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# Socio-Cultural Perspectives: A New Intelligence Paradigm

# **Report on the conference at The MITRE Corporation**

# McLean, Virginia, September 12, 2006

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# Abstract

In September 2006, The MITRE Corporation hosted a one-day conference titled "Socio-Cultural Perspectives: A New Intelligence Paradigm." The goal of the conference was to explore various ways in which socio-cultural perspectives could be used in intelligence analysis. The conference also was designed to raise awareness among participants, and their host organizations, of current activities in this area, and to establish the groundwork for ongoing interaction within and across organizations and agencies.

The conference demonstrated that cultural intelligence is important for a wide range of national security endeavors and that this fact is increasingly recognized in many government quarters. Questions arose regarding tools, including the development and use of computational models; methods, including issues relating to data collection, analysis, and dissemination; and the development of cross-community and interdisciplinary ties that would allow the intelligence community as a whole to move forward. There also was discussion of the contested nature of the term "culture" among academics and some communities of practice, as well as how an analyst might use socio-cultural knowledge to further intelligence analysis. In addition, methodological rigor, development of best practices, engagement of a wide variety of disciplines, and interaction with open source communities all arose as essential issues to pursue in the future.

Participants emphasized that the cultural problem is a systems problem. It is important to understand ourselves and the ways in which we interact with others in different contexts, as these interactions color the ways others perceive our actions and their interaction with us. There also were many conversations about how socio-cultural data are gathered, analyzed, and computationally manipulated. Participants discussed disciplinary and theoretical concerns, and how different approaches could impact the clarity of conversations among analysts.

While there was consensus that cultural intelligence must inform national security activity, there remained many unanswered questions about method, approach, data, and institutionalization of the capability. Many of the findings from this conference can be used to build a follow-on exercise that would more specifically focus on identification of problem areas in methodology, tool development and use, and communication. The results of such efforts would, in turn, provide a basis for a research program, as well as policy and best practice guidelines, that would fuel significant advancement of the state-of-the-art in cultural intelligence data gathering, analysis, and use.

**KEYWORDS**: analytic tools, behavioral science, computational social models, crosscultural competency, cultural analysis, cultural awareness, cultural intelligence, culture, intelligence analysis, multidisciplinary theory, situational awareness, social science, socio-cultural knowledge, socio-cultural models, socio-cultural perspectives, soldier as sensor

# **Table of Contents**

1	Introduction	7
2	Background	7
3	Conference	9
4	Discussion of Themes	9
4.	1 Socio-cultural Analysis	10
4.	2 Defining "Cultural Intelligence"	10
4.	3 Culture Debates	11
4.	4 Culture as a Framework for Understanding	11
4.	5 An "Anthropology of Us"	12
4.	6 Understanding Intent	12
5	Data	13
6	Theoretical Concerns	14
7	Methods	15
8	Analytic Tools	17
9	The Path Forward	19
9.	1 Conference Recommendations	20
9.	2 Ethical Considerations	20
10	Conclusion	21
11	Addendum 1 – Selected Conference Briefings	22

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### 1 Introduction

Since September 11, 2001, socio-cultural perspectives have had an increasingly high profile in government circles. They have been applied to many dimensions of national security, including threats, capabilities, and intentions, as well as preventive, protective, and predictive strategies. This paper explores some of the background for this increased attention. It then summarizes a conference held in September 2006 to recognize this growing interest in the United States intelligence community (IC), and to identify opportunities and concerns the IC faces as it increases socio-cultural analysis. This paper concludes with recommendations for further assessment and strengthening of socio-cultural data, analysis, and approaches in intelligence.

### 2 Background

The use of socio-cultural perspectives in intelligence analysis is as old as the endeavor itself. Sun Tzu (c. 500 B.C.) spoke of the necessity of knowing one's enemy as well as one's neighbors, and of taking advantage of local guides.<sup>1</sup> Throughout history, cultural knowledge and language capabilities–along with deception and disguise–have provided outsiders with the ability to interact with, and even blend into, local populations in order to gain crucial knowledge of the thinking, intentions, and capabilities of others.<sup>2</sup> In more recent times, the British use of these techniques, as they played "the Great Game"<sup>3</sup> across Central Asia, became legendary and was immortalized in fiction, such as Kipling's novel, *Kim.*<sup>4</sup>

During the Cold War–the major focus of U.S. government intelligence activity during the second half of the twentieth century–socio-cultural perspectives were overshadowed by concerns about economic power, political and military dominance, and technological superiority. <sup>5</sup> This is not to say that socio-cultural perspectives were entirely ignored. The development of Soviet studies, and other area studies specialties, increased the capacity to analyze and interpret the multiple cultures of the Communist Bloc and provide context for interpreting ideological, political, and strategic precepts and actions.<sup>6</sup>

<sup>&</sup>lt;sup>1</sup> Sun Tzu, *The Art of War*, Ralph D. Sawyer, trans. (Boulder, CO: Westview Press, 1994), [c. 500BC].

<sup>&</sup>lt;sup>2</sup> Rose Mary Sheldon, *Espionage in the Ancient World: An Annotated Bibliography* (N.p.: McFarland and Company, 2003).

<sup>&</sup>lt;sup>3</sup> Peter Hopkirk, *The Great Game: The Struggle for Empire in Central Asia* (New York: Kodansha America, 1994).

<sup>&</sup>lt;sup>4</sup> Rudyard Kipling, *Kim* (New York: Doubleday, Page, 1901).

<sup>&</sup>lt;sup>5</sup> Benjamin Frankel, *Roots of Realism* (New York: Frank Cass, 1996); Jonathan Nashel, "Cold War (1945–91): Changing Interpretations," in *The Oxford Companion to American Military History*, ed. John

Whiteclay Chambers II (Oxford: Oxford University Press, 1999).

<sup>&</sup>lt;sup>6</sup> Victoria E. Bonnell and George Breslauer, "Soviet and Post-Soviet Area Studies," in *The Politics of Knowledge: Area Studies and the Disciplines*, ed. David L. Szanton (Berkeley: University of California Press/University of California International and Area Studies, 2002); David L. Szanton, "The Origin, Nature, and Challenges of Area Studies in the United States," in *The Politics of Knowledge: Area Studies* 

The concept of "strategic culture" also developed in strategic studies and gained currency in foreign policy and international relations.<sup>7</sup>

The fall of the Berlin Wall in 1989, the Soviet collapse in 1991, and the end of the Cold War to a large degree eliminated the political threat posed by the Soviet Union. While the emergence of China as a "new" peer competitor continues, the Chinese strategic threat remains far below that of the Soviet Union in its heyday. Socio-cultural analyses still took a back seat post-1991 to technical questions in the intelligence community, both in terms of visibility and resource allocation.

With the end of the Cold War and the rise of asymmetric terrorist threats in the late twentieth century, the need for socio-cultural perspectives increased.<sup>8</sup>

Absent this singular [Soviet] focus, in the post-Cold War environment the Intelligence Community struggled to reestablish its identity and purpose in what had become a world of multiple crises and transient threats.<sup>9</sup>

These new threats and crises were rising from regions and cultures around the world less familiar to Western analysts. In addition, terrorist ideologies were often emergent as well as generally less transparent than the well-documented and established philosophies undergirding Communism. Moreover, as retrospective analyses of the intelligence failures leading to the terrorist attacks of September 11, 2001, have shown, there was an overreliance on "technical collection systems with little acknowledgement of the political/cultural context." <sup>10</sup>

Need for socio-cultural perspectives also became a major theme in comments from military personnel returning from the wars in Afghanistan and Iraq. Officers cited their practical experience on the ground dealing with nontraditional warfare, local populations, and inadequate cultural and linguistic knowledge.<sup>11</sup> A growing body of testimonials and studies citing their lessons learned and recommendations for change, provided additional validation of the need for socio-cultural perspectives.<sup>12</sup> This discussion illuminated some

*and the Disciplines*, ed. David L. Szanton (Berkeley: University of California Press/University of California International and Area Studies, 2002).

<sup>&</sup>lt;sup>7</sup> Jeffrey S. Lantis, *Strategic Culture: From Clausewitz to Constructivism*, prepared for the Defense Threat Reduction Agency Comparative Strategic Curriculum (October 2006).

<sup>&</sup>lt;sup>8</sup> Austin T. Turk, "Sociology of Terrorism," Annual Review of Sociology 30 (2004): 271-286.

<sup>&</sup>lt;sup>9</sup> Richard Kerr, Thomas Wolfe, Rebecca Donegan, and Aris Pappas, "Issues for the Intelligence

Community: Collection and Analysis on Iraq:," Studies in Intelligence 49, no. 3 (2005).

<sup>&</sup>lt;sup>10</sup> ibid.; also see Commission on the Intelligence Capabilities of the United States Regarding Weapons of Mass Destruction, *Report to the President* (2005), <u>http://www.wmd.gov/report/</u>.

<sup>&</sup>lt;sup>11</sup> For example, see Lieutenant General David H. Petraeus, "Learning Counterinsurgency: Observations from Soldiering in Iraq," *Military Review* (January-February 2006): 2-12; Major Ben Connable, "Marines are From Mars, Iraqis are From Venus," *Small Wars Journal* (May 2004); Mounir Elkhamri, "Dealing with the Iraqi Populace: An Arab-American Soldier's Perspective," *Military Review* (January-February 2007): 110-113; Craig T. Trebilcock, "The Modern Seven Pillars of Iraq," *Army* (February 2007): 25-33.

<sup>&</sup>lt;sup>12</sup> For example, see Sarah E. Archer, "Civilian and Military Cooperation in Complex Humanitarian Operations," *Military Review* (March-April 2003): 32-41; Major Patrick Carroll, "Increasing Cultural Awareness," *Marine Corps Gazette* (June 2004); Jennifer V. Chandler, "Why Culture Matters: An

ways in which intelligence support for operations (and analysis) needs improvement and also spawned a proof-of-concept program to place teams of cultural and "human terrain" specialists in theater to provide direct support to brigade commanders.<sup>13</sup>

The confluence of these factors provided the impetus for holding the conference described in this report. The goal was to create an opportunity to explore current activities, identify gaps in resources and methods, articulate recommendations for how to move forward, and contribute to community-building. The sections that follow summarize major points of conference discussion and recommendations.

### **3** Conference

In September 2006, The MITRE Corporation hosted a one-day conference titled "Socio-Cultural Perspectives: A New Intelligence Paradigm." Over 130 participants from more than 50 different government organizations attended the conference. In keeping with the conference theme, participants brought a broad range of expertise in the social and behavioral sciences; intelligence analysis; military and intelligence operations, including experience in theater; area studies; and technology.

The goal of the conference was to explore various ways socio-cultural perspectives could be used in intelligence analysis. Another goal was to raise awareness among participants, and their host organizations, of current activities in this area, and to establish the groundwork for ongoing interaction within and across organizations and agencies. Conference organizers anticipated that the day's activities would highlight areas in the field that need additional programmatic or research attention, and identify specific ideas for follow-up.

### 4 Discussion of Themes

Throughout the conference program, there was lively discussion of socio-cultural perspectives in meeting national security challenges, and how to characterize the nexus of socio-cultural and intelligence analysis. Although participants represented mixed backgrounds and diverse organizations, there was implicit or explicit consensus on several key points.

Empirically-Based Pre-Deployment Training Program," M.A. Thesis, Naval Postgraduate School (September 2005); Lieutenant Commander John P. Coles, "Cultural Intelligence and Joint Intelligence Doctrine," Joint Forces Staff College Paper (2005),

http://www.jfsc.ndu.edu/college\_resources/JOR/articles/Cultural\_Intelligence.pdf; Major James A. Gordon, "Cultural Assessments and Campaign Planning," School of Advanced Military Studies (2004); Colonel Maxie McFarland, "Military Cultural Education," *Military Review* (March-April 2005): 62-69.

<sup>&</sup>lt;sup>13</sup> Jacob Kipp, Lester Grau, Karl Prinslow, and Captain Don Smith, "The Human Terrain System: A CORDS for the 21<sup>st</sup> Century" *Military Review* (2006): 8; Montgomery McFate and Andrea Jackson, "An Organizational Solution for DoD's Cultural Knowledge Needs" *Military Review* (2005): 18.

#### 4.1 Socio-cultural Analysis

There was no formal attempt to define "socio-cultural analysis," but the term was used consistently in two ways. In one sense, it was used to mean the analysis of socio-cultural data or scenarios. In the other sense, it connoted the employment of socio-cultural perspectives in the analysis of any type of data or scenario. As one of the stated goals of the conference was to foster open exchange and sharing of viewpoints, no attempt was made to reconcile varying uses of such terms. Rather, as long as different uses of terms and concepts were understood in context, they were allowed to coexist and thereby represent the spectrum of priorities and orientations brought to the table by conference participants. In this report, the phrase "socio-cultural data, analysis, and approaches" is intended to encompass the set of ideas referred to as "socio-cultural analysis" during the conference.

### 4.2 Defining "Cultural Intelligence"

The term "cultural intelligence" was used frequently, also with variations in meaning. However, there was implicit acceptance of three underlying tenets:

Cultural intelligence:

- includes, or is informed by, socio-cultural data and their analysis
- must be actionable, in the sense that it can be used in decision-making
- includes perspective, theory, and method derived from the social and/or behavioral sciences

The most explicit discussion of definitions was presented by the speakers from the Marine Corps Intelligence Activity (MCIA), who described a framework that distinguishes among three levels of knowledge, interpretation, and application of cultural data. The first of these, cultural awareness, was defined as behavioral dos and don'ts, and basic familiarity with language and religion. The second level, cultural understanding, encompassed the "why" of behavior embodied in perceptions, mindsets, attitudes, and customs. The third level, cultural intelligence, included the implications of these behaviors and their drivers, including ways in which culture can shape theater or policy decision-making.<sup>14</sup> In addition, MCIA noted that they consider cultural intelligence to be a type of all-source analysis that relies heavily on open-source intelligence (OSINT) and human intelligence (HUMINT). In other words, cultural intelligence is the product of analysis rather than something that can be collected. In fact, they maintained, it requires multi-disciplinary approaches and a multi-step process.<sup>15</sup>

Presentations and discussions during the course of the day also shifted between strategic and tactical uses for cultural intelligence. There was tacit agreement among participants that cultural intelligence could be useful in both environments. This suggests the

<sup>&</sup>lt;sup>14</sup> Arthur Speyer and Job Henning, "MCIA's Cultural Intelligence Methodology and Lessons Learned" (paper presented at the Socio-Cultural Perspectives: A New Intelligence Paradigm Conference, McLean, Virginia, September 12, 2006). See Addendum 1.

<sup>&</sup>lt;sup>15</sup> ibid.

importance of discussing metrics for measuring the quality and success of cultural intelligence, and the likelihood that such metrics may differ between tactical and strategic intelligence applications. Though there was no direct discussion of this during the conference, it would be a fruitful topic for future exploration.

The term "cultural intelligence" has also entered the lexicon of the organizational management field through a model based largely on psychological concepts.<sup>16</sup> This model defines cultural intelligence as "a person's capability to adapt effectively to new cultural contexts," and proposes constructs for cognition, motivation, and behavior.<sup>17</sup> Interestingly, this individual capability-based definition of cultural intelligence, though frequently cited in studies, was not raised at the conference, perhaps because it was not seen as relevant to analysis. This definition may be more relevant to issues of cross-cultural competence being debated as part of training and education efforts.<sup>18</sup>

### 4.3 Culture Debates

In contrast to the implicit acceptance of a shared understanding of key terms such as "socio-cultural analysis" and "cultural intelligence," a number of speakers, including some of the anthropologists present, drew attention to the fact that the root word "culture" has long been contested.<sup>19</sup> This was illustrated during the course of the conference. For example, one speaker cited a standard dictionary definition that portrayed culture as attitudes, values, and behaviors, distinguishing it from social phenomena that relate to the structure of groups. Another participant spoke of the social, cultural, political, and economic dimensions of a group, but separated the political and economic from the larger socio-cultural framework. A third speaker focused specifically on the culture defined by intellectual capital and work practice, positing that members of some professions have much in common around the world because their education and expertise cross-cut or transcend more traditional definitions of culture based on factors such as national or ethnic identity.

### 4.4 Culture as a Framework for Understanding

Most participants agreed that understanding culture helps establish a context for human activity and provides key insights into the potential meaning and significance of actions. It helps analysts understand the "why" and the "so what" of behavior. In this way, socio-cultural perspectives provide a framework for understanding. The ability of the social and behavioral sciences to contribute to the predictive capabilities of intelligence was also

<sup>&</sup>lt;sup>16</sup> Christopher P. Earley and Soon Ang, *Cultural Intelligence: Individual Interactions Across Cultures* (Stanford, CA: Stanford University Press, 2003).

<sup>&</sup>lt;sup>17</sup> ibid.

<sup>&</sup>lt;sup>18</sup> Selmeski, Brian, "Military Cross-Cultural Competence: Core Concepts and Individual Development," Royal Military College of Canada Centre for Security, Armed Forces & Society Occasional Paper Series– no. 1 (2007).

<sup>&</sup>lt;sup>19</sup> The vigorous and long-standing debate of culture definitions is illustrated in Alfred L. Kroeber and Clyde Kluckhohn, *Culture* (New York: Meridian Books, 1952). Also see Clifford Geertz, *The Interpretation of Cultures* (New York: Basic Books, 1973).

debated. Among the questions participants thought might be profitably addressed using socio-cultural perspectives were: what critical factors shape how leaders make decisions in different contexts?, and, what criteria should be used to select methods and circumstances for inter-group negotiations?<sup>20</sup> The field of cross-cultural communication was cited as a potentially relevant resource for work in this area.<sup>21</sup>

### 4.5 An "Anthropology of Us"

Conferees made the point that awareness of the interpretive frames one employs in analyzing human behavior is valuable, including those that might be illuminated by an "anthropology of us" as well as an "anthropology of them." One speaker noted that we need to understand the intersection of the adversary's and the analyst's "situational awareness." Indeed, ethnographic studies of military officers and intelligence professionals have revealed how culture can impact one's work and effectiveness, sometimes in unexpected ways. Examples include the influence of national and organizational culture on military officers participating in peace support operations,<sup>22</sup> attitudes toward asymmetric power and authority relationships for military advisors,<sup>23</sup> and perceived ethnocentrism among intelligence analysts.<sup>24</sup>

### 4.6 Understanding Intent

Several comments during the course of the conference also suggested that it was, perhaps, not the notion of cultural intelligence *per se* that was new, but its relative emphasis. As one speaker put it, "It isn't al-Qa'ida itself that's the problem, it's their ideology." This was repeated in different terms in another comment about how the threats in today's world can be defined ninety percent by intention, and only ten percent by capability. The difficulties we are having countering improvised explosive devices, which are relatively crude technologically, and suicide bombers, whose lethality stems (again) not from the sophistication of the weapon but the intensity of the bombers' commitment and our lack of understanding of the dimensions of that commitment, are strong illustrations of this

<sup>&</sup>lt;sup>20</sup> Melville J. Herskovits, "Economizing and Rational Behavior," in *Economic Anthropology*, ed. Melville J. Herskovits (New York: Alfred A. Knopf, 1952); Christina H. Gladwin, *Ethnographic Decision Tree Modeling*, Qualitative Research Methods series 19 (Newbury Park, CA: Sage Publications, 1989); Paul C. Nutt, "Comparing Public and Private Sector Decision-Making Practices," *Journal of Public Administration Research and Theory* 16 (2006).

<sup>&</sup>lt;sup>21</sup> J. Michael Greig, "The End of Geography?: Globalization, Communications, and Culture in the International System, *Journal of Conflict Resolution* 46, no. 2 (2002: 225-243; Annette Scheunpflug, "Cross-Cultural Encounters as a Way of Overcoming Xenophobia," *International Review of Education* 43, no. 1 (1997): 109-116; Francesca O. Norales, *Cross Cultural Communication: Concepts, Cases, and Challenges* (Youngstown, NY: Cambria Press, 2006).

<sup>&</sup>lt;sup>22</sup> Robert A. Rubinstein, "Peacekeepers and Politics: Experience and Political Representation Among U.S. Military Officers," in *Anthropology and the United States Military: Coming of Age in the Twenty-first Century*, ed. Pamela R. Frese and Margaret C. Harrell (New York: Palgrave Macmillan, 2003).

<sup>&</sup>lt;sup>23</sup> Anna Simons, "The Military Advisor as Warrior-King and Other 'Going Native' Temptations," in *Anthropology and the United States Military: Coming of Age in the Twenty-first Century*, ed. Pamela R. Frese and Margaret C. Harrell (New York: Palgrave Macmillan, 2003).

<sup>&</sup>lt;sup>24</sup> Rob Johnston, *Analytical Culture in the U.S. Intelligence Community: An Ethnographic Study* (Washington, DC: Central Intelligence Agency Center for the Study of Intelligence, 2005).

point.<sup>25</sup> Highly motivated and focused individuals can be a significant threat without sophisticated technology. Additionally, sophisticated technology has a social dimension.<sup>26</sup> In either case, as one speaker noted, "Technology is knowledge put to use," and, further, "You can't have technology without technologists [i.e., people]." This turns our focus back to socio-cultural factors. During the Cold War, our adversaries' motivation and intention were well-studied and well-understood. A comparable understanding of the socio-cultural context of current national security threats is just as critical to decision-making today.

The general point made in these discussions is an important one. We, along with any other actors, are part of a system. People do not act in a vacuum but in response to, and in concert with, the actions of others. Recognition of this system and its dynamic relationships and interdependencies is vital from the tactical through strategic levels. Furthermore, as mentioned earlier, our own analyses are colored by the values and interpretive frames we bring to them. We therefore need to better understand our own biases in order to understand others.

### 5 Data

This new focus on socio-cultural perspectives requires a different kind of data than that of interest during the Cold War.<sup>27</sup> Socio-cultural data can be significantly different in kind than data collected about capabilities, technologies, or artifacts. Many at the conference asserted that data are best collected by immersion in the target environment. This belief is supported by formal methodological approaches, especially participant-observation, developed by the field of anthropology.<sup>28</sup> This clearly falls into the realm of human intelligence (HUMINT). One participant commented, "You can't collect this stuff by satellite." Another speaker, who represented an operational organization, said that his unit's best advantage was that "we know our neighborhood." Accordingly, some of that organization's most valuable assets are individuals who can visually and behaviorally blend into that neighborhood.

The emphasis on HUMINT raised interesting questions about the data themselves and associated analytic tools. The cultural data most often collected are narrative and qualitative in nature.<sup>29</sup> If analytic tools are computational, data may need to be translated into a form that can be processed. While this is often possible, analysts need to be aware

<sup>&</sup>lt;sup>25</sup> Steven Metz and Raymond Millen, "Intervention, Stabilization, and Transformation Operations: The Role of Landpower in the New Strategic Environment," *Parameters* 35, no. 1 (2005); Jeffrey Record and W. Andrew Terril, *Iraq and Vietnam: Differences, Similarities, and Insights* (Carlisle Barracks, PA: Strategic Studies Institute of the U.S. Army War College, 2004).

<sup>&</sup>lt;sup>26</sup> Joseph C. Pitt, *Thinking about Technology: Foundations of the Philosophy of Technology* (New York: Seven Bridges Press, 2000).

<sup>&</sup>lt;sup>27</sup> Richard K. Betts, "Fixing Intelligence," Foreign Affairs 81, no. 1 (2002).

 <sup>&</sup>lt;sup>28</sup> H. Russell Bernard, *Research Methods in Anthropology* (Walnut Creek, CA: Alta Mira Press, 2001).
 <sup>29</sup> ibid.

of the limitations and constraints of such translations and understand the costs and benefits of these types of approaches.

The question arose whether data must be quantifiable. It was pointed out that computational models, because they must use quantified data, often use surrogates for qualitative data. However, surrogates may have varying levels of validity according to the standards of different social science disciplines (e.g., the number of times one goes to church is not necessarily a valid measure of intensity of religious belief) and users of these models and their outputs must consider these issues and their potential impact on analyses. Another speaker remarked that qualitative data are not considered credible in many environments. The growing interest in cultural intelligence, as evidenced by comments such as these, highlights the need to examine underlying assumptions about the value, utility, and interpretation of both qualitative and quantitative data.

It also became clear that collection of qualitative data is labor-intensive. A speaker whose work focuses on data collection was questioned about how to ensure consistency across collectors. The speaker replied that this methodological issue is a challenge that should be addressed by training and the development of collection protocols, such as interview guidelines.

Cultural data also have a temporal dimension. As a speaker from an operational organization pointed out, his collectors spend a great deal of time establishing sociocultural baselines in communities. Establishing these baselines allows collectors and analysts to recognize significant change over time. Understanding the cultural context of these changes is what allows them to grasp the significance of the change.

Speakers pointed out that in addition to the temporal dimension of socio-cultural data, there is also a spatial dimension. Socio-cultural data collection and analysis should be driven not only by intelligence requirements, but also by an assessment of local contextual factors. Communities do not live in isolation and individuals can move in and out of communities. Moreover, social structures, such as kinship relations or tribal identity, can have significance across community and geographical boundaries. Once again, a holistic systems view must encompass both these socio-cultural dimensions.

# 6 Theoretical Concerns

Sound data collection must be guided by appropriate collection protocols.<sup>30</sup> Analytic tools, such as computational models, do not attempt to include the whole world in an analytic exercise, only part of it. As one speaker noted, models–whether conceptual or computational–do not represent the whole world: they would not be models if they did.

In the social sciences, theoretical frameworks shape the definition of research problems and the approaches taken to explore them. For example, a cultural materialist approach

<sup>&</sup>lt;sup>30</sup> ibid.

would focus on the interrelationship between people and their physical environment, while a symbolic or semiotic approach would pay more attention to expressive forms of culture such as language and visual representations. One presenter noted that a "social constructivist" framework<sup>31</sup> underpinned his organization's approach to cultural intelligence. Others were less explicit about their theoretical biases, which led to requests for presenters to clarify what was and was not included in their approaches.

Because all human activity occurs in socio-cultural environments, it is fundamentally a multi-dimensional phenomenon. In order to address these multiple dimensions, analysts will need to leverage approaches from different disciplines in the social sciences (e.g., political science, anthropology, sociology), behavioral sciences (e.g., psychology), life sciences (e.g., physiology, ecology/environmental science), and physical sciences (e.g., physics, chemistry), as well as engineering. Builders of analytic tools, including computational social models, also need to understand how multi-disciplinary theories and approaches can impact data collection, integrity, manipulation, and interpretation.

### 7 Methods

Understanding and analyzing socio-cultural contexts and their potential implications have led the analytic community to seek new social science skill sets and focus on integrating them into intelligence analysis as we have shown earlier. Though some organizations have made great strides in this area there still is, in general, a lack of institutionalization of frameworks and best practices for addressing socio-cultural topics. Also discussed by conference participants were methods by which one gains cross-cultural competency. Moreover, expertise in the social and behavioral sciences, as in the physical sciences, often is stovepiped by discipline. Economics, psychology, political science, anthropology, and sociology – to name only a few disciplines – employ different methodological approaches, apply different theoretical structures, and provide insights into different aspects of the human condition.<sup>32</sup>

This raises issues of interdisciplinary access and integration that must be addressed. These cross-disciplinary efforts are critical, but can present challenges of their own. They can require not only acquisition of new vocabularies, but open-mindedness toward different scientific approaches and methods. The conference did not address this topic directly, but it is important to recognize the difficulties inherent in such interdisciplinary dialogue. Impediments can range from mutually incomprehensible vocabularies, to different definitions of key problems, to varied criteria for what constitutes legitimate data.

Cross-disciplinary efforts also require ongoing collaborative dialog. A one-way conversation in which a subject-matter expert gives data to a modeler, for example, who

<sup>&</sup>lt;sup>31</sup> Peter L. Berger and Thomas Luckman, *The Social Construction of Reality: A Treatise in the Sociology of Knowledge* (New York: Doubleday, 1966).

<sup>&</sup>lt;sup>32</sup> W.S. Bainbridge, "The Future in the Social Sciences," *Futures* 35 no. 6 (2003).

then goes off to build a model and hand it over to an analyst, is likely to be of limited utility. Arguably, one of the most productive aspects of creating an analytic tool is the conversation that occurs between its creators during the process of its construction. For computational social models, it is at this stage that the analyst is forced into explicit awareness of relevant variables and relationships, available data, and the limitations, as well as benefits, of the tool itself.<sup>33</sup> Both tool builders and tool users emphasized these points during the conference.

Given the increasing importance of cultural intelligence, the national security community might formally catalog the human assets it can task (with both collection and analysis) and determine whether these assets are being used effectively. Currently there is talk in some circles of the "soldier as sensor,"<sup>34</sup> that is, using deployed soldiers as collectors of socio-cultural data. This would, of course, require the development and institutionalization of mechanisms to train soldiers to capture and transmit socio-cultural data, as well as consideration of how that activity might affect other missions and goals.

The intelligence community also needs to recognize that much of the expertise and existing data required for cultural intelligence reside outside the intelligence community. For example, although one presentation given by a speaker who works outside the traditional intelligence and academic communities presented relevant methods and data types, questions from participants revealed that many were unable to interpret how these data and methods might be used in intelligence analysis. Cases such as this demonstrate the need for cross-cultural translation of the frameworks and vocabularies commonly employed in different disciplines and professional contexts. This also applies to contact across sectors of government, academia, and the business community.

Several speakers emphasized the element of creativity necessary for socio-cultural analysis in the sense that, while there may be guidelines or theoretical constructs to follow, there is rarely an exact prescription. One called it a process of "scientific improvisation." Another used a cooking analogy. While a good cook will follow a recipe and produce an edible meal, a chef will use the same basic recipe and produce a gastronomic work of art. We should not expect cultural analyses necessarily to provide the same strict interpolation from data to conclusion that is generally expected in the physical sciences.<sup>35</sup>

<sup>&</sup>lt;sup>33</sup> Thomas H. Karas, "Modelers and Policymakers: Improving the Relationship," *Sandia Report 2004-2888* (Albuquerque, NM: Sandia National Laboratories, 2004).

<sup>&</sup>lt;sup>34</sup> R.L. Brownlee and Peter J. Schoomaker, *The United States Army 2004 Posture Statement*, Office of the Chief of Staff, U.S. Army, Special Actions Branch, <u>http://www.army.mil/APS/04/index.html</u>.

<sup>&</sup>lt;sup>35</sup> Joseph S. Nye Jr., "Peering into the Future," *Foreign Affairs* 73, no. 4 (July/August 2004): 82-93. Even in the physical sciences, quantitative data are subject to both intentional and unintentional subjective interpretation and manipulation. See Stephen Jay Gould, *The Mismeasure of Man* (New York: Norton, 1996), or Donald Mackenzie, *Inventing Accuracy: A Historical Sociology of Nuclear Missile Guidance* (Cambridge, MA: MIT Press, 1990).

### 8 Analytic Tools

Analysis of socio-cultural data can be accomplished by a wide range of analytic approaches ranging from hermeneutics<sup>36</sup> to structural explanations,<sup>37</sup> some of which require manipulations of quantitative data.<sup>38</sup> Since most social science data are collected, communicated, and archived in textual format, hermeneutical or interpretive approaches of various types have historically been most widely applied. However, as these types of analytic approaches draw on mental models,<sup>39</sup> they depend heavily on the training and capabilities of individual analysts. Results may, therefore, be difficult to verify and/or replicate. The explosion in computational power over the last few decades, combined with decreasing cost and development of user-friendly interfaces for non-specialists, have led to an increasing emphasis in the social sciences on the use of quantitative analytic approaches and computational models. Analysts, who are under significant pressure to produce analytic results quickly and face ever-increasing amounts of data, stand to benefit from this trend. However, the recent increase in the use of computational tools to model socio-cultural phenomena has raised some important questions for the field of cultural intelligence.

One of the most critical questions is about the role of the computational model itself and how its use has changed socio-cultural analysis. One school of thought holds that the computational model is merely an externalization of a mental model or theory, and that it occupies a middle space between theory and the "real world." Another school of thought argues that the model itself teaches us something about the phenomenon it represents.<sup>40</sup> Computational models are quantitatively based, yet, in the socio-cultural world, they deal with phenomena that are qualitative in nature and generally collected and presented in narrative, rather than numeric, form.<sup>41</sup> Furthermore, some model types, such as social network analyses, are data intensive. Gathering the amount of data required to fully populate these types of models, especially when working in denied areas or with clandestine groups, can be a significant challenge. Lack of such data will contribute significantly to uncertainty of model output, as discussed above. A couple of speakers addressed these limits of computational models, including the need to have data in quantitative form. Other speakers argued that the problem is the ineffective deployment

<sup>&</sup>lt;sup>36</sup> See Geertz *Interpretation of Cultures* op. cit. for an example of symbolic anthropology, and Jacques Derrida, *Of Grammatology* (Baltimore: Johns Hopkins University Press, 1976) for an example of a seminal text in post-modern exegesis. In transferring this latter approach to the social sciences, anthropologists and others have treated cultures as "texts."

<sup>&</sup>lt;sup>37</sup> The structural-functionalism of E.E. Evans-Pritchard and A.R. Radcliffe-Brown are examples of this type of formalism. See E.E. Evans-Pritchard, *The Nuer: A Description of the Modes of Livelihood and Political Institutions of a Nilotic People* (Oxford: Oxford University Press, 1934), and A.R. Radcliffe-Brown, *Structure and Function in Primitive Society* (New York: The Free Press, 1952).

<sup>&</sup>lt;sup>38</sup> Social network analysis, an analytic approach that has been developed and applied since the 1930s, is one of this class of methods that has recently gained much prominence. See Stanley Wasserman and Katherine Faust, *Social Network Analysis: Methods and Applications* (New York: Cambridge University Press, 1994). <sup>39</sup> Kenneth Craik, *The Nature of Explanation* (Cambridge: Cambridge University Press, 1967).

<sup>&</sup>lt;sup>40</sup> See Mary S. Morgan and Margaret Morrison, eds., *Models as Mediators: Perspectives on Natural and Social Science* (New York: Cambridge University Press, 1999) for a discussion of this argument.

<sup>&</sup>lt;sup>41</sup> There is also a "chicken and an egg" problem here. Because tools to effectively and efficiently manipulate large, quantitative data sets have been historically lacking, many field workers in the social sciences have tended not to collect this type of data.

of current tools. For example, there are many extant databases that do not interoperate or interact adequately with computational models. Some of the tools, although technically excellent, remain difficult to apply or integrate into the analytical process.

Developing computational models also can be expensive in both money and time. Models need to be problem-driven and time- and place-specific because, as the dimensions of the problem shift, the required model type may change or the nature of the available data set may shift. For example, a problem focusing on the exchanges between two individuals may be most amenable to a social network approach. However, an inquiry into whether, and if so, how, different types of individuals might have different impacts on an exchange might be better suited to an agent-based approach. An assessment of macro-influences in a socio-cultural environment may be best explored with a systems-dynamics model. These factors emphasize the need for ongoing, continuous interaction between the model builder and the social scientist and/or sociocultural analyst. In many cases, the value of the computational model as a method for learning lies as much in the rigor imposed on the thinking of the analyst during the model construction process as on the output of the model once it is built.<sup>42</sup>

Models also need to account for changes or uncertainty in data. As a couple of conference speakers noted, data can be incomplete, inherently uncertain, and vary because of inconsistency across collectors or in response to changing circumstances. As some watchers of the intelligence community have suggested, the shift in intelligence from focusing on lists of weapons to actors' intentions has resulted in a change from discovering secrets or puzzles to unraveling mysteries.<sup>43</sup> Rarely are these types of uncertainty or incompleteness articulated explicitly or accounted for in the results of analytic processes.

Uncertainty in data is not the only type of uncertainty a model builder or user must consider. There is also uncertainty regarding the choice of model type ("model uncertainty"). Since a model is a set of "things" or variables connected to each other in certain ways,<sup>44</sup> and, by definition, represents only a portion of the target system, the analyst must determine which portion of the system – both in terms of phenomena ("things") and relationships among the phenomena (structure) – are of interest.<sup>45</sup> This determination is driven by two factors: the modeler's theoretical predisposition (that is, his own notion of the way the target system functions) and the problem the model is to

<sup>&</sup>lt;sup>42</sup> Margaret Morrison and Mary S. Morgan, "Models as Mediating Instruments," in Mary S. Morgan and Margaret Morrison, eds., *Models as Mediators: Perspectives on Natural and Social Science* (New York: Cambridge University Press, 1999).

<sup>&</sup>lt;sup>43</sup> Joseph S. Nye Jr., op. cit.; Gregory F. Treverton, *Reshaping National Intelligence for an Age of Information* (New York: RAND/Cambridge University Press, 2003).

<sup>&</sup>lt;sup>44</sup> Jack P. Kleijen, "Verification and Validation of Simulation Models," *European Journal of Operational Research* 82, no. 1 (1995): 145-162.

<sup>&</sup>lt;sup>45</sup> T. Nilsen and T. Aven, "Modes and Model Uncertainty in the Context of Risk Analysis," *Reliability Engineering & System Safety* 79, no. 3 (2003): 309-317; David Draper, "Assessment and Propagation of Model Uncertainty," *Journal of the Royal Statistical Society, Series B (Methodological)* 57, no. 1 (2005).

address. These two factors drive the modeler's choice of model type.<sup>46</sup> As discussed above, if the problem is how information is transmitted among members of a group, and the modeler (or model user) believes the most important factor in this analysis is the strength of the relationships among the members of the group, and not the content of the information or the socio-cultural factors that allowed certain individuals to become members of the group, then the model structure of choice would be a social network analysis. Conversely, if the model builder/user believes that the characteristics of participants are of greater importance, an agent-based approach might be selected. However, as one conference participant noted, there is often inadequate explanation of why a particular model type has been chosen for a given problem or tool in computational social-simulation approaches. In fact, most discussions of uncertainty tend to focus on data uncertainty and neglect structural uncertainty.<sup>47</sup>

### 9 The Path Forward

In its 2003 report, the Defense Science Board Task Force on Discriminate Use of Force concluded that we need a "comprehensive, long-term, and coherent effort to understand adversaries in a systemic way," and that this would require models that account for not only physical dimensions, but "softer" social and cultural dimensions as well. The Task Force also noted that our capabilities in this area are immature.<sup>48</sup> The Defense Science Board's *2006 Summer Study on 21<sup>st</sup> Century Science and Technology Vectors* places social science foremost among the four operational capabilities and enabling technologies needed to support future military missions, and emphasizes that:

Perhaps most central is to gain deeper understanding of how individuals, groups, societies and nations behave and then use this information to (1) improve the performance of U.S. forces through continuous education and training and (2) shape behaviors of others in pre-, intra- and post-conflict situations. Key enablers include immersive gaming environments, automated language processing and human, social, cultural and behavior modeling.<sup>49</sup>

The following recommendations for ways to advance and strengthen the IC's capabilities in these areas were made by Socio-Cultural Perspectives conference participants.

<sup>&</sup>lt;sup>46</sup> Turnley, Jessica Glicken, "Validation Issues in Computational Social Simulation" (paper presented at 3<sup>rd</sup> Lake Arrowhead Conference on Human Complex Systems, Lake Arrowhead, CA, 2005), <u>http://hcs.ucla.edu/lake-arrowhead-2005/HCS2005\_JessicaTurnley2.pdf</u>.

<sup>&</sup>lt;sup>47</sup> Draper, op.cit.

<sup>&</sup>lt;sup>48</sup> *Report of the Defense Science Board Task Force on Discriminate Use of Force*, Office of the Under Secretary of Defense for Acquisition, Technology, and Logistics (July 2003).

<sup>&</sup>lt;sup>49</sup> 2007 Report of the Defense Science Board 2006 Summer Study on 21<sup>st</sup> Century Science and Technology Vectors (Volume 1, Main Report), Office of the Secretary of Defense (February 2007).

### 9.1 Conference Recommendations

- 1. Characterize needs for qualitative and quantitative socio-cultural data, analytic tools, and methods, and identify knowledge and resource gaps
- 2. Establish IC-wide coordination to:
  - 2.1. Establish and nurture networks of government professionals with socio-cultural interests and expertise
    - 2.1.1. Facilitate liaisons among data providers, analysts, tool-builders, and endusers
  - 2.2. Establish and maintain partnerships with non-government experts and organizations in socio-cultural areas of interest, optimize the potential for collaboration, and build outreach programs to support ongoing engagement of different types
  - 2.3. Ensure that socio-cultural data sets, analytic tools, and techniques are available to all IC organizations
  - 2.4. Develop standards and guidelines for quality assurance and life-cycle management of socio-cultural resources
  - 2.5. Provide education and training (e.g., conceptual frameworks, theory, and research design and methods from the social and behavioral sciences; and legal and ethical requirements) to enable socio-cultural analysis
    - 2.5.1. Develop approaches tailored to fulfill strategic, operational, and tactical requirements
    - 2.5.2. Address these activities with the vigor applied to the 1960's "space race"
  - 2.6. Provide guidance regarding the potential impact of evolving ethical considerations on the collection, storage, dissemination, and use of socio-cultural information
  - 2.7. Facilitate the adaptation of inter- and intra-organizational work practice and collaboration as needed to incorporate socio-cultural perspectives
  - 2.8. Establish a program to capture and analyze lessons learned in order to inform and improve socio-cultural efforts across the IC
  - 2.9. Develop performance-assessment system requirements, including a 360-degree feedback component, for socio-cultural expertise and its application

### 9.2 Ethical Considerations

Several social science disciplines have raised ethical concerns about the collection and use of socio-cultural knowledge in a national security environment.<sup>50</sup> The American Psychological Association, for example, has issued a formal statement on the ethics of the use of psychology and psychologists in interrogations.<sup>51</sup> The American Anthropological Association has established an ad-hoc commission to investigate the implications of its members' participation in national security activities, and a heated

<sup>&</sup>lt;sup>50</sup> American Anthropological Association, "Principles of Professional Responsibility (as amended through November 1986)" (Washington, 1971); Olivia Moorehead-Slaughter, "Ethics and National Security," *Monitor on Psychology* 37, no. 4 (Washington: American Psychological Association, 2006).

<sup>&</sup>lt;sup>51</sup> American Psychological Association, "Report of the American Psychological Association Presidential Task Force on Psychological Ethics and National Security," June 2005 http://www.apa.org/releases/PENSTaskForceReportFinal.pdf.

internal debate is underway.<sup>52</sup> Members of the business and non-governmental organizations (NGO) communities, as well as private citizens, have also raised concerns regarding ethical issues resulting from policies and activities affecting local populations.<sup>53</sup> The IC needs a sophisticated understanding of the history and context of ethical issues as they apply to national security, and to remain informed about new and evolving developments in this arena.

### **10** Conclusion

The Socio-Cultural Perspectives: A New Intelligence Paradigm conference demonstrated that there is keen interest in, and need for, socio-cultural data, analysis, and approaches in a wide range of critical national security endeavors. The conference also made clear that this need is increasingly recognized in many government quarters. Questions arose regarding tools, including the development and use of computational models; methods, including issues relating to data collection, analysis, and dissemination; ethics; and the development of cross-community and interdisciplinary ties that would allow the intelligence community, as a whole, to move forward. Methodological rigor, development of best practices, engagement of a wide variety of disciplines, and interaction with open-source communities all arose as essential issues to pursue.

The recommendations distilled from the conference discussion, which are presented in this report, provide a blueprint for progress in the intelligence community. If implemented, the recommendations will afford an unprecedented opportunity to build a foundation to support new levels of collaboration and synergistic thinking that will employ socio-cultural perspectives to address a broad range of national security challenges.

<sup>&</sup>lt;sup>52</sup> See recent issues of Anthropology News. <u>http://www.aaanet.org/press/an/index.htm</u>

<sup>&</sup>lt;sup>53</sup> Asian Peoples Security Network, "Human Security not National Security–A Call to Action, Declaration of the Regional NGO Workshop on Democracy and Security of the People of the Asian Region," (Nakhon Nayok, Thailand, August 23-25, 2002); Adrienne Paul Elwell, "US Aid: Through a National Security Lens," *Reality of Aid Reports 2006*, Part V (Paris: Organization for Economic Co-operation and Development Thematic Reports, 2006), <u>http://www.realityofaid.org/roa.php?id=34</u>.

# 11 Addendum 1 – Selected Conference Briefings

This section contains the briefings presented by several speakers at the Socio-Cultural Perspectives: A New Intelligence Paradigm conference, held at The MITRE Corporation in McLean, Virginia, on September 12, 2006. An additional Addendum is available on Intellipedia.



















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Marine Corps Intelligence Activity Excellence in Expeditionary Intelligence

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MCIA's Cultural Intelligence Methodology and Lessons Learned

Mr. Job Henning – Hicks and Assoc

Mr. Arthur Speyer- MCIA

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describing the *cultural terrain* of the environment.

The cultural terrain provides insight into the mindset, intentions, reactions, and potential courses of action of a population.

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Marine Corps Intelligence Activity Excellence in Expeditionary Intelligence Grounded Theory and Deductive Reasoning					
		GROUNDED THEORY	DEDUCTIVE REASONING		
	How is it generated?	Inductively through research	Logically deduced from <i>a priori</i> assumptions		
	Relation between theory and data	Integral: Generating a theory involves a process of research	Independent: Theory can come from sources other than data		
	Advantages and Benefits	Acknowledges process of discovery	Easy to test		
	Dangers and Limitations	Replication; Forcing findings to "fit"	Mismatch between theory and empirical world		
	Emphasis	Theory generation	Theory verification		

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#### Marine Corps Intelligence Activity Excellence in Expeditionary Intelligence

# Military Culture

Increased interaction between U.S. forces requires an understanding of not just foreign culture, but foreign military culture

Coalition Warfare, Training, Counterinsurgency, etc

MCIA is producing unclassified field guides to assist in the understanding of the unique cultural attributes of foreign militaries

- Unique research challenges
  - Underserved by HUMINT
  - Ignored by Academia
  - Under-served by traditional military intel

MCIA Culture 2.0: Operational Focus – Global Vision

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![](_page_43_Picture_12.jpeg)

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Marine Corps Intelligence Activity

Excellence in Expeditionary Intelligence

Lessons Learned/Challenges

•The study of culture does not lend itself to rigorous methodology

•Don't be a slave to theory

•But prevent "explanations" from simply being

- Subjective descriptions
- Undisciplined story-telling
- Unverifiable analytic judgments

•Cultural analysis is heavily influenced by the categories you choose

•Ex: Modernization: why aren't they more like us?

•They would work better if they were more like us.

•Let's study how they are different than us

Everyone is a participant in culture; but not everyone is an expert in studying culture
Cultural Intelligence is "open source", but requires theoretical and methodological sizes

![](_page_44_Picture_15.jpeg)

![](_page_44_Picture_16.jpeg)

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![](_page_44_Picture_18.jpeg)

Mr. Arthur Speyer Cultural Program Lead Marine Corps Intel Activity Quantico, VA 703-432-7237 aspeyer@mcia.osis.gov

> Job C. Henning Vice President Hicks & Associates job.c.henning@saic.com (703)676-5892

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Marine Corps Intelligence Activity Excellence in Expeditionary Intelligence

# **BACK-UPS**

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## Marine Corps Intelligence Activity

#### Excellence in Expeditionary Intelligence **Cultural Taxonomy**

#### Modes of communication Verbal

Punishment Corruption

	Link context 9 Low context culture		Religion	
	Non Verbal (Symbols)	le		Belief s
	Personal			
	Societal (Cultural Icons, graffiti)			Factors
	Business			Religio
	Familial			- tongio
Cor	nmunication environment			
	Characterizes environment			Individu
	Can you speak freely			Physica
	Quantitative			Roles o
	Qualitative			Interact
INUa	inced			
	Language			1.1
				Standa
	Dialect			Present
	= Accent			Religiou
	Written			Hierard
	Lingua Franca (Common word; vernacular)			Impact
	Official language policy			Religio
	Officer enlisted language gans			rtongiot
1.0	Primary language		Cross-ci	utural con
	Jargon (Military/Professional/etc.	-	01000 01	antartar oos
	Intra-group language difficulties		Stule of	communi
	Cross-cultural communications	-	Style of	Koron (
1.1	Stude of communication		Milelah al	Koran (
	= Koran (Floweny repetitive etc.)		which c	lasses sp
1.0	Which classes speak which language?	- C	Linguisti	c identifie
	Linguistic identifiers	- C	Languag	je etiquet
100	Language etiquette	- C	Busines	s Langua
	Business Language	- A.	Literacy	rates (sp
	Literacy rates (spatial distribution)			By ethn
	By ennic group			By Sex
	By Sex			By age
	= Dy age			By Class
	= by Glass			

ion	
	Belief systems
	<ul> <li>Religion and how the impact on life</li> </ul>
	Factors that affect behavior
	Religious groupings
	<ul> <li>Sub-groupings</li> </ul>
	Individual community influence
	Physical infrastructure
	Roles of Evangelism & Missionaries
	Interaction between religious groups
	<ul> <li>Tolerance</li> </ul>
	<ul> <li>Friction</li> </ul>
	Standards versus actual practices
	Presentation versus true belief
	Religious freedom
	Hierarchy of religion
	Impact on behavior
	Religious leadership
s-ci	ultural communications
of	communication
	Koran (Flowery, repetitive etc.)
hc	lasses speak which language?
uisti	c identifiers
uaq	de etiquette
acv	rates (spatial distribution)
,	By ethnic group
	By Sex
	-,

Diet Typical / Traditional Influence on culture Alcohol/Drugs Eating style Role of food Food taboos Regional diets History of famines Customs Basic Do's and Don'ts Public rituals/Ceremonies ъ. Secular а. Religious Gestures Manners Visiting Displays of affection Business Hand signs Gifts Protocol х. Business etiquette Concept of time Taboos

.

Reflect deeply held beliefs

Status indicators ClothingSpeaking order etc.

Seating

Personal space

WHAT IN CORP. Marine Corps Intelligence Activity Excellence in Expeditionary Intelligence Cultural Taxonomy Role of family
 Gender norms
 Gender norms
 Role of men
 Collective group's sense of honor
 Role of women
 Collective group's sense of honor
 Role of women
 Collective group's sense of honor
 Role of women
 Role of women
 Role of the of sense of honor
 Role of women
 Role of the of sense of honor
 Role of the o Health care Perception of health care the system Access to water Diseases and ailments Epidemics Aids/HIV Attitudes to Western medicine Traditional medicine ional medicine Holistic Access to resources
 Impact on population distribution
 Industrialization was was Agratian society
 Respect for nature
 Perceptions of transmitional businesses &
 comparies
 Content
 Access
 Content
 Content
 Religous
 Content
 Religous
 Universities (Location)
 Universities (Location)
 Role of Education
 Note of Education Mysticism Infrastructure 
 Mysticism
 Role of Sexuality

 Infrastructure
 Segregation of sexes

 Practitioners
 Homosexuality/Transgender Issues

 Role
 Role of children

 Traditional authority
 Youth cuture

 Filturation
 Divide cutes
 . Perceptions of criminals
 Perceptions Role of Education in Society Cultural themes within curriculum Standards Literacy rates Spatial Distribution Elementary
 Secondary University Protecting national Self-policing Who provides security? Informal Formal How applied? Punishment By ethnic or tribal group By Age and gender

![](_page_47_Picture_0.jpeg)

### Marine Corps Intelligence Activity Excellence in Expeditionary Intelligence

# **Cultural Taxonomy**

# National Government Indigenous groups Indigenous groups Neighboring groups Regional powers United States US military NGOs & IGOS Xenophobic Persistent loyalty versus temporary agreement Trust issues Outsiders Internal Familial relationships Trigger to provide support/hospitality toward others Sanctuary Sanctuary Assumptions of arrogance Cultural affinity ing Headwear Clothing Footwear Piercina Body markings Jewelry/Self Adornment Status clothing/ accoutrement Clothing as a symbol system Cichting as a symbol sy Megration Information flow Dissporas Population movements Human development index Land use Settlement patterns Rura/Urban settlement patterns Vernacular Architecture Urban versus rural geography

	Division of labor
	Types of industry
	Sources of income
	Insurgency
	Marketplaces
	= Who
	= What
	<ul> <li>Exchange</li> </ul>
	Informal or formal economy
	Exchange
	<ul> <li>Barter</li> </ul>
	<ul> <li>Services</li> </ul>
; =	Navigation of economy
	<ul> <li>Bribes (appropriateness)</li> </ul>
	<ul> <li>Haggling &amp; bartering</li> </ul>
	<ul> <li>Who controls marketplace</li> </ul>
	Role of migrant workers
	Role of foreign labor
	Economic power of minority groups & syndicates
	Perceptions of corruption
	<ul> <li>Bribes versus gratuity</li> </ul>
	Social safety net/ welfare
	Household economy
	Perceptions of different socio-economic classes
D	emographics
	Age/Sex Pyramids
1	Rural/urban migration
2	Birth/Death rates
1	rennity
P	olitical Geography
F.	Political fracture lines

Political boundaries Control of boundaries Patterns of voting behavior Military Culture Cultural Style of Warfare Cultural influences on military effectiveness Culture and rank Identities with the military Military culture of organizations & institutions Civic Values Role in the State & Society Prestige attached to military How tactics and organization shaped Professional versus conscript force Military icons Planning processes Small unit leader training Political sensitivity Ethnic makeup of military 10 Military indigenous or surrogate from other regions Use of mercenaries Civil/Military relations Who is military subordinate to?Paramilitary & militia forces Use in political propaganda/indoctrination Work for state or people Education level of force Linguistics Centralized versus decentralized control Independence of military leadership

![](_page_47_Picture_6.jpeg)

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Marine Corps Intelligence Activity

Excellence in Expeditionary Intelligence

Culture and Marine Corps Doctrine

### Culture lies at the heart of Intelligence

"Intelligence requires an understanding of foreign culture"

Critical to support commander's estimate of (enemy) activity

Primary source of environmental/cultural knowledge to support commander's decision making

-Marine Corps Doctrinal Publication 2 Intelligence

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![](_page_48_Figure_10.jpeg)

![](_page_49_Picture_0.jpeg)

# Marine Corps Intelligence Activity

Excellence in Expeditionary Intelligence

The role of culture and intelligence is nothing new

- Early 1990s- MCIA becomes official producer of country handbooks (pocket sized green books)- large culture chapter
- 1998- MCIA asked to conduct "Cultural Intelligence Seminars" for deploying USMC units (mainly MEUs heading to Balkans)
- 1999- Begins Cultural Intelligence Product Line (Africa)
- 2001- Begin Products based on Cultural Intelligence Factors (Afghanistan)
- 2003- Produced First Cultural Smart Card (Iraq)
- 2004- MCIA/HQMC Cultural Intel Working Group formed
   Advices on the creation of the CAOCL
- 2004- Numerous special cultural projects for I MEF (Iraq)
- 2005- Given DoD Intel lead on Cultural Intelligence (DIAP)
- 2006-2009- Cultural Intelligence Program Build

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![](_page_50_Picture_0.jpeg)

Katie Sievers USG Steve Maiorano USG Srini Narayanan, ICSI and UC Berkeley

![](_page_50_Picture_2.jpeg)

# Talk Outline

- Introduction and Specific Problem
- Modeling approach
- Preliminary Results
- Future

# **Basic Question**

 How do we systematize the application of social/cultural factors, norms, and practices to analysis and prediction.

- Can we formally model the impact of social factors in policy analysis?
- Focus is on formal operational models that support predictive analysis.

# Approaches

- Previous approaches to the problem involve
  - Intuition
  - Rationality Theory
    - Game Theory
    - Bayesian Analysis
    - Logical Approaches
  - Problems:
    - Social knowledge is not categorical
      - Prototypes, radial categories
    - Human perception, motivation, social practices are fundamental, not epiphenomenal
    - Dynamic unfolding of events and actors

# Specific Problem: Case Study

Question: How do cultural, social, and political factors impact coca eradication efforts?

![](_page_52_Picture_2.jpeg)

# **Factors Considered**

- Social/Cultural Factors
- Economic Factors
- Political Factors

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# Social Factors

- Education
- Ethnicity
- Religion
- Demographic Factors (Race, Dwelling)
- Traditional Practices regarding Coca use

# **Economic Factors**

- Economic Status
  - Poverty Level
  - GDP
- Nutrition Levels
- Urban/Rural Distribution
- Labor Organization

# **Political Factors**

# • Political Structure

- Party in Power
- Opposition
- Other Organizations/Parties
- Leader Characteristics
  - Background
  - Position
  - Affiliations

# Questions

- What is the joint impact of the different kinds of factors on coca eradication efforts?
- How do predictions from the combination of these factors differ between Bolivia and Peru?

# the start of the s

# Talk Outline

- Introduction and Specific Problem
- Modeling approach
- Preliminary Results
- Future

![](_page_55_Picture_6.jpeg)

# Modeling Complex Dynamic Scenarios

- Reasoning about dynamics
  - Complex event structure
    - Multiple stages, interruptions, resources, framing
  - Evolving events
    - Conditional events, presuppositions.
  - Nested temporal and aspectual references
     Past, future event references
- Reasoning with Uncertainty
  - Combining Evidence from Multiple, unreliable sources
  - Non-monotonic inference
    - Retracting previous assertions
    - Conditioning on partial evidence

![](_page_56_Picture_0.jpeg)

# Building/Using Scenario Models

- Models of Complex Scenarios involve
  - Complex, evolving events
  - Modeling of uncertainty
- An ontology of Events
- Simulator Demo
- Knowledge Capture
- CPRM Models and Inference
- Hybrid Models and Biological Processes

![](_page_56_Figure_10.jpeg)

![](_page_57_Figure_0.jpeg)

![](_page_57_Picture_1.jpeg)

![](_page_58_Picture_0.jpeg)

# Knowledge Capture Methods

- Direct manipulation by analysts using the CPRM simulator GUI
- Ontology editing using Protégé
  - Automatic compilation of model
- Semi-Automatic translation from XML schemas

![](_page_58_Picture_6.jpeg)

# Using Protégé-OWL

- The Protégé-OWL editor features used:
  - Load and save OWL and RDF ontologies.
  - Edit and visualize classes, properties and SWRL rules.
  - Define logical class characteristics as OWL expressions.
- Process Ontology in OWL
  - Basis for OWL-S, compatible with VERL, and other process ontologies
  - Extension to allow specification of probabilistic information
- Automatic translation from OWL ontology to a CPRM model

![](_page_59_Figure_0.jpeg)

Create	Move	Delete	Query	Observe

![](_page_59_Picture_2.jpeg)

![](_page_60_Figure_0.jpeg)

![](_page_61_Figure_0.jpeg)

# Talk Outline

- Introduction and Specific Problem
- Modeling approach
- Preliminary Results
- Future

![](_page_62_Picture_0.jpeg)

# Predicting effects of coca eradication

- We looked at two similar countries
  - Peru
  - Bolivia
- We modeled the different parameters (social, economic, political) by culling evidence from a variety of sources
  - Katie Sievers
- We instantiated the factor model and computed the effect on the outcome (negative, positive)

# **Preliminary Results**

- Predicts greater acceptance of coca eradication efforts in Peru compared to Bolivia.
  - While social factors are similar the political factors dominate
    - Leader background, position, attitude
  - Interesting to look at the ethnic distribution of voters
- Main Lesson: It is the combination of factors that is predictive. No single factor is sufficiently predictive.

# $rac{\delta}{\delta}$ Systematizing comparisons

- Sensitivity and Perturbation analysis
- Divergence in highly sensitive variables
- Mutual information and KL-divergence between the two structured networks.

![](_page_63_Figure_4.jpeg)

![](_page_64_Figure_0.jpeg)

# The Future: Toward an Analyst Workbench

• How can we systematize the modeling of how social and cultural factors contribute to analysis?

#### Key Technical Problems

- Large complex data with individual cases and generic schemas
- All the information is incomplete and uncertain (some qualitative, some quantitative)
- Information changes over time so analysis has to change incrementally (can't redo all the analysis all the time)
- Model has to be PREDICTIVE not just post-hoc analysis tool.

#### • Hypothesis: CPRM are tools with the right properties.

- Combines the modeling of uncertain and qualitative relational information with dynamic models
  - Subsumes logical, traditional bayesian, and dynamic system approaches

### **Making Qualitative Data Actionable**

Applying Social Science Methodology to Market Research

Timothy Benner, Ph.D.

## Background

- Academic perspective and training
  - Social Sciences/Anthropology
  - Cultural focus
- Challenge:
  - How to take this perspective and apply the methodologies and perspectives learned in a primarily non-applied discipline to a completely applied environment
- Approach:
  - Participant observation
  - Unobtrusive observation
  - Unstructured in-depth interviews

### **Using Qualitative Data**

- Exploration:
  - 1. Qualitative data in terms of participant observation and exploratory interviews can help you begin to understand a context with which you may be largely unfamiliar
- Contextualization:
  - 1. Qualitative data can serve as both the starting point and the end point of a research project.
    - Can give the initial insight that helps formulate the direction of the research
    - Helps contextualize the final product in terms that are much more understandable and immediate than raw data to people who are not accustomed to receiving information in that form.

![](_page_66_Picture_7.jpeg)

- Anecdotal information:
  - Qualitative information is often dismissed as such
  - To avoid this one must marry qualitative methods with quantitative methods.
- Quantifying qualitative information:
  - Serves to make anecdotal information "real" or "valid" in the eyes of the client.
  - Backs up the observations with "real numbers"

![](_page_67_Figure_0.jpeg)

![](_page_67_Figure_1.jpeg)

SmartRevenue's Shopper-Centric Research™ Identifies In-Store Shopper Segments (Sample based on brand vs. private label purchase drivers)

![](_page_67_Figure_3.jpeg)

		Sample Groups	
Group	Need-States/Motivations	In-store Behavior and Navigational Paths	Tactical Recommendations
Health- Conscious	<ul> <li>Making change to a healthier lifestyle</li> <li>Looking for healthy alternatives without compromising taste and enjoyment of consumption</li> </ul>	<ul> <li>Most likely to shop alone</li> <li>Most likely to stick to the perimeter</li> <li>Reads labels in search of healthier ingredients</li> <li>Will browse for new ideas and new foods</li> </ul>	<ul> <li>Emphasize importance of in-store merchandising and marketing based on healthy themes/choices</li> <li>Create a healthy foods section with clear product labeling and display information</li> </ul>
Variety- Seekers	<ul> <li>Seeking new and interesting products through sales</li> <li>Expecting retailer to make it easy to find products through visible promotions</li> <li>Not as willing to explore entire store</li> </ul>	<ul> <li>Will use store flyers and coupons</li> <li>While they like the idea of finding new and interesting food items, they do not like to exert much effort and time in finding these items</li> </ul>	<ul> <li>Use store flyers and coupons to direct shopper to new products in the center of the store</li> <li>Use free standing displays (FSD) and endcaps to promote new products along the store perimeter</li> <li>Create a "new arrivals/new product" FSD or section to cultivate and grow this segment</li> </ul>
Value- Driven	<ul> <li>Shopping for family</li> <li>Looking for everyday low prices</li> <li>Making purchase decisions to make family happy but also will stay within budget</li> </ul>	<ul> <li>Picks up products from regular aisle, does not explore FSD</li> <li>Compares prices, does a lot of in-store browsing, uses shopping list, shops with other children and adults</li> <li>More likely to prioritize taste over nutrition</li> </ul>	<ul> <li>Make store an interesting place to shop for family</li> <li>Emphasize service with helpful, knowledgeable staff</li> <li>Trigger unplanned purchases of premium brands by creating kid- friendly in-store merchandising</li> </ul>
Brand- Driven	<ul> <li>Coming to store for specific items and specific day-based needs</li> <li>Are brand loyal and not concerned with price</li> </ul>	<ul> <li>Most likely to make a short, grab-and-go path through store</li> <li>Most likely to shop from endcaps for planned purchases</li> <li>Most likely to prioritize taste over nutrition</li> </ul>	<ul> <li>Re-think endcap product placement and promotional strategy to effectively target this segment</li> </ul>

# Selling in the Information

- Position yourself for success:
  - 1. Know your audience and clearly define what constitutes the realm of possible actions
  - 2. Clearly define the expectations as to what kind of information that the client finds palatable and give them the results in a format that they can understand and use.

### Make the recommendations "Real"

- Contextualize Recommendations:
  - 1. They must be tied back to the original goals of the project.
  - 2. They must be truly actionable (i.e. within the realm of possibility for the client)
    - You can make "pie in the sky" recommendations but they must be identified as such or you lose credibility
  - 3. They must explicitly tied to the findings of the research or the data.
  - 4. They must also be explicitly tied to actual projected results.

Action	Matrix

GROUP	Findings	Recommendation	Impact
	Despite prominent signage, for the Store X Promise 24% of shoppers leave the store without purchasing	Use in-store radio and national media to make sure that shoppers understand the Store X Promise	Increased conversion of the 24% of non-purchasers
	Shoppers tend to be focused while shopping at Store X and come in for a particular reason and do not make a lot of side trips apart from that purpose	Consider developing segment-based shopper zones in which shoppers will be able to easily find and purchase related products Create targeted segment-based stores	Increased incremental sales per store trip
All	Proximity of the store to home or work is an important driver of store usage	Consider adding some convenience items at the front of the store	More incremental sales of convenience items. More store trips
Shoppers	Signage varies significantly in terms of effectiveness Navigational signage works well Life-style signs have good noticeability (42%) and high approval ratings Product information signs have good noticeability (41%) Services provided signs are only noticed by 30% Special offers signage only noticed by 21% Spanish signage viewed as appropriate	Tie service and special offer signage to life-style signage to increase noticeability and favorable perceptions use a poster strategy with the lifestyle signage	Increased noticeability = increased conversion