Officers (CEOs) from a number of trucking firms including Estes, Schneider, JB Hunt, Yellow Freight, and ABF Freight have called for the Federal Government to open up all interstate traffic.

The Secretary of the Department of Homeland Defense and the Secretary of Agriculture issued a joint statement. The statement reassured U.S. citizens that efforts were underway to control the spread of FMD. A stop movement order is being readied for issue to certain portions of the United States in order to help stop the expansion of the disease.

Markets React

Futures for live cattle and pork bellies on the Chicago Mercantile Exchange were up computer-regulated limits for the third day in a row, after the FMD confirmation announcement. The U.S. dollar continued to fall sharply in the Nikkei, His-Hang Seng, and British FTSE markets. The Dow Jones Industrial average fell ten percent today.

Day 11

Major riots broke out in large metropolitan areas especially around warehouse club stores such as Costco and Sam's where bulk beef, pork, and lamb are sold. Portions of the cities of New York, Chicago, Los Angeles, Miami, and New Orleans were being patrolled by National Guard forces from their respective States. Wal-Mart pleads with the Federal Government to have distribution trucks let through the road blocks in order to deliver food to major cities. Most cities do not have more than seven days of food within the local area at any one time. The Dow Jones Industrial average fell another ten percent today.

Day 14

Initial Event Discovered

SPRINGFIELD/BRANSON AIRPORT/ SGF, MO: Two individuals pick up international freight from the air cargo terminal. Their final destination at this time is not known. The shipment they carried passed through U.S. customs without proper USDA inspection. Upon investigation 14 days after the fact, this shipment contained contaminated animal products (offal - including skins, rendered fat, and salt-cured meat products) with the Foot-and-Mouth Disease (FMD). The source of the products is unknown. No groups either domestically or internationally have taken responsibility for transporting the suspected disease into the United States.

Day 21

Fast Food Restaurants

The top six major fast food restaurants (including Wendy's, McDonald's, Burger King, Taco Bell, Hardee's, and Arby's) filed for bankruptcy on 5 June 2009 based on the rising cost of FMD free beef. The prospects for domestically grown beef supplying these chains looks remote for the next two years based on the mass culling of animals. The market conditions are such that beef that is certified FMD free is now selling at $10.25 on the hoof and selling at over $50.00 a pound for ground beef once it is processed.

Black markets for red meat

Supplies of the FMD-free meat are very limited and some black markets are operating in the Southwest and Northwest. These private illegal markets are selling meat smuggled into the United States from Mexico and Canada respectively. National Guard forces put into place to stop the flow of illegal immigrants by President Bush in 2006 were sent back to their respective states in 2008. Now National Guard assets are being federalized to be sent back again. States that are currently trying to restrict transportation in order to halt the spread of the disease are now balking at the federalization of troops for missions at both the Canadian and Mexican borders.

Day 25

The USDA will certify 30 different meat packing plants that had existing meat inventories prior to the FMD outbreak. This is certified "FMD-Free" meat that is safe to eat. Several food chains are selling

all their red meat based on market demands. Some higher quality cuts of beef some as high as $100.00 a pound. Pork and lamb are similarly priced.

Day 30

Several Chief Executive Officers (CEOs) from a number of trucking firms including Estes, Schneider, JB Hunt, Yellow Freight, and ABF Freight requested to help federal officials in a "Civil Reserve Air Fleet (CRAF)-like scenario" to move carcasses to burn and burial pits within the United States.

A Foot and Mouth Disease Catastrophe (2nd Stage)

"People will sympathize more because humans will not necessarily die."

Dateline: 20 November 2009

World News

Iraq, Afghanistan, and the Horn of Africa: There are still approximately 120,000 U.S. troops deployed in Iraq. The next round of deployments were delayed until the federal government determines if some of those forces may be used in the current FMD crisis within the United States. All troops deployed to Iraq and Afghanistan have been instructed that their tours are now extended for the "duration of the crisis plus 90 days." On 23 October 2009, several CJTF-HOA civil affairs soldiers were attacked and injured by the Al Qaeda-sponsored Al Ittihad Al Islami – Ogaden (AIAI-O) radical Muslim group near Kelafo, Ethiopia. No updates on their condition are available. Currently CJTF-HOA is removing troops from the Ogaden region based on instructions from the U.S. Ambassador to Ethiopia. DoD is now requesting assistance from other coalition partners in the CJTF-HOA mission to increase their presence in the region. Ethiopian soldiers and armored vehicles battled with Muslim Fundamentalists (Islamic Courts Militia) southwest of Baidoa over the past several weeks. Recently, Eritrea has initiated steps to formally recognize the Islamic Courts Militia as the sovereign government of Somalia.

Lebanon: The United States just sent 500 troops to the UN Interim Force in Lebanon II (UNIFIL II) which began in September 2006. This replaced the UN Interim Force in Lebanon (UNIFIL) which began in 1978. The U.S. troops replaced French troops in an agreement recently brokered by the President.

Iran: Ayatollah Khamenei, Supreme Leader of Iran is critically ill. The Assembly of Experts (the body who elects the Supreme Leader) is now calling for a more permanent solution to the void created by Khamenei's illness. Some want President Mahmoud Ahmadinejad to permanently take over duties as the Supreme Leader. Other members of the Assembly of Experts want to elect a new Supreme Leader from the ranks of the clergy.

North Korea: The Taepongdong 3 missile North Korea tested on 15 April 2009, did achieve ballistic height to reach the U.S. Northwest. A number of UN members are calling for increase sanctions against North Korea. However, China is calling for tolerance and other diplomatic means before instituting devastating UN-enforced trade sanctions.

Japan, Korea, and Singapore: All of the Pacific Rim countries who imported a large amount of U.S. beef and pork voted to continue their six-month-long ban on all U.S. meat products. This has caused a loss of $1.2 billion in revenues to U.S. meat trading export companies.

US News

DHS JOC Update: OMAHA, NEBRASKA, OPERATION PRAIRIE SAGE

Nebraska, Iowa, Kansas, Texas, Oklahoma, and Colorado stopped interstate traffic for seven weeks to try and contain/control the outbreak. Only interstate transportation via air was allowed. This is the first time since the Civil War that ground movement between states is halted. The total cost losses could exceed $25-35 billion within 15 months. Americans are now being told to pay over $20 billion in higher meat prices in each of the next three years. This equates to Americans now spending 30-40 percent of their disposable income on food versus 11 percent prior to the FMD outbreak. This increase will continue for at least the next three years. Some farmers began slaughtering their animals to take advantage of local unregulated "FMD-Free (F2) Meat Markets." Currently, the U.S. dollar has fallen by 35 percent against all major international currencies.

Day 162

The U.S. National School Lunch Program (NSLP) is insolvent based on the lack of available red meat. The program budget is over $10 billion. The USDA program has battled the FMD crisis and other programs for budgetary funding. A number of states are buying replacement items to supplement the National School Lunch program but can only make up about 50 percent of the protein and caloric shortfalls created by the FMD crisis.

Day 169

Several beef cattle, hog, and sheep associations within the United States are calling for federal funding and use of federal facilities to save the genetic material that is being destroyed in the mass cullings of beef, hogs, and sheep. Some primary genetic material will be lost due to lack of prior cryogenic storage.

Day 175

Since the outbreak of FMD twenty-seven weeks ago, economic losses are in the tens of billions. Costs include wholesale destruction of animals, lost sales, and loss of exports. Gas prices in some areas have soared, while in other areas of the United States they have actually reduced by over .50 per gallon.

Day 180

Several logistic units scheduled for deployment to Iraq are now under the control of OPERATION PRAIRIE SAGE in support of operations to destroy animal carcasses.

Day 189

Fast Food Restaurants

The top six major fast food restaurants (including Wendy's, McDonald's, Burger King, Taco Bell, Hardee's, and Arby's) who filed for bankruptcy on 5 June 2009 were given federally-guaranteed loans to continue operations. Also, several Chief Executive Officers (CEOs) from a number of trucking firms including Estes, Schneider, JB Hunt, Yellow Freight, and ABF Freight requested to help federal officials in a "CRAF-like scenario" to move carcasses to burn and burial pits within the United States.

Day 210

The USDA had to reduce to 10 different meatpacking plants that they are certifying as containing FMD-free meat. This is due to the reduction of resources generated by the federal stop movement order in effect on many of the interstates within the United States.

A Foot and Mouth Disease Catastrophe (3rd Stage)

"The threshold of repercussions is low for committing an agroterrorist act."

Dateline: 20 March 2010, World Trade Conference

World News

Iraq, Afghanistan, and the Horn of Africa: There are approximately 120,000 U.S. troops still deployed in Iraq. All troops deployed to Iraq and Afghanistan are continuing their extensions for the "duration of the FMD crisis plus 90 days." Approximately 2,000 additional troops have been deployed to support the very tenuous situation in the Horn of Africa. Attacks on CJTF-HOA troops in Ethiopia increased by the Al Qaeda sponsored Al Ittihad Al Islami – Ogaden (AIAI-O) radical Muslim group. The U.S. ambassador to Ethiopia allowed CJTF-HOA troops to stay in designated "safe zones" to continue humanitarian operations. The introduction of Eritrea advisory forces into Mogadishu, Somalia in January 2010 increased already high tensions between Ethiopia and Somalia's Muslim Fundamentalists (Islamic Courts Militia).

Iran: President Mahmoud Ahmadinejad has permanently taken over duties as the Supreme Leader of Iran. Tensions between Iran and Israel continue to increase over Hezbollah attacks into Israel, despite the UNIFIL II mission in southern Lebanon.

North Korea: A large underground explosion occurred in northwest North Korea in February 2010. North Korean officials are denying that is was a successful test of a nuclear weapon. Satellite imagery confirms that the explosion created a crater approximately 2 km across to form near the remote city of Musan.

NAIROBI, KENYA: Since the outbreak of FMD with in the United States during May 2009, the World Trade Organization (WTO) has been trying to determine the extent of trade restrictions on future U.S. meat exports. Since the failure of the WTO Doha negotiations in 2006 and the subsequent lack of participation in the Madrid WTO negotiations in 2008, the United States is still

at odds with the EU and other nations on major agricultural policy issues. U.S. delegates assure the WTO that FMD is now under control in the continental United States.

US News

Day 290

Fast Food Restaurants

Even though the top six major fast food restaurants (including Wendy's, McDonald's, Burger King, Taco Bell, Hardee's, and Arby's) who filed for bankruptcy on 5 June 2009 were given federally-guaranteed loans to continue operations, some are still expected to fail. This contraction of fast food restaurants will dramatically affect the availability of food for summer travelers and a decrease in minimum wage jobs for youth and seniors. It was originally hoped that the federal loans would help the fast food restaurants maintain operations to increase tourism and help to the government show citizens that the United States was back to normal after the FMD outbreak.

Day 300

All segments of the meat industry food chain are completely "transformed." Tagging of all four-legged animals from hoof to processor will be the standard within three months. The federal stop movement order is lifted in all affected regions. This allows the first free flow of commerce and people in almost ten months.

Day 305

The USDA special task force is certifying all animals, as FMD free, moving from one state to another for further processing. Destruction of all "infected and exposed" animals is almost complete. Also, new customs procedures are in place, training of veterinarians on Foreign Animal Diseases (FAD) is federally subsidized, and farmers are being certified as FMD-free providers. The $5.1 billion U.S. beef and pork export industries are in complete disarray. The economic effects of the FMD outbreak, like loss of revenues through tourism and overall agricultural trade are still being realized.

Day 340

Domestic Groups

The Animal Liberation Front (ALF) and the Earth Liberation Front (ELF) issued a joint statement calling for "the complete removal of meat from the U.S. diet and also ceasing of carcass disposal operations." Officials confirmed that a number of burn pyre and burial sites were vandalized by both groups in the previous months.

Day 365

U.S. markets were dealt another severe blow today. USDA veterinarians, supporting OPERATION PRAIRIE SAGE, conducting tests of wildlife in several Midwest states found that the PanAsiatic version of FMD "jumped" species. It was found in a number of elk, deer, and moose herds.

Case Study Methodology

Case study methodology is a good adult learner technique. It is a method of teaching that involves significant time outside the classroom reading and understanding the facts of a case. This allows classroom discussion to center around points that make up the case. The function of a case study methodology enables the student to conduct analysis, and then identify, evaluate, recommend, and finally discuss implementation of actions based on the case study. "Not only must a case provide sufficient detail to allow the student to grapple with the problem in a realistic way, but the case must also present the context and the protagonist in a rich fashion."[44]

This case study takes place in the not so distant future with elements of fact. Actual places, events that could happen, and the impact of the incident are all possible. All aspects of the U.S. agricultural system including exports, transportation, genetically-modified foods, imports, production, and policies are accurately and realistically detailed. The case study begins with the immediate aftermath of the incident and its effects. Initially, the incident is not identified as being purposeful or accidental. This natural occurrence versus terrorist act is one of the major issues concerning agroterrorism that requires immediate attention by policy and decision makers. After thorough discussion, the successive impacts of the second and third order effects are described. Students can evaluate their prior decisions and determine the implications for future events. A very brief synopsis of the initial incident and the second and third stages is enclosed. Actions taken during two similar outbreaks are discussed to familiarize the student audience and instructors with the subtle and substantial impacts that such an outbreak would have on the economy of the United States. "A key premise of the case method is that the skill required to apply principles and analytical techniques can best be learned by practicing these skills in the simulated context of a case."[45]

Teaching notes for this case study begin on the next page. These will enable the instructor to facilitate the discussion of students based on the data presented in the case study. "The teaching note is the written product of the instructor's class preparation. It becomes a contribution to education for other instructors to use."[46] This will also assist the instructor in fully developing the analysis of this case within the parameters of the Proteus Insights across the planes of influence and understand the effects across the entire joint, interagency, intergovernmental, and multinational environment (JIIM).

Using this case study will help improve students' understanding of a Homeland Security domestic incident during the conduct of consequence management. The case study is a future incident that takes place within the USNORTHCOM; participants are part of a standing Interagency Operational Planning Team (IOPT) within the Joint Task Force-Civil Support (JTF-CS). The participants could represent Department of Homeland Security (DHS), Department of Justice (DOJ), Department of Agriculture (USDA), Department of the Interior (DOI), Department of Transportation (DOT), Department of Defense, and Department of Commerce (DOC) action officers.

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44. Michael J. Roberts, "Developing a Teaching Case (Abridged)", Harvard Business School Publishing: Boston MA, 9-901-055, 28 June 2001, p.1.

45. Ibid, p. 5.

46. E. Raymond Corey, "Writing Cases and Teaching Notes", Harvard Business School Publishing: Boston, MA, 9-399-077, 5 November 1998, p.8.

Teaching Notes

Following the statements below are legislative and policy documents that relate directly to the events of a FMD outbreak. Students should exhibit familiarity with these documents and be able to relate possible outcomes or alternatives in the case study. Other valuable resources are the lessons learned from the Dark Winter Bioterrorism table-top exercise in 2001 and the report on High Plains Guardian table-top exercise from 2004.

This case study is a description of the "Perfect Storm" scenario of an agroterrorism event that could possibly jeopardize U.S. national security. The events described depend upon some inherent premises that are present in U.S. agriculture and policy. These include the following:

1. U.S. agriculture is nearly invisible, highly concentrated, vertically-integrated, and often Federal Trade Commission (FTC)-neglected industry.
2. The United States has a virtually unguarded food supply system.
3. The military's domestic response to support DHS is initially minimal and cannot increase appreciably based on deployments and force structure.
4. There are a limited number (300-400) of Foreign Animal Disease (FAD)-trained veterinarians in the United States to aid in detecting such a disease.
5. Doha WTO failure in 2006 may impact future farm policy and spending.
6. There is a continued lack of resources for customs and inspectors for food commodities.
7. There is a general lack of awareness of this type of problem and its second- and third- order effects.
8. Introducing a highly pathogenic virus like FMD will impact the United States for years with large portions of our nation affected.

Stafford Disaster Relief and Emergency Assistance Act

The Stafford Act authorizes the use of the military for disaster relief operations at the request of the state governor, but does not authorized the use of the military to perform law enforcement functions, which is ordinarily prohibited by the Posse Comitatus Act. However, the president may invoke other authorities, such as the Insurrection Act, to use federal troops to aid in executing the law. This act authorizes the President to make a wide range of federal aid available to states that are stricken by a natural or man-made disaster. This authority does not constitute an exception of the Posse Comitatus Act. The Stafford Act does not authorize using federal military forces to maintain law and order. In the event of a disaster that results in wide-scale deterioration of civil law and order, the authority to employ active duty troops to perform law enforcement functions must be found elsewhere.

The Posse Comitatus Act

The Constitution does not explicitly bar the use of military forces in civilian situations or in matter of law enforcement, but the United States has traditionally refrained from employing troops to enforce the law except in "cases of necessity." The Posse Comitatus Act punishes those who, "except in cases and under circumstances expressly authorized by the Constitution or Act of Congress, willfully use any part of the Army or the Air Force as a posse comitatus or otherwise to execute the laws."

Reserve Mobilization

Presidential Reserve Call-up (PRC): The president has the authority to involuntarily augment the active forces by a call-up of up to 200,000 members of the selected reserve for a period up to 270 days to meet mission requirements within the continental United States (CONUS) or overseas. The president must notify Congress within 24 hours and state the reason for his action.

Partial Mobilization: The President has the authority to mobilize no more than 1,000,000 reservists (units and individuals from all services), for 24 months or less, and the resources needed for their support to meet the requirements of war or other national emergency involving an external threat to national security.

Full Mobilization: Congress must declare that a state of national emergency exists to call up all forces, including Army Reserve and Army National Guard units, Individual Ready Reserve, Standby Reserve and members of the Retired Reserve, and the resources required for their support. The duration is the length of the emergency plus six months.

Total Mobilization: Once a state of national emergency exists. Congress can extend full mobilization by activating and organizing additional units beyond the currently approved force structure. Total mobilization brings the industrial base up to full capacity to provide the additional resources, equipment and production facilities needed to support the armed forces of the nation, as done in World War II. Total mobilization involves not only the AC and RC but the entire Militia of the United States. The Militia of the United States consists of the Organized Militia and the Unorganized Militia. The Organized Militia consists of the National Guard and the Naval Militia. The Unorganized Militia consists of every able-bodied male citizen or person wishing to be a citizen between the ages of 17 and 45 as well as female members of the National Guard. Exceptions to this are: The Vice President; Judicial and Executive officers of the United States, territories, and Puerto Rico; postal employees/contractors; custom house agents; workers in armories, arsenals, and naval shipyards; pilots on navigable waterways; and mariners in the sea service of a citizen or a merchant in the United States.

The Army Chief of Staff set a goal for the Reserve Components to achieve and sustain an 85 percent DMOSQ and Professional Development (PDE) qualification level by fiscal year 2005. Recent increases in funding have raised both DMOSQ and PDE qualification rates by several percentage

	PRC	PARTIAL MOBILIZATION	FULL MOBILIZATION
AUTHORITY	10 USC 12304 (Presidential)	10 USC 12302 (Presidential)	10 USC 12301(a) (Congressional)
NUMBER SUBJECT TO INVOLUNTARY CALL-UP	200,000 (Includes 30K IRR)	1,000,000	UNLIMITED
RESERVE CATEGORIES SUBJECT TO CALL-UP	READY RESERVE (Units, IMAs, AGRs, Special Category IRR)	READY RESERVE (Units, IMAs, AGRs, + IRR/ING)	TOTAL RESERVE (Units, IMAs, AGRs, IRR/ING, + Retirees, Standby Reserve)
LENGTH OF TIME OF CALL-UP	270 DAYS	24 MONTHS	DURATION OF WAR/ EMERGENCY PLUS 6 MONTHS

Table 1. Reserve Mobilization

points. The Army Reserve is projecting that DMOSQ rates will climb to 85 percent by FY 2005 and NCOES qualification rates will reach 85 percent by FY 2004 due to programmed increases to funding levels. The Army Reserve's readiness status continues to improve. As of April, 2001, 76 percent of units meet deployment standards, a 9 percent increase over the previous two years. The Force Support Package (FSP) units, those which scheduled for early mobilization, average 88 percent deployable readiness. The Army Reserve continues to achieve a high number of units rated deployable, despite having the lowest level of full-time support of any reserve component."[47]

Federal Quarantine Law

Under the Public Health Service Act, the Secretary of Health and Human Services has the authority to make and enforce regulations necessary "to prevent the introduction, transmission, or spread of communicable diseases from foreign countries into the States or possessions, or from one State or possession into any other State or possession."

The Insurrection Act

This act authorizes the president to use the military to suppress an insurrection at the request of a state government, which is meant to fulfill the federal government's responsibility to protect states against "domestic violence." This act was used during the 1992 Los Angeles riots and during Hurricane Hugo in 1989, during which wide-spread looting was reported in St. Croix, Virgin Islands.

Presidential Decision Directive (PDD-39, 1995)

"Before 9/11, national policy on federal roles and responsibilities was set by PDD-39, which divided operational responsibilities between the FBI, which handled crisis management, and FEMA which handled consequence managements."[48] There is no single definition of consequence management; however, Presidential Decision Directive 39 (PDD-39) concerning terrorist use of weapons of mass destruction, divides the issue, home and abroad, into crisis response and consequence management.[49] Consequence management conceived in this document consists of the "ways and means to alleviate the short- and long-term physical, socio-economic, and psychological effects" of such an attack.[50] PDD 39 also designates the Federal Emergency Management Agency as the "lead organization for domestic consequence management, that agency usually requests military assistance."[51]

Presidential Decision Directive (PDD-62, 1995)

This directive creates a new and more systematic approach to fighting the terrorist threat of the next century. It reinforces the mission of the many U.S. agencies charged with roles in defeating terrorism; it also codifies and clarifies their activities in the wide range of U.S. counter-terrorism programs, from

47. US Army Reserve Mobilization, available from http://www.globalsecurity.org/military/agency/army/usar-mob.htm , p.2-3, accessed 10 August 2006.

48. Falkenrath, Richard, "Homeland Security and Consequence Management," The Challenge of Proliferation, A Report of the Aspen Strategy Group, Summer 2005, The Brookings Institution, p.131.

49. Seiple, Chris, "Consequence Management: Domestic Response to Weapons of Mass Destruction", Parameters, US Army War College Quarterly, Autumn 1997, p. 2.

50. Ibid.

51. Taylor, Scott R., MAJ, Rowe, Amy M, Maj, Lewis, Brian, M. CDR, "Consequence Management, In Need of a Timeout", Joint Forces Quarterly, Summer 1999, p. 81.

apprehension and prosecution of terrorists to increasing transportation security, enhancing response capabilities, and protecting the computer-based systems that lie at the heart of America's economy. The directive will help achieve the president's goal of ensuring that we meet the threat of terrorism in the 21st century with the same rigor that we have met military threats in this century.

The National Coordinator. To achieve this new level of integration in the fight against terror, PDD-62 establishes the office of the National Coordinator for Security, Infrastructure Protection, and Counter-Terrorism. The National Coordinator will oversee the broad variety of relevant polices and programs including such areas as counter-terrorism, protection of critical infrastructure, preparedness and consequence management for weapons of mass destruction. The National Coordinator will work within the National Security Council, report to the President through the Assistant to the President for National Security Affairs and produce for him an annual Security Preparedness Report. The National Coordinator will also provide advice regarding budgets for counter-terror programs and coordinate the development of guidelines that might be needed for crisis management.[52]

Homeland Security Presidential Directive: Critical Infrastructure Identification, Prioritization, and Protection (HSPD- 7, 2003)

"This directive establishes a national policy for Federal departments and agencies to identify and prioritize United States critical infrastructure and key resources and to protect them from terrorist attacks."[53]

"In carrying out the functions assigned in the Homeland Security Act of 2002, the Secretary shall be responsible for coordinating the overall national effort to enhance the protection of the critical infrastructure and key resources of the United States. The Secretary shall serve as the principal Federal official to lead, integrate, and coordinate implementation of efforts among Federal departments and agencies, State and local governments, and the private sector to protect critical infrastructure and key resources. (13) Consistent with this directive, the Secretary will identify, prioritize, and coordinate the protection of critical infrastructure and key resources with an emphasis on critical infrastructure and key resources that could be exploited to cause catastrophic health effects or mass casualties comparable to those from the use of a weapon of mass destruction."[54]

> "(18) Recognizing that each infrastructure sector possesses its own unique characteristics and operating models, there are designated Sector-Specific Agencies, including:
>
> (a) Department of Agriculture – agriculture, food (meat, poultry, egg products);
>
> (b) Health and Human Services – public health, healthcare, and food (other than meat, poultry, egg products);
>
> (c) Environmental Protection Agency – drinking water and water treatment systems;
>
> (d) Department of Energy – energy, including the production refining, storage, and distribution of oil and gas, and electric power except for commercial nuclear power facilities;

52. Combatting Terrorism: Presidential Decision Directive 62, available from http://www.au.af.mil/au/awc/awcgate/ciao/62factsheet.htm, p. 1, accessed on 10 August 2006.

53. Homeland Security Presidential Directive: Critical Infrastructure Identification, Prioritization, and Protection (HSPD- 7), available from http://www.whitehouse.gov/news/releases/2003/12/20031217-5.html , p. 1, accessed 10 August 2006.

54. Ibid.

(e) Department of the Treasury – banking and finance;

(f) Department of the Interior – national monuments and icons; and

(g) Department of Defense – defense industrial base."[55]

Homeland Security Presidential Directive 8: National Preparedness (HSPD-8, 2003)

This directive establishes policies to strengthen the preparedness of the United States to prevent and respond to threatened or actual domestic terrorist attacks, major disasters, and other emergencies by requiring a national domestic all-hazards preparedness goal, establishing mechanisms for improved delivery of federal preparedness assistance to state and local governments, and outlining actions to strengthen preparedness capabilities of federal, state, and local entities.

Homeland Security Presidential Directive 9: Defense of United States Agriculture and Food (HSPD-9, 2004)

This directive establishes a national policy to defend the agriculture and food system against attacks, major disasters, and other emergencies. As established in the Homeland Security Presidential Directive-7 (HSPD-7), the secretary of Homeland Security is responsible for coordinating the overall national effort to enhance the protection of infrastructure and key resources of the United States.

National Strategy for Homeland Security (2002)

The *National Strategy for Homeland Security* was published in 2002 shortly after the 9/11 attacks. This is the first National Strategy and "its purpose is to mobilize and organize our Nation to secure the U.S. homeland from terrorist attacks."[56] This being the first document of its kind, it lays out very general guidelines and means to help secure the U.S. homeland. One area of concern is the Means of Attack that a terrorist group could use. "Our terrorist enemies are constantly seeking new tactics or unexpected ways to carry out attacks."[57] One very significant means that is possible for use is the area of agriculture. "Biological agents can serve as a means of attack against humans as well as livestock and corps, inflicting casualties as well as economic damage."[58]

National Response Plan (2004)

One of the primary reasons for discussing this case study is to develop student knowledge in this area of Response and Recovery Phases of the National Response Plan, December 2004. The subject of this scenario was chosen because the current National Response Plan acknowledges only an unwritten Food and Agriculture Incident Annex.[59] This case study involves the consequence management especially the Recovery and Mitigation Actions within the Recovery Phase within the National Response Base Plan.[60]

55. Ibid.
56. Ibid.
57. Ibid, p.9.
58. Ibid.
59. National Response Plan, Department of Homeland Security, Incident Annexes, December 2004, p. xiii.
60. Ibid, p. 54-55.

Homeland Security Council Planning Scenarios (2004)

In partnership with the Department of Homeland Security (DHS), the federal interagency, and state and local homeland security agencies, has developed fifteen all-hazards planning scenarios for use in national, federal, state, and local homeland security preparedness activities. These scenarios are designed to the foundational structure for the development of national preparedness standards for which homeland security capabilities can be measured. These scenarios represent the evolving all-hazards threat picture, recognized that refinement and revision over time is necessary, and embody the capabilities necessary to respond to domestic incidents.

DOD Directive 3025.15 "Assistance to Civil Authorities", (1997)

"Establishes DoD policy and assigns responsibilities for providing military assistance to civil authorities."[61]

"Governs all DoD military assistance provided to civil authorities within the 50 States, District of Columbia, Commonwealth of Puerto Rico, U.S. possessions and territories, or any political subdivision thereof, including sensitive support requests under reference (d), civil disturbances under DoD Directive 3025.12, protection of key assets under DoD Directive 5160.54, DoD responses to civil emergencies under DoD Directive 3025.1, acts or threats of terrorism under DoD Directive 2000.12, and requests for aid to civil law enforcement authorities under DoD Directive 5525.5 (references (e) through (i))."[62]

"The Department of Defense shall cooperate with and provide military assistance to civil authorities as directed by and consistent with applicable law, Presidential Directives, Executive orders, and this Directive."[63]

"With the exception of immediate responses under imminently serious conditions, as provided in subparagraph 4.7.1., below, any support that requires the deployment of forces or equipment assigned to a Combatant Command by Secretary of Defense Memorandum (reference (j)), must be coordinated with the Chairman of the Joint Chiefs of Staff. The Chairman shall evaluate each request to use Combatant Command forces or equipment to determine if there is a significant issue requiring Secretary of Defense approval. Orders providing assistance to civil authorities that are approved by the Secretary of Defense involving the use of Combatant Command forces or equipment shall be issued through the Chairman of the Joint Chiefs of Staff. Upon Secretary of Defense approval, the Secretary of the Army, when designated "the DoD Executive Agent," shall implement and oversee DoD support in accordance with such approved orders."[64]

"This Directive does not address non-Federalized National Guard assets in support of local and/or State civil agencies approved by the Governor. However, there exists potential for such deployments to result in confrontation, use of lethal force, or national media attention. Therefore, the Director of Military Support (DOMS) shall keep the Chairman of the Joint Chiefs of Staff and the Secretary of Defense informed of such support."[65]

61. Department of Defense Directive 3025.15, 18 February 1997, available from http://www.dtic.mil/whs/directives/corres/rtf/d302515x.rtf, p.2, accessed 10 August 2006.

62. Ibid, p. 3.

63. Ibid.

64. Ibid.

65. Ibid, p.4.

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The Application of Strategic Stress Management in Winning the Peace

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To win one hundred victories in one hundred battles is not the acme of skill. To subdue the enemy without fighting is the supreme excellence.

– Sun Tsu

The Armed Forces of the United States are without peer in maneuver warfare. They dominate the battlefield and consistently prevail in the conventional operational and tactical setting. Yet, they find themselves so far unable to achieve strategic victory in Iraq and in the Global War on Terror (GWOT).

The need to prevail in Stability, Security, Transition and Reconstruction Operations (SSTRO) and counterinsurgency operations is paramount. Advocates of the concept of Fourth Generation Warfare (4GW) say the United States is now engaged in the only type of war it has ever lost: a multi-year long struggle against a highly motivated, often but not exclusively low technology, networked insurgency.

Clausewitz said "The first task…in planning for war is to identify the enemy's centers of gravity, and if possible, trace them back to a single one."[1] Initially, the enemy Center of Gravity (COG) would have been the person, the wealth, and the organizing power of Osama bin Laden. But the enemy COG has morphed; it is now a malignant ideology of extremist Islam, an ideology that empowers systems such as a networked insurgency in Iraq, and global terrorism; both phenomena sharing implacable hostility to liberal social mores. The ideology is energized by American behavior, but is also fueled by a number of external factors that have no simple fixes: poverty, unemployment, the prevalence of poor governance in the Middle East, the Palestinian-Israeli conflict and the perception of America's role in that conflict, to name but a few.

In order to defeat the insurgency in Iraq and the terrorist networks of global reach connected to or inspired by al-Qaeda, the coalition must, if not extinguish this ideology, at least diminish the violence the ideology precipitates. Baron Antoine Henri De Jomini observed that the excited passions of a hostile people are themselves a powerful enemy, and thus both the general and his government should use their best efforts to allay them. Drawing from the emerging doctrine of Effects Based Operations (EBO), an effect the United States seeks is an absence of violence. This virtually defines security and is the basis of the objectives of stability and the establishment of civil society.

General Sir Frank Kitson noted that the main characteristic that distinguishes stability and reconstruction operations from other forms of war is that "they are primarily concerned with the struggle for men's minds."[2] In the battle for minds, brains themselves are nodes, and it is the thesis of

this paper that the relationships among minds are links that can be influenced by operations within the field of consciousness that connects them all. The collective thinking of the population within which an insurgency or a hostile ideology persists may be regarded as a critical system or function that is an accessible decisive point.

Hammes states that leadership of 4GW organizations "recognizes that their most important function is to sustain the idea and the organizations."[3] Among the critical requirements for terrorism and the insurgency is a flow of recruits ready to fight, die and even suicide for radical Islam. Chaos and sectarian parochialism and violence constitute self-perpetuating cycles that enhance the production of such future combatants. But the stress and frustration that contribute mightily to the availability of such recruits are enemy critical vulnerabilities.

STRATEGIC STRESS MANAGEMENT

Strategic Stress Management (SSM), in the form of groups of persons practicing a meditative technique called the TM-Sidhi Program, can be applied to reduce hostilities in targeted populations. The underlying hypothesis is that consciousness is a field, and that effects generated in the field of consciousness can affect the brain chemistry,[4] the brain activity,[5] the thinking and the subsequent behavior of potential belligerents who are not engaged in, or even aware of, the meditative practice.

Transcendental Meditation (TM) is a purely mental technique, introduced to the West by Maharishi Mahesh Yogi in the late 1950s. It is practiced with eyes closed for about 20 minutes twice a day. This technique is taught in a very standardized fashion, which makes it amenable to scientific evaluation. To *transcend* is to go beyond; *meditation* is thinking; according to the origins of this technique in the *Vedic* tradition of India, TM is a technique for going beyond thought, for residing in the field of pure consciousness, the source of thought.

Vedic is derived from *Ved* or *Veda*; it is a Sanskrit term simply translated as "knowledge" or "science," but ultimately it refers to a fundamental field of existence from which all forms and phenomena of nature arise. The nature of this field of consciousness as defined by the Vedic tradition is identical to the unified field of all the laws of nature identified by quantum physics.[6] It is a self-interacting field that is without boundaries, all pervading, unchanging, eternal, awake and dynamic within itself, the home and source of orderliness, intelligence, creativity and organizing power, "a continuous medium which is present everywhere in space."[7] This idea has gained currency in modern physics for many decades.[8] Max Planck, for whom the Planck scale is named and who early in the 20th century first described the quantum nature of subatomic reality, said: "I regard consciousness as primary. I regard matter as derivative of consciousness."[9]

While the concept of a field of consciousness is subtle, most people are familiar in everyday life with fields that mediate effects remote from the cause. A child's magnet moves iron filings via the magnetic field; anyone who has adjusted the rabbit ears atop a television was trying to capture better the signal being propagated from the TV station through the electromagnetic field.

Social scientists generally envision social interactions as linear and Newtonian. That is, unless someone talks to someone, shoots someone, gives someone a job or some money (or influences someone else who performs these actions), or in some way tangibly deals with someone else, there is no meaningful interaction among these people. This model sees people interacting the way

billiard balls interact on a pool table. One ball hits another and hits another, and, in this way, the interaction is propagated; otherwise, "a miss is as good as a mile." The Vedic tradition has an extensive theoretical underpinning beyond the scope of this paper to encompass; but from that Vedic perspective, consciousness is not like a pool table, but more like a bathtub.

A simple analogy can help. Visualize a bathtub that is calm and has floating in it a dozen or so corks. If one pushes down on one cork, then let it go, it begins to bob up and down. As it bobs up and down, even though it's not touching any of the other corks, it propagates some effect through the *field* of the water that causes all the other corks to respond by bobbing up and down. This is analogous to the field effect of consciousness. The idea is: influences generated in the consciousness of individuals or groups can have effects on the consciousness of people who are not involved in the specific intervention being done. So, people meditating, for instance, can have effects on persons not meditating, and can generate influences of coherence in society at large.

In TM, the mind follows its natural tendency to transcend gross superficial levels of thought, experience subtler levels, transcend them, and reside in pure consciousness as noted. An advanced elaboration of TM, the TM-Sidhi program allows the practitioner to reside and act and generate influences within those subtler levels of thought; superficial to the Transcendent, but still, strata that are less differentiated, more energetic and more powerful than are the more superficial levels. That influence has effects on the subtler levels of thought of everyone within the operational reach of the intervention, and can thus change their gross thoughts and subsequent actions.

Influences generated in the TM-Sidhi program have both local and non-local effects. Researchers note that:

> Political units reflect greater homogeneity, closer personal ties, more frequent interactions, and stronger internal lines of influence (cultural, emotional, and economic, as well as political) than those across [political] boundaries and hence cannot be ignored in calculating the "spread" of predicted coherent effects on collective consciousness and behavior…. Our common experience with such everyday field effects as transmission of radio or television waves tells us that local conditions (including weather, the terrain, and other electromagnetic sources, such as power lines) affect patterns of transmission across large areas. The proposed intimate connection between consciousness and the unified field would support similarly uneven patterns of influence due to local boundaries in collective consciousness.[10]

[Synonyms for the phenomena generated by groups of TM-Sidhi practitioners include: Invincible Defense Technology, Coherence Creating Groups, Maharishi Effect, Superradiance Effect, Maharishi Technology of the Unified Field (MTUF), Social Stress Abatement Technology (SSAT), Consciousness Based Defense Technology, and Unified Field Based Defense Technology. This paper will use Strategic Stress Management, as the term seems more accessible to those not conversant with TM organization terminology.]

One could derive from the Vedic literature, the texts of ancient India, the following hypothesis: a certain number of people meditating in an area will change the trends in the surrounding population.[11] The minds thus affected will manifest more of the orderliness and intelligence intrinsic to the field of consciousness, increasing positive influences and decreasing negative ones.

Tat sannidau vairatyagah

"*In the vicinity of Yoga, enmity ceases.*"

– *Yoga sutra, 2.35*

This hypothesis was first put to the test back in the 1970s when 24 cities in the United States were found to have one percent or more of their population practicing TM. These "one percent" TM cities were compared with 24 comparable cities that did not have one percent of the population practicing TM. Those cities that reached the one percent level had trends toward decreased crime rates, increased employment, and enhanced quality of life.[12]

The hypothesis from the Vedic literature further predicted that this "super-radiance" or "coherence creating" effect would be stronger when generated by persons practicing the TM-Sidhi Program. The prediction was: while one percent of the population practicing TM would generate this effect of coherence significantly enough in the environment to induce changes in the behaviors of persons not practicing the technique, the same effect would be generated when only the *square root* of one percent of a given population was practicing the TM-Sidhi Program.

This introduced the practical possibility of actually mobilizing teams of individuals practicing the TM-Sidhi Program and sending them to trouble spots in the world. This was accomplished on a number of occasions, and the effects were documented prospectively. That is, certain trends were evaluated, particularly in places that were hotspots during the 1970s and 80s, such as South Africa, Nicaragua, Iran, Lebanon, and Israel. Teams of TM-Sidhi Program practitioners were inserted into these areas at times of social disturbance. These teams were found to be able to decrease disorder in society and increase coherence and positivity. It was further noted that when the teams were removed from these areas problems tended to resume. This finding was replicated multiple times to a high degree of statistical significance. Next, groups established in certain cities in the United States demonstrated decreases in crime rate and other indices of social disorder and distress, and increases in indices of improvement in quality of life. Indeed, 51 such studies involving this coherence creating effect have been performed, and the effect was found to be significant in all of them.[13]

Limitations of space preclude a review of all 51 studies. Three however can be representative. These three deal with the effects of the TM-Sidhi program on the violence of war, crime, and terrorism, respectively. Two are prospective; all three were published in peer reviewed scientific journals.

Research

STUDY #1, WAR DEATHS AND WAR INTENSITY

In the summer of 1983, Israel was deeply involved in Lebanon, and was taking casualties. The researchers tested this approach by establishing in Jerusalem a group of TM-Sidhi practitioners, about the square root of 1% of the population size they were trying to influence. In advance of the study they lodged their outcomes predictions and methodology with independent review boards in both Israel and North America.

Most salient among the dependent variables (*dependent* in that they were to vary *depending* upon the *independent* variable, which was the size of the coherence group) were war deaths and "war intensity," derived from news content analysis. (Other factors measured included crimes, accidents,

fires, the Israeli stock market performance, and "national mood", as indicated by the tone of the daily front page newspaper story, read by different observers who were blinded as to the number of people in the meditation group.) They also measured *variability*; that is, if the coherence-creating group was effective, everything should generally improve and variability among measures should decrease. If the group were having no effect, then some things might improve, some get worse, just in their random way, and variability would be usual or "normal."

Care was taken in designing the study to minimize confounding factors, and to account for those influences that couldn't be controlled, such as for holidays, temperature, weekends, and so forth. The study lasted from August to September 1983. The independent variable fluctuated from 65 to 241 participants.

RESULTS

There were seven separate deflections of the independent variable during the experimental period; movement of the dependent variables in the predicted direction accompanied each deflection. Variability decreased as predicted. Overall, there was a 76% decrease in deaths, ($p = 0.0004$), and 45% less intensity. There was also an "improvement of national mood"; quality of life measures and economic indices significantly improved, in concert with the size of the intervention group.[14]

STUDY #2: CRIME

The second study was conducted in the United States over the summer of 1993 in Washington DC. It was rigorous, larger, and had similarly robust results. The hypothesis in this case was that the insertion into the District of Columbia of a group of persons practicing the TM-Sidhi Program would lead to reduction in violent crime and social stress and improvement in the effectiveness of government. Specifically, based on the population of Washington, DC, it was predicted that bringing in 4,000 practitioners would lead to a decrease in violent crime of 20 percent in the District of Columbia over the period of the study.

The independent variable was the size of the group, which grew from June through July of 1993. The cardinal dependent variables were violent crimes (homicides, rapes and assaults, or "HRA"), as well as public approval of presidential performance. The study was executed in concert with the District of Columbia Metropolitan Police Department, which supplied the crime data (a member of the DC police was a co-author of the paper). The Institute of Science, Technology and Public Policy's Research and Evaluation Division analyzed the statistics, using what is called *time-series analysis*, and controlling for weather, daylight, crime trends, and so forth. The study was overseen by an independent project review board of scientists from leading institutions around the country.[15]

RESULTS

In the first month of the project, crime rates dropped modestly. There were about 1,000 TM-Sidhi practitioners in the group at that time. In the fifth and sixth weeks, the numbers increased to 2,500, and by the end of the demonstration project, the last two weeks of July 1993, there were almost 4,000 people participating in the demonstration. At the culmination of the assembly, when the group was largest, actual crime (HRA) decreased markedly below the predicted level.[16] This decrease was 23.3% ($p<0.000000002$); using a longer baseline back to 1988, the drop was 24.6%. Public approval of the President changed from a negative to a positive trend ($p<0.00002$).

After the assembly ended, the effect decayed, and crime eventually returned back to its predicted level. The model used[17] predicted that, had the group not disbanded, crime rates would have been reduced by 48 percent in subsequent months, and that a larger group or the same group working for a more extended period would have brought about greater decreases in crime.

STUDY #3: TERRORISM

During the time frame 1983 through 1985, there were three large assemblies of persons practicing the TM-Sidhi program, in Iowa, Holland, and Washington DC. Ranging from 8 to 11 days in length, and with 8000, 6000, and 5500 participants respectively, these assemblies were large enough (approaching or exceeding the square root of 1% of the world's population) to have global coherence creating effects. In this retrospective study, researchers looked at Rand corporation data on the numbers of casualties and fatalities due to terrorism during 1983-1985, and performed time series analyses to determine drops in terrorism, if any, during the assemblies. They also evaluated data from standardized date-blind ratings of news from major newspapers to determine effects on international conflict. The researchers controlled for seasonal, year-end, and other possible confounding factors.

RESULTS

There was a 72% drop in terrorism ($p<0.025$), and 32% less international conflict (p values from <0.005 to <0.025) during the assemblies.[18] The Capitol International World Stock Index increased during each assembly ($p<0.025$).

ALTERNATIVE EXPLANATIONS:

In view of the unorthodox nature of this approach, policy makers will want to explore alternative explanations for the noted effects. These include five: [19]

- **A**ssociation versus causality
- **C**onfounding factors
- **C**ause versus effect
- **C**oincidence, luck.
- **F**raud

Some scientists have demonstrated overt hostility toward this body of work.[20] But objective reviewers of the research data have been satisfied that these potential alternative explanations have not been responsible for the findings in these studies. A comment by a leading expert in the field of peace studies and conflict resolution, Ted Robert Gurr, emeritus professor of government and politics at the University Maryland, is representative of the reactions of those who have impartially reviewed this body of research:

> In the studies I have examined on the impact of the Maharishi Effect on conflict, I can find no methodologic flaws, and the findings have been consistent across a large number of replications in many different geographical and conflictual situations. As unlikely as the premise may sound, I think we have to take these studies seriously.[21]

COURSE OF ACTION ANALYSIS

It is not the purpose of this paper to develop a complete Course of Action (COA). But before SSM in the form of the TM-Sidhi program can be seriously regarded as a potential course of action, it should meet the tests of suitability and adequacy, feasibility, acceptability, and distinguishability. Though this technology of consciousness has been demonstrated to have efficacy in a wide variety of settings, for purposes of simplicity and illustration, this COA will be applied to the current mission in Iraq. The bare bones of this COA would be the insertion of a group or groups of TM-Sidhi practitioners into Iraq for the purpose of generating the SSM effect. While this COA could stand alone, it is compatible with, and practically it would almost certainly be in addition to, many other steps the coalition would be taking; SSM and any other COA are not mutually exclusive.

SUITABILITY/ADEQUACY

SSM is compatible with the commander's guidance. The United States seeks "an Iraq that is peaceful, united, stable, democratic, and secure."[22] Rather than kinetic, SSM is nonviolent. Rather than employ the strength of the "one-armed Cyclops"[23] in combat operations, proponents submit that SSM is a dimension of soft power, the softest power, involving not economic coercion, not the confrontation of diplomatic negotiations, nor even the efforts of changing minds through information operations.[24]

There is no opportunity to generate collateral damage; indeed the data indicate favorable second and third order effects. American strategy includes building "stable pluralistic and effective national institutions" and a "sound and self-sustaining economy."[25] Many of the studies on the TM-Sidhi program document benefits in the areas of effective governance and improvement of economic indices.[26]

FEASIBILITY

According to the "Frustration/Aggression" Hypothesis, war is born as follows: "The man in the street, with his lust for power and prestige thwarted by his own limitations and the necessities of social life, projects his ego upon his nation and indulges his anarchic lusts vicariously."[27] Maharishi Mahesh Yogi (hereinafter, just "Maharishi") has a related but somewhat different take:

> All occurrences of violence, negativity, conflict, crises, or problems in any society are just the expression of growth of stress in collective consciousness. When the level of stress becomes sufficiently great, it bursts out into large-scale violence, war, and civil uprising necessitating military action.[28]

Kinetic solutions to problems born of such dynamics may be elusive.

Metz states that 21st century insurgency includes not only the regime and the insurgents, but is characterized by the growing role of what he calls "third" and "fourth" forces, all affecting the conduct and outcome of the conflict. "Third forces were armed organizations sometimes affiliated with either the insurgents or the regime….They included militias, criminal gangs, warlord armies, and various kinds of death squads…."[29] Fourth forces were unarmed non-state organizations such as nongovernmental organizations and the media, such as Al-Jazeera. He further notes "Dealing with third and fourth forces make for a different type of conflict and require a different strategy for which existing doctrine is little help."[30] The three studies previously cited demonstrate efficacy in the arenas of war, crime, and

terrorism, as well as economics and politics, and support the contention that SSM can accomplish its part of the mission[31] "within the established time, space, and resource limitations."[32]

A proposal has already been made for a group of TM-Sidhi experts to operate in Iraq to address the threat from improvised explosive devices (IEDs).[33] Based on the population to be affected (the approximately 29 million minds in Iraq), the square root of 1% would be 540. One challenge to counterinsurgency efforts is the fact that "Insurgents do not need all or most of the public to support them, but only a foundation of active support and passivity from the rest."[34] According to Maharishi, "It is the weakness and lack of coherent thinking in the civilian sector of a nation which produces the situation where military action and war become necessary."[35]

The over-engineered solution in the proposal was 1080 individuals, to account for vacations, illness, participant turnover, and so forth. Based on previous trials, proponents expect fatalities due to hostile action to drop by over 70% within six weeks, with a concomitant decrease in conflict, improvement in governance, and increase in overall cooperation. This should help reverse two of the unfortunate effects of the evolution of the insurgency: increasing the combat activities of U.S. forces, resulting in "less time and fewer resources for other activities, including reconstruction,"[36] as well as increasing the number of Iraqis who believe the insurgents can defeat the United States.[37]

Effects are sustainable: there is no predicted "fatigue effect," and there is no known hostile "work-around" to defeat this approach. Rather, research indicates that the longer the group is sustained, the stronger the effect will become.

Implementation could come in one of three (or more) forms. Over 20,000 Americans have been trained in the TM-Sidhi Program. Many of them are highly motivated to demonstrate the efficacy of this approach; contracting with a thousand of them should not be difficult. Many more thousands worldwide are available as needed. There is a subtle value added to training a thousand Iraqi nationals in the technique, as ties of kinship and culture should augment the SSM effect, as well as enhance Iraqi autonomy.[38] Such training would take about six months. Training U.S. service personnel or government employees, who could subsequently be utilized in other areas as needed, is another alternative.

The costs of the proposal are relatively modest.[39] Initial deployment of the first thousand contractors was proposed to require approximately $17 million. Maintenance of the group would run about $16.7 million per month, plus life support. Training local nationals would cost more initially, but subsequent costs would be about $30 million per year.

There would be positive second and third order effects to training soldiers in this technique (or in just "plain vanilla" TM). Compared to other techniques,[40] many medical and psychological benefits of TM have been documented,[41] including decreased heath care utilization and costs.[42] TM has been shown to be of benefit in the treatment of Post Traumatic Stress Syndrome (PTSD)[43] and may serve to inoculate soldiers against PTSD.[44]

In the era of the "strategic corporal" and the CNN Effect, it becomes increasingly important for soldiers at the tactical level to behave in a manner consistent with the highest moral values.[45] TM practice is associated with greater development of "post conventional thinking," a higher level of moral maturity.[46] Criminals who learn TM are less likely to continue with crime, and not just criminals who

may have selected themselves to learn TM and simultaneously opted to turn away from crime: repeat offenders who have been sentenced to learn TM have better outcomes.[47]

ACCEPTABILITY

Acceptability must be evaluated along two axes. First the risk of employing this technology must be determined. The enemy is clever, and if this is a weapon, one may anticipate that he will find a way to employ it against coalition forces. Second, with an approach this unusual, the conservative nature of the military may inhibit its application.

It is difficult to envision al-Qaeda or its progeny employing SSM. Were they to do so, they would attenuate their own violent tendencies. Paradoxically, the employment of SSM by the coalition may fulfill some of the more benign goals of radical Islam.

> Bin Laden's center of gravity…lies in the list of current U.S. policies toward the Muslim world because that status quo enrages Muslims around the globe – no matter their view of al Qaeda's martial actions – and gives bin Alden's efforts to instigate a worldwide anti-U.S. defensive jihad virtually unlimited room for growth….America's support for [countries] against Islamists; its protection of multiple Muslim tyrannies; its efforts to control oil policy and pricing; and its military activities in Afghanistan, Iraq, the Arabian Peninsula, and elsewhere – these are the sources of the infection of hatred spreading in the Islamic world.[48]

While the implementation of SSM in Iraq may not affect U.S. policies worldwide, the data indicate that SSM employed within the United States would.[49] The United States could be expected to be less arrogant, less parochial, less driven by moneyed special interests and the military industrial complex Eisenhower warned of, and more respectful of other cultures. Regarding its global role affecting all of the world's people, the United States would adhere more to the guidance from Field Manual 100-20, in that the government "identifies the genuine grievances of its people and takes political, economic, and social actions to redress them."[50] The unguided hand of globalization (the United States being its greatest engine) and the behavior of Friedman's "Electronic Herd"[51] would be more life-supporting while generating less environmental degradation, promoting of wealth and prosperity without undue privatization and exploitation, and creating new financial opportunities without unnecessary destruction of traditional lifestyles. These are the types of phenomena governed by "collective consciousness."[52]

Resistance to SSM on the part of the military is not to be assumed. Regarding former commandant of the U.S. Army War College, MG Franklin Davis:

> Having begun the practice of the Transcendental Meditation program to test its efficacy for use within the military, General Davis recommended it as an antidote to stress in the armed services and as a possible deterrent to drug abuse. He said, "Transcendental Meditation has done a lot for me personally. My friends and colleagues and my wife say it has improved my disposition and my doctor says it's knocked my blood pressure down ten points...."[53]

But there are aspects of this program that will present challenges to many, particularly in the following three areas.

- Apparent lack of verisimilitude
- Atypical world views of advocates
- Cultural, racial, religious biases

Lack of verisimilitude: simply put, SSM in the form of the group practice of the TM-Sidhi Program just sounds weird. The idea of stopping war by meditating seems to fly in the face of common sense.[54] The data are compelling, but the concept is so extraordinary that it is easy to dismiss before taking the time to investigate the supporting research.

Atypical world views: while researchers are wedded to the scientific method, many members of the TM organization representing the research results believe strongly in the value of their meditation. This has led some people to question their objectivity. Also, while not exclusively so, many are quite liberal and anti-war. However, most are very respectful of the military and appreciate its role; indeed, Maharishi himself is of the *kshatriya*, or warrior caste.

Biases: TM is not a religion, as it requires no change in belief system or lifestyle, and is compatible with any religious observation. Priests, rabbis and clergy of all religions practice it. However, Maharishi himself is a Hindu monk. Some decision makers may balk at embracing an approach whose primary proponent is an Indian guru.[55]

DISTINGUISHABILITY

Certainly this COA is readily distinguishable from any other. No one is proposing anything even vaguely similar to the group practice of the TM-Sidhi Program. But planners may wish to consider an alternate COA. In the practice of medicine and psychology today, "stress management" or "relaxation" techniques abound, and are often lumped together as essentially interchangeable. If TM and the TM-Sidhi Program are forms of stress management, and other techniques for stress management exist, then perhaps one of those other techniques (without the baggage of TM in terms of its origins, organization, nomenclature, and so forth) could be employed in Iraq for SSM.

Data does not support the idea that all relaxation techniques are interchangeable; studies indicate that the domain of stress management techniques is actually quite heterogeneous. Brain activity is different in different techniques,[56] and the results are different.[57] Data from eight meta-analyses encompassing 597 individual studies of techniques (to include Zen, Benson's relaxation response, biofeedback, and other forms of meditation and relaxation[58]) show a wide variety of outcomes. Throughout the range of findings, TM was found to have greater efficacy than any other technique in addressing an assortment of issues, to include decreasing trait anxiety, lowering blood pressure, more physiological relaxation, greater self-actualization, improved psychological outcomes, and decreased drug and alcohol abuse.[59] Controlled prospective trials directly comparing TM and other techniques in different settings have yielded similar results.[60]

There is no analog among other techniques for the group practice of the TM-Sidhi Program and its societal effects. In the absence of data, one cannot conclude that no other technique could achieve the same results. That is, perhaps planners could employ another technique; but there are as yet no data available to support the contention that any other technique would obtain the results the TM-Sidhi Program has.

CONCLUSION

"The Americans are between two fires," said the number two man of al-Qaeda, Ayman al-Zawahiri, in 2004. "If they remain [in Iraq] they will bleed to death, and if they withdraw they will have lost everything."[61] Uncertainties about the legitimacy of American motivations in invading Iraq have weakened popular support for the war; Operation Iraqi Freedom and perhaps the entire GWOT are at risk of failure. Coalition war efforts may culminate due to an erosion of American national will. Ongoing violence and attendant American casualties place additional political strain upon decision makers.

Avoiding Huntington's "clash of civilizations" may require SSM. The creation of an atmosphere of calm and coherence in Iraq and elsewhere in the Muslim world may enable moderate Muslims to win the war of ideas within Islam. Establishing a similar influence in the United States may result in the adoption of policies less likely to provoke the emergence of future antagonists. Advocates of SSM argue that, of all courses of action previously implemented or currently proposed for Iraq, based upon available data, this course of action (SSM) may be essential to accomplishing the mission.

SSM has demonstrated efficacy when addressing the nefarious activities of criminals and terrorists, as well as the legal violence of combatants. This is fortunate, because a witches' brew of these miscreants is the most likely opponent of American expeditionary forces in the 21st century. As Metz observes, "By failing to prepare for counterinsurgency in Iraq and by failing to avoid it, the United States has increased the chances of facing it again in the near future."[62]

Strategic Stress Management in the form of group practice of the TM-Sidhi Program is effective in reducing hostile behavior in targeted populations. The acceptability of this unconventional approach is an open question.

Endnotes

1. Carl von Clausewitz, *On War* (1832). Quoted in U.S. Army War College course 572, lesson 1, 2007.

2. General Sir Frank Kitson, quoted in Andrew Garfield, *Succeeding in Phase IV: British Perspectives on the US Effort to Stabilize and Reconstruct Iraq* (Foreign Policy Research Institute, Philadelphia, PA, 2006) vi.

3. Colonel Thomas X. Hammes, *The Sling and the Stone*, (St. Paul, MN: Zenith Press, 2004), 222.

4. Kenneth G. Walton, Kenneth L. Cavanaugh, and Nirmal D. Pugh, "Effect of Group Practice of the Transcendental Meditation Program on Biochemical Indicators of Stress in Non-Meditators: A Prospective Time Series Study," *Journal of Social Behavior and Personality* (2004): 339-373.

5. David Orme-Johnson et al, "Intersubject EEG coherence: Is consciousness a field?" *International Journal of Neuroscience* 16, (1982): 203–209.

6. Robert M. Oates, *Permanent Peace* (Fairfield, IA: Institute of Science, Technology and Public Policy, 2002), 95-119.

7. Fritjov Capra, *The Tao of Physics*, (Boston, MA: Shambhala Publications, 1975).

8. John S. Hagelin, "Is consciousness the unified field? A field theorist's perspective." *Modern Science and Vedic Science* 1, no. 1 (1987): 29-87.

9. Oates, *Permanent Peace* ,122.

10. David Orme-Johnson, Charles Alexander, & JL Davies, "The effects of the Maharishi Technology of the Unified Field: Reply to a methodological critique." *Journal of Conflict Resolution,* 34 (1990): 756–768.

11. Many examples from physics exist, such as lasers, and the Meissner Effect in superconductivity, which demonstrate that a small number of particles or waves behaving in a coherent manner can cause an entire system to behave coherently and resist extraneous disordering influences. For more background, see Maharishi Mahesh Yogi, *Maharishi's Absolute Theory of Defence*, (India: Age of Enlightenment Press, 1995), 208-218.

12. Michael Dillbeck, Garland Landrith III, & David Orme-Johnson, "The Transcendental Meditation program and crime rate change in a sample of forty-eight cities." *Journal of Crime and Justice,* 4 (1981): 25–45.

13. A bibliography of 60 articles covering the 51 studies is available from <http://www.truthabouttm.org/truth/SocietalEffects/ResearchOverview/index.cfm> Internet; accessed 29 April 2007.

14. David Orme-Johnson et al, "International Peace Project in the Middle East: The Effects of the Maharishi Technology of the Unified Field." *Journal of Conflict Resolution* 32, No. 4 (December 1988): 776-812.

15. Despite the success of previous similar interventions in this matter, this demonstration project was met with some skepticism. A Deputy Chief of the Washington DC Police was quoted as saying, "The only thing that will reduce crime by 20 percent in the District this coming summer would be 20 inches of snow."

> Demonstrating a decrease in crime rate is not simple. For example, if a charlatan wanted to take credit for a reduction in crime all he would have to do is walk into almost any town in July, say there is a terrible crime problem and promise that in six months he could reduce crime significantly. Six months later, in January, crime would indeed be lower: but not due to anything he had done. Crime would be lower because crime is virtually always lower in January than in July (with a few exceptions, such burglaries). In the cited study, seasonal influences, influences of temperature, precipitation, weekend effects, number of hours of daylight, even hypotheses that geomagnetic fields have effects on crime were controlled for. (It turns out that temperature is by far the most important factor.)
>
> That is, a model was generated which could account for all fluctuations in crime rates over the previous year and a half or so, and once that model was demonstrated to account for those crime rates it was then viewed prospectively, looking forward, to see whether it would continue to account for changes in crime; and, indeed, this model did work. As it turned out, the three primary considerations are: temperature, and less so, precipitation and weekend effects. That is, the hotter the weather the more crime there is. When it rains, there is less crime.

The researchers' model showed that, accounting for the variables, crime will be within a certain range. A particularly hot summer with little precipitation would be a higher-crime summer; an especially cool summer with high precipitation would be a lower-crime summer. The nature of the prediction made by these researchers was that, whatever the crime rates were going to be based upon the statistical predictions, there would be a reduction in crime by 20 percent due to this intervention.

This approach was reviewed by an independent review panel composed of scientists from the University of Maryland, University of Texas, Temple University, University of Denver School of Law, University of the District of Columbia, American University and Howard University. Before the project was undertaken all these researchers signed off on it and recognized that if the intervention was going to have an effect this was the best way to measure it and account for it.

Emmanuel Ross of the Planning and Research Division at the District of Columbia Police Department said,

> The data on violent crime used in the experiment was provided by the Police Department. The experiment appears to have been competently undertaken and to be a good-faith effort on the part of the Institute of Science Technology and Public Policy and the Independent Project Review Board of Scientists formed to oversee the project.

Dr. John Davies is the Research Coordinator for the Center of International Development and Conflict Management at the University of Maryland. He was a member of the Project Review Board who evaluated the project. He stated, "The project design was rigorous, the analysis was conducted in a highly competent manner and the results are impressive."

Other members of the review board commented as follows:

A Professor of Government from the University of Texas at Austin, Dr. David Edwards:

> The claim can be made plausibly that the promised practical societal impact of this research significantly exceeds that of any other ongoing social-psychological research program. For this reason alone the research along with the theory that informs it deserves the most serious evaluative consideration by the social science community.

Ann Hughes Ph.D., Professor of Sociology and Government at the University of the District of Columbia also was impressed with the findings, and added: "To a skeptic I would say, 'What is your solution?' I haven't seen one yet."

Dr. Beverly Rubik, Biophysicist and Director of the Center for Frontier Sciences at Temple University:

> The data show an impressive, statistically significant correlation: a decrease in violent crime for the time period over which the group meditated. An impressive number of variables were considered in analyzing the data and I'm satisfied that the research team made a serious effort to examine the data in the light of numerous other possible influences.

Quotes are from Robert Keith Wallace and Jay B. Marcus, *Victory Before War* (Fairfield, IA: Maharishi University of Management Press, 2005) iii-iv

Drs. Edwards and Hughes were not practitioners of TM (at least not at the time they made the statements). This author does not know the TM status of the other members of the review board.

16. John Hagelin et al, "Effects of group practice of the Transcendental Meditation program on preventing violent crime in Washington, DC: Results of the National Demonstration Project, June–July 1993." *Social Indicators Research* 47, no. 2 (June 1999): 153–201.

17. See note 15.

18. David Orme-Johnson, Michael Dillbeck, & Charles Alexander, "Preventing terrorism and international conflict: Effects of large assemblies of participants in the Transcendental Meditation and TM-Sidhi programs." *Journal of Offender Rehabilitation,* 36 (2003): 283–302.

19. Carla L. Brown, "Overcoming Barriers to Use of Promising Research Among Elite Middle East Policy Groups," *Journal of Social Behavior and Personality* 17, no. 1 (2005): 489-543.

20. The five alternative explanations are as follows:

A. Association versus causality

There is an association between the sale of ice cream and rates of crime; this association does not establish a causal relationship. Both increase in hotter weather. But since they vary independent of each other, limiting ice cream sales would not be a fruitful avenue for crime reduction.

B. Confounding factors

Research designers must take great care to control for the effects of confounding factors (such as weather, or increased police activity, or a new UN brokered peace deal, etc.). A big part of the value of peer reviewed scientific journals is to keep results from poorly designed studies out of the scientific literature. In the cited studies, there is no viable alternative mechanism postulated for the associations found between the size of the TM-Sidhi groups and violence reduction.

C. Cause versus effect

Particularly regarding the Jerusalem/Lebanon war death study, reviewers questioned the causal relationship of the intervention. Specifically, they questioned whether the size of the group could have been influenced by the level of violence rather than vice versa. Perhaps during increased hostilities, meditators rushed to the group meditation site, and when time and regression to the mean diminished the violence, the size of the meditation group only seemed to be responsible. The researchers were required to do further statistical analysis pre-publication (transfer function analysis to produce cross-correlations), and satisfied the reviewers that the "direction of causation" was from the assembly to the dependent variables.

D. Coincidence, luck

If you flip a coin a million times, somewhere in there it will probably come up heads 10 times in a row. But it is very unlikely that it will happen during the only 10 tosses that you had chosen in advance to observe; not impossible, but very unlikely. Studies are made large enough, and are repeated, in order to avoid having blind luck be the cause of positive findings. Simply put, the "p" values cited reflect the likelihood of the finding being due to chance. The threshold for "statistical significance" is usually $p<0.05$; that is, if the likelihood of the findings being due to chance (rather than due to the intervention studied) is less than 5%, then that finding is statistically significant. The p values in the three studies elaborated upon earlier were less than four per 10,000 in the Lebanon war death study, less than two in a billion in the crime study, and less than five per thousand in terrorism. The chance that coincidence is responsible for the positive findings in all such studies is infinitesimally small.

E. Fraud

Integrity and honesty are the coin of the realm in scientific research. However strongly an investigator may desire significant findings in his study, if he is caught falsifying data, his career is over. The idea that varied researchers colluded over all these many years and managed to sneak lies past impartial (at times hostile) journal reviewers as well as oversight boards, is not credible.

21. Oates, 41.

22. National Security Council, *National Strategy for Victory in Iraq* (Washington, D.C.: The White House, November 2005), 1.

23. Hoffman, *Changing Tires on the Fly* (Foreign Policy Research Institute, Philadelphia, PA, 2006), vii.

24. John Hagelin, video presentation, 11 April 2007; available from <http://www.invincibledefense.org/videos/2007_04_11_hagelin.html>; Internet; accessed 1 May 2007.

25. National Security Council, 1-2.

26. Available from <http://www.truthabouttm.org/truth/SocietalEffects/ResearchOverview/index.cfm> Internet; accessed 29 April 2007.

27. Niebuhr, quoted by John Garnett in, "The Causes of War and the Conditions of Peace." in *Strategy in the Contemporary World: An Introduction to Strategic Studies,* ed. John Baylis, James Wirtz, Eliot Cohen, and Colin S. Gray (Oxford, UK: Oxford University Press, 2002), 66-87.

28. *World Government News,* 11:38.

29. Steven Metz, *Learning From Iraq: Counterinsurgency in American Strategy* (Carlisle, PA: Strategic Studies Institute, January 2007), 46-47.

30. Ibid., 81.

31. The current mission in Iraq involves the "Stabilize" and "Enable Civil Authority" phases of operations, against an irregular threat. While SSM would seem less relevant to the "Seize Initiative" and "Dominate" phases in conventional conflict, it is ideal for "Shaping" and "Deterring," and should thus also have applicability against disruptive and catastrophic threats. The thinking of a "super-empowered" individual terrorist, a member of a "phantom cell," is beyond the reach of any conventional intervention. Coalition forces and their enforcement organs can only hope to intercept him; they cannot deter him, control him, or dissuade him, if he is truly determined to carry out some terrible act. Ultimately, the only defense against such persons will be to sway their thinking at the subtlest levels, levels they cannot close off, levels that SSM has been shown to be able to influence, regardless of culture and geography.

32. U.S. Joint Forces Command, *Commander's Handbook for an Effects-Based Approach to Joint Operations*, (Suffolk, VA: Joint Warfighting Center, 24 February 2006), III-12.

33. Personal electronic mail message from Dr. David Leffler to Brian Rees 12 April 2007. Dr. Leffler's contact information is available at <http://www.InvincibleMilitary.org>; Internet; accessed 26 April 2007.

34. Metz, 52.

35. Maharishi Mahesh Yogi, *Maharishi's Absolute Theory of Defence*, (India: Age of Enlightenment Press, 1995), 59.

36. Metz, 35.

37. Ibid., 37.

38. David Orme-Johnson, Charles Alexander, & JL Davies, "The effects of the Maharishi Technology of the Unified Field.

39. See note 31.

40. David Orme-Johnson and Kenneth Walton K, "All Approaches to Preventing or Reversing Effects of Stress are Not the Same," *American Journal of Health Promotion* 12, no.5 (May/June 1998): 297-298.

41. Bibliography available from <http://www.mum.edu/tm_research/research.html>: Internet; accessed 26 April 2007.

42. David Orme-Johnson, "Medical care utilization and the Transcendental Meditation program," *Psychosomatic Medicine,* 49 (1987): 493–507.

43. James Brooks and T. Scarano, "Transcendental Meditation in the treatment of post-Vietnam adjustment," *Journal of Counseling and Development,* 64 (1985): 212–215.

44. David Orme-Johnson, "Autonomic stability and Transcendental Meditation," *Psychosomatic Medicine,* 35 (1973): 341–349.

45. Martin L. Cook, "Moral Reasoning as a Strategic Leader Competency," (Carlisle Barracks, PA: U.S. Army War College, August 1999), 1-6.

46. S.I. Nidich, "A study of the relationship of the TM program to Kohlberg's stages of moral reasoning", *Collected Papers on the Transcendental Meditation Program,* 1 (1975): 585-593.

47. Charles Alexander et al, "Transcendental Meditation in Criminal Rehabilitation and Crime Prevention," *Journal of Offender Rehabilitation* 36, nos. 1/2/3/4 (2003): 35-46

48. Anonymous, *Imperial Hubris* (Dulles, VA: Brassey"s, 2004), 263.

49. According to the emerging doctrine of Network Centric Warfare, (Office of Force Transformation, *The Implementation of Network-Centric Warfare,* (Washington D.C.: U.S. Department of Defense, 5 January 2005), 15-21) power flows from society, and the source of that power has become subtler, shifting from industry to information. Warfare is recognized to have physical, informational, social, and cognitive domains; subtler than these and underlying them is the transcendental domain of consciousness. The term Consciousness Age Warfare seems an oxymoron; yet, in addressing one of the components of Clausewitz's triad, taming the blind natural force of the hostility of populations both in the United States and in the Muslim world, advocates assert that this ultimate network can both calm Islamist extremism and enhance the coherence of US national policy to the point of minimizing conflict and promoting peaceful solutions in areas of disagreement.

50. Department of the Army, *Military Operations in Low Intensity Conflict*, Field Manual 100-20 (Washington, D.C.: U.S. Department of the Army, 1990), 2-18.

51. Thomas Friedman, *The Lexus and the Olive Tree*, (New York: Anchor Books, 2000), 13.

52. Oates, 83.

53. Quoted in the website of the Center for Advanced Military Science, at: <http://istpp.org/military_science/>; Internet; accessed 26 April 2007.

54. Dr. Robert Duval of West Virginia University was one of the peer reviewers for the war study from Jerusalem/Lebanon. His editorial comments, published in the same edition of the journal (*Journal of Conflict Resolution*, 32 No. 4, December 1988), illustrate anticipated objections.

> On the one hand, the claimed theoretical basis for the activity described, and the results…are anathema to one who considers himself a strong advocate of the application of scientific method in the social sciences…. The disturbing aspect of this piece is not that it is in print, but that it got there via the very mechanism [scientific peer review] that…should have screened it out.
>
> For this reviewer, the primary lesson learned is that if a piece this unconventional can be supported with measurement and method, then perhaps there is a notable volume of research of a much more *prima facie* convincing nature that is no more valid than this piece on TM.

In essence, Dr. Duval finds the theory underlying the Maharishi Effect to be so unacceptable that he considers that the scientific process itself may be broken. But he continues:

> Therefore we are back to our dilemma. Here we have an unconventional piece with high-quality design and methodology.
>
> Yet if, by some strange chance, we are seeing a social-science equivalent of Einstein's "spukhafte Fernwirkungen" ("spooky action-at-a-distance"…), then our perceptions of a Kuhnian "normal science" of international politics are somewhat threatened.
>
> Perhaps it is fitting to conclude this commentary by repeating a remark by Douglas Hibbs, who, more than anyone else, ushered in the use of Box-Jenkins techniques in political science. "Ultimately, it is incumbent upon the critic to provide a better model."

55. At a presentation of this information at the Proteus Group at Carlisle Barracks in August 2006, one man mentioned that he couldn't accept this approach because whenever he interrogated proponents on a difficult point, they often resorted to saying more or less: "because Maharishi says so." This author has heard Maharishi speak on numerous occasions, and can perhaps add an insight to this phenomenon.

It is not uncommon for Maharishi to indicate for instance, that the English translation of some of the Vedic literature is utterly lacking in value. Indeed, he often comments that it is the Sanskrit syllables themselves, the vibrational qualities of the sounds that are more significant. In fact, the greatest value of the literature is to be found in the pure potentiality of the silence between the syllables. These and similar types of observations are frequently

somewhat opaque even to long term meditators. Expressing them adequately can be a challenge, and when attempted, may end up sounding like, "because Maharishi says so."

56. Fred Travis, "Are All Meditations the Same?", slide presentation from the Science of Consciousness conference, April 2006; available from <http://www.fredtravis.com/talk.html>; Internet; accessed 1 May 2007.

57. David Orme-Johnson, "Comparison of Techniques Issue: Are all forms of meditation and relaxation the same?"; available from <http://www.truthabouttm.org/truth/Research/ComparisonofTechniques/index.cfm>; Internet; accessed 1 May 2007.

58. David Orme-Johnson, Charles Alexander, & JL Davies, "The effects of the Maharishi Technology of the Unified Field.

59. The view of TM as being a form of relaxation is almost certainly incomplete. Consider the origins of this technique: individuals of very settled attention meditating in caves in the Himalayas millennia ago. They can be viewed as scientists of consciousness, plumbing the depths of their own awareness. Rather than the classical Greek/Western objective approach to gaining knowledge, they employed the subjective approach, apprehending their own inner nature and identifying that as the nature of Nature as a whole. Stress management and relaxation were probably not significant concerns. Likely, it is an artifact of stressed fast paced 20th century western culture that TM is identified as relaxation and touted for its amelioration of hypertension and anxiety. Derivative techniques such as "relaxation response" demonstrate lesser efficacy regarding virtually all the metrics of stress management; there are no data available to indicate whether or not such techniques are influential at the level of the field effects of consciousness.

60. Robert Schneider et al, "A randomized controlled trial of stress reduction for hypertension in older African Americans," *Hypertension,* 26 (1995): 820–827. See also, Robert Schneider et al, "A randomized controlled trial of stress reduction in the treatment of hypertension in African Americans during one year," *American Journal of Hypertension* 18, no. 1 (2005): 88–98.

61. Daniel Byman, essay #3 in "Who Wins in Iraq?", *Foreign Policy* (March/April 2007): 42.

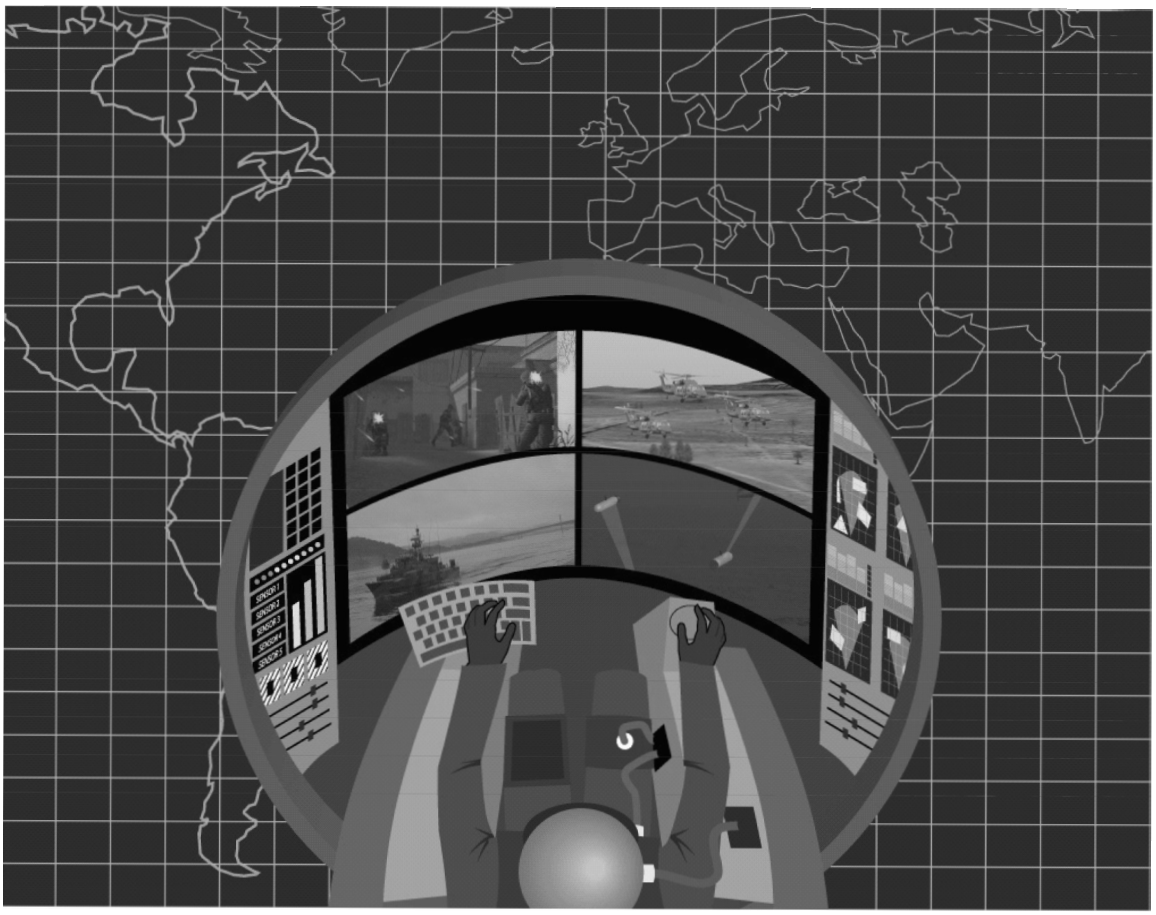
62. Metz, 86.

An Unmanned Systems Vision

A Humanity-Centered View

CAPT Rand D. LeBouvier, USN (Ret.)
Bluefin Robotics

The Lieutenant enters the spherical chamber and seats herself at the controls. She clicks in the umbilical connecting her biofeedback suit to the chair, and the chamber powers up, revealing a complete, real-time three-dimensional display of the surroundings of the vehicle she is currently "piloting." Information regarding, threats, targets, and friendlies relevant to her mission compiled from the sensor grid is displayed at corresponding real-world locations. As the vehicle she controls moves through the battlespace, the Lieutenant receives indications and alerts, augmented by the biofeedback suit to allow her to apply her own human senses, training, and intuition to enhance the capabilities of the vehicle. Soon, the Lieutenant experiences the familiar transition from virtual environment to a sense of actually 'being' in the vehicle cockpit.



Graphics by Jona Steenbrink, Bluefin Robotics Corporation

In consideration of the scenario above, one might note that it does not describe the exact physical environment in which the vehicle was operating. The normal assumption is that the Lieutenant is piloting an aircraft, but this scenario could be unfolding undersea, on the surface of the ocean, on the ground, in space, or in all five depending on the mission. To those outside the field of unmanned systems, such a vision may sound like the stuff of science fiction. To industry insiders, it may seem trite.

This vision is not, in fact, extraordinary, nor is it particularly original. What is most striking is the fact that such a vision is not far from realization…technologically. All the individual technology pieces are either existent or close to achievement. This vision is less far from realization than the possibility of "brilliant" unmanned systems that can detect, classify, and engage threats and targets in dense urban settings without human intervention. The great hurdle is not in encountered in hardware or software, but rather in the lack of a systemic approach to integrating the required diverse technologies and human capabilities.

The term "unmanned" needs to be carefully applied. Only a system where no human intervention or oversight is possible might correctly be termed unmanned. Semantics aside, what is the correct relationship between human and machine for military applications of unmanned systems? Human presence in the decision-making process is presumed to continue to be an essential part of any system that has the power to destroy.[1]

> The intrinsic relationship that arises between tools and organs . . . is that in the tool the human continually reproduces itself. Since the organ whose utility and power is to be increased is the controlling factor, the appropriate form of a tool can be derived only from that organ.[2]

One of the early philosophers of technology, Ernst Kapp, offered that technology is best regarded and applied as an extension of ourselves. In Kapp's view, technology should "fit" the human user, rather than exist independently. Technology would thus augment humanity rather than replace it. One finds that concept particularly useful when discussing the proper design and use of robotic systems, especially in consideration of the balance between human and machine. Rather than rehash humanity's deep-seated fears of replacement by machines, a more practical reservation may be that when technology exceeds our ability to control or even understand, we correspondingly abrogate our ability to predict and direct its effects. Still, the pursuit of completely autonomous systems remains a preoccupation for many in the field of robotic research.

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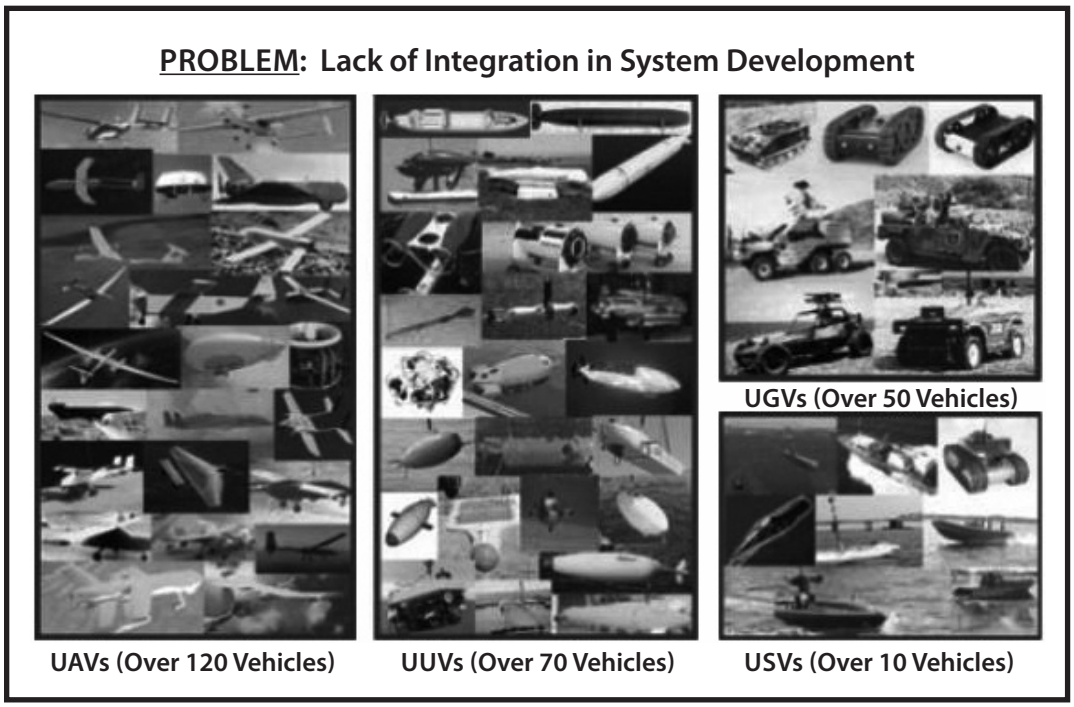
1. From an article entitled "UAVs And The Human Factor," Author J. R. Wilson quotes Maj. Mark Draper, of AFRL's Synthetic Interface Research for UAV Systems (SIRUS) lab, "With the Global Hawk and UCAV programs, the Air Force seems to be heading toward systems in which the operator provides high-level commands but does not have stick and throttle control. As technology progresses and systems become more autonomous, we have to be certain the human is correctly inserted into the process to provide human intellect and problem-solving." The author further asserts that, "While both military and civilian government officials have stated that no robotic system will be given autonomous discretion to fire a weapon, nearly all other operations eventually will be handled by computers, mostly on board the aircraft. Even today, the Global Hawk can take off and land without human involvement, while its on-board computer controls it in flight from point to point, using preprogrammed flight plans based on human input." Aerospace America. 40, no. 7, (2002): 54.

2. In Mitcham, Carl. Thinking Through Technology: The Path between Engineering and Philosophy. Chicago: University of Chicago Press, 1994, 23.



The Magnitude of the Problem[3]

The scientific method creates the tendency to attempt to reduce the problems presented by the vision above into more manageable component parts—a Cartesian-reductionist approach. That sort of approach has its merits, but has, to date, kept the vision beyond our reach. A more systemic approach would take into account the truly interdisciplinary nature of robotic systems; it must regard and combine the sciences of physics and chemistry, specifically materials, mechanics, electronics, propulsion, computation, sensors, energy, and communications with the humanities disciplines of philosophy and ethics. To exert any control over technology, we must know what it is we expect to *do* with technology. Safe to state is the fact that technologies created without such holistic considerations have proven to do and affect more than originally envisioned.

While the preceding discussion may seem like a bit of a detour from the vision, it is essential. We are already procuring unmanned systems at an increasingly rapid rate at enormous expense[4] with little consideration for their proper use or for the role humans will play in the system. Accepting that we wish to avoid potential tragedy foreshadowed by the unrestrained use of "smart" technology, the vision of humans as the central "organ" of any system with the capacity to kill seems appropriate.

Even such a human-centered system cannot address every contingency. One does not win hearts and minds artificially or virtually. At the other end of the spectrum, in the realms where humans should not or could not venture (or do not wish to linger either by reason of endurance or mundaneness), truly unmanned systems certainly do have a place.

3. Naval Surface Warfare Center. Shaping the Future of Naval Warfare With Unmanned Systems. Panama City, Florida. document # CSS/TR-01/09, July 2001, 3-17.

4. "DOD is currently investing over $600M per year on unmanned aerial vehicles [alone], probably upwards of $1B per year when one factors in support and training." Naval Surface Warfare Center, xvii.

So, is the vision a practical concept? One recent example serves to illustrate how close we may be. Anthony Finn, in charge of the Automation of the Battlespace Initiative program for Australia's Defense Science and Technology Organization (DSTO) claims, "In the next phase [of the initiative], there will be a swarm of 18-20 UAVs [Unmanned Aerial Vehicles] operating together: six real ones and a dozen or more simulated….The operator will prioritize the targets, but the rest will be autonomous. As a team, they will coordinate on the targets and [attack] one of them on the basis of geometry, sensors and other information." Using a combination of sensors, namely a miniaturized LADAR and a camera, the two sensors' images, "will be fused into a three-dimensional picture." The endstate? Finn claims that "later this year we will conduct a trial that enables us to combine the 3D UAV data with 3D millimeter-wave radar imagery from a ground vehicle for multi-aspect situational awareness."[5]

From the point of view that the biggest challenge for unmanned systems is the development of sufficiently capable algorithms and programs to deliver autonomy, a real-time human overseer is an efficient, reliable, and flexible alternative. The use of the term "overseer" is intentional, for the terms "controller" or "operator" imply a greater degree of involvement in routine functions. As the vision offers a single human overseeing multiple vehicles operating in diverse physical environments, direct control is not practical. The limitations of the human overseer occur in the ability to maintain situational awareness and avoid what has been called the "soda straw effect"—the tendency to focus on what is presented on the video screen alone, covering a very limited field of view. The creation of a surrounding, combined sensor-observed and virtual environment enhanced by human sensory interfaces serves to mitigate that effect.

As Mr. Finn and his colleagues would assure you, technologies will soon be available to provide such an environment. The ideal environment for the overseer would enable data to be presented in the form of surrounding visual displays using an amalgam of live video and computer-generated imagery, overlaid with symbology and text. Sensory interfaces like the biofeedback suit described in the vision have already been produced for simulation and training purposes. Such interfaces minimize possible disorientation and increase the feeling of participation, even immersion—witness the success of virtual reality entertainment and amusement park rides using a simple combination of a video screen and a minimally moving platform. The difference here is that the sensory input will be coming live from sensors operating in dynamic and remote environments.

That means real-time, simultaneous data transmission from differing sensors. The limitations upon bandwidth and the possibility of interference with other platforms and overseers will require a supremely agile open-architecture network. The addition of real-time control exacerbates the problem and indicates that command by negation or by delegation and the ability to modify missions rather than issue specific "rudder orders" is a more practical approach.[6]

To collate and display the data, it must be presented in an intuitive, easy-to-use format, and control functions must be designed with the human overseer in mind. These must incorporate all the relevant sensor data and other network-provided information in a form that will not overwhelm the

5. Fulghum, David A. "One Man Armies." Aviation Week and Space Technologies. 164, no. 22, (2006): 52-53.

6. In a study entitled, "A Flexible Delegation-Type Interface Enhances System Performance in Human Supervision of Multiple Robots: Empirical Studies With RoboFlag" the authors contend that, "The results provide initial empirical evidence for the efficacy of delegation-type interfaces in human supervision of a team of multiple autonomous robots." In IEEE Transactions on Systems, Man & Cybernetics: Part A. 35. no.4 (2005): 481-493.

user. The computer in this case must serve as a Kappian extension of the human in assisting with the management and assimilation of data. The system must also be flexible enough for the human overseer to "pull" information from other sources that the overseer's intuition and experience deem critical and that the computer may not logically associate with the mission.

An adaptive concept of operations must be developed to account for the optimal employment of the system's capabilities. Rather than a laundry list of possible missions and functions, program sets should describe capabilities, such as persistent surveillance, which could be further delineated by environment, threat, data requirements, and surveillance targets to mention a few. Knowing how the data will be treated and disseminated must be part of the concept. The concept must also address multiple vehicles operating in diverse environments.[7]

Ethical, legal, and practical considerations should guide the design of the system and its operational concepts. The system described by the vision compiles input from more than a single sensor, enabling corroboration of target data. With the proper protocols in place, the human augmented by the computer could prove to be more reliable than either alone.

This takes us back to the core of the system: the human overseer. Of course, the human overseer must be trained to use the system. The development of truly intuitive interfaces will be critical in preventing the overseer being saturated with information or over tasked with vehicle control demands.[8] Again, the biofeedback suit is one dimension of this type of interface, but one could envision making use of other tactile (vibration, acceleration-deceleration, turbulence) and auditory (engine or equipment noise, air/water flow, alarms and alerts) input to augment the visual. If such interfaces are available, the additional training and acclimation required is correspondingly reduced.

At the center of it all, the human "component," the overseer, will need more than mere equipment training to be able to properly use such a complex system. Beside the physical dexterity and mental acuity required, unmanned system overseers will still require the firm ethical grounding required of all our service members. That grounding may need more frequent reinforcement. The feeling of remoteness generated by existing unmanned systems has caused those who operate them to feel detached in more than mere distance. The sensation of watching a video game is not uncommon when observing live data transmitted from unmanned vehicles. This sense of detachment and the absence of personal consequences are phenomena that require consideration before subjecting future overseers to the kind of total absorption the vision predicts.

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7. One concept proposes that, "Deployment of large numbers of unmanned systems in warfighting scenarios will also require a dramatic evolution of operation and control concepts. Today we are already thinking in terms of controlling multiple vehicles of one type (e.g. three or six unmanned aerial vehicles) from a common control station. With large numbers of all types of unmanned systems the general control strategy will have to take on an entirely new dimension wherein the theater commanders and on-scene combatant personnel become the "users" of the products and services provided by the unmanned systems, without the need to worry about the operation and control of the specific unmanned systems themselves. An illustrative example is the delivery of imagery and other intelligence products produced by national assets in real-time for consumption by theater commanders. The theater commander does not have to worry about the operation or control of the national assets themselves, he only requests and receives a product or service. In fact, the deployment, operation, and control of the national assets themselves may involve a broad spectrum of personnel distributed all over the globe." Naval Surface Warfare Center, xvii.

8. "Dissenting voices in the defence community have argued—perhaps with some justification—that future soldier programmes are liable to overload the average soldier with too much information, making it more difficult for him to perform his job effectively." From "Future Solider Projects; Techno Warriors." In The Engineer, Monday, July 17, 2006, 25.

To get a better sense of the potential impact of total immersion in a virtual environment, a review of Sherry Turkle's excellent work entitled *Life on the Screen*[9] is strongly recommended for two reasons. First, Ms. Turkle moves quite comfortably in the realm of technology, particularly in the fields of computer science and artificial intelligence. Second, she adopts a distinctly philosophical bent in her approach, blending the technological and the philosophical with ease. Such talent will be required for those aiming to design the system and the training for the human overseers who use it.

Throughout this discussion, it should have been evident that no single part of this vision is achievable or practical without consideration for the rest of the system. Each component must be designed with the end in mind: the creation of a human-centered, mechanically and digitally augmented command and control, information gathering and disseminating, and ultimately destructive capability. With a host of sensors and vehicles deployed, the overseer has a wide array of options and backups. In a traditional single vehicle, single "pilot" paradigm, if any part fails to perform—the vehicle, the sensors, the communications links, the displays, the computer, the interfaces, or, most importantly, the human operator—then the entire system fails. Such a paradigm proffers an ideal target for an asymmetric counter, as it is so dependent on technology and is subject to single-point failure. The vision system is far less susceptible than a traditional or even a completely autonomous system that is correspondingly completely dependent on technology. The human overseer and a multiple vehicle and sensor configuration thus provide a bulwark against asymmetry.

With an eye towards good stewardship, our research and development centers are beginning to agree that "[n]ational investment of this magnitude with the concomitant reliance on unmanned systems to support our troops predicates that an orderly and systematic engineering approach be instituted to mature these technologies to the significant and crucial role that awaits them in future combat."[10] It behooves us to design, produce, and procure unmanned systems prudently with due regard for their proper integration and with a more complete understanding of the human factor. This requires more than engineering. It requires a strategic view of our aims for unmanned systems. Above all, it requires a more profound appreciation of the impact of this marvelous technology on us, the humans who will make use of its capabilities and who will form its core.

9. See Turkle, Sherry. Life on the Screen. New York: Simon & Schuster, 1995.

10. Naval Surface Warfare Center, xxvii.

CHAPTER FIVE

Future Modeling, Simulation, and Gaming Technology in Strategic and Operational Analysis, Decision Making, and Experiential Education

Overview

The acronym VUCA characterizes the strategic environment in which we must operate. VUCA stands for volatility, uncertainty, complexity, and ambiguity. Future threats will continue to target to creatively and violently attack our vulnerabilities and seams and will often employ idiosyncratic methods and asymmetric techniques which, although they are not new in the course of history, will exploit new tools in the hands of super-empowered groups and individuals who hide, adapt, learn, and strike quickly with precision. How do we learn to cope with volatility, uncertainty, complexity and ambiguity in order to holistically analyze our vulnerabilities, identify these threats, and determine systemic root causes of national security issues and then apply solutions and develop strategies that can withstand the long-term rigors of a complex interconnected world? In other words, do we really understand "what it is we want to do and what we do not want to have happen"? If we can't repeat patterns and if outcomes based on constant inputs are not constant, then how can we anticipate or predict what is on the future horizon?

Since 9/11, the beginning of the Global War on Terrorism, and follow-on military combat operations in Iraq and Afghanistan, the U.S. government and military have been rapidly transforming their emphasis from a Cold War doctrine, which focused almost solely on major war, e.g. direct combat operations, kinetic effects, and large conventional battles, to new, irregular and unrestricted warfare concepts that not only include conventional or kinetic operations but also include operations that address the reality and complexity of the human dimension of conflict. Winning the peace and achieving strategic end state is more than conflict, and will involve a thorough understanding of entity (friend, foe, or neutral) belief systems (however rational or irrational), resultant direct and/or indirect actions, and the interaction and reaction among these various entities. Within the Operational Net Assessment (ONA) concept,[1] the military has coined a holistic framing convention and acronym, PMESII (Political, Military, Economic, Social, and Information and Infrastructure) that outlines the integrated and interrelated systems and domains that are acted upon or are affected through the use of all elements of national power: Diplomatic, Informational, Military and Economic (DIME).

The future challenge for the Modeling, Simulation and Gaming community as a whole is not developing the algorithms to model or simulate effects of physical military systems, e.g. Probability of Kill (PK), Correlation of Forces and Means (COFM), etc. But the real challenge is doing this for psychological effects or human aspects within the complex cognitive and social domains. Most current live, virtual, and constructive (L-V-C) simulations developed by the government and the U.S. military to educate and train leaders and staffs have not been able to fully portray or account for cognitive complex adaptive systems where rational or irrational thoughts, ideas, and actions abound and relationships are

1. Read more about ONA and PMESII at: http://www.jfcom.mil/about/glossary.htm#ONA

constantly changing and morphing. The analytical and educational tools needed must be able to address and account for the nonlinear aspects of the future environment and the expanded time domain we operate in. The difficulty is addressing the nuances and inherent dynamism within complex adaptive systems. Key is being able to collect and process mega-data on and analyze the informational, cognitive and behavioral aspects of an immense and diverse set of targets and tactics—especially the contextually rational behavior of enemies.

The good news is that the U. S government, the Department of Defense (DoD), and its multinational partners have continued to move forward to establish greater corporate Modeling and Simulation (M&S) oversight and community collaborative effort that is providing guidance, coordination and integration of future L-V-C simulations across the military services and Combatant Commands. This ongoing effort transcends simulating and modeling the physical aspect of the operational environment (i.e. effects of weapon systems) and is actively promoting new M&S developments to improve tools for educating, planning, analysis, and decision making that reflect all PMESII effects of DIME actions under the auspices of an "Effects-based Approach."[2]

Overall, DOD M&S initiatives are providing analysts, planners, and decision makers with a markedly greater appreciation and understanding of the human aspects of rational and logical actions of the PMESII. However, these tools are still limited in application because they are generally based on linear and stochastic, deterministic processes and can not fully account for, model, or simulate the cognitive domain or human nature and its illogical or irrational or counter-cultural and social beliefs and resultant actions. So what additional steps can the government and the military take to gain additional understanding and insight into changing dynamics of relationships and discreet interrelationships within or between complex adaptive human systems in order to prevent unintended consequences or second and third order effects that this form of complexity entails?

The traditional bounded problem set or bounded systems that we have historically modeled may be extremely complicated but are not complex. For the future, we must depict an environment that is made up of Complex Adaptive Systems (CAS); therefore, a new approach to modeling and analysis is needed to adequately account for and portray probable outcomes. Traditional modeling defines systems as having objects with relationships: linear homogeneous, in equilibrium, stable, predictable, closed to environment and autonomous. On the other hand, CAS processes are nonlinear heterogeneous, non-equilibrium, meta-stable, unpredictable, open to the environment, and interconnected.

There are multiple methods to assist in predicting future states of a CAS. One method is using Multi-agent Based Modeling (MBM) in future analytical and educational efforts as learning agents and cognitive assistants. MBMs are ideal for analysts and decision makers interested in seeking generative explanations conducting sensitivity analysis, developing interactive theory, and creating generators of "possibility landscapes." The second method is to apply machine learning classification techniques, specifically decision trees and support vector machines, in searching for predictive future states using mega-data sets within a complex adaptive environment. The following papers examine both approaches.

The first paper, by Mr. Tony Cerri and Dr. Alok Chaturvedi, examines U.S. Joint Forces Command's pursuit of the concept of Sentient World Simulation (SWS), a continuously running, continually

2. Anthony Cerri, JFCOM J9 Briefing, Future of Joint Modeling and Simulation, Proteus Workshop; Carlisle Barracks, PA, 24 AUG 2006.

updated model of the world. SWS is based on the Synthetic Environment for Analysis and Simulations (SEAS) and mirrors the real world in many of its key aspects—Political, Military, Economic, Social, Information, and Infrastructure. SWS is designed to sense and react to actual events as they occur anywhere in the world and predict likelihood of future events and evaluate outcomes of courses of actions. SWS provides the ability to examine the likely progression of the status-quo as well as explore "what if" scenarios, for example, to anticipate and shape behaviors of citizens, societies, governments, customers, and competitors.

Dr. George Tecuci and his associates provide a brief overview on research into the development of cognitive assistants for use by intelligence analysts. These assistants have the potential to improve analytic capabilities and alleviate many problems faced by analysts in their daily routine. The cognitive assistant under development is a new type of intelligent agent that can rapidly acquire expertise directly from an analyst. It can subsequently be employed as a tutor for new intelligence analysts in a manner similar to how it was trained. When used as a career-long assistant, it can help an analyst find solutions to complex analytical problems, share intelligence, collaborate with complementary experts and their agents, and report results of research.

Mr. Daniel Mabrey, Dr. John Miller, and Dr. Christopher Hale, of Sam Houston University, propose and evaluate structured analytical models built by applying machine learning classification techniques, specifically decision trees and support vector machines, to tactical data on terrorist/insurgent operations in Iraq from March 2003–April 2006. One of the most basic responsibilities of a counterterrorism analyst is to provide policymakers with information about suspected terrorist groups in the immediate aftermath of a terrorist attack. This process of predicting culpability for terrorist attacks is the product of analytical tradecraft that combines analyst intuition with structured analytical technique, although not in equal parts. In reality, most culpability predictions are based largely on analyst intuition because of the lack of sophisticated structured analytical techniques in this area. Iraq was selected for this study because of the high volume of terrorist/insurgent operations that occur there and the fact that there are numerous identifiable groups committing actions there. Seven model scenarios were constructed for building the analytical models, and the performance of each structured analytical technique was evaluated.

Sentient World Simulation (SWS)

A Continuously Running Model of the Real World

Mr. Anthony Cerri
Experimentation Engineering Lead
Joint Forces Command, J9

Dr. Alok Chaturvedi
Purdue University

Introduction

The goal of the Sentient World Simulation (SWS) is to build a synthetic mirror of the real world with automated continuous calibration with respect to current real-world information, such as major events, opinion polls, demographic statistics, economic reports, and shifts in trends. The ability of a synthetic model of the real world to sense, adapt, and react to real events distinguishes SWS from the traditional approach of constructing a simulation to illustrate a phenomenon. Behaviors, interactions, and relationships emerge in SWS and are observed much as they are observed in the real world. Basing the synthetic world on multi-domain theories in a manner that is unbiased to specific outcomes offers a unique environment in which to develop, test, and prove or disprove different alternative perspectives.

SWS embodies a multi-granularity approach consisting of components capable of capturing new events as they occur anywhere in the world, while offering sufficient detail for any local area of the synthetic world on demand. In other words, the set of models that make up the synthetic environment encompass the behavior of individual entities and simultaneously capturing the trends emerging from the interaction of entities with their environment and with each other. The multi-granularity detail provides a means for inserting new models or incorporating user-supplied data at varying temporal and spatial scales. Therefore, SWS can be continuously enriched and refined as new information becomes available.

SWS consists of the following components:

- A synthetic environment that supports planning, experimentation, and operation. This environment provides a comprehensive representation of the real world at multiple levels of granularity in terms of a system of systems model consisting of Political, Military, Economic, Social, Infrastructure, andInformation (PMESII) elements of geographies.

- A theory design environment supporting automatic characterization of information sources and theories.

• Integrated Development Environments (IDE)s for constructing and configuring new models or modifying existing models and then incorporating these changes into the continuously running synthetic world.

• A single façade of user interfaces accessing the theory and model design environment along with information from all sources (simulation generated data, parameters for models, and data gathered from the real world.) The interfaces allow information, models, and theories to be searched, viewed and modified in an ontology-aware manner.

• A scalable means of integrating heterogeneous components that operate on diverse time and space granularities.

• Mechanisms that discover, gather, and incorporate new knowledge into the continuously running synthetic environment.

• A means to take excursions from a point in time in the synthetic world to focus on select regions of the world, leverage private user data, or to research specific theories by simplifying the types of models to employ in the excursion.

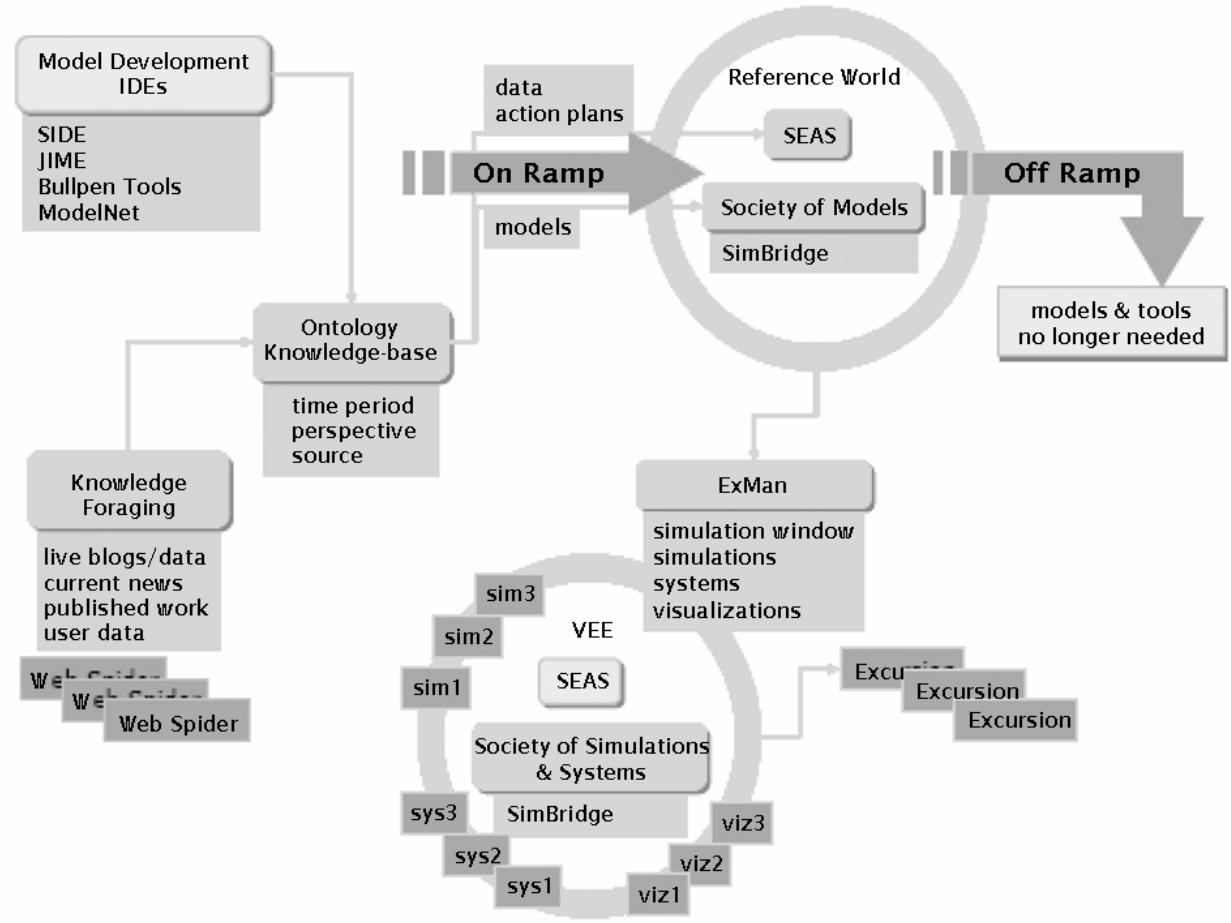

Figure 1. A conceptual view of SWS and its components.

SWS Components

The Core Synthetic Environment That Supports Pluralism of Thought

The core component of SWS is an agent-based environment, named the Synthetic Environment for Analysis and Simulation (SEAS), that provides all aspects of behavior within the PMESII categorization and enables the application of Effects Based Thinking to the reference world of SWS. SEAS is designed to be agnostic to the type of simulations and choice of models in order to allow experimentation in the context of multiple and potentially conflicting theories. The assumption is that no single theory adequately explains complex behavior, such as the rise or splitting of terrorist organizations. Each theory brings another perspective to the same phenomena. Only by combining these theories within the same environment can we gain a comprehensive perspective.

By basing the designing of the synthetic environment on a fractal-like representation, SWS avoids the most common pitfall faced by simulation environments: designing and optimizing an infrastructure for a parochial purpose and thereby limiting its application to a small range of problems. The fractal approach provides models with a consistent representation of the environment's building blocks, enabling access at all granularities. The basic building blocks consist of individuals, organizations, institutions, information, and geographies. From these building blocks communities are built, constructed into societies, nations, and, ultimately, a synthetic world. Coarse-grained models use a small sample of the population and localized fine-grained models use a full sample of the population in an area. The same individual who experiences local events from fine-grained models, such as the building of a new factory and the resulting employment, is also influenced by the coarse-grained models, such as an international economic depression. This approach to enabling heterogeneous models to interact is a Society of Models approach, described below.

An Ontological Representation of Knowledge

Underlying the continuously executing SWS is an ontological representation of concepts that enables theories, models, and data to interact, be searched, and developed. Ontology is commonly defined as 'a shared and agreed upon conceptualization of a domain.' It captures relationships between concepts, enabling meaning to be extracted from a framework of terms. Ontologies facilitate the integration of heterogeneous data sources by resolving semantic heterogeneity among them. Through the ontological representation of SWS, theories about the world are expressed in a formal and logical manner. The virtues of such a formalism are that an ontology: (1) brings a certain degree of clarity to the representation of the world; (2) makes theories readily accessible, evaluable, and reusable by different communities; and (3) makes it possible to exploit the power of logical reasoning systems.

The SWS ontological representation differs from traditional database approaches in that it stores ontology as well as data. Interactions with the ontological annotations of data in the repository are fundamentally different from the interactions allowed by prevailing RDMS and OODBMS approaches to database management. Traditional approaches coordinate tools with data by identifying the physical data in queries whereas SWS enables coordination based on the semantic meaning of data. A piece of data can be annotated with different keywords from diverse disciplines. Analysts as well as automated processes can describe data needs using keywords from their own domains, enabling cross-disciplinary integration and a unified view of both real and synthetic information. A non-ambiguous data categorization and annotation process is also needed to support the distributed and incremental process.

Data is stored within the ontological knowledgebase tagged with its informational sources and temporal lifetime. Consequently, multiple experiments can be performed utilizing the same models combined with different points of views by sourcing data from different informational sources or conducting an experiment in the context of a specific calendar date.

A seminal integration of a knowledge repository with an active simulation environment was successfully deployed in Urban Resolve 2015 (UR 2015). The implementation of an ontological representation of knowledge, called Extensible Net Assessment (xNA), was used to augment analyst knowledge with simulation semantics. Including xNA as a component of the prototype SWS deployed in UR2015 extends the Service Orientated Architecture (SOA) approach to provide a semantics-based integration of analyst knowledge, stored in a repository named Operational Net Assessment (ONA), with emergent simulation data. xNA supports multi-granularity and multi-disciplinary data to facilitate integration in the context of a diversity of models and data sources. xNA can also receive incremental data updates from analysts and automated data collection tools. More details on the prototype SWS are given in "JFCOM J9 Deployment of SWS 0.5 for UR 2015" below.

Knowledge Foraging

An ontological representation supports a forward ontology process whereby data and data models are generalized into higher level knowledge constructs. Intelligent search and semantic mining mechanisms extend the existing ontology with new relationships and entities. The forward ontology process draws evidence from the Internet, published reports and theories, and user supplied data resources in order to instantiate the relevant concepts and relationships in xNA. By doing so, the ontology of xNA remains current and representative in scope of the "accessed" Internet sources in an automated manner.

Relationships are adjusted as real world events unfold and/or as new information surfaces. The result of performing semantic mining of data and relating the data to the existing ontology is the knowledgebase that drives SEAS and its components.

The database can then be used by computational methods in a semantically consistent manner by comparing the relationships between a desired concept and the conceptualization of available data.

Forward ontology development is automated yet allows full transparency of both the process and the resulting ontology. Subject matter experts guide the forward ontology development, identifying the reliability of certain sources and tuning the search and semantic mining mechanisms.

Model Development IDEs

SWS provides a set of tools for use by experts from various domains to develop and experiment with models in the synthetic environment. Since the models span various disciplines, the tools are ontologically based, leveraging the semantics resident within the knowledge repository.

A researcher begins with a set of theories to test. Using algorithms of how the theories interact with the rest of the synthetic world, the researcher creates models. A complete experiment environment is constructed using the newly created models and leveraging existing models. Within the Model Development IDE, a researcher specifies a profile that fulfills the input requirements of the selected models that are not provided within the selection of models and support the experiment's scenario. The

profile is specified as parameters of ontological data that is then used to select from existing models and identify any missing data in the knowledge repository or missing models.

Agent Creation Using the SEAS Integrated Development Environment

SEAS Integrated Development Environment (SIDE) provides the tools to create and retrofit artificial agents in SEAS. Researchers create new types of agents, defining the agent's DNA and memory using the design interfaces of SIDE. The design interfaces also allow DNA and memory of existing agent types to be modified. After creating new agent types, SIDE is used to configure the population makeup of the new agents in the synthetic environment.

Behavior Design Using the Just-In-Time Modeling Environment

After the creation of new agents, researchers use Just-In-Time Modeling Environment (JIME) to create and modify the behaviors of agents. Agent behaviors can be mathematical models based on variables that agents sense from their environment, or can be described procedurally using a workflow engine. A workflow in JIME is a customizable system composed of states, transitions, and messages. The behaviors describe how agents interact with their environment and other fellow agents.

New Model Testing Using the Bullpen Tool

Before incorporating the new agents into the reference world of SWS, agents are prudently tested using the Bullpen Tool. Within Bullpen, the behavior of agents is observed in a limited and controlled environment. Researchers profile environment variables in BullPen experiments to observe the range of decisions an agent makes and an agent's resulting actions.

Internet-Scale Model Development Using ModelNet Integration

Additionally, the modeling environment of SWS is extensible using ModelNet. ModelNet is a collection of Web services that provides the functionalities of the aforementioned tools. Using ModelNet, external modeling tools are integrated into SWS, enabling researchers to design models using tools that are best suited for their specific domains.

A Society Approach to Integration

The cross-disciplinary nature of SWS fosters collaboration among diverse modeling and simulation developers. This diversity necessitates an approach to integration that does not limit developers of SWS components to adopt a uniform design in terms of the temporal and spatial granularities with which the components interact with the synthetic environment or the semantics the components apply to data they produce. Integration in SWS follows a Society Approach, implemented through the SimBridge technology, addressing the need to integrate components in a scalable manner while preserving heterogeneity.

The Society Approach is applied to three areas in SWS to integrate models, simulations, and system components. A Society of Models enables models to operate at diverse temporal and spatial granularities within the same synthetic environment. SEAS employs a Society of Models to integrate models ranging from global, regional, and national PMESII behaviors to near real-time emotional arousal.

SWS does not restrict developers to use the same set of models. Independently developed simulations can be integrated using a Society of Simulations. The Society Approach applied to simulations captures the necessary data exchange among interacting simulations without requiring unscalable, difficult to maintain, and centralized management. A Society of Simulations has been used to integrate SEAS with a tactical, kinetics federation of simulations, Joint Semi-Automated Forces (JSAF). This integration is described more fully in Figure 1.

A Society of Systems extends the Society of Simulations to include non-simulation components, such as third party visualizations, enterprise system databases, analysis tools, and live sensor feeds.

A Society Approach fulfills the need of integrating with the following goals:

- independent and concurrent development of components,
- heterogeneous and reusable components,
- and high fidelity of detail in a scalable system.

Sensitivity to Current Information Through Real-Time Knowledge Discovery

Continuously incorporating current information in SWS provides three key benefits that distinguish SWS from other simulated environment initiatives:

- SWS remains up to date with respect to events and emerging trends;
- SWS leverages the prodigious amounts of data from all publicly available data sources, something that is infeasible for a small number of analysts to gather in a timely manner;
- Models used by SWS are continuously refined, parameterized, and validated, keeping the underlying model base of SWS relevant across time.

Burgeoning technology in the area of knowledge discovery has matured so that Web crawlers and spiders are now used in research and industry. Applying this technology to news portals, blogs, and other Internet sources enables large amounts of data to be gathered and processed in a short amount of time.

By considering all available data, automated data mining provides an unbiased means of incorporating data originating from multiple sources, and, therefore, data from multiple perspectives. Additionally, interesting outliers are discovered through text, video, and transaction analytics.

Believability and reliability metrics are applied to weight the influence of data from different sources depending on the type of source, experience with data from the source, and the type of data. The believability and reliability are then taken into account when incorporating data into the SWS synthetic world.

The discovery technology is coupled with a semantic engine that extracts semantics from the data. The semantics are used to prepare the gathered data for use by the simulations and to relate the data to knowledge already in the synthetic world.

Other sources of data besides the Internet are incorporated using the same knowledge discovery and semantic extraction, such as proprietary, enterprise system, and classified data sources, (classified and proprietary data are only incorporated in select excursions.)

Excursion Management

Excursion Manager (ExMan) provides a dynamic deployment framework for users to configure excursions from the continuously running SWS reference world to meet individual needs of the user. ExMan combines the base system of SEAS models, xNA information, and Action Planner plays with executable simulations and active system components. Experiments deployed by ExMan are configured using a description of the simulations to employ, a Simulation Window, and the set of systems that are required in order for the simulations to execute.

Configuration by Simulation Windows

The Simulation Window configures an instance of the virtual environment by specifying the amount of fidelity to apply to geographical areas based on a scenario's requirements. The spatial fidelity determines the granularity of population representation and number of nodes (leaders, organizations, institutions, infrastructure, and geographies) for an experiment. The temporal fidelity is specified in terms of beginning and ending calendar dates and the size of a unit of simulation time.

Centralized Management of Environments

ExMan also provides a centralized user-interface to manage multiple, parallel experiments, that can include several parallel environments receiving different input scenarios from users. Users are able to instantiate new experiments starting from any calendar date supported by the configuration.

ExMan dynamically discovers all available active Execution Environments (EEs) during startup. EEs are virtualized clusters of systems that synthetic environments can be deployed on. EEs continuously send digital heartbeats to the ExMan, ensuring that ExMan will have the most current deployment information.

To instantiate an experiment, ExMan retrieves a list of configured Simulation Windows from a configuration server. ExMan also loads any checkpoints of simulations executed. This information is then used to instantiate a synthetic environment.

Features of ExMan

User needs addressed by the ExMan include

- Exploring multiple courses of action by taking different sets of actions in identical copies of the reference world.
- Using proprietary or classified data in a controlled experiment without interfering with the publicly accessible SWS.
- Constructing a synthetic environment for only a portion of the world or including only certain models, simulations, tools, visualizations, or data sources.
- Conducting simultaneous excursions in different areas of the world and merging the nonproprietary and unclassified results together.
- Once an excursion is configured, the ExMan fulfills the following:

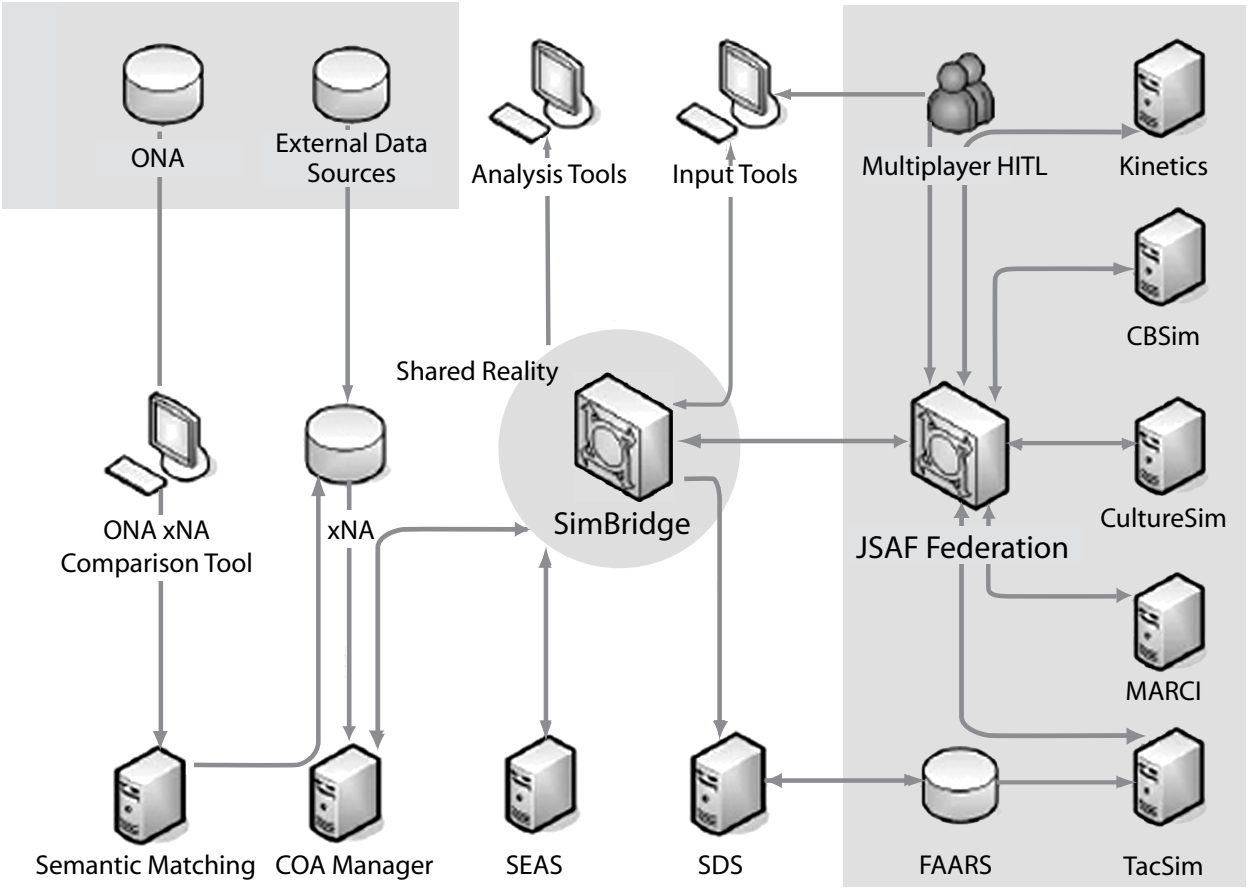

Figure 2. Setup of SWS 0.5 for UR 2015.

- **E**xMan esigns a Society of Systems, consisting of the user-configured choice of simulations and components and any other components that the simulations depend on (referred to as members.)
- **E**xMan sets up Shared Reality, the space shared among all members that are active in the excursion.
- **F**or each excursion, ExMan pulls appropriate information for a specified calendar date from the ontological repository to meet the members' input requirements.
- **E**xMan persists significant simulation results in the ontological repository, tagged with this excursion's identifier, for later analysis and cross-excursion analysis.

JFCOM J9 Deployment of SWS 0.5 for UR 2015

The Urban Resolve 2015 exercise at JFCOM J9 showcased SWS version 0.5. The UR2015 SWS configuration was built from a foundation of the Virtual International System (SEAS-VIS) and the Near Real Time (SEAS-NRT) models, the Extensible Net Assessment (xNA) knowledge repository, and the SimBridge integration technology. SEAS-VIS is a fast time environment used in UR 2015 to simulate the dynamics of 48 countries across the world. Major leaders, infrastructures, institutions, and organizations of the countries of interest were modeled, going down to the granularity of the city government level in certain regions. The SEAS-NRT system provided high spatial and temporal

fidelity to run in conjunction with real-time systems and simulations integrated through the Joint Semi-Automated Forces (JSAF) federation in this exercise. xNA represented data gathered by subject matter experts and imported from a user-supplied, classified database in a digital form that was then used to build the synthetic environment for the SEAS simulation runtime. To do so, all data was described within an ontology that was accessible by models in the synthetic environment. Integration of the fast time and near real-time SEAS models with realtime simulations in JSAF was facilitated by SimBridge, a software technology based on the Society of Simulation concept. Not only has the integration provided through the first installment of SWS, integration with SEAS has proven to be an integral part of expanding the capabilities of JSAF at JFCOM and provides a launch point from which numerous experimentation systems of interest can be developed to address the counter-terrorism community.

Use Cases of SWS

Training

- SWS provides the context within which training excursions are done, presenting the training community with the unprecedented ability to train in a live and comprehensive synthetic environment that is validated by theory and up to date with the real world.
- For skill refinement, a trainee's skills can be directly compared with an experienced individual's skills by immersing the trainee into the synthetic environment in the real-world context where the event actually occurred and analyzing the ensuing reactions of the simulated environment.
- Skill acquisition is supported by the ability to illustrate the emergent effects achieved by certain doctrinal theories, and the proper contexts in which to apply them.
- The experimentation platform provides trainers with the ability to store and recall training experiments, start another training experiment where an earlier one left off, and compare results from multiple experiments.

Analysis

- Analysts' theories are continuously weighed against emergent phenomena in SWS. As SWS progresses with new real world events, the divergence between proposed theories or models indicates a need for a change in thinking. Likewise, the synthetic world may confirm the relevance of theories.
- Cross-excursion analysis reveals the influence of "what if" excursions from a comprehensive perspective.
- The synthetic reference world of SWS provides immediate access to a mix of details from both the real and synthetic worlds. The synthetic worlds remain up to date with respect to real world data and additionally include details which are not easily obtainable in the real world, such as measurements of emotional arousal for a group of people.
- SWS also reveals relationships between entities that emerge over time. Analysts can perform full strategic, operational, and tactical net assessment with access to a dynamic description of the links between nodes and across nodes and resources.

Planning

- SWS provides tools to develop, reuse, and compose action plans into playbooks. A playbook database enables planners to recall playbooks.
- Planning tools enable plans to be developed for temporally and spatially fine-grained actions as well as long-term actions and to place combined plans into a single playbook.
- Additionally, SWS facilitates the integration of interagency participation in computer assisted events.

Operations

- The execution environment enables plans to be utilized in a scenario and decision making to be injected.
- Augmenting real-time information with near real-time and faster than real-time simulations allows RCC to develop and test multiple courses of action to anticipate and shape behaviors of adversaries, neutrals, and partners.
- SWS will provide the ability to develop and assess campaigns involving diplomatic, information, military, and economic actions (DIME).

Experimentation

- Users of SWS can take excursions that are configurable through ExMan for the user's unique needs, such as selectively including or excluding models, interfaces, visualizations, and data sources.
- Users concerned with a localized region of the world can construct an experiment that uses only a subset of SWS by specifying constraints in a Simulation Window.
- The results from multiple excursions can be merged into a single picture using cross-excursion analysis visualizations.
- A subsequent excursion can be instantiated using the results from a previous experiment.
- Researchers can construct experiments to evaluate new models or employ user-supplied data without interfering with the SWS reference world. The new models can be tested and refined in an experimentation environment.

Testing

- SWS provides an environment for testing Psychological Operations (PSYOP) and Civil Affairs activities, capable of illustrating the impact of these activities on populations.
- Commercial users can construct experiments to use proprietary data in a controlled environment.

Cognitive Assistants for Analysts

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1. Introduction

Traditional intelligence analysis suffers from several systemic problems including: information overload; intelligence sharing difficulties; lack of time, methods, and resources for analytic collaboration with area experts; limited capabilities in regard to the consideration of multiple hypotheses; socio-cultural and socio-psychological bias informing the analytic process; lack of time and resources for critical analysis and after-action review; "group-think" (a lack of diverse opinions informing the process) and "paralysis by analysis"; loss of analytic expertise due to downsizing and attrition; lack of time and resources needed to train new analysts; and limited availability and use of tools to improve the analytic process (Lowenthal, 1999; National Commission on Terrorist Attacks Upon the United States, 2004; Wheaton, 2001).

This paper presents joint research performed by the Learning Agents Center of George Mason University and the Center for Strategic Leadership of the U.S. Army War College aimed at developing a new type of analytic tool that will help alleviate several of the above problems (Boicu et al., 2005; Tecuci et al., 2005a). This tool, called Disciple-LTA (learner, tutor, and assistant), is a personal cognitive assistant to an intelligence analyst that rapidly acquires expertise in intelligence analysis directly from the analyst, including the analyst's prior and tacit knowledge, biases and assumptions. It helps the analyst solve complex problems through a mixed-initiative process that makes possible the synergistic integration of a human's experience and creativity with an automated agent's knowledge and speed. It facilitates collaborative problem solving and intelligence sharing between analysts (and their agents) in a network-centric environment. It can rapidly train new analysts and explain its knowledge in a pedagogical way. This new type of intelligent agent, capable of learning, tutoring and decision making assistance, is intended to act as a career-long aid to intelligence analysts. It will be used during classroom learning, for skills maintenance and growth after classroom learning, and for decision support in the field. Finally, it will function as a repository of the analyst's knowledge-base to provide continuity and historical archive for departing analysts, thus codifying individual and personal analytical expertise, otherwise lost forever to the intelligence community.

Research performed in the creation of the Disciple-LTA builds on the Disciple theory, methodology, and family of agent shells for the development of knowledge-based agents by subject matter experts, with limited assistance from knowledge engineers (Tecuci, 1998). Previous versions of the Disciple agent shells were used to build agents for course-of-action critiquing and center-of-gravity analysis, which were

successfully evaluated as part of DARPA's High Performance Knowledge Bases and Rapid Knowledge Formation programs (Tecuci et al. 2001). The Disciple agents for center of gravity analysis have been successfully used in several courses at the U.S. Army War College since 2001 (Tecuci et al., 2002). In the "Case Studies in Center of Gravity Analysis" course the students use trained Disciple agents as intelligent assistants that help them develop a center of gravity analysis of a war scenario. At the same time, the students learn how to perform such an analysis. In the follow-on course, "Military Applications of Artificial Intelligence," the students, now trained in center of gravity analysis, teach personal Disciple agents their own expertise and then evaluate both the developed agents and the development process.

Working closely with the users helped us identify the weaknesses and strengths of the Disciple prototype agents and guided the development of improved agents for subsequent sessions of these courses. A similar strategy is being used for the Disciple-LTA project which is based on the latest version of the Disciple approach (Tecuci et al., 2005b). Disciple-LTA extends the previous approach in several important directions related to its application to intelligence analysis; its capabilities to represent and reason with written evidence; its ability to act as a mixed-initiative problem solving system; and its use as a tutoring system.

The rest of this paper is organized as follows. The next section presents our vision on the integration of intelligence analysis education and operations that guides the development of Disciple-LTA. Then, section 3 presents a systematic approach to hypotheses analysis which is both natural for a human analyst and appropriate for an automated agent, and is the basis of analyst-agent collaboration. Sections 4, 5, and 6 present the three main uses of Disciple-LTA, as a problem solving assistant, as a learning system, and as a tutoring system. Section 7 discusses the development and experimentation approach of Disciple-LTA as well as the evaluation results obtained from users during and after the experimentation processes. Section 8 discusses how this research addresses some of the main challenges of intelligence analysis, results that have already been achieved, and directions of future research.

2. Integration of Intelligence Analysis Education and Operations

Figure 1 presents a long-term vision of the life cycle of a Disciple-LTA cognitive assistant which integrates intelligence analysis education and operations. The starting point (Phase 1) is the development of a Disciple-LTA agent shell customized for intelligence analysis tasks. The Disciple-LTA shell has the required knowledge representation, learning and problem solving capabilities, but no specific domain knowledge in its knowledge base.

In Phase 2, the Disciple-LTA agent shell is trained by expert analysts (with limited assistance from a knowledge engineer) to perform intelligence analysis tasks. The goal of this phase is to create an agent that can act both as a tutor and as a competent collaborator of the human analysts. In our experiments, the subject matter experts are U.S. Army War College (USAWC) professors, as discussed in section 5.

In Phase 3 the trained agents take the role of intelligent tutors, teaching the USAWC students in a way that is similar to how they were taught by the expert analysts.

The USAWC students will take their agents with them, to be used as expert collaborators, during Phase 4. During the agent's normal use in operations, the analyst and the agent will encounter novel situations which are new opportunities for learning. However, the analyst will be primarily concerned

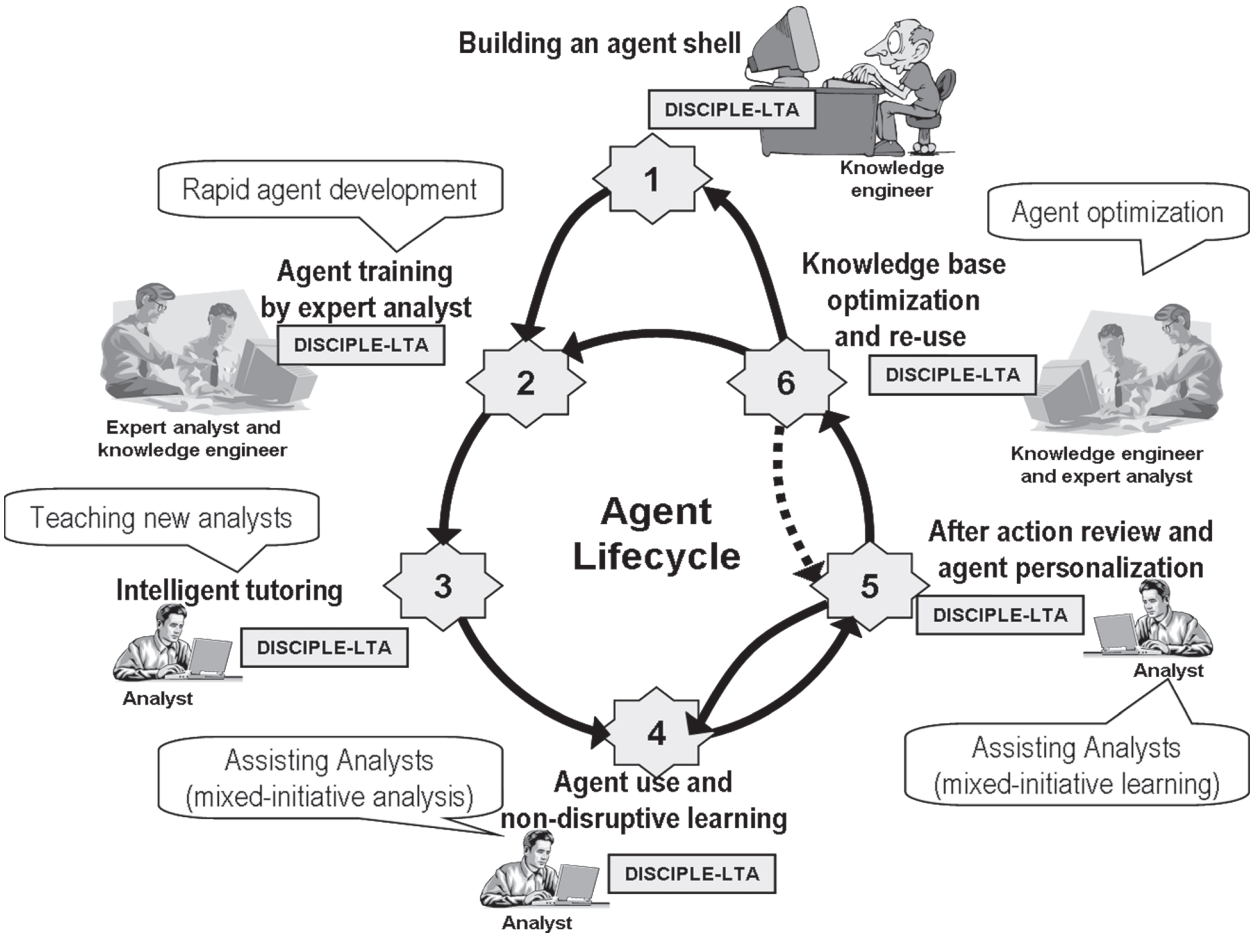

Figure 1. Integration of intelligence analysis education and operations.

with the current problem solving process and will have neither the time nor the incentive to support the learning of the agent. Therefore, the agent will have to learn by employing resource bounded, non-disruptive learning techniques storing relevant experiences for mixed-initiative learning to occur during periodic after-action reviews, represented as Phase 5. During the after-action reviews, the agent will learn not only new reasoning patterns, but also a model of its analyst, incorporating his/her preferences, biases, and assumptions. After the completion of Phase 5, the agent will reenter Phase 4 of its life cycle.

During its use, an agent will acquire a significant amount of problem solving knowledge. However, because its user is not a knowledge engineer, this knowledge will not always be optimally represented and organized. Therefore, during Phase 6, a knowledge engineer will interact with the agent to optimize its knowledge base, with limited assistance from an expert analyst. The optimized agent will be returned to its user (see the line from Phase 6 to Phase 5). Notice also that the knowledge bases of different agents will incorporate the expertise of their analysts. These knowledge bases could be kept to represent the knowledge of various expert analysts, allowing the preservation and future access to this knowledge. A comparative analysis of these knowledge bases (performed during Phase 6) will also reveal valuable new knowledge to be integrated into an improved agent to be used in Phase 2 of a new cycle (see the link from Phase 6 to Phase 2), therefore injecting the learned knowledge back into the process. Phase 6

will also provide Phase 1 with a specification on how to improve the learning agent shell, based on the lessons learned in the previous phases (see the link from Phase 6 to Phase 1).

Figure 2 shows the envisioned use of the Disciple-LTA cognitive assistants in an operational environment. An analyst will be assisted by a personal Disciple-LTA agent. The agent will be able to solve problems either through mixed-initiative reasoning with its analyst, autonomously, or in collaboration with other experts and their agents in a network centric environment.

The Disciple-LTA agents will share and maintain a global knowledge base to facilitate the collaboration between the analysts and their agents. For instance, an analyst, through his/her agent, may collaborate with other experts and their agents to solve problems requiring expertise in multiple areas (e.g. expertise in chemical warfare weapons development, in weapons of mass destruction, or in politics). Similarly, the analyst, through his/her Disciple-LTA agent, may ask the agents of other analysts to provide a solution to the current analysis task from their points of view (i.e. biases, assumptions, prior knowledge), thus reducing the effect of a narrowly focused analytic mindset.

The Disciple-LTA agents will not only assist the human analysts to solve problems and to collaborate, but they will also continuously improve their knowledge by learning from their problem solving experience.

In the rest of the paper we will present current results in realizing this vision and the next steps of our research.

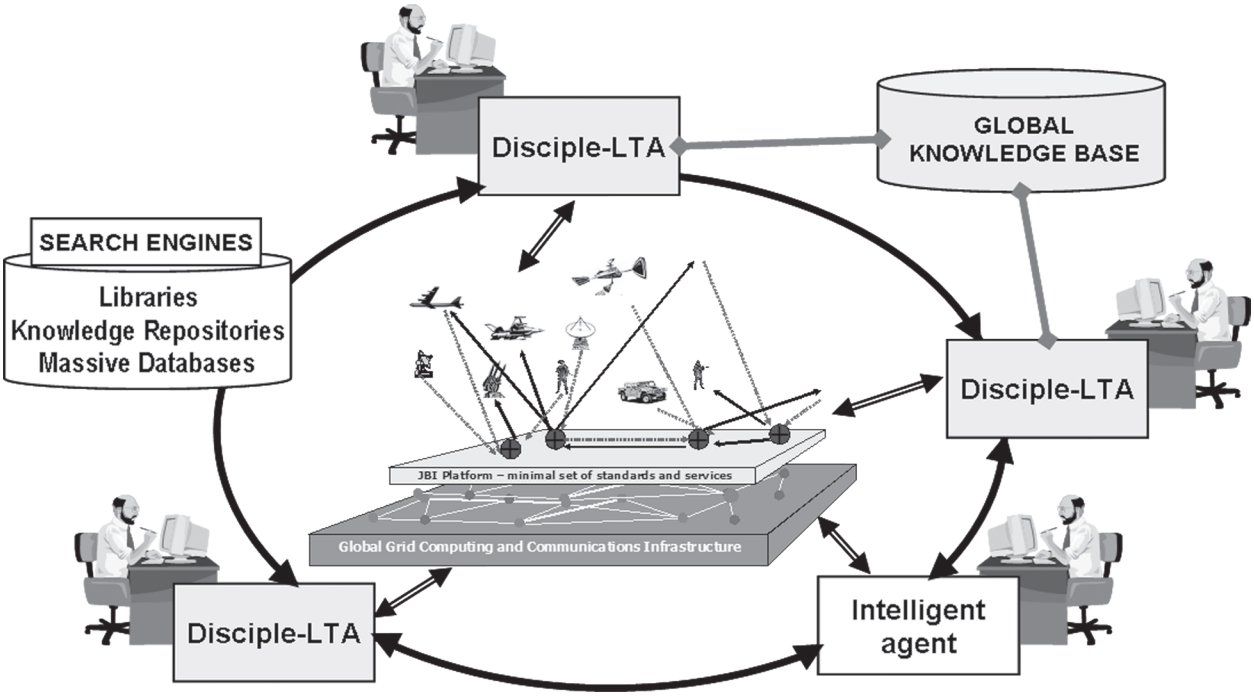

Figure 2. Envisioned use of Disciple-LTA in an operational environment.

3. A Systematic Approach to Hypotheses Analysis

3.1 Hypotheses Analysis through Task Reduction and Solution Synthesis

One of the main results of this research is the development of a systematic approach to intelligence analysis which is both natural for the human analyst and appropriate for an automated agent. This approach is based on the general task reduction and solution synthesis paradigm of problem solving which proved to be suitable for a wide variety of domains (Durham, 2000; Lowrance et al., 2001; Powel and Schmidt, 1988; Tecuci, 1988). Our approach is illustrated by the reasoning tree in figure 3. Such a tree is jointly developed by the analyst and his/her Disciple-LTA assistant and is intended to be a natural and explicit representation of the thread of logic of the analyst, as if he/she would be thinking aloud, as discussed in the following sample problem.

We need to:

> Assess whether Al Qaeda has nuclear weapons.

In order to perform this assessment task, the analyst and the agent will ask themselves a series of questions. The answer to each question will lead to the reduction of the current assessment task to simpler assessment tasks. The first question asked is:

> What factors should we consider to determine whether Al Qaeda has nuclear weapons?

The answer is:

> Reasons to obtain nuclear weapons, desire to obtain nuclear weapons, ability to obtain nuclear weapons, and current evidence that it has nuclear weapons.

This answer leads to the reduction of the above top level task to four simpler assessment tasks, one for each identified factor. Each such task is further reduced in a similar manner, guided by a corresponding question and answer. For instance, the first task is reduced to five simpler tasks. The purpose of this successive task reduction process is to reduce a complex intelligence analysis task T to a set of simpler intelligence analysis tasks T_i which could be performed through evidence analysis. Such tasks are the five tasks mentioned above, the second of which is:

> Assess whether Al Qaeda considers self defense as a reason to obtain nuclear weapons.

The next step is to search for and analyze pieces of evidence that are relevant to each of the tasks T_i. To illustrate this, let us consider the analysis of the task "Assess whether Al Qaeda considers self defense as a reason to obtain nuclear weapons," as illustrated in figure 3:

> Is there any potentially relevant piece of evidence?
>
> Dawn-Mir01-a which mentions that Al Qaeda would use nuclear weapons to defend itself.

Dawn-Mir01-a represents the following fragment from an interview given by Osama bin Laden to Hamid Mir entitled "Osama claims he has nukes: If U.S. uses N-arms it will get same response:" *"We ourselves are the target of killings, destruction, and atrocities. We are only defending ourselves. This is defensive jihad. We want to defend our people and our land. That is why I say that if we don't get security, the Americans, too would not get security."* (Mir, 2001).

We therefore need to:

> Assess to what extent the piece of evidence Dawn-Mir01-a supports or undermines the hypothesis that Al Qaeda considers self defense as a reason to obtain nuclear weapons.
>
> What factors determine how a piece of evidence supports or undermines a hypothesis?
>
> The information provided by the piece of evidence and the extent to which it can be trusted.

We therefore can reduce the above task to two simpler tasks:

> Assess to what extent Dawn-Mir01-a supports or undermines the hypothesis that Al Qaeda considers self defense as a reason to obtain nuclear weapons, assuming that we believe that the information provided by Dawn-Mir01-a is true.
>
> Assess the credibility of Dawn-Mir01-a.

The first of these tasks can be immediately solved (as shown in figure 3):

> Taking into account only the information provided by Dawn-Mir01-a what is the likelihood that Al Qaeda considers self defense as a reason to obtain nuclear weapons?
>
> Very high because Dawn-Mir01-a states that Al Qaeda would use nuclear weapons to defend itself.

Therefore we can conclude that:

> The information from Dawn-Mir01-a supports to a very high degree the hypothesis that Al Qaeda considers self defense as a reason to obtain nuclear weapons.

The second task "Assess the credibility of Dawn-Mir01-a." is solved through a similar process of task reduction / solution synthesis, as will be discussed in the next section. However, for now, let us assume that we have found its solution:

> The credibility of Dawn-Mir01-a is medium.

The next step is to combine these two solutions into the solution of the task:

> Assess to what extent the piece of evidence Dawn-Mir01-a supports or undermines the hypothesis that Al Qaeda considers self defense as a reason to obtain nuclear weapons.

Solution synthesis is also guided by questions and answers (see figure 3), as illustrated below.

We have determined that:

> The information from Dawn-Mir01-a supports to a very high degree the hypothesis that Al Qaeda considers self defense as a reason to obtain nuclear weapons.
>
> The credibility of Dawn-Mir01-a is medium.

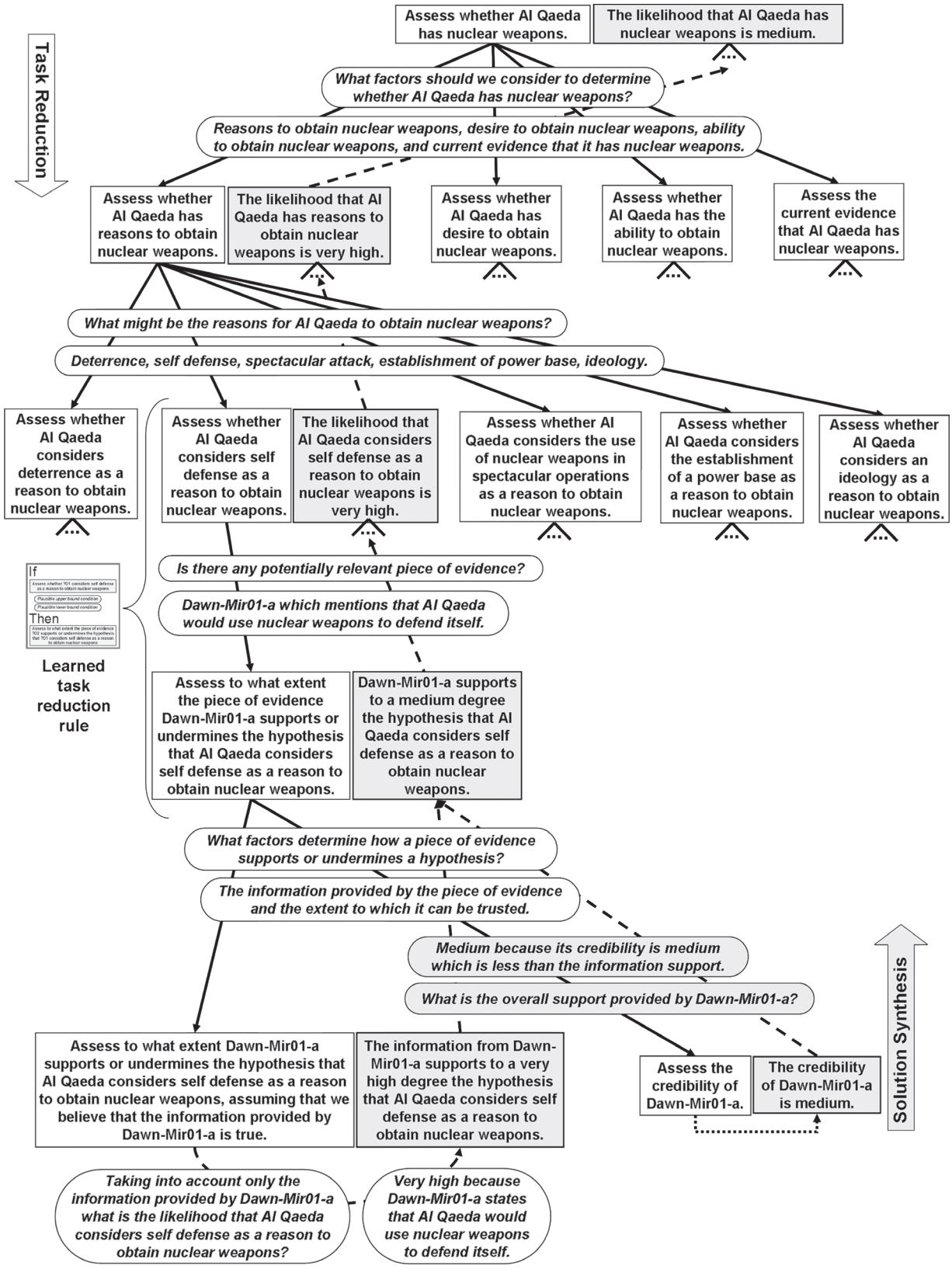

Figure 3. Hypothesis analysis through task reduction and solution synthesis.

In this case:

> What is the overall support provided by Dawn-Mir01-a?
>
> Medium because its credibility is medium and is less than the information support.

Therefore we can conclude that:

> Dawn-Mir01-a supports to a medium degree the hypothesis that Al Qaeda considers self defense as a reason to obtain nuclear weapons.

To summarize these last steps, a task T was reduced to two simpler tasks, the solutions of these simpler tasks have been found, and these solutions have been combined into the solution of T.

We have just illustrated how the task "Assess whether Al Qaeda considers self defense as a reason to obtain nuclear weapons" was performed based on a relevant piece of evidence (i.e. Dawn-Mir01-a). In general, however, we may have several relevant pieces of evidence and all of them have to be used in solving the above tasks. Thus, when we ask the question "Is there any potentially relevant piece of evidence?" we have to consider all the available pieces of evidence. Then we have to analyze the support or the undermining of the current hypothesis provided by each piece of evidence found. After that, we have to combine all the found solutions into a global assessment of the extent to which all the available pieces of evidence support or undermine the analyzed hypothesis.

Essentially, the more complex solution synthesis process for the initial task proceeds from the bottom up, successively combining the solutions of sub-tasks into the solutions of tasks, until the solution of the initial task "Assess whether Al Qaeda has nuclear weapons" is found, by taking into account all the available evidence and knowledge.

The next section discusses a systematic approach to the analysis of a piece of evidence.

3.2 Analysis of a Piece of Evidence

We are also developing a systematic approach to evidence analysis which identifies different types of evidence and defines analytic procedures that are specific to each type. This approach is inspired by the theory of evidence developed by Schum (2001) which distinguishes between the following types of evidence: *tangible* (objects, documents, images, measurements, charts), *unequivocal testimonial* (direct observation, second hand, or opinion), *equivocal testimonial* (complete equivocation or probabilistic), *missing tangible or testimonial*, and *authoritative records* (accepted facts).

To illustrate our approach, let us consider the task "Assess the credibility of Dawn-Mir01-a." As indicated in the previous section, Dawn-Mir01-a represents a fragment from a newspaper article where the author, Hamid Mir, cites Osama bin Laden. Considering Schum's types of evidence, Dawn-Mir01-a is second hand testimonial evidence. Therefore, to analyze its credibility, one would need to consider both the credibility of Osama bin Laden (the original source), and the credibility of Hamid Mir (who may have potentially altered the information). Figure 4 illustrates this analysis in the task reduction / solution synthesis framework.

We need to:

> Assess the credibility of Dawn-Mir01-a.

Was Dawn-Mir01-a obtained as a second-hand evidence and, if yes, what is the reporting chain?

Yes, Dawn-Mir01-a is testimonial evidence of Osama bin Laden cited in Dawn-Mir01 by Hamid Mir.

Therefore we need to:

Assess the credibility of Hamid Mir as the reporter of Dawn-Mir01-a.

Assess the credibility of Osama bin Laden as the source of Dawn-Mir01-a.

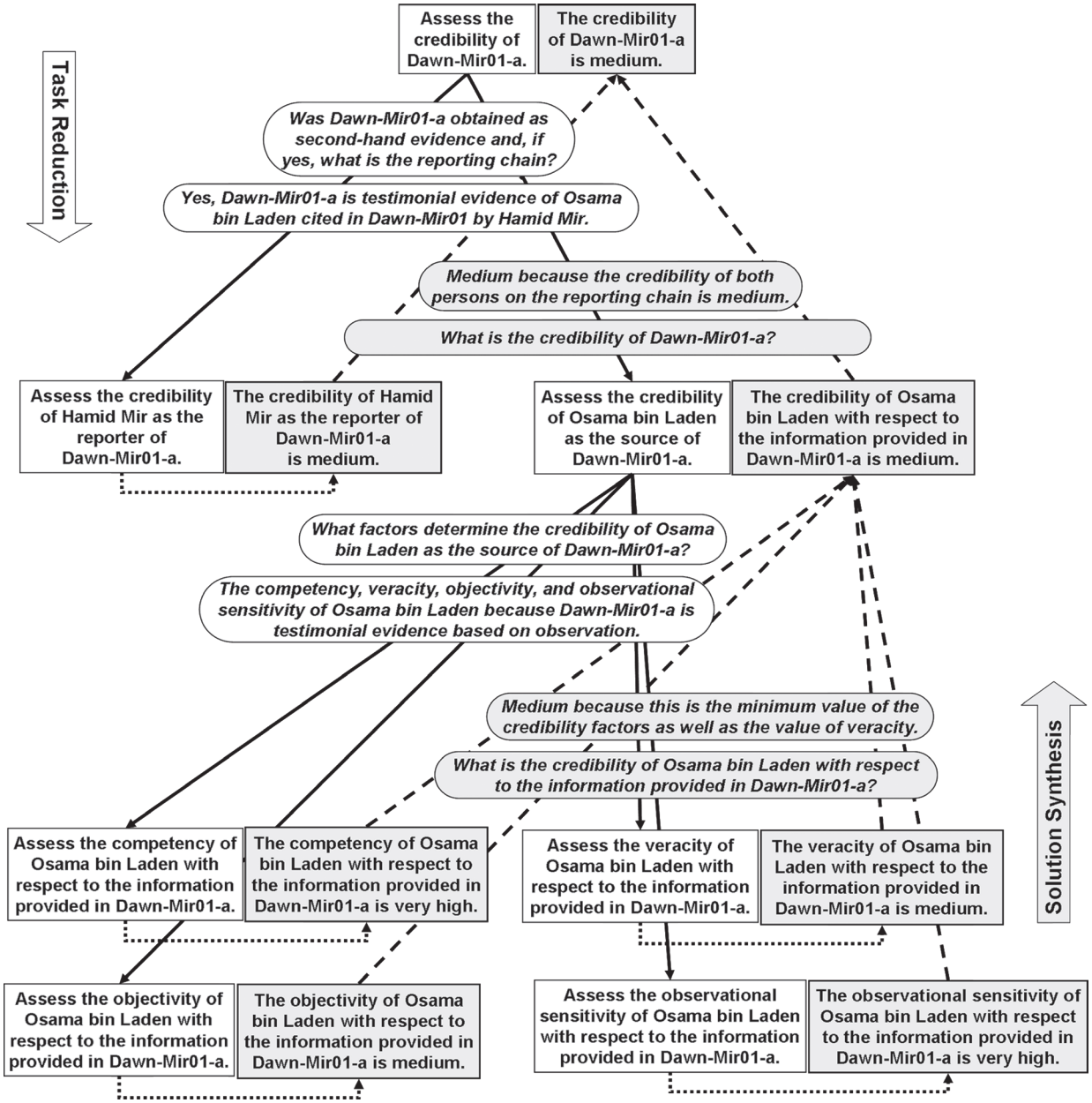

Figure 4. Credibility analysis through task reduction and solution synthesis.

Let us consider the credibility of Osama bin Laden:

> What factors determine the credibility of Osama bin Laden as the source of Dawn-Mir01-a?
>
> The competency, veracity, objectivity, and observational sensitivity of Osama bin Laden because Dawn-Mir01-a is testimonial evidence based on observation.

Therefore we need to solve the following four tasks, one for each credibility factor:

> Assess the competency of Osama bin Laden with respect to the information provided in Dawn-Mir01-a.
>
> Assess the veracity of Osama bin Laden with respect to the information provided in Dawn-Mir01-a.
>
> Assess the objectivity of Osama bin Laden with respect to the information provided in Dawn-Mir01-a.
>
> Assess the observational sensitivity of Osama bin Laden with respect to the information provided in Dawn-Mir01-a.

The *veracity* of an observer refers to the degree to which that observer believes that the event actually occurred (i.e. is Osama bin Laden lying or is he telling the truth?). The *objectivity* of an observer refers to the degree to which one attends to the evidence of his/her senses and does not let personal motivations or expectations determine what he/she will believe. The *observational sensitivity* or *accuracy* of an observer refers to the degree to which one's senses (as well as the conditions of observations and the observer's physical condition at the time of observation) gives evidence to reported observation (Schum, 2001).

Estimating the above components of credibility may themselves be complex tasks, solved also through task reduction and solution synthesis. For instance, to estimate the veracity of Osama bin Laden the analyst may need to consider previous statements made by him and the extent to which they proved to be true or false.

After the components of Osama bin Laden's credibility are evaluated, they need to be combined into an overall estimation of his credibility, as illustrated at the bottom of figure 4 and in the following.

We have determined that:

> The competency of Osama bin Laden with respect to the information provided in Dawn-Mir01-a is very high.
>
> The veracity of Osama bin Laden with respect to the information provided in Dawn-Mir01-a is medium.
>
> The objectivity of Osama bin Laden with respect to the information provided in Dawn-Mir01-a is medium.
>
> The observational sensitivity of Osama bin Laden with respect to the information provided in Dawn-Mir01-a is very high.

In this case:

> What is the credibility of Osama bin Laden with respect to the information provided in Dawn-Mir01-a?
>
> Medium because this is the minimum value of the credibility factors as well as the value of veracity.

Therefore we can conclude that:

> The credibility of Osama bin Laden with respect to the information provided in Dawn-Mir01-a is medium.

The credibility of Hamid Mir is determined in a similar manner as being medium. Then both these credibility estimates are combined into an overall credibility for the piece of evidence Dawn-Mir01-a (see the top of figure 4).

The above is an illustration of how a piece of evidence can be rigorously analyzed, based on its type, in the task reduction / solution synthesis framework. Our current research considers how to analyze other types of evidence in the presented framework.

3.3 Summary of the Hypothesis Analysis Process

The analysis from figure 3 and figure 4 illustrates the following general hypothesis analysis process:

1) A complex intelligence analysis task T is successively reduced to simpler tasks T_i that either have known solutions or can be solved through evidence analysis. As a result, the analyst determines what kind of pieces of evidence to look for.
2) Potentially relevant pieces of evidence for each task T_i are identified.
3) The identified pieces of evidence are analyzed through task reduction and solution synthesis and a solution for each task T_i is obtained.
4) The solutions of the tasks T_i are successively combined, from bottom-up, to obtain the solution for the initial task T.

The next sections present a brief overview of the three roles of Disciple-LTA: as a problem-solving assistant, as a learning system, and as a tutor.

4. Disciple-LTA as a Problem Solving Assistant

The main problem-solving engine of Disciple-LTA is based on the general task reduction / solution synthesis paradigm illustrated in the previous section. To be able to generate reasoning trees like the ones from figure 3 and figure 4, the knowledge base of a Disciple agent is structured into an object ontology and a set of general problem solving rules.

The *object ontology* is a hierarchical representation of the objects and type of objects from the application domain, together with their properties and relationships (Fensel 2000; Stanescu et al., 2003). The objects to be represented include different types of intelligence sources, such as HUMINT

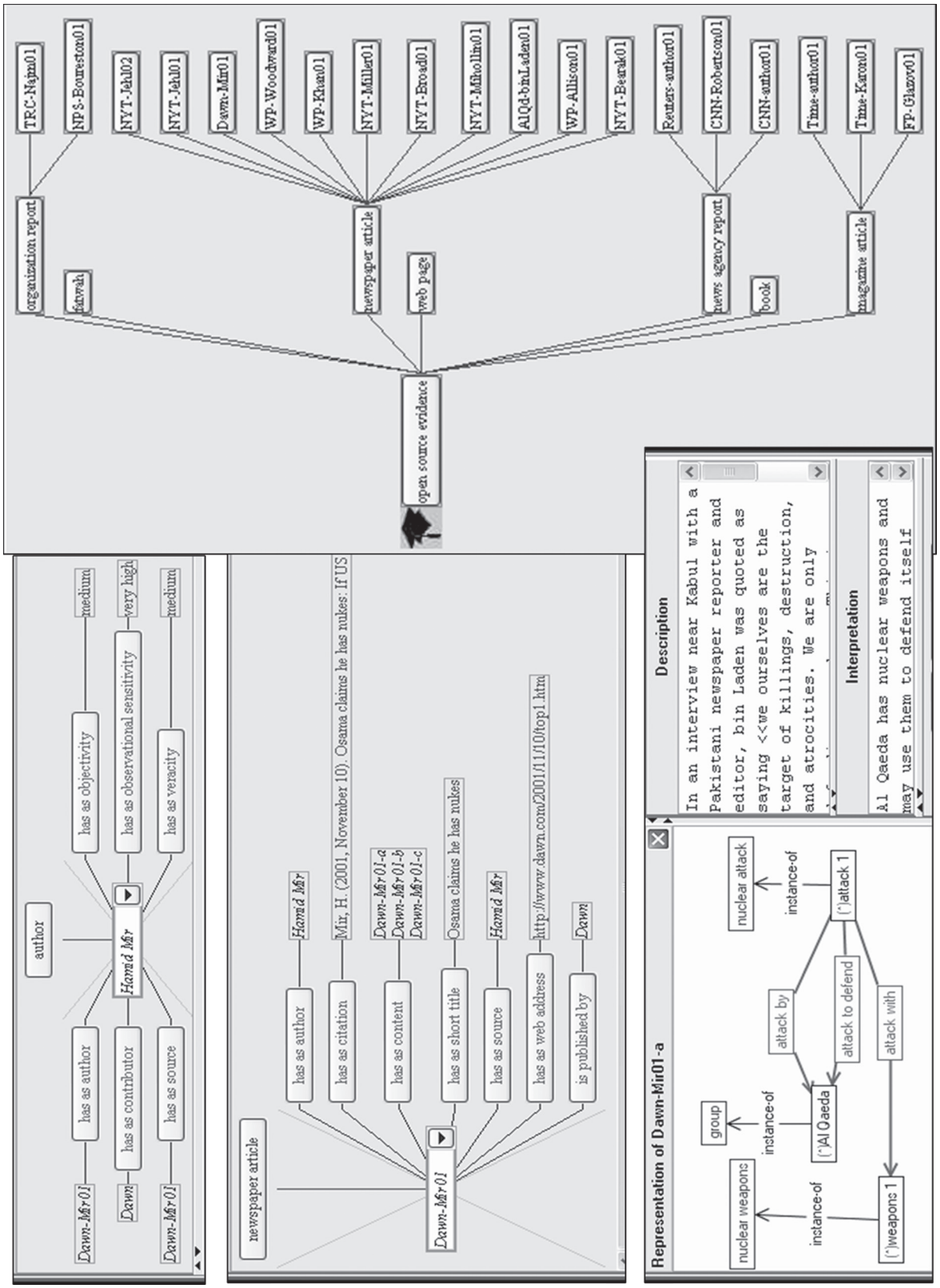

Figure 5. Fragments from the object ontology of Disciple-LTA.

(e.g. intelligence obtained from agents, informers, observants) or OSINT (e.g. intelligence obtained from books, newspaper articles, magazine articles, and research reports available to the public), as well as descriptions of entities (such as states, terrorist groups, individuals) and different types of weapons (e.g. nuclear, chemical, biological, radiological), etc. depending on the types of tasks to be solved by Disciple-LTA.

Figure 5 represents several fragments from the current object ontology of Disciple-LTA, shown in the interface of some of the system's viewers. The right hand side pane illustrates the interface of the Graphical Tree Browser. It shows a (rotated) hierarchy fragment the top of which is open-source evidence. Under it there are several types of open-source evidence such as, organization report, fatwah, newspaper article, web page, news agency report, etc. Under the category of newspaper article are the actual articles represented in the ontology, one of which is Dawn-Mir01, an article from the Dawn newspaper, authored by Mir.

The two panes from the upper left side of figure 5 illustrate the interface of the Association Browser. The top pane shows the description of Hamid Mir, the author of Dawn-Mir01. The middle pane shows the description of Dawn-Mir01. The descriptions of these entities are in terms of their properties and relationships. For instance, Dawn-Mir01 has as content Dawn-Mir01-a which was used as a piece of evidence in the tree from figure 3.

Part of the representation of Dawn-Mir01-a is shown in the interface of the Evidence Editor, located in the bottom-left side of figure 5. The upper right side of this pane shows the natural language description of Dawn-Mir01-a. Under it there is the analyst's interpretation of this description: "Al Qaeda has nuclear weapons and may use them to defend itself." At the bottom left side of figure 5 there is the formal representation of this interpretation: (*)attack1 is a nuclear attack. This is an attack by (*)Al Qaeda, an attack to defend (*)Al Qaeda, and an attack with (*)weapons1 which are nuclear weapons. Notice that some objects are preceded by *. This is to indicate that these are not the objects themselves, but views of these objects from Dawn-Mir01-a. Different pieces of evidence will generally have different and even contradictory views on some objects. For instance, in Dawn-Mir01-a, (*)Al Qaeda is viewed as a group (because this is how presumably Osama bin Laden is viewing it), while in other parts of the ontology (which represent analyst's knowledge), Al Qaeda is a terrorist group.

The reasoning trees like the ones from figure 3 and figure 4 are generated through the application of task reduction and solution synthesis rules. An example of a task reduction rule is presented in figure 6. This is an IF-THEN rule that indicates the condition under which one could solve the IF task by solving the

IF: Assess the credibility of *?O1*.

Q: Was *?O1* obtained as a second-hand evidence and, if yes, what is the reporting chain?

A: Yes, *?O1* is a testimonial evidence of *?O3* cited in *?O4* by *?O2*.

MAIN CONDITION

VAR	BOUND
?O1	(testimonial evidence)
?O2	(source)
?O3	(source)
?O4	(evidence)

VAR	RELATIONSHIP	VAR
?O4	has as content	*?O1*
?O1	has as source	*?O3*
?O4	has as source	*?O2*

THEN: Assess the credibility of *?O2* as the reporter of the *?O1*.
Assess the credibility of *?O3* as the source of the *?O1*.

Figure 6. Task reduction rule.

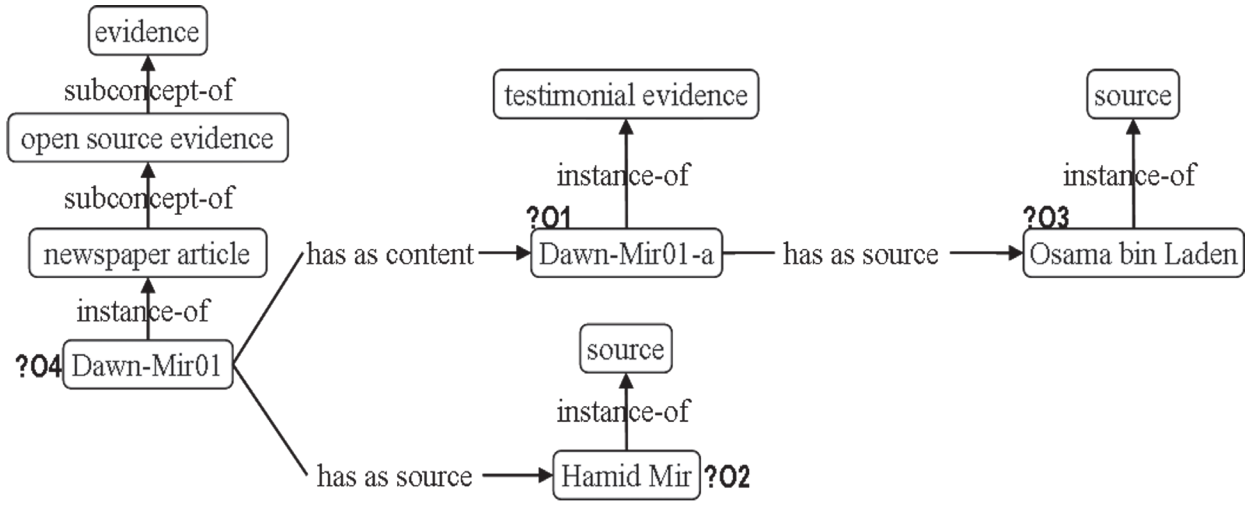

Figure 7. Fragment from the object ontology of Disciple-LTA.

THEN tasks. There are two alternative forms of the condition, one for the analyst and the other for the agent.

The condition for the analyst consists of a question (Q) and its answer (A). That is, if the question Q has the answer A, then one can reduce the IF task to the THEN tasks. Notice that the rule in figure 6 was used to generate the task reduction step from the top of figure 4 by instantiating ?O1 to Dawn-Mir01-a, ?O2 to Hamid Mir, ?O3 to Osama bin Laden, and ?O4 to Dawn-Mir01. Thus the rule's tasks, question and answer are used to generate reasoning trees that can be naturally followed by an analyst.

The condition for the agent (called MAIN CONDITION in figure 6) consists of relationships that have to exist between the rule's variables in order to reduce the IF task to the THEN tasks. More specifically, in order to determine whether a rule like the one in figure 6 can be applied to reduce a task, such as "Assess the credibility of Dawn-Mir01-a" from the top of figure 4, the agent has to do two things. First, it has to check that the IF task of the rule (i.e. "Assess the credibility of ?O1") matches the current task (which is true for ?O1 instantiated to Dawn-Mir01-a). Second, it has to determine that the MAIN CONDITION of the rule is satisfied. This means that the agent has to find objects in its ontology that match all the rule's variables and satisfy the condition. In our case the instances of the variables indicated in the previous paragraph have all the features specified in the MAIN CONDITION, as shown in figure 7. Indeed, Dawn-Mir01 (which matched ?O4) is a newspaper article, which is an "open source evidence" (see also the right hand side of figure 5), which is, in turn, contained within the broader category of "evidence." Thus the condition "?O4 is an evidence" is satisfied. The conditions "?O4 has as source ?O2" and "?O4 has as content ?O1" are also satisfied because "Dawn-Mir01 has as source Hamid Mir" and "Dawn-Mir01 has as content Dawn-Mir01-a" (see these features also in the middle left pane from figure 5), and so on.

5. Disciple-LTA as a Learner

The Disciple-LTA learning agent shell is a general knowledge-based agent which has no specific knowledge in its knowledge base, but can be taught by an intelligence analyst and can develop its knowledge base to become an analyst's assistant and a tutor for new analysts. The process of developing

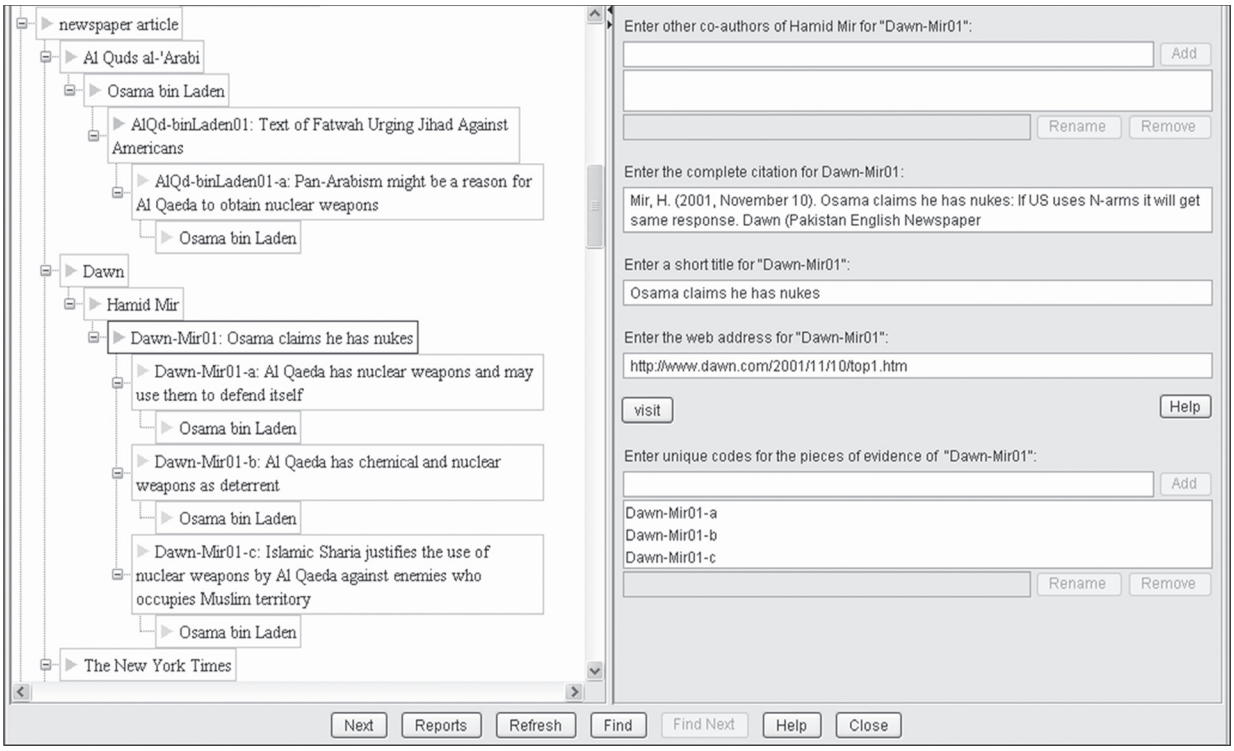

Figure 8. The interface of the Evidence Elicitation module.

a specific Disciple-LTA agent for a class of intelligence analysis tasks consists of two main phases, which are briefly discussed in the following:

1) The development of an initial object ontology, which is performed jointly by a knowledge engineer and an expert analyst, and
2) The teaching of Disciple-LTA, which is performed by the intelligence analyst, with limited assistance from the knowledge engineer.

5.1 Ontology Development

The object ontology is developed by importing ontological knowledge from existing knowledge repositories and by using the ontology building tools of Disciple. While, in general, the ontology is developed by a knowledge engineer and an expert analyst, several of the ontology modules have been developed to be easily used by the analyst, with no assistance from a knowledge engineer. Two of such modules are the Graphical Tree Browser and the Association Browser mentioned in section 4. Another one is the Evidence Elicitation module, the interface of which is shown in figure 8. This module guides the analyst to describe an open-source piece of evidence, such as a newspaper article (e.g. Dawn-Mir01), by requesting specific pieces of information (e.g. "Enter the complete citation for Dawn-Mir01" or "Enter a short title for Dawn-Mir01"). Based on the information provided by the analyst, Disciple-LTA generates an internal representation of the piece of evidence. For instance, based on the dialog illustrated in figure 8, Disciple-LTA generated the internal representation of Hamid Mir and Dawn-Mir01 shown in the two upper-left panes from figure 5.

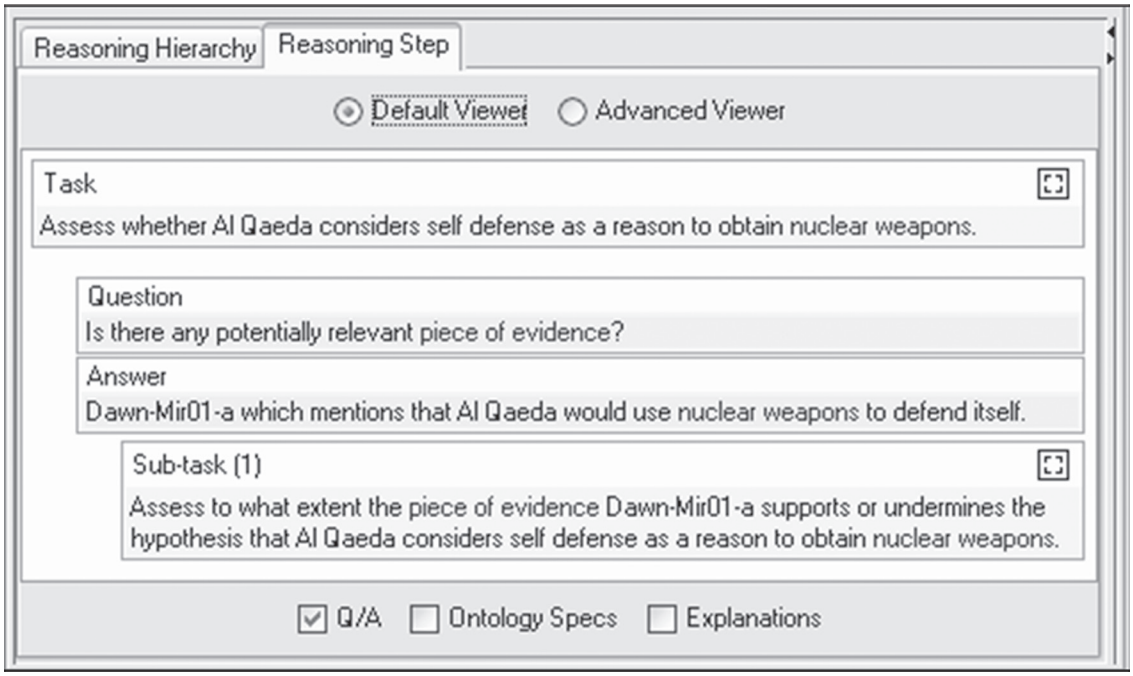

Figure 9. Task reduction step from figure 3 shown in the Reasoning Step Viewer.

5.2 Agent Teaching and Rule Learning

Once an initial object ontology has been developed, the analyst may start teaching the agent his/her problem solving expertise, including his/her problem solving strategies, prior and tacit knowledge. The analyst considers typical intelligence analysis tasks, such as the one from the top of figure 3, builds the reasoning tree, and helps the agent to understand each problem solving step. From each problem solving step the agent learns a general reasoning rule, which will allow it to solve similar problem solving tasks (Boicu, 2002).

Consider, for instance, the reasoning step from the middle of figure 3, this time shown in the interface of the Reasoning Step Viewer from figure 9. From this reasoning step, Disciple-LTA has learned the IF-THEN task reduction rule from figure 10. This rule indicates under what condition that IF task can be reduced to the simpler THEN task. Notice that the tasks, question, and answer are generalizations of the corresponding expressions from the example, where each specific object (i.e. Al Qaeda and Dawn-Mir01-a) was generalized to a variable (i.e. ?O1 and ?O2, respectively). When this rule is used in problem solving, the variables ?O1 and ?O2 are instantiated to specific objects, as discussed in section 4. The role of the rule's condition is to restrict the possible values of these variables so that any instantiation of the rule makes sense. Thus the main goal of the rule learning process is to determine this condition, which is done as briefly explained below.

First of all, let us notice that the analyst's explanation of why the task reduction step from figure 9 makes sense is given by the question and answer following the top task:

Is there any potentially relevant piece of evidence? [1]

Dawn-Mir01-a which mentions that Al Qaeda would use nuclear weapons to defend itself.

Rule Viewer

DECOMPOSITION RULE DDR.00003 FORMAL DESCRIPTION

IF:	Assess whether *?O1* considers self defense as a reason to obtain nuclear weapons.

Q:	Is there any potentially relevant piece of evidence?
A:	*?O2* which mentions that *?O1* would use nuclear weapons to defend itself.

MAIN CONDITION

Var	Lower Bound	Upper Bound
?O1	(terrorist group)	(actor)
?O2	(elementary piece of evidence)	(elementary piece of evidence)
?O3	(group)	(actor)
?O4	(nuclear attack)	(nuclear attack)
?O5	(nuclear weapons)	(nuclear weapons)

Var	Relationship	Var
?O2	states as view	*?O3*
?O3	is view of	*?O1*
?O2	states as view	*?O4*
?O2	states as view	*?O5*
?O4	attack by	*?O3*
?O4	attack with	*?O5*
?O4	attack to defend	*?O3*

THEN:	Assess to what extent the piece of evidence the *?O2* supports or undermines the hypothesis that the *?O1* considers self defense as a reason to obtain nuclear weapons.

Figure 10. A task reduction rule learned from the example in figure 9.

However the question-answer pair is in natural language and the analyst has to help Disciple-LTA to "understand" its meaning, that is, to determine its representation in terms of the objects and features from the agent's object ontology.

First let us notice that Dawn-Mir01-a is a piece of evidence that includes some statements about Al Qaeda. However these statements may or may not be true. Therefore they are not represented in the agent's knowledge base as facts about Al Qaeda, but as facts about the view of Al Qaeda expressed by Dawn-Mir01-a, view denoted by (*)Al Qaeda. Thus the names of all the objects mentioned in Dawn-Mir01-a (e.g. Al Qaeda, weapons, attack) are preceded by (*). This aspect was also mentioned in section 4, where we have presented the representation of Dawn-Mir01-a inside the Evidence Editor (see the lower left pane from figure 5).

In the object ontology of Disciple-LTA, Dawn-Mir01-a is represented as a piece of evidence that mentions an attack by Al Qaeda, an attack with nuclear weapons, attack intended to defend Al Qaeda, which is in essence the meaning of the above question-answer pair. Thus the following expressions (called explanation pieces) express the meaning of the question-answer pair [1] in the agent's ontology:

Dawn-Mir01-a —is—> piece of evidence [2]

Dawn-Mir01-a —states as view—> (*)Al Qaeda —is view of—> Al Qaeda

Dawn-Mir01-a —states as view—> (*)weapons 1 —is—> nuclear weapons

Dawn-Mir01-a —states as view—> (*)attack 1 —is—> nuclear attack

(*)attack 1 —attack by—> (*)Al Qaeda

(*)attack 1 —attack with—> (*)weapons 1

(*)attack 1 —attack to defend—> (*)Al Qaeda

Disciple-LTA will use analogical reasoning with previously learned rules, as well as general heuristics, to hypothesize the meaning of the question-answer pair [1]. It will generate plausible explanation fragments, like the above ones [2], ordered by their plausibility. Then the analyst will select those explanation fragments that best express the meaning of the question-answer pair [1]. As illustrated above, each explanation fragment proposed by the agent is a relationship (or a relationship chain) involving instances, concepts and constants from the task reduction step and from the knowledge base. The analyst may also help the agent to propose the right explanation pieces by proving hints, such as pointing to a relevant object that should be part of them.

Based on the example from figure 9 and its explanation [2], and using the object ontology as the basis for generalization, Disciple-LTA learned the rule from figure 10. Notice that this rule is only partially learned, and will need to be further improved. Indeed, instead of a single applicability condition (MAIN CONDITION), it has two bounds for this condition, a Lower Bound and an Upper Bound. The Lower Bound is obtained from the minimally general generalization of the example and its explanation, in the context of the current ontology, while the Upper Bound is obtained from the maximally general generalization. For instance, Al Qaeda (?O1) has been generalized to a terrorist group in the Lower Bound and to an actor in the Upper Bound. Based on additional examples, Disciple will determine whether the exact set of values for ?O1 should be terrorist group, or actor, or something in between, such as group.

From each of the reasoning steps in figures 3 and 4, Disciple-LTA learned a reasoning rule like the one in figure 10. As Disciple-LTA is trained by the analyst and learns new rules, the analyst-agent interaction evolves from a teacher-student interaction toward an interaction where both collaborate in performing an intelligence analysis task. For instance, based on the rules learned from the tree in

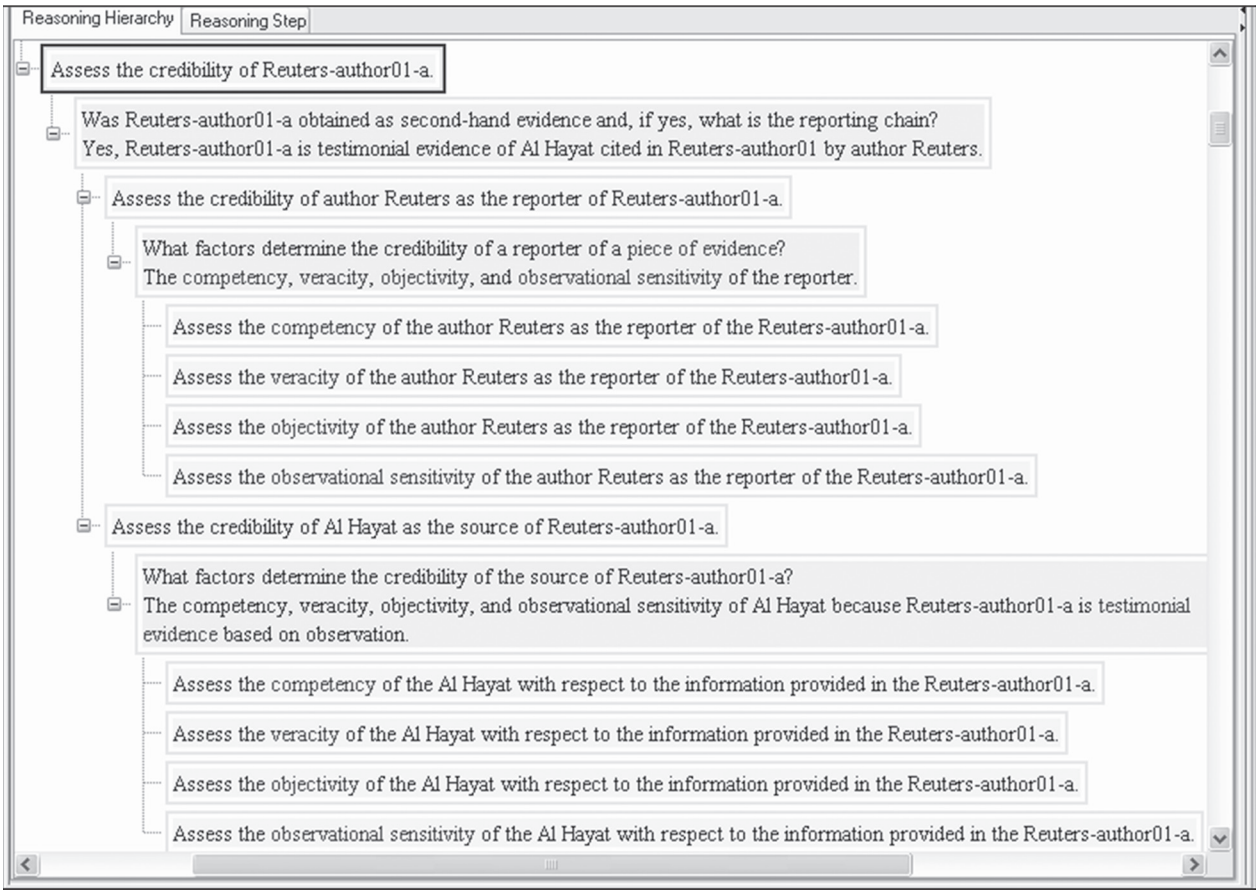

Figure 11. The interface of the Reasoning Hierarchy Viewer.

figure 4, Disciple-LTA automatically generated the tree from figure 11 (shown in the interface of the Hierarchical Viewer).

During interactive problem solving with the analyst, Disciple-LTA learns not only from the contributions of the analyst, but also from its own successful or unsuccessful problem solving attempts, which lead to the refinement of the learned rules. For instance, Disciple-LTA will generalize the lower bound condition of the rule in figure 10 when proposing correct reductions in order to include a generalization of these new cases. It will also specialize the upper bound condition when proposing incorrect reductions, to avoid making similar mistakes in the future. Alternatively, it may add except-when conditions that should not be satisfied in order for the rule to be applicable. Thus, in time, the lower and upper bounds of the learned rules will converge toward one-another, and new except-when conditions may be added to the rules, leading to complex, but accurate reasoning rules that represent analyst's expertise.

6. Disciple-LTA as a Tutor

The main idea of using Disciple-LTA as a tutor is to teach new analysts in a way that is similar to how Disciple-LTA was itself taught by an expert analyst. Thus the roles are now reversed, with the agent being the expert and the human the learner. The agent will now consider typical intelligence

analysis tasks, such as the one from the top of figure 3, and will explain to the student analyst how to solve them in a systematic way.

Our current research concentrates on developing the tutoring capabilities of Disciple-LTA by developing modules for learning and refining tutoring knowledge, for learning a student's model, for test generation, and for student evaluation. Experimentation and evaluation of these modules was performed at the U.S. Army War College during the Spring 2006 offering of the course "Military Applications of Artificial Intelligence: Intelligence Analysis."

7. Experimentation Environment and Experimental Results

We are developing Disciple-LTA using an approach similar to the User-Centered Systems Engineering Process (DeBellis and Haapala, 1995) which encourages the developers and the users to collaborate during software design. Furthermore, because there is a strong correlation between a system's success and the way it fits within an existing organization, our approach takes into account the organization of the military, its cycles of military education and practice, and the new challenges that it faces in the current war on terror.

Disciple prototypes are developed iteratively and incrementally, and are evaluated in periodic formal experiments, to obtain crucial feedback. Successive prototypes have increasing functionality and approximation of user needs. This approach identifies risks and problems early, making corrections less expensive and more effective.

We use an experimentation environment similar to one which was very successfully used for Disciple-RKF, as part of the DARPA's Rapid Knowledge Formation Program (Tecuci et al., 2002). Experimentation is conducted during the Military Applications of Artificial Intelligence (MAAI) course, taught every Spring at the U.S. Army War College. MAAI is an elective attended by intelligence analysts and individuals with an interest in artificial intelligence and intelligence analysis; but generally, there are no students with knowledge engineering experience. The first evaluation took place in Spring 2005.

Throughout the conduct of the course, we have collected useful feedback on the Disciple approach and the current implementation of the tools used by the students. The feedback was collected in the form of questionnaires where the students were requested to express their agreement or disagreement with various statements, taking one of the following 5 positions: strongly agree, agree, neutral, disagree, and strongly disagree. Sample evaluation results are presented in table 1.

The top part of table 1 contains the evaluation results for the task reduction paradigm discussed in section 3. The second part of table 1 contains the evaluation results for the Evidence Elicitation Tool, the interface of which is shown in figure 8. The third part of table 1 contains the evaluation of the Rule Learning Tool which was described in section 5.2. Finally, the bottom part of table 1 contains some general assessments of Disciple. These and other results provided both valuable feedback on the current development of Disciple-LTA, and a significant support of its usefulness to the Intelligence Community.

In the next section we review some of the challenges of intelligence analysis and how the current or future versions of Disciple-LTA can address them.

The Task-Reduction Paradigm Used in Disciple-LTA	SA	A	N	D	SD
The task-reduction paradigm is adequate to express the logic for analyzing an issue	3	4			
The task-reduction logic is easy to understand	4	3			
I can use the task-reduction paradigm with an acceptable amount of effort	1	6			

Evidence Elicitation Tool	SA	A	N	D	SD
The Evidence Elicitation Tool provides a good way to describe a piece of evidence	1	5			
It is easy to learn how to use the Evidence Elicitation Tool	3	2	1		
It is easy to use the Evidence Elicitation Tool to describe a piece of evidence	3	3			

Rule Learning Tool	SA	A	N	D	SD
It is easy to learn how to use the Rule Learning Tool	1	2	4		
It is easy to use the Rule Learning Tool	2	4	1		
It is easy to search for explanations	1	6			
It is easy to direct Disciple to generate explanations related to certain instances	2	4	1		
The proposed explanations are easy to understand	2	5			
The most relevant explanations are proposed first	3	4			

General Assessments	SA	A	N	D	SD
The use of Disciple is well suited to learn basic artificial intelligence concepts	2	2			
The use of Disciple is well suited to learn basic intelligence analysis concepts		4			
The use of Disciple is a useful learning experience	2	2			
Disciple should be used in future sessions of this course	1	3			
It is easy to learn how to use Disciple	1	3			
It is easy to use Disciple	1	3			
The learning experience offered by Disciple justifies the effort required for using it	2	2			

Table 1. Sample evaluation results.

8. Addressing Intelligence Analysis Challenges: Current Results and Future Research

8.1 Difficult to acquire and retain analytic expertise

Intelligence analysis expertise takes years to establish, is lost when analysts separate from service, and is costly to replace. As discussed in section 5, Disciple-LTA agents can rapidly acquire, use, and preserve the prior and tacit knowledge of an expert analyst who can directly teach an agent how to analyze hypotheses, in a natural way, similarly to how the analyst would teach a person. The main feature of the Disciple-LTA is its capability to rapidly learn rules like the one from figure 10, based only on specific examples and explanations. This is in contrast with other approaches to knowledge bases and agents development, such as CYC (Siegel et al., 2005), where the rules have to be manually defined, verified and corrected by knowledge engineers and subject matter experts, through a process that is long, difficult, and error-prone.

8.2 Difficult to train new analysts

As discussed in section 6, Disciple-LTA is currently developed to be used as a tutoring system for new analysts. It is expected that the resulting system will have the following capabilities:

- it can be rapidly trained by a subject matter expert to solve problems in a systematic, pedagogical way, and to explain its knowledge;
- it will allow a subject matter expert and a knowledge engineer to define a curriculum for intelligence analysis, based on a repository of knowledge bases;
- it will allows a teacher to customize a curriculum based on specific course objectives;
- it will be able to dynamically generate lessons based on the content of the knowledge base used in the course, and further customize the curriculum to teach those concepts and problem solving strategies that can be illustrated from the knowledge base.

8.3 Difficult to analyze in reference to the culture of the data source

Disciple-LTA can be trained by a user to solve problems and reason in a manner that is similar to that user. Therefore Disciple-LTA could be trained to reason as an opponent by an expert in the culture of the opponent. For instance, an expert in the reasoning of an Al Qaeda terrorist could train a Disciple agent to reason like a terrorist. Such a trained Disciple agent could then be used to simulate a terrorist and help avoid mirror-imaging in intelligence analysis (i.e. avoid projecting on terrorists the analyst's own values and way of thinking).

8.4 Difficult to collaborate with other analysts and experts

The task reduction paradigm and networking capabilities facilitate collaboration between complementary experts and their agents. Consider, for instance, the task "Assess whether Al Qaeda has nuclear weapons" from the top of figure 3. This task is reduced to four simpler assessment tasks and therefore, to perform it, one has to perform these simpler tasks. Each of these simpler assessments could, in principle, be performed by a different expert. Then their solutions could be combined into the solution of the initial task. This is very important because each task may require a different type of expertise, and no analyst is an expert in all areas. Consider the task "Assess whether Al Qaeda has the

ability to obtain nuclear weapons." The performance of this task requires deep knowledge of nuclear weapons because one strategy to obtain them is to acquire and assemble its components.

Disciple-LTA adds several dimensions to the collaboration issue. For instance, when the required experts are not available, their trained Disciple-LTA assistants can act on their behalf, solving the problems in a manner that would closely resemble the way that the experts would have solved them.

Similarly, solutions of certain problems could be stored and reused as solutions of subproblems of other problems. Disciple-LTA facilitates this reuse because it provides not just the solution, but its entire justification which could be checked and updated, in light of new evidence.

8.5 Difficult to share intelligence

The following illustrates this difficulty (Kris, 2005):

> *While I was serving as an intelligence analyst at the US Central Command in Qatar during operations Enduring Freedom and Iraqi Freedom in 2003, my team and I analyzed hundreds of messages and reports each day. We created briefings used by generals Tommy Franks and John Abizaid. A vast amount of information was available to us on Intelink, but there was no simple way to find and use the data efficiently....And while there were hundreds of people throughout the world reading the same materials, there was no easy way to learn what they thought. Somebody had answers to my questions, I knew, but how were we ever to connect? The scary truth is that most of the time analysts are flying half blind.*

Consider the rule from figure 10 learned by Disciple-LTA. This rule allows Disciple to automatically identify pieces of evidence that are potentially relevant to the general task "Assess whether ?O1 considers self defense as a reason to obtain nuclear weapons." Using it, Disciple-LTA automatically identified Reuters-author01-a which represents the following fragment from a Reuters report: *"Al-Qaeda would use the [nuclear] weapons only inside the United States or if the group faced a "crushing blow" which threatened its existence, such as the use of nuclear or chemical weapons against its fighters."* (Reuters, 2004). Moreover, Disciple-LTA also built the analysis tree from figure 11.

As another example, consider Dawn-Mir-01a, which was used in the analysis illustrated in figure 3 and figure 4. An analyst has represented this piece of evidence, as illustrated in the left-hand side of figure 5, and has analyzed its credibility, as illustrated in figure 4, making it possible for the agents of other analysts to automatically retrieve and reason with it. Similarly, stored analyses like the one in figure 4 could be retrieved and reused by the agent of another analyst trying to answer the same questions.

Therefore, Disciple-LTA agents acting as assistants to human analysts, connected on the information grid, and sharing common knowledge bases, as envisioned by the illustration from figure 2, would do much to alleviate the difficulties mentioned in the quotation from the U.S. Central Command analyst (Kris, 2005).

8.6 Difficult to avoid a narrowly focused analytic mindset

Disciple-LTA allows the analyst to act as the orchestrator of the problem solving process, guiding the high-level exploration, while Disciple-LTA implements this guidance by taking into account the analyst's assumptions, preferences and biases. To illustrate this, let us consider again the reasoning

tree in figure 3, this time developed by the trained Disciple-LTA agent. The rightmost assessment task from the upper part of figure 3 is "Assess whether Al Qaeda considers an ideology as a reason to obtain nuclear weapons." The agent may reason under the analyst's assumption that Al Qaeda does not consider its ideology as a reason to obtain nuclear weapons, and may no longer investigate this issue. However, knowing that this is an assumption, the agent may also attempt to challenge it in the background by actually trying to solve this assessment task, and alerting the analyst if, for instance, a document is found in which Osama bin Laden states that it is a religious duty for Muslims to acquire nuclear weapons (Time Asia, 2001).

Sometimes there is not enough information to find an answer to some question. In such a case the agent may explore what-if scenarios, each corresponding to a different plausible answer to the question.

Another way to improve the product of the analytic process is to have the same tasks solved by different analysts and to compare their analyses. While in general this cannot be done by human analysts due to limited resources, it can be done by their agents. Such a comparative analysis may also reveal hard to detect biases and assumptions made by different analysts.

Assumption checking, consideration of *what-if scenarios,* and *comparative analysis* are three important capabilities that we plan to integrate into Disciple-LTA to help an analyst avoid the analytic mindset.

8.7 Difficult to consider multiple hypotheses

The automation of the hypothesis analysis process, the collaboration with other analysts, the reuse of existing analyses and annotated pieces of evidence, not only increase the quality of the analysis, but also reduce the time required to perform it, allowing an analyst to consider more hypotheses, and to compare and contrast them, to arrive at the best possible answers.

8.8 Difficult to rigorously explain the analysis

This difficulty is very clearly stated in the report of *The Commission on the Intelligence Capabilities of the United States Regarding Weapons of Mass Destruction* (CNN, 2005):

> *"The main cause [of the Iraq WMD 'intelligence failure'], the commission said, was the intelligence community's inability to collect good information about Iraq's WMD programs, serious errors in analyzing what information it could gather and a failure to make clear just how much of its analysis was based on assumptions rather than good evidence." "No important intelligence assessment should be accepted without sharp questioning that forces the (intelligence) community to explain exactly how it came to that assessment and what alternatives might also be true."*

As discussed in the previous sections, Disciple-LTA keeps an accessible record of its analysis which *delineates the logic, the evidence and how it was used,* and *the assumptions made*.

9. Conclusions

This paper has presented current research on the development of a new type of cognitive assistant, called Disciple-LTA, that helps an intelligence analyst to systematically solve complex intelligence analysis tasks faster and better—an assistant that learns and uses an analyst's preferred problem solving

strategies, biases and assumptions, but can also constructively challenge them and consider alternative what-if scenarios. Disciple-LTA facilitates the retention of the expertise and the training of new analysts. Its ability to rapidly acquire subject matter expertise allows also the development of agents that reason consistently with the culture of the data source—agents that can further improve the analysis process.

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New Frontiers in Tactical Terrorism Analysis

An Evaluation of Machine Learning Techniques to Support Counterterrorism Analysts' Decision Making for Predicting Culpability in Terrorist Bombing Attacks in Iraq

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The data for this study was provided by the Institute for the Study of Violent Groups at Sam Houston State University from a relational database built through a grant from the Bureau of Justice Assistance at the U.S. Department of Justice.

The low intensity conflict in Iraq officially began on May 1, 2003 when President George W. Bush declared Operation Iraqi Freedom at an end (Beckett, 2005). By the end of May 2003, the first U.S. soldier was killed at a checkpoint in Fallujah (Metz and Millen, 2004) and on June 13, 2003, the first U.S. helicopter was shot down (Williams, 2003). What followed was a sustained, low-intensity insurgency that went largely unrecognized and underestimated by U.S. policymaker for nearly a year (Cordesman, 2006a). The insurgent threat was seen as remnants of Saddam loyalists and small bands of Sunni fighters that Coalition forces would be able to easily defeat before the first election in the country (Gordon & Trainor, 2006). Some have argued that the true nature and scope of the insurgency was not appreciated until mid-2004 (Cordesman, 2006a), when the U.S. military began training Iraqi security forces in counterinsurgency techniques (Gettleman, 2004; Schmitt, 2005).

Observations on the Iraq Insurgency

The underlying assumption is that the Iraq insurgency is a dynamic struggle where insurgents are fluidly adapting their tactics (Cordesman, 2006b; Eisenstadt & White, 2005; Metz & Millen, 2004; Hashim, 2003) and organizational structures to the changing political situation and the counterinsurgency efforts of security forces. Worse, one of the principal obstacles in analyzing/combating the insurgency is identifying the enemy committing the attacks. To quote Bruce Hoffman (2006) in his 2006 observations on the insurgency:

> "In no area is the intelligence lacuna more acute in Iraq than in the determination of insurgent identity and numbers—two of the most basic criteria." (p.111)

The reason for this is the insurgent groups are a mix of nationalities and religious sects of the insurgents, including Shia insurgents, Sunni insurgents, Kurdish insurgents, and Foreign Fighters/Transnational Insurgents. As of June 2006, there were more than 55 identifiable[1] groups operating in Iraq since the beginning of the insurgency in 2003.

1. This is an admittedly loose construction of identifiable, as many of these groups are only identified through their communiqués and claims of responsibility for attacks. In many cases, these groups have taken credit for only a handful of attacks

Accompanying the Iraq insurgent groups is a massive multi-national, multi-lingual, and highly skilled Internet-based Jihad/Insurgent support network. This support network has evolved into the lifeblood of the Insurgency and provides the infrastructure for knowledge transference and organizational learning. For instance, al-Qaeda in Iraq launched an online Jihad University where current and potential members could go to download training videos, manuals, reports on the U.S.-led coalition forces, target lists, and share best practices about conducting attacks. The Internet support network also served as the chief propaganda vehicle for the groups operating in Iraq. Daily reports and chronologies about insurgent attacks were disseminated for propaganda purposes to aid in recruitment and for influencing media reporting on the conflict. Although the majority of these online resources are in Arabic, training, recruitment, and propaganda materials can be found in more than 20 languages, including the major languages of the world.[2]

The ubiquity of Jihadist/insurgent support networks on the Internet brings into question of the contention that the Insurgent is inscrutable, and potentially unknowable. In other words, Hoffman's observation about the main problem facing the U.S.-led Coalition Forces might be less dire, should the Insurgents' information operations be exploited to better understand the enemy(ies) working in Iraq.

Specifying the Research Problem

Confronting this paradox of the unknown enemy with a massive Internet-based support network that disseminates volumes of information daily about the conflict is the principal motivation behind this research. There is clearly a strong potential for analytical exploitation of the publicly disseminated information supporting the insurgency; the problem is determining the extent to which the Internet-based support network reflects the operations of the insurgents fighting in Iraq. Two questions were posed to guide the research efforts herein:

- Can the information that the insurgent groups are disseminating be used in modeling the insurgent violence to estimate culpability in the Insurgency?
- Can these models be developed so that they could be meaningfully used by analysts to better understand the enemy in Iraq?

Creating the Dataset for Study

As of the beginning of May 2006, the data from the National Counterterrorism Center (NCTC) was the only publicly available dataset on the insurgency in Iraq, although it was only accessible through a web-based format; not in a "traditional" spreadsheet or machine-readable format for quantitative analysis. Several private sector organizations, such as the dataset used in the analyses of Anthony Cordesman at CSIS and the Triton Open Source Terrorist Activity Intelligence Database produced by HMS Ltd, have been used to identify trends throughout the conflict, but have yet to be made available for sophisticated quantitative analysis.

The Institute for the Study of Violent Groups at Sam Houston State University sought to create a unique dataset of the Iraq insurgency that would expand and build on the publicly available NCTC

2. There are numerous public and private sector organizations performing translation of Jihadist/Insurgent materials, but two, the Open Source Center and the SITE Institute, have emerged as the premiere sources of this type of information. Both have unique, yet complementary, archives of this information, which were utilized heavily in this research.

data by incorporating information on attacks and tactics disseminated by the Jihadist/insurgent Internet networks.

ISVG is a research institute funded principally by the Bureau of Justice Assistance at the U.S. Department of Justice to test the feasibility of using open source information to model the actions and activities of terrorist groups for counterterrorism analysis. The institute was officially formed in 2003 with seed money from the university and has grown[3] into a full-fledged terrorism research center complete with a functional database, a website, analytical products, and peer-reviewed research publications.

ISVG has a collection staff of 19 data collectors, one collection manager, and one quality control manager. The data collectors are organized regionally[4] with a designated regional leader to direct the data collection efforts of the regional data collectors. The collection staff is ethnically diverse with more than 10 languages spoken fluently by the collection staff.[5] The collection manager oversees the regional leaders and is responsible for ensuring thoroughness in collection scope and detail. All the information collected by the data collection staff is entered into the ISVG relational database.[6]

The data collection methodology was designed and implemented over the course of two years to maximize the level of detail and the scope of open source reporting related to terrorism. ISVG collects open source information on twenty-one incident types;[7] these incident types go beyond the standard "seven tactics of terrorism" collected by the RAND-MIPT and the ITERATE datasets to include incident types related to ancillary terrorism operations like communications, financing, trafficking, robbery, and ceasefires. The *modus operandi* details within each of these twenty-one incident types have been identified and captured in the ISVG database structure. Altogether, the ISVG database has more than 750 variables related to the tactics, actions, and activities of terrorist and extremist groups.

The data collection methodology is comprehensive because it was a created through a data-driven process as opposed to pre-fabricating database variables based on prior knowledge of terrorist activities. Over the course of two years, variables were added and categorized as ISVG collection staff discovered them in open source reporting. The database structure and variables finally became robust[8] in June 2005, nearly two years after the ISVG began building its relational database. See Appendix A – Comparison of Terrorism Open Source Databases, for a comparison of the ISVG database with other mainstream open source terrorism databases.

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3. The ISVG project was funded through the U.S. Department of Justice for three years through a $745,000 grant from the Bureau of Justice Assistance.

4. ISVG has seven regions: North America, South America, Europe, Middle East/North Africa, Africa, South Asia, and East/Southeast Asia.

5. Languages as of April 12, 2006 include: Arabic, Sinhalese, Turkish, German, Spanish, Thai, Korean, Serbo-Croatian, Russian, Portuguese, Setswana, and Hindi.

6. For a detailed description of the creation, structure, and analysis of the ISVG relational database, see Dr. W. Chris Hale's forthcoming article in the Winter 2006 issue of the *International Journal of Emergency Management* titled "21st Century Terrorism, 21st Century Answers: The Where, What, Why, When, and Who of Terrorism."

7. The twenty-one incidents collected in the ISVG database include: bombing, armed assault, arson, hijacking, kidnapping, hostage taking, biological terrorism, chemical terrorism, nuclear terrorism, vandalism/sabotage, burglary/robbery, assassination, trafficking, financing, communication, ceasefire, police operation, military operation, civil court proceeding, criminal court proceeding, cyberterrorism.

8. This essentially means that ISVG collection staff were finding very few new variables and incident types to be added to the database.

ISVG relied on six principal sources for exploiting the information disseminated by the Jihadist/insurgent Internet networks. The daily translated reporting of the Open Source Center provided the greatest source of information from these groups. The reports of the SITE Institute provided one of the best sources of disseminated information on the Sunni groups that were not strongly affiliated with al-Qaeda in Iraq (and eventually the Mujahideen Shura Council). The MidEastWire provides translation of more 100 Arabic and Farsi media outlets in the region. The Baghdad Mosquito and the Basra Bugle, disseminated through the Open Source Information System (OSIS) provided analysis of the media and underground reporting in two key areas in the conflict. Finally, searches and translations from ISVG's own data collectors in the Middle East/North Africa region rounded out the collection effort on the Iraq insurgency.

ISVG data collection staff used source triangulation and peer review wherever possible to minimize incident duplication and to ensure that the proper tactical details were captured for incidents.

Terrorist/Insurgent Bombings in Iraq: 1/1/2003 – 12/31/2005

The dataset compiled for this study consisted of 2,429 bombings in Iraq from January 1, 2003 through December 31, 2005. A specific insurgent group was identified or reported as suspected in 578 of these bombings (24%). Fifty-five insurgent groups were identified as having committed at least one of the bombings in the sample during the period, although two groups (Al Qaeda in Iraq and the Ansar al-Sunnah group) were responsible for more than 60% of the total bombings for the period. See figure 1 for complete descriptive statistics on the bombing dataset.

Modeling Techniques

Two general types of machine learning techniques, Support Vector Machines and Decision Trees, were used to model the culpability of al-Qaeda in Iraq for committing bombing attacks during the period. A brief description of these techniques follows.

Support Vector Machines

Recent advances in statistical learning theory have seen a new generation of supervised learning methods, called support vector machines, evolve from polynomial functions, radial basis functions, and neural networks for classification and regression applications (Rychetsky, 2001; Cristianini & Shawe-Taylor, 2000). Support vector machines are primarily a classifier method that performs classification tasks by constructing hyperplanes in a multidimensional space that separates cases of different class labels (Statsoft, 2006b; Cortes & Vapnik, 1995). They support both regression and classification tasks and can handle multiple continuous and categorical variables (Statsoft, 2006b).

Support vector machines were first related to statistical learning theory in 1992 (Boser, Guyon, & Vapnik, 1992), and introduced in a comparison of classifier methods for handwritten digit recognition the same year (Bottou et al., 1992). Vapnik et al. (1995) popularized support vector machines in 1995 with the publication of several articles and a book on support vector machines. To date, support vector machines have been used primarily in pattern recognition applications such as handwritten digit recognition (Cortes & Vapnik, 1995; Schölkopf, 1997), face recognition (Osuna, Freund, and Girosi, 1997), object recognition (Blanz et al., 1996), speaker identification (Schmidt, 1996), text categorization (Joachims, 1997; 1998), and optical character recognition (Liu et al., 2003; Lecun et al,

Variable	Total (n=2429)	Known/Suspected (n=578)	al-Qaeda in Iraq (n=293)
State Where Attack Occurred			
Baghdad	879 (36.2%)	219 (37.9%)	150 (51.2%)
Salah ad Din	319 (13.1%)	59 (10.2%)	11 (3.8%)
At Tam'mim	246 (10.1%)	37 (6.4%)	4 (1.4%)
Ninawa	225 (9.3%)	73 (12.6%)	52 (17.7%)
Diyala	209 (8.6%)	53 (9.2%)	36 (12.3%)
Babil	178 (7.3%)	38 (6.6%)	12 (4.1%)
Al Anbar	160 (6.6%)	61 (10.6%)	20 (6.8%)
Others	214 (8.8%)	38 (6.5%)	8 (2.7%)
Suicide Bombings	588 (24.9%)	162 (28%)	138 (47.1%)
Roadside Bombings	853 (36.1%)	298 (51.6%)	87 (29.7%)
IED Type			
Generic IED	1211 (49.9%)	307 (53.1%)	104 (35.5%)
Vehicle-Borne IED	889 (36.6%)	174 (30.1%)	133 (45.4%)
Command Initiated IED	188 (7.7%)	43 (7.4%)	11 (3.8%)
Vest/Belt IED	94 (3.9%)	45 (7.8%)	40 (13.7%)
6 Others	47 (1.9%)	9 (1.6%)	5 (1.7%)
Target Type			
Individual	1581 (65.1%)	449 (77.7%)	215 (73.4%)
Building	435 (17.9%)	64 (11.1%)	50 (17.1%)
Vehicle	211 (8.7%)	54 (9.3%)	22 (7.5%)
Non-Building Infrastructure	193 (7.9%)	11 (1.9%	6 (2.0%)
Monument	4 (0.2%)	0 (0%)	0 (0%)
Target Status			
Law Enforcement	665 (27.4%)	120 (20.8%)	70 (23.9%)
Military	651 (26.8%)	310 (53.6%)	127 (43.3%)
Diplomatic/Government	316 (13%)	71 (12.3%)	49 (16.7%)
2 Others	793 (32.6%)	77 (13.3%)	47 (16%)
Target Nationality			
Iraqi	1706 (70.2%)	304 (52.6%)	193 (65.9%
American	413 (17%)	219 (37.9%)	73 (24.9%)
British	11 (0.5%)	5 (.9%)	2 (0.7%)
27 Others	299 (12.3%)	50 (8.6%)	25 (8.5%)

Figure 1. Descriptive Statistics.

1995). There have been notable applications of support vector machines in regression and time series predictions (Müller et al. 1997, Drucker et al. 1997, Stitson et al. 1999, Mattera and Haykin 1999).

The work of Vapnik (1995) has inspired many in machine learning to use basic quadratic programming techniques to improve on neural nets by overcoming two limitations:

- the "curse of dimensionality" or the tendency for models to accumulate too many predictor variables for the sample size
- the problem of "over fitting" in which the technique continues to add terms which improve performance on the training set, but do not improve the generalization error

Numerous empirical studies have shown that appropriate choice of nonlinear kernels, including support vector machines, can significantly improve the classification accuracy (Teytaud & Sarrut, 2001).

Support vector machines also have some significant limitations, which are probably more a function of nascency rather than statistical foundation. Burges (1998) pointed out three principal limitations of support vector machines: 1) they are limited in both training and testing situations by both speed and size, 2) there are indications that support vector machines do not perform as well when using

discrete data, and 3) there is still little meaningful guidance as to the selection of kernel function parameters (Suykens et al., 2003).

Given their highly-effective, yet parsimonious design, support vector machines are have the potential to be among the most promising machine learning applications for classification, pattern recognition, and regression estimation (Keeman, 2005; Burges, 1998).

Decision Tree Analysis

Decision Trees are very popular supervised learning classification techniques because they are powerful, fast, and accurate classifiers (Mena, 2004). Classification rules can be quickly and easily derived from decision trees because they graphically describe a series of decisions that result in a course of action (Koller, 1999). Further, decision trees are probably the most extensively studied method of machine learning in data mining (Witten & Frank, 2005). In the language of data mining, a decision tree is a flow-chart-like tree structure, where each internal node denotes a test on an attribute, each branch represents an outcome of the tests, and each leaf node represents a class or class distribution (Han & Kamber, 2001).

The branches and leaves on a decision tree are built using training data and unknown cases (testing data) are classified by their attribute values against the attribute rules of the decision tree. Any noise (a random error or variance in a measured variable [Smith, 2002]) or outliers in the training data can affect the creation of branches and leaves in the tree, decreasing the overall classification accuracy of the tree on testing data. In data with a large number of variables and attributes, the classification algorithms and any noise inherent in the data can produce large and complicated decision trees that contain irrelevant nodes and overfit the data (Freitas, 2002).

Decision tree pruning is a technique used to produce simpler, shorter trees that are more comprehensible for the user and to obtain better predictive accuracy on testing data by controlling for overfit data and meaningless nodes (Han & Kamber, 2001). Pruning can occur either before or after building a decision tree. In post-pruning, the decision tree is expanded as far as possible by a recursive partitioning process.[9] In pre-pruning, the partitioning process can be stopped earlier during the tree building process (Freitas & Lavington, 2000). Post-pruning often produces trees with higher predictive accuracy than pre-pruning; however, pre-pruning often makes the algorithm more efficient and expands the decision tree into fewer nodes (Freitas, 2002).

Four principal algorithms have gained acceptance for building decision trees: CART, ID3, C4.5, and C5.0 (Mena, 2004). The ID3 decision tree algorithm was created by J. R. Quinlan in 1975 when he adapted the Concept Learning System algorithm to build an inductive decision tree (Dankel, 1997). The ID3 algorithm utilizes a recursive partitioning process to build the decision tree, but terminates with an oversimplified stopping criterion[10] (Schmid, 1999). Its simplicity in purity and stopping criterion caused ID3 to be eclipsed by other decision tree algorithms, although the ID3 algorithm

9. This means that the algorithm is run on the data to split each node according to specified criteria in the algorithm; the algorithm runs iteratively until predefined stopping criteria is met (Delisle, 2006).

10. From Schmid,(1999): "The ID3 algorithm selects at each step the test which yields maximal information about the class of the training items, splits the training set according to the tested feature and invokes itself recursively to build decision trees for each subset of the training items. The ID3 algorithm terminates when the class of training items is unambiguous, i.e. when all training items of a subtree are of the same class." (p. 16).

has been embraced by proponents of fuzzy logic systems (Shibata, 1997). The ID3 algorithm was succeeded by the C4.5 and C5.0 algorithms, which were also developed by Quinlan.

C4.5 was developed in 1993 as an improvement over ID3. It starts with a general tree and grows and more specific tree until maximal classification is attained. It then prunes the tree as much as possible according to predefined criteria (Adama-Acquah, Garibaldi, & Symonds, 2001). C4.5 is an extension of ID3 in that it accounts for unavailable values, continuous attribute value ranges, pruning of decision trees, and rule derivation (Ingargiola, 2006). C5.0 is the commercial variant of C4.5 with only slight improvements in building and pruning decision trees (Witten & Frank, 2005).

CART is an acronym for Classification and Regression Trees, a decision-tree procedure introduced in 1984 by world-renowned statisticians Leo Breiman, Jerome Friedman, Richard Olshen, and Charles Stone (CART, 2006). CART's main advantage is the algorithm it uses to build the decision tree; CART overgrows the tree and then prunes it back, which eliminates biases caused by stopping criteria in the iterative pruning process (CART, 2006). This feature allows CART to be unaffected by outliers yet capable of handling missing values easily (Shapiro & Jain, 2003).

Three key improvements to tree analysis have been made in the last 10 years. The first is called "Bagging," short for Boosted Aggregation, was developed by Breiman in 1996. Bagging is used for weak classifiers and involves drawing repeated samples from the original sample (with replacement), then using a simple voting process to assign class membership. "Boosting" is another technique for improving moderately weak classifiers through a process where is fit to a series of samples in which case selection probabilities are modified to give difficult-to-predict cases increased weight. Each boosting stage classifier is given a weight depending on its accuracy during a final vote on class membership. "LogitBoost" is a recent improvement to tree analysis and involves using logistic regression to fit trees to boosted samples.

Results

SVM Analysis

As discussed previously, SVM analysis is a very recent development in statistical theory, and there are numerous versions of SVM in the literature. In this analysis, the Keerthi, et al (2001) improvement to the Platt (1999) improvement SMO – "sequential minimal optimizer" – was used, which will automatically convert qualitative scales to binary indicators and standardize quantitative scales. All SVM analysis was completed using the Waikato Environment for Knowledge Analysis (WEKA), which is a software "workbench" that incorporates several standard machine learning techniques.

The SVM analysis was conducted in three stages to predict culpability for al-Qaeda in Iraq vs. all other groups in the dataset. The first stage was the default linear model; the second stage used a radial basis kernel and default parameters; the third stage used a radial basis kernel and parameters values (c = 3, gamma = .3). The results follow:

The default linear (dot product) model correctly identified:

- 70.6% overall,
- 80.4% of the non-Al Qaeda, and

- 61.1% of the Al Qaeda incidents.

Using the radial basis kernel and default parameter values, we improved to

- 72.5% overall,
- 80.4% of the non-Al Qaeda, and
- 63.9% of the Al Qaeda incidents.

Using the radial basis kernel and parameter values from the previous chart (c = 3, gamma = .3), we improved to

- 76.8% overall,
- 77.9% of the non-Al Qaeda, and
- 75.8% of the Al Qaeda incidents.

Decision Tree Analysis

Decision tree analysis was also conducted using the WEKA machine learning workbench and was performed in four stages. The first stage used the J48 algorithm, which is WEKA's implementation of Quinlan's C4.5 tree algorithm. See figure 2 for the original tree created using J48.

The second, third, and fourth stages used the three improvements reviewed above: Bagging, Boosting, and LogitBoost, respectively. The results follow:

The original tree (using J48) identified correctly:

– 73.9% overall,
– 80.0% of the non-Al Qaeda, and
– 67.9% of the Al Qaeda incidents.

Bagging did improve the tree:

– 74.9% overall,
– 78.6% of the non-Al Qaeda, and
– 71.3% of the Al Qaeda incidents.

Boosting improved the tree to:

– 75.6% overall,
– 77.2% of the non-Al Qaeda, and
– 76.1% of the Al Qaeda incidents.

LogitBoost improved the most:

– 77.7% overall,
– 79.6% of the non-Al Qaeda, and
– 75.8% of the Al Qaeda incidents.

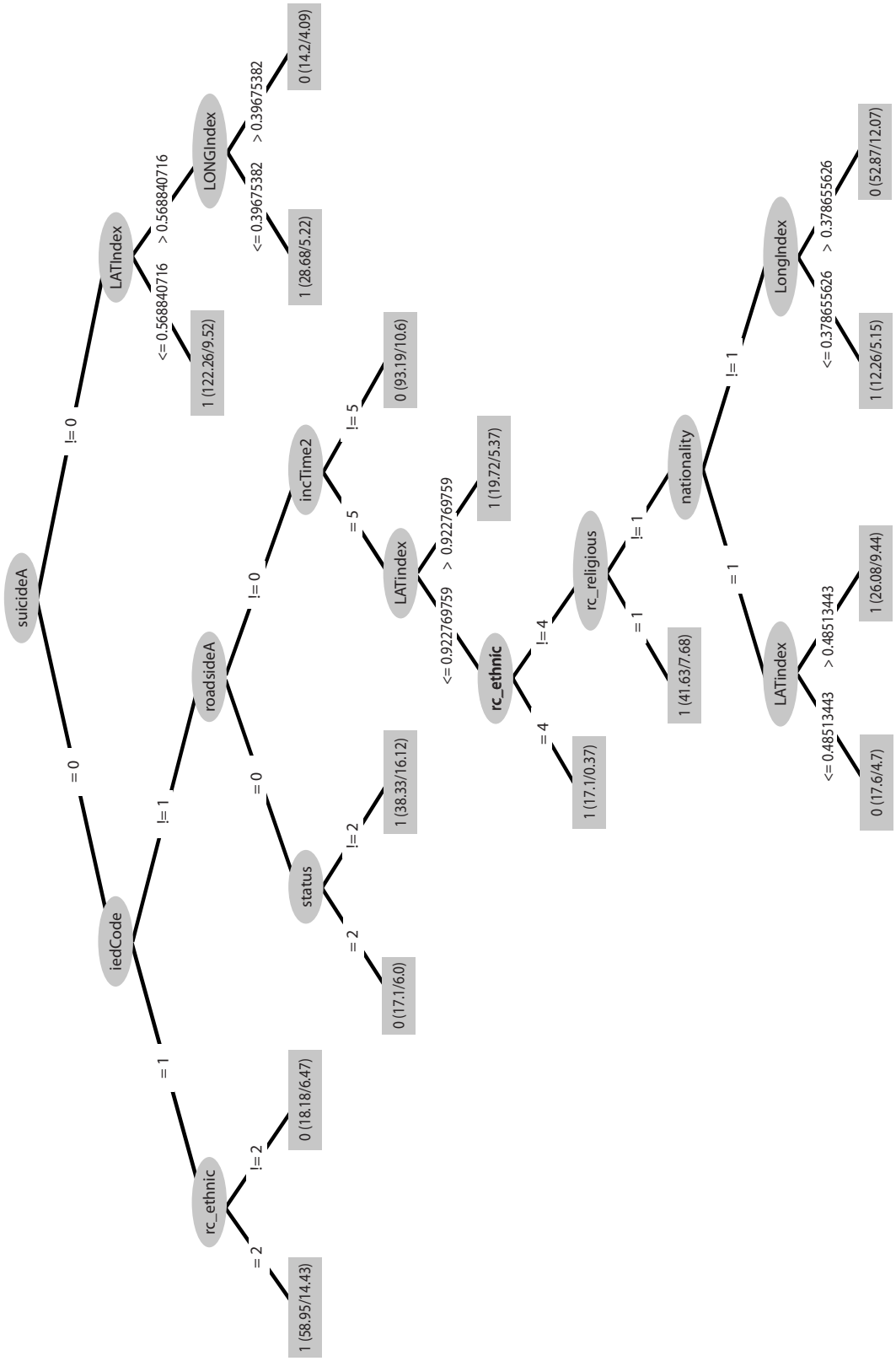

Figure 2. Original Iraq Tree Created Using the J48 Algorithm.

Conclusions and Implications for Future Research

New classification and machine learning applications to terrorist incidents in Iraq have shown in early trials to have an encouraging aptitude for identifying culpability. Overall, responsibility for over three-fourths of all incidents can be correctly identified as either Al Qaeda or not. All procedures are better able to identify non-Al Qaeda than Al Qaeda.

Advances based on more traditional statistical techniques based on tree analysis have shown slightly better performance than the support vector machine advances over neural networks. SVM's are further hampered by difficulties in interpreting the results operationally.

This initial study suggests that there is potential for pairing the information disseminated by insurgent groups' support networks on the Internet with open source and official data on the Iraq insurgency. This is significant given the relatively superficial nature of the tactical variables included in this analysis. It would be worth examining how more detailed tactical-level variables, such as explosive type, detonation methods, etc., would improve the models. The finding that nearly 75% of all incidents can be correctly classified as al-Qaeda in Iraq vs. other insurgent groups suggests that these techniques have the potential to be used in both operational- and strategic-level intelligence analyses.

Whereas the findings are exciting from a research perspective, it remains to be seen whether these techniques could be readily adaptable for use by counterterrorism analysts. First, the data used in this study was difficult to prepare and structure for the analysis. It is doubtful that any technique that required 10+ hours of data cleaning, recoding, and transforming would useful in an operational analytical setting.

Decision trees hold some promise in that they are relatively easy to create and interpret, once the data is properly prepared. The tree and resulting classification rules immense potential for helping analysts understand their analytical thought processes in this area. However, there are few terrorist conflicts in the world with frequent, sustained, violent campaigns that create datasets suitable for these types of analyses.

Support Vector Machines showed marked improvement when tweaked, albeit the applicability of SVM models is still somewhat questionable. The tweaking of SVM remains a complex process that requires fairly extensive knowledge of the techniques – a criterion that would probably exclude SVM from ever being implemented as standard analytical tradecraft.

Overall, the findings in this study are encouraging enough to continue exploring the use of machine learning techniques for modeling culpability for insurgent bombings in Iraq. There are strong potential benefits for effectively exploiting the insurgent information disseminated via the Internet. It is also probably worth examining how much the inclusion of more specific tactical-level bomb data would improve the models as this could yield significant operational and strategic intelligence benefits.

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Dr. Guntram Werther

Dr. Guntram Werther is Professor of International Politics and Economics at Western International University and is newly affiliated with Thunderbird—the Garvin School of International Management. Since 1986, he has studied comparative conflict styles and mirroring management approaches of governments dealing with ethnic national self-determination movements and, since 1992, worked on developing holistically integrative analysis techniques for better predicting emerging trends and patterns of international change. Dr. Werther's "profiling international change processes" approach has been used successfully and extensively within corporate venues. Dr. Werther earned a B.Sci. degree in Wildlife Management from the University of Arizona (Tucson) in 1974. He received his doctorate in Comparative Politics from Washington University in St. Louis in 1990 where his dissertation was defended "with distinction," being also twice nominated as the best work in comparative politics nationally.

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