

BRINGING INTELLIGENCE ABOUT

Practitioners Reflect on Best Practices

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With a Foreword by

Mark M. Lowenthal

Assistant Director of Central Intelligence



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May 2003

Russell G. Swenson, Editor

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The Joint Military Intelligence College supports and encourages research on intelligence that distills lessons and improves support to policy-level and operational consumers, and that familiarizes the public with aspects of the intelligence profession.

Bringing Intelligence About: Practitioners Reflect on Best Practitioners

The title chosen for this book carries two meanings. The more straightforward interpretation of “Bringing Intelligence About,” and the principal one, refers to the book’s coverage of wide-ranging sources and methods employed to add value to national security-related information—to create “intelligence.” A second meaning, not unrelated to the first, refers to the responsible agility expected of U.S. intelligence professionals, to think and act in such a way as to navigate information collection and interpretation duties with a fix on society’s shifting but consensual interpretation of the U.S. Constitution.

A prominent individual and ideal intelligence professional who lived both meanings of “Bringing Intelligence About” was the late Lieutenant General Vernon A. Walters. As an intelligence officer, defense attache, ambassador-at-large and ambassador to Germany, his combination of skills—notably his language skills—made him the epitome of a professional. Beyond intelligence service in the Departments of Defense and of State, General Walters presided as Deputy Director of Central Intelligence during the Watergate episode, where he stood on principle and at odds with political figures in the Nixon administration. His mastery of intelligence collection, analysis and politically attuned synthesis, the full story of which has not yet been told, make him a near-mythic figure for aspiring intelligence professionals.

Although the talents and assignments of General Walters were extraordinary, his demonstration that intelligence aptitudes and skills are fungible across Departments and Agencies is a powerful suggestion that those separate institutions can also operate together as a professional community.

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Editor

FOREWORD

There are two anecdotes from the world of entertainment that seem apt to introduce this book.

First: The great 19th-century Anglo-Irish actor Edmund Kean lay on his deathbed. A friend asked, “Is it hard, Edmund?”

“No,” he replied. “Dying is easy. *Comedy* is hard.”

Second: A Hollywood producer in the 1930s or 1940s was asked why a certain film succeeded at the box office but another did not. He replied, “If we knew the answer to that, we’d only make hits.”

Similarly, the process of intelligence is easy; *good* intelligence is hard. And if we could figure out what made some intelligence “good” or “better” (which would require some further definition), then we would produce it more regularly.

We spend a lot of time in the Intelligence Community analyzing the various parts of the intelligence process and trying to define what makes some intelligence better than other intelligence. And yet, for all that intellectual effort, we still have not evolved a steady and reliable means of producing this “better” intelligence. We know when the process works and when it does not, but this knowledge does not turn into a formula for greater success.

Why is that? Are we unable to learn from our own successes and failures? Or does the process remain so intangible at core that it eludes us even when we have, on occasion, mastered it? My own view is that we have not yet (after more than 55 years) come up with a good picture in our minds—nor have we successfully enunciated—just what a professional intelligence analyst “looks like,” and how we train and develop this analyst across his or her entire career—not just at the outset. Interestingly, we do know what the analyst’s ethos is, but we remain fuzzy on the necessary professional underpinnings.

This volume helps us move down the long and difficult road of helping identify how to produce good or better intelligence—by which I mean intelligence that is of use to policymakers and is better than other intelligence by being so used. The authors have—across a range of areas of interest—identified some of the practices that work best to produce—or, more aptly, “to bring about”—good intelligence. Note that the preceding sentence said “some of the practices.” Few books could expect to identify all of the practices that work and, as the authors of each chapter would undoubtedly concede, there will always be some variables and intangibles at work in intelligence: vagaries of time to perform collection and analysis; the quality of sources; the quality of the analysts; the nature and personality of the policymakers. Still, it is possible to identify the practices that work and the practices that have to be altered over time as conditions change.

I cannot help but think that if we were to take the various observations and recommendations of these chapters and shape them into a coherent program we would be well on our way to producing better intelligence on a more consistent basis. Of course, we would still face the issue of where that program should exist and how it should be imparted because, for all of the improvements we have made in training and developing analysts, we still do this in vertical, agency-dominated stovepipes. We have a variety of courses that seek to train (or inculcate) people into the broader Community aspects of intelligence, but training remains a series of isolated enterprises. Thus, even if we accept the many good ideas in this book, getting them to all of the people who might benefit from them remains typically problematic.

Finally, it is also important to understand that this book focuses on the issue of analysis. I am admittedly prejudiced in my views, but I believe that analysis is the main goal of any intelligence enterprise: putting informed judgments in front of policymakers to help them make decisions. This is not meant to demean clandestine activities in the field, or the designing and operation of collection systems, or any of the other necessary parts of the broader intelligence function. But, at the end of the day, the most consistent service intelligence provides is analysis, whether it is a one-line warning or a detailed estimate. The Infantry likes to call itself “the Queen of Battle.” This is how I feel about analysis in the world of intelligence. This book helps analysis remain firmly placed on her throne.

A handwritten signature in black ink that reads "Mark M. Lowenthal". The signature is written in a cursive, flowing style.

Mark M. Lowenthal
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Analysis and Production
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Council

BRINGING INTELLIGENCE ABOUT PRACTITIONERS REFLECT ON BEST PRACTICES

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INTRODUCTION

Russell G. Swenson

with David T. Moore and Lisa Krizan

This book is the product of studious self-reflection by *currently serving* intelligence professionals, as well as by those who are in a position, with recent experience and continuing contacts, to influence the development of succeeding generations of intelligence personnel. Contributors to this book represent eight of the fourteen organizations that make up the National Foreign Intelligence Community. A positive image of a community of professionals, engaged in public service, and concerned about continuous self-improvement through “best practices,” emerges from these pages.

Practitioners anywhere in this Community are professional by any definition of the term. Their work requires extensive education and specialized training, and at their best, personnel exhibit highly innovative approaches to collection and analysis. Differences in focus among the principal Intelligence Community partners are sometimes sharp, but similarities in techniques do exist, particularly at the “working level.” Community partners, such as the Central Intelligence Agency (CIA), Defense Intelligence Agency (DIA), the National Security Agency (NSA), and the State Department’s Bureau of Intelligence and Research (INR), for example, share responsibilities for national security issues that allow individual collectors, analysts, issue managers and offices to work together on interagency task forces.

However, commonalities may decrease farther afield, for example between the agencies with a strategic focus and those involved in tactical or law-enforcement intelligence. Not the least of these differences is that, with its strategic focus, the Intelligence Community expects to be forward-looking, envisioning future developments and their repercussions, whereas law enforcement intelligence efforts have typically focused on exploiting pattern analysis to link together the extralegal behavior of individuals and organizations with clear and legally acceptable evidence. Some overlap of intelligence applications already occur, especially in the areas of crime and narcotics, where interagency task forces work from both ends of the problem—the predictive and the reactive—so that a facile claim of significant differences between law enforcement and national security intelligence may hold up to scrutiny only in terms of the scale of operations supported rather than professional intelligence techniques employed.¹ We may infer from these observations that the principles of intelligence collection and analysis addressed in this book will apply to intelligence creation in the broadly overlapping cultures of law enforcement and national security intelligence.

¹ Two works that document the evolution of criminal or law enforcement intelligence, both in the U.S. and internationally, are 1) *Intelligence 2000: Revising The Basic Elements: A Guide for Intelligence Professionals*, Marilyn Peterson, ed. (n.p.: Law Enforcement Intelligence Unit, California, and International Association of Law Enforcement Intelligence Analysts, 2000), and 2) Don McDowell, *Strategic Intelligence: A Handbook for Practitioners, Managers and Users* (Cooma, NSW, Australia: Istana Enterprises Pty, Ltd, 1998). These books provide evidence of a convergence, in both instructional and professional standards of practice, between law enforcement and national security intelligence.

The concept of a *Community* of professional intelligence collectors and analysts persists, despite the specialized character of much of their work. Further, the National Foreign Intelligence Community does not remain static, as shown by its recent (2001), formal incorporation of the U.S. Coast. The Coast Guard combines its new intelligence focus with its traditional broad responsibilities in law enforcement, in paramilitary operations, and in public safety. As a new, young member, and a bridge between national security and law enforcement spheres, the USCG is in position to help rejuvenate the community by exemplifying the ideal of sharing both information and assessments.

The U.S. Intelligence Community was subject during the 1990s to a congressionally mandated reduction in Intelligence Community personnel levels.² This reduction occurred despite numerous small wars and the continuation of international criminal activity during the decade. When dissenters, such as former Director of Central Intelligence James Woolsey, “talked about the proliferators, traffickers, terrorists, and rogue states as the serpents that came in the wake of the slain Soviet dragon, [they were] accused of ‘creating threats’ to justify an inflated intelligence budget.”³ Even government reports such as that of the United States Commission on National Security (commonly referred to as the Hart-Rudman Report), which warned of catastrophic attacks against the American homeland and a need for vigilance, were dismissed.⁴

Intelligence collectors and analysts have at times been subject to personnel retrenchment, a situation favoring current operations support, and leading to the neglect of individual and corporate succession planning—to capture and pass on institutional and target knowledge. Today, collection and analysis tradecraft remain neglected phenomena—the focus of very few self-studies.⁵ Naturally, some literature known to “insiders” is not made available to the general public because of the admonition not to disclose “sources and

² John E. McLaughlin, CIA Deputy Director of Intelligence, notes that the reduction was 22 percent. See McLaughlin’s “The Changing Nature of CIA Analysis in the Post-Soviet World,” remarks as prepared for delivery at the Conference on CIA’s Analysis of the Soviet Union, 1947-1991, 9-10 March 2001 (Princeton, NJ: Princeton University, 2001), URL: <http://www.cia.gov/cia/public_affairs/speeches/archives/2001/ddci_speech_03092001.html>, accessed 22 December 2002. Cited hereafter as McLaughlin.

³ McLaughlin.

⁴ U.S. Commission on National Security/21st Century, *New World Coming: American Security in the 21st Century*, The Phase I Report on the Emerging Global Security Environment for the First Quarter of the 21st Century, Supporting Research and Analysis (Washington, DC: GPO, 15 September 1999), 49.

⁵ The few works that do address intelligence practices in informed detail have become classics, and are widely cited. They include Sherman Kent’s *Strategic Intelligence For American World Policy* (Princeton, NJ: Princeton University Press, 1949); Roger Hilsman, *Strategic Intelligence and National Decisions* (Glencoe, IL: The Free Press, 1956); Washington Platt, *Strategic Intelligence Production: Basic Principles* (New York: Frederick A. Praeger, 1957); Bruce D. Berkowitz and Allen E. Goodman, *Strategic Intelligence for American National Security* (Princeton, NJ: Princeton University Press, 1989); Richards J. Heuer, Jr., *Psychology of Intelligence Analysis* (Washington, DC: Center for the Study of Intelligence, 1999) and Lisa Krizan, *Intelligence Essentials for Everyone*, Occasional Paper Number Six (Washington, DC: Joint Military Intelligence College, 1999).

methods.” However, even though collection methods are often arcane, methods of analysis are not very esoteric. Analytic methods used by intelligence analysts are readily available to specialists in the academic world.⁶ The commonalities that do exist among collectors and analysts across the Community have rarely been noted in intelligence literature. The essays in this book will help fill that gap, and should illuminate for non-specialists the important role of self-reflection among intelligence professionals who remain in government service.

The contributors to this book share an interest in exploring and explaining intelligence collection and analysis practices.

Pauletta Otis, whose work has acquainted her with both the Intelligence Community and academia, outlines from experience the numerous similarities and differences between communities of academics and intelligence professionals. Her reminder that academics tend to be “contrarian” points up the value of academics having continual interaction with intelligence experts, in support of the Community’s ideal, “nonmonastic” (not following the party line) approach to issues.

In the next essay, retired Navy Captain George Satterthwaite recounts how persistence and creativity when coupled with serendipity can contribute to gathering unique information that may thereby yield valuable intelligence. By taking advantage of his responsibilities as Defense Attaché to host official U.S. delegations, he gained access to important facilities in India for insight into Indian nuclear and naval capabilities. Intelligence professionals can readily relate to his spirited interaction with bureaucratic and political colleagues in the U.S. Embassy and the host country.

It may now be true that the value of intelligence to consumers is more dependent on the evaluation of information (grappling with mysteries) than on discovering “secrets.”⁷ If so, then the evaluation of social trends in various regions might best begin with systematic exploitation of authentic or “grass-roots” reporting from newspapers and other mass media. In the third essay, John Turner, senior Middle East and North Africa analyst at the U.S. European Command’s Joint Analysis Center, illustrates his facility with exploiting multilingual electronic news media from North Africa. Translation and reporting by the Foreign Broadcast Information Service from such media is selective rather than comprehensive, and selections are not tailored for individual analysts, who are removed from first-hand screening of the sources. Therefore, language capabilities are indispensable for any country’s intelligence personnel who seek insights through indigenous mass media. Language capabilities must mirror those tongues used across the electronic media that represent the target entities. Further, as noted in a recent news

⁶ Many if not most analysts have been exposed, by training or experimentation, to such techniques as link analysis, the Delphi technique, and analysis of competing hypotheses. Morgan D. Jones, former CIA analyst, has distilled the less structured techniques that intelligence analysts may employ in *The Thinker’s Toolkit: 14 Powerful Techniques for Problem Solving* (New York: Times Business, Random House, 1995 and 1998).

⁷ For an “insider’s” comparison of secrets” and “mysteries” see John C. Gannon, CIA Deputy Director for Intelligence, speech before the World Affairs Council, 20 March 1996. URL: http://www.cia.gov/cia/public_affairs/speeches/archives/1996/ddi_speech_032096.html.

report, the U.S. experience is that non-native, academically trained linguists who have lived abroad typically outperform native linguists in intelligence assignments that depend on language ability.⁸ Dr. Turner's essay, with its emphasis on his own familiarity with North African news media reporting, illustrates that point.

Stephen Marrin reflects on his experiences as a new CIA analyst as he addresses whether and how formal training programs can impart the specialized knowledge, skills, and abilities necessary for meaningful intelligence analysis. He examines how the customary activity, processes, and organization of intelligence may have contributed to some failed aspects of intelligence prior to the events of 11 September 2001. He then suggests some specific ways to reinvent certain aspects of the national intelligence mission to allow analysts to bring greater persuasiveness to their value-added information.

U.S. Air Force Lieutenant Colonel Tom Garin examines how dignity and self-respect among professionals may be fostered within an intelligence organization. Garin defines the intelligence corporation in terms of a "learning organization" and then applies external standards from the Baldrige National Quality Program to selected intelligence-producing offices within the Defense Intelligence Agency. This benchmarking study not only identifies best practices, but also shows how such professional standards could be used to identify exemplary offices or individuals across the entire Intelligence Community.

Available literature does not yet address the question of what knowledge, skills and abilities are required, from the point of view of front-line managers, to support and sustain the evolution of intelligence tradecraft. David Moore and Lisa Krizan define a graduated set of criteria to calibrate an individual's suitability for an analytic position. Given the current Intelligence Community hiring surge, the set of core competencies they identify for NSA also provides a guide for the larger Intelligence Community to improve the professional stature of its workforce by defining who the analysts of the present and future ought to be.

The last essay reveals how the U.S. Coast Guard, having only recently joined the Intelligence Community, has already adjusted its organizational structure and its personnel system, expanded its participation in multi-agency initiatives, and developed procedures for more effective management of its unique position between civilian and military worlds. These rapid developments, stimulated by membership in the Community of Intelligence professionals, should enable the Coast Guard to anticipate and meet the requirements of both law enforcement and national security intelligence. As a fresh-faced affiliate of the Intelligence Community, the Coast Guard can inject an uncompromised determination to help the community live up to its name.

The essays collected here only begin to illustrate the potential of self-reflective writing by intelligence practitioners. If a communitarian ethos distinguishes intelligence professionals from their more individualistic and self-absorbed brethren in academia, then self-reflection among intelligence practitioners can also easily become a communal good. Tension between a communitarian and individualistic ethos can resolve itself among

⁸ Susan Schmidt and Allan Lengel, "Help Still Wanted: Arabic Linguists," *Washington Post*, 27 December 2002, A23.

intelligence professionals through the strength of their bureaucratic (Weberian), nonmonastic tradition. The essays in this volume illustrate how, through self-reflection, that tension may be resolved. For example, individual professionals can easily spell out connections among these essays that would quickly move the discussion to a classified realm—into their “culture.” That culture is typically characterized by fast-moving events and requirements that preclude introspection about the phenomena of intelligence collection and production.

Self-reflection not only allows the various agency sub-cultures to be displayed, as portrayed here, but also allows “insiders” to realize the subtle connections of their individual work to the overall enterprise. As a further illustration of this principle, the intense intellectual effort that characterized earlier eras of intelligence production and that continues as a part of the enduring culture, is evoked by the observations of William Millward, a World War II intelligence analyst at the UK’s Bletchley Park:

[Analysis] means reviewing the known facts, sorting out significant from insignificant, assessing them severally and jointly, and arriving at a conclusion by the exercise of judgment: part induction, part deduction. Absolute intellectual honesty is essential. The process must not be muddied by emotion or prejudice, nor by a desire to please.⁹

National intelligence collection management and intelligence analysis remain inherently government functions, and privatized intelligence—with its prospect of reduced congressional oversight—is even more antagonistic to the communal sharing of information than are the more stringently overseen bureaucratic fiefdoms.¹⁰ In this environment, to “bring intelligence about” from the point of view of the American people requires peeling back some of the thick mantle of secrecy that has shrouded individual initiatives and management approaches—Community best practices—employed in the execution of ordinary and extraordinary tasks. Readers who look closely at the observations set down by the authors here will find a serviceable tool for unwrapping some of the otherwise enigmatic enthusiasms and motivations of government intelligence professionals.

⁹ William Millward, “Life in and out of Hut 3,” in F.H. Hinsley and Alan Stripp, *Codebreakers: The Inside Story of Bletchley Park* (Oxford, UK: Oxford University Press, 1993), 17.

¹⁰ Across the Intelligence Community, the proportion of private, “contract” employees of all categories now stands at about 30 percent, and is growing. Few of these individuals are “independent” contractors, the great majority being associated with small or large private enterprises. Although most such contractors hold high-level security clearances based upon background investigations, the proprietary interests of their “parent” organizations can be at odds with an ethos of uninhibited sharing of information and perspectives. For an exploration of these issues, see James R. Sutton, *Subversion of a Government Monopoly: The Privatization of Intelligence Services* (n.p.: Research Intelligence Consortium, Inc., 2000). For information about the author, see http://www.trinitydc.edu/academics/depts/Interdisc/International/Jim_Sutton.htm.

ABOUT THE AUTHOR

Pauletta Otis is Professor of Political Science and International Studies at the University of Southern Colorado. Her Ph.D. was awarded from the Graduate School of International Studies at the University of Denver in 1989. Dr. Otis held the position of Distinguished Visiting Professor of International Security Studies at the Joint Military Intelligence College in 1998 and then was Visiting Scholar for the National Security Education Program 1999, under the auspices of the National Defense University. She continues to teach summer sessions at JMIC and contributes to a number of defense research efforts. Dr. Otis maintains an active speaking schedule and has been guest speaker at a number of prestigious meetings including those held by the National War College, National Intelligence Council, Defense Intelligence Agency, Central Intelligence Agency, National Security Agency, U.S. Marine Corps, the Denver Committee on Foreign Relations, and other private and public venues.

Dr. Otis has special expertise in the study of sub-national violence and combines theoretical (from graduate degrees in Anthropology, Political Science, and International Studies) with operational experience and expertise. She has conducted field research in conflict situations in South Asia, Latin America, the Middle East, and the eastern Mediterranean.

CORE COMPETENCIES FOR INTELLIGENCE ANALYSIS AT THE NATIONAL SECURITY AGENCY

David T. Moore and Lisa Krizan

Seekers of Wisdom first need sound intelligence.

—Heraclitus¹

What makes an intelligence analyst successful in the profession? This question strikes at the heart of the National Foreign Intelligence Community's mission to provide actionable information to national leaders and decisionmakers. The imperative to answer this question stems from two types of pressures, external and internal. Externally, the component agencies face a world that demands responsiveness, agility, and flexibility.² Internally, they are charged with transforming outdated Cold War organizational structure, mentality, and methods.³ This paper argues that, at least at the National Security Agency, identifying core analytic competencies that can be translated into managerial strategies is the surest way to ensure that intelligence analysts are successful.

As a member of the Intelligence Community (IC), the National Security Agency (NSA) is now pursuing an ambitious campaign to modernize its intelligence production mission and to mold its workforce accordingly.⁴ Part of the modernization campaign is a new organizational model that places all intelligence analysts under the purview of an analytic deployment service. In this paradigm, individual analysts are assigned to specific production lines based on the capabilities of the former and the needs of the latter. However, for this model to work, staffers need to know what assets the analysts in the workforce possess. Similarly, when intelligence agencies use precious few hiring allocations to bring in new intelligence analysts, they must maximize those opportunities, and only hire qualified personnel. But what is a qualified intelligence analyst?

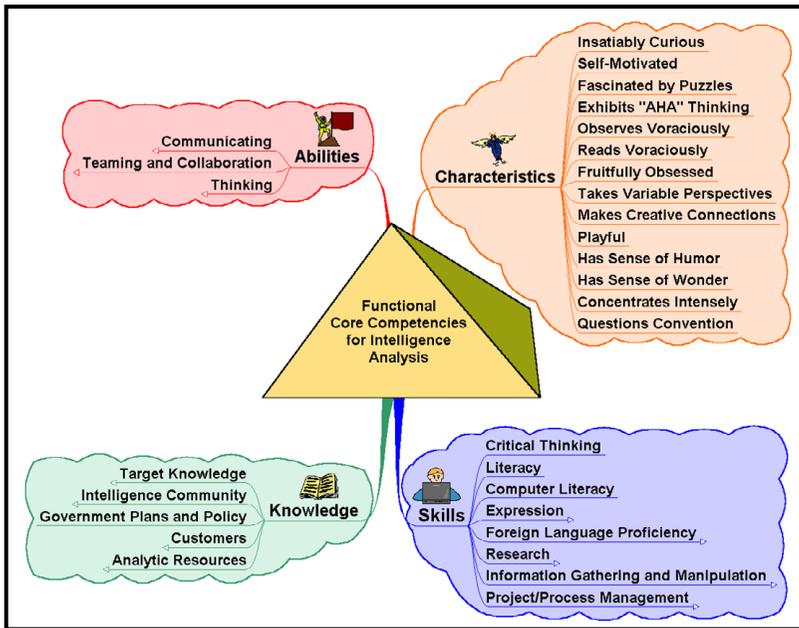
¹ From Brooks Haxton, translator, *Fragments, the Collected Wisdom of Heraclitus* (New York: Penguin, 2001), 33.

² John Gannon and others, National Intelligence Council, *Global Trends 2015: A Dialogue About the Future with Nongovernment Experts* (Washington DC: National Foreign Intelligence Board, 2000), 41, URL: <http://www.cia.gov/cia/publications/globaltrends2015/>; hereafter cited as National Intelligence Council. For other views of security threats to America see also Loch Johnson, *Bombs, Bugs, Drugs, and Thugs: Intelligence and America's Quest for Security* (New York: New York University Press, 2000); and Robert D. Kaplan, *The Coming Anarchy: Shattering the Dreams of the Post-Cold War* (New York: Random House, 2000).

³ George W. Bush, "National Security Presidential Directive 5," 9 May 2001. This directive instructs the Director of Central Intelligence to conduct a comprehensive review of U.S. intelligence. The order gives the DCI a broad mandate to "challenge the status quo."

⁴ See URL: http://www.nsa.gov/releases/nsa_new_enterprise_team_recommendations.pdf, 1 October 1999, 16, accessed 3 November 2001. In this document, it is implicit that the Director, NSA recognizes that the agency's responsibility for the "production of signals intelligence" extends beyond "technical analysis of data" to "all-source" analysis of the context and implications of those data, especially but not exclusively for use within the agency itself.

In this paper the authors propose a set of functional core competencies for intelligence analysis, shown in the figure below, which provides a starting point for answering fundamental questions about the nature of ideal intelligence professionals, and how analysts who share these ideals can go about doing their work. Keeping in mind the complex nature of the threats to U.S. national security, we argue that the strategy for deploying intelligence analysts and for carrying out intelligence production must become more rigorous to keep pace with 21st Century foes, and to defeat them.



Functional core competencies for intelligence analysis..

The authors began exploring the art and science of intelligence analysis at their agency as part of a corporate initiative to add rigor to its analytic practice. Comments presented here on analytic thinking, its associated culture and processes, and its related technologies reflect conversations with intelligence experts both within and outside of government, and observation of analysts considered by their peers to be successful. We realized that definitions and descriptions of common characteristics, skills, knowledge, and abilities required for successful intelligence analysis were lacking, not only within our own agency but across the field of intelligence. We developed a set of functional core competencies for intelligence analysis that seem to apply across the intelligence profession in the government setting, not just for the types of analysis done at NSA. Our work has been reviewed by personnel in our agency as well as by individuals outside government, including academic experts on intelligence and

intelligence analysis.⁵ They have made helpful suggestions for our model of functional core competencies.

Sherman Kent, who helped shape the national peacetime intelligence community, argues that intelligence requires its own literature. According to Kent, a key purpose of this literature is to advance the discipline of intelligence. Kent believed “[as] long as this discipline lacks a literature, its method, its vocabulary, its body of doctrine, and even its fundamental theory run the risk of never reaching full maturity.”⁶ Through the publication of articles on analysis and subsequent discussion, “original synthesis of all that has gone before” occurs.⁷ In keeping with Kent’s mandate to develop an intelligence literature that provokes discussion and further methodological development, we seek comment and further discussion among scholars of intelligence studies.

DEFINITIONS AND CONTEXT

Intelligence refers to information that meets the stated or understood needs of policymakers.... All intelligence is information; not all information is intelligence.

— Mark Lowenthal⁸

Intelligence is timely, actionable information that helps policymakers, decisionmakers, and military leaders perform their national security functions. The intelligence business itself depends on professional competencies, what John Gannon, former Chairman of the National Intelligence Council, refers to as “skills and expertise.” He notes that “this means people—people in whom we will need to invest more to deal with the array of complex challenges we face over the next generation.”⁹ Analysis is the process by which

⁵ The authors wish to acknowledge individuals within the Department of Defense who challenged our ideas and critiqued our work. Thanks also are due to James Holden-Rhodes, University of New Mexico; Robert Heibel, Mercyhurst College; Hugo Keesing, Joint Military Intelligence Training Center; Marilyn Peterson, Financial Analysis Coordinator, New Jersey Division of Criminal Justice; Adam Pode, formerly of Mercyhurst College; Robert David Steele, CEO, Open Source Solutions; and Russell Swenson, Joint Military Intelligence College. Colleagues in the international Generic Intelligence Training Initiative, sponsored by the U.S. Drug Enforcement Administration, also provided valuable comments.

⁶ *Sherman Kent and the Board of National Estimates: Collected Essays*, Donald P. Steury, ed., (Washington DC: Center for the Study of Intelligence, Central Intelligence Agency, 1994), 14.

⁷ See Sherman Kent, “The Need for an Intelligence Literature,” *Studies in Intelligence*, Spring, 1955 (reprinted in *Studies in Intelligence*, 45th Anniversary Special Edition, Washington DC: Government Printing Office, 2001), 1-11.

⁸ Mark M. Lowenthal, *Intelligence: From Secrets to Policy* (Washington, DC: CQ Press, 2000), 1-2.

people transform information into intelligence. Ultimately, analysis leads to synthesis and effective persuasion, or, less pointedly, estimation.¹⁰ It does so by breaking down large problems into a number of smaller ones, involving “close examination of related items of information to determine the extent to which they confirm, supplement, or contradict each other and thus to establish probabilities and relationships.”¹¹

Since the advent of the Information Age, “[collecting] information is less of a problem and verifying is more of one.”¹² Thus the role of analysis becomes more vital as the supply of information available to consumers from every type of source, proven and unproven, multiplies exponentially. Intelligence analysts are more than merely another information source, more than collectors and couriers of information to consumers. Further,

[the] images that are sometimes evoked of policymakers surfing the Net themselves, in direct touch with their own information sources, are very misleading. Most of the time, as [policymakers’] access to information multiplies, their need for processing, if not analysis, will go up. If collection is easier, selection will be harder.¹³

At its best, the results of intelligence analysis provide just the right information permitting national leaders “to make wise decisions—all presented with accuracy, timeliness, and clarity.”¹⁴ The intelligence provided must “contain hard-hitting, focused analysis relevant to current policy issues....Therefore, analysis of raw information has the most impact on the decisionmaker and [therefore] producing high-quality analytical product should be the highest priority for intelligence agencies.”¹⁵

Intelligence is judged, then, on its usefulness. But what criteria define “useful?” Amos Kovacs asserts that useful intelligence makes a “difference” to policymakers.¹⁶ There is also an expectation that intelligence should be unbiased, although analysts with concerns

⁹ Director of Central Intelligence National Security Advisory Panel, *Strategic Investment Plan for Intelligence Community Analysis* (Washington DC: Central Intelligence Agency, 2000), URL: http://www.cia.gov/cia/publications/unclass_sip/index.html, 11, accessed 29 September 2001.

¹⁰ Lisa Krizan, *Intelligence Essentials for Everyone*, Joint Military College Occasional Paper Number Six (Washington DC: Joint Military Intelligence College, 1999), 29.

¹¹ R. H. Mathams, “The Intelligence Analyst’s Notebook,” in *Strategic Intelligence: Theory and Application*, 2d. ed. Douglas H. Dearth and R. Thomas Goodden, eds. (Washington, DC: Joint Military Intelligence Training Center, 1995), 88.

¹² R. H. Mathams, 88.

¹³ R. H. Mathams, 88; Gregory F. Treverton, *Reshaping National Intelligence For an Age of Information* (Cambridge, UK: Cambridge University Press, 2001), 10.

¹⁴ Loch K. Johnson, “Analysis for a New Age,” *Intelligence and National Security* 11, no. 4 (October 1996): 658.

¹⁵ Kevin P. Stack, “Competitive Intelligence,” *Intelligence and National Security* 13, no. 4 (Winter 1998): 194.

about outcomes do influence the product by selecting which inputs to analyze.¹⁷ Finally, as Michael Turner points out, analysts “from below” now join senior government officials in “setting the analytical agenda.”¹⁸ All policymakers and their subordinates are free to reject intelligence findings, no matter how persuasively argued they may be.

To say that policymakers may dismiss intelligence that doesn’t support their presuppositions and policy objectives is to tell only half the story. There may be numerous reasons why policymakers do not accept intelligence. Gregory Treverton, former Vice-Chair of the National Intelligence Council, indicates that intelligence is ignored both when it brings inconvenient news and when it offers nothing new. In writing about the U.S. policy failures of the first Bush administration during the Balkan crisis, Treverton wonders, “If, in retrospect, the intelligence seems on the mark, did the policy failure derive from intelligence unheeded, or was the intelligence heeded but either not new or not really actionable?”¹⁹

Treverton adds that intelligence must anticipate the needs of policy. “By the time policy knows what it needs to know, it is usually too late for intelligence to respond by developing new sources or cranking up its analytic capacity.”²⁰ A former policymaker himself, he asserts that intelligence is useful to policy at three stages during the life of an issue:

- If the policymakers are prescient, when the issue is just beginning; however there is likely to be little intelligence on the issue at that point.
- When the issue is “ripe for decision.” Here policymakers want intelligence that permits alternatives to be considered; however, intelligence often is only able to provide background information necessary for understanding the issue.
- When the policymakers have made up their minds on the issue, but only if intelligence supports their view. They will be uninterested or even hostile when it does not support their view.²¹

These limitations notwithstanding, Treverton suggests that policymakers can and should establish a symbiotic relationship with the intelligence analysts who advise them:

[If] you call them in, face to face, they will understand how much you know, and you’ll have a chance to calibrate them. You’ll learn more in fifteen minutes than you’d have imagined. And you’ll also begin to target those analysts to your concerns and your sense of the issue.²²

¹⁶Amos Kovacs, “Using Intelligence,” *Intelligence and National Security* 12, no. 4 (October 1997): 148.

¹⁷Lowenthal, 4.

¹⁸Michael A. Turner, “Setting Analytical Priorities in U.S. Intelligence,” *International Journal of Intelligence and Counterintelligence* 9, no. 3 (Fall 1996): 314.

¹⁹Treverton, 178.

²⁰Treverton, 179.

²¹Treverton, 183-185.

Similarly, the analyst has responsibilities to the policymaker. In commenting on this relationship, Sherman Kent asserts

[intelligence] performs a service function. Its job is to see that the doers are generally well informed; its job is to stand behind them with a book opened at the right page to call their attention to the stubborn fact they may be neglecting, and—at their request—to analyze alternative courses without indicating choice.²³

In Kent’s view, the intelligence analyst is required to ensure, tenaciously, that policymakers view those “right” pages, even when they may not wish to do so.

MEASURING SUCCESS IN INTELLIGENCE ANALYSIS

Intelligence must be measured to be valued, so let us take the initiative and ask our management, [and] the users, to evaluate us and our products.

— Jan P. Herring²⁴

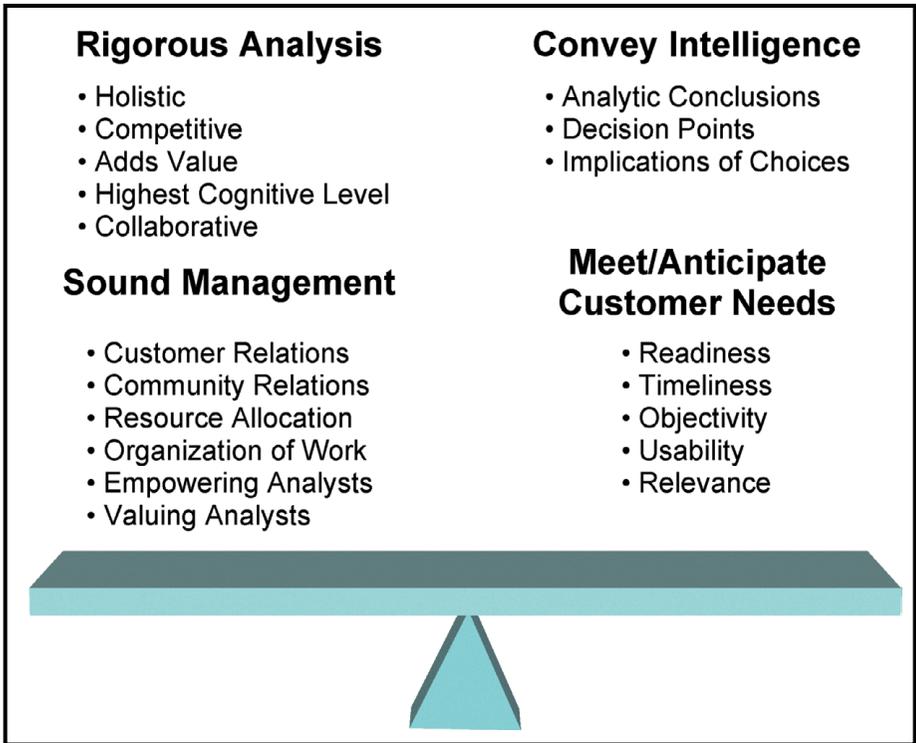
Any observer can expect that a successful intelligence analyst will have certain personal characteristics that tend to foster dedication to the work and quality of results. Such an analyst will also have specific abilities, skills, and knowledge to perform intelligence work. Finally such an analyst will have productive relationships with consumers. But how can success in intelligence analysis be measured?

Measures of success have been based on job performance, including numbers of reports issued; volumes of raw data processed; or degree of consumer reliance on, or satisfaction with, products or services. However, these are measurements of outcome, only one facet of success. When analysis follows a rigorous process that allows an analyst to “add value” to information, and that results in timely, actionable intelligence used by consumers, then it may be judged successful. Thus, an assessment of success may be made by balancing measures of two basic criteria: intelligence process (processing and adding value to information) and intelligence product (meeting consumer needs). As depicted in the figure below, each can keep the other in balance, curbing any tendency toward “analysis paralysis”²⁵ on one side, and countering an assembly-line mindset on the other.

²²Treverton, 191.

²³Sherman Kent, *Strategic Intelligence for American World Policy* (Princeton: Princeton University Press, 1949), 182.

²⁴Jan P. Herring, *Measuring the Effectiveness of Competitive Intelligence: Assessing and Communicating CI’s Value to Your Organization* (Alexandria, VA: Society of Competitive Intelligence Professionals, 1996), 63.



An intelligence evaluation scheme.

Intelligence Process

Successful intelligence analysis is a holistic process involving both “art” and “science.” Intuitive abilities, inherent aptitudes, rigorously applied skills, and acquired knowledge together enable analysts to work problems in a multidimensional manner, thereby avoiding the pitfalls of both scientism and adventurism. The former occurs when scientific methodology is excessively relied upon to reveal the “truth”; the latter occurs when “inspiration [is] unsupported by rigorous analysis.”²⁶

²⁵One potential pitfall of the analytic profession is the tendency to pursue analysis for its own sake, continually seeking more information, becoming locked into analysis and failing to reach conclusions. Rigorous methodology that emphasizes adding value to information and making it actionable for a specific consumer can break the cycle of such paralysis.

²⁶Steven R. Mann, “Chaos Theory and Strategic Thought,” *Parameters* 22, no. 3 (Autumn 1992): 67. Quoted in MSgt Robert D. Folker, Jr., *Intelligence Analysis in Theater Joint Intelligence Centers: An Experiment in Applying Structured Methods*, Occasional Paper Number Seven (Washington DC: Joint Military Intelligence College, 2000), 13.

A vital contributor to the analytic process is a spirit of competition, both within an intelligence-producing agency and especially between intelligence agencies. There is a tendency for analysts working together to develop a common mindset. This trap occurs typically when analysts fail to question their assumptions about their role in the intelligence process and about the target. The Council on Foreign Relations' independent task force on the future of U.S. intelligence recommends that "competitive or redundant analysis be encouraged" precisely for these reasons.²⁷

Successful analysis adds value—to the information itself, to institutional knowledge, to fellow intelligence professionals, to the process, and to the institution or unit itself—in terms of reputation and the degree to which good analytic practices endure despite changes in target, consumer, and personnel. Successful analysts are those whose work, whenever possible goes to the level of making judgments or estimating. The analysts' risks in doing so are carefully calculated, for successful analysts rely on critical thinking. Nor do successful analysts settle for the first answer their analysis reveals. Rather they employ rigorous methods to push beyond the obvious conclusions. However, tendencies toward arrogance in trend-spotting analysis are tempered by self-awareness of biases and assumptions, strengths and weaknesses. And most importantly, successful analysts collaborate at every opportunity. Such measures ensure that analytic results, even if controversial, remain grounded in reality.

What role does management play in ensuring analytic success? First and foremost, management effectively uses financial and political capital to ensure that analysts have access to consumers, and to the resources they require to answer those consumers' intelligence needs. This includes the organization of the work itself, allocation of materiel and personnel, and coordination with consumers and other producers. When management is successful, the analyst has the necessary tools and the correct information for successful intelligence analysis. Good morale among analytic personnel becomes an indicator of effective management. A good understanding of the unit's mission and the analysts' own satisfaction with his or her performance naturally produces a feeling of empowerment and a belief that the organization places great value on analytic talent.

Intelligence Product

The products of successful analysis convey intelligence that meets or anticipates the consumer's needs; these products reveal analytic conclusions, not the methods used to derive them. Intelligence products are successful if they arm the decisionmaker, policymaker or military leader with the information and context—the answers—needed to win on his or her playing field. Such intelligence enables consumers to be more effective by making them smarter than they were before, smarter than the people they play with, and smarter than those they play against. Successful intelligence enables consumers to outwit

²⁷ Council on Foreign Relations, *Making Intelligence Smarter: The Future of U.S. Intelligence: A Report of an Independent Task Force*, 11, URL: <http://www.fas.org/irp/efr.html>, accessed 4 June 2001.

opponents, protect U.S. persons, bring aid to the nation's allies, or to judge levels of trust. It does so by revealing decision points, actions or choices available to a consumer, and the implications of choosing one over another.

Yet, consumers rarely acknowledge explicitly the role that good intelligence plays in their own success. While they may be quick to bring intelligence failures to the attention of the producing organization, consumers do not always give feedback on successful outcomes enabled by intelligence. Thus intelligence analysts and their management historically have looked within the production organization for ways to measure success, falling into the trap of "bean-counting." But there is a better way.

Readiness: Intelligence systems must be responsive to existing and contingent intelligence requirements of consumers at all levels.

Timeliness: Intelligence must be delivered while the content is still actionable under the consumer's circumstances.

Accuracy: All sources and data must be evaluated for the possibility of technical error, misperception, and hostile efforts to mislead.

Objectivity: All judgments must be evaluated for the possibility of deliberate distortions and manipulations due to self-interest.

Usability: All intelligence output must be in a form that facilitates ready comprehension and immediate application. Intelligence products must be compatible with the consumer's capabilities for receiving, manipulating, protecting, and storing the product.

Relevance: Information must be selected and organized for its applicability to a consumer's requirements, with potential consequences and significance of the information made explicit to the consumer's circumstances.

Measures of success for intelligence products²⁸

Six "underlying ideas or core values" for intelligence analysis, identified by William Brei for operational-level intelligence, and shown in the figure above, establish the analyst's "essential work processes."²⁹ Since they are defined in terms of the consumer, they also can be used as a checklist to rate the quality of products provided to the consumer. Brei asserts that they "provide specific qualitative objectives for managers and leaders, and a framework for standards against which intelligence services should be judged."³⁰ While qualitative feedback from consumers aids evaluation of some of these objectives, the absence of consumer input does not prevent their being used in self-evaluation.

²⁸William S. Brei, Captain, USAF, *Getting Intelligence Right: The Power of Logical Procedure*, Occasional Paper Number Two (Washington DC: Joint Military Intelligence College, 1996), 6.

²⁹Brei, 6.

³⁰Brei, 5.

The principles of Readiness and Timeliness evaluate the intelligence service's basic ability to perform intelligence production. These two principles are limiting factors affecting what the producer can do to "achieve accurate data, objective judgments, usable formats, and relevant products."³¹ Once production Readiness and Timeliness are evaluated, the other four of Brei's fundamental principles then can be arranged in a checklist or a series of questions about intelligence products. Typical questions might include:

- Was the reported intelligence accurate? (*Accuracy*)
- Are there any distortions in the reported judgments? (*Objectivity*)
- Is the reported intelligence actionable? Does it facilitate ready comprehension? (*Usability*)
- Does it support the consumer's mission? Is it applicable to the consumer's requirements? Has its significance been made explicit? (*Relevance*)

These four principles also overlap, and poor quality in one can affect the quality of another. Brei asserts that accurate data provide the foundation for subsequent objective judgments, and the expression of objective judgments in a usable form provides much of the basis of a relevant product. Thus, unverified data cannot only cost an intelligence product its Accuracy, but also damage its Relevance to the customer.³²

Although Brei's principles do not require consumer input in the evaluation of intelligence, the process of measuring the effectiveness of a product is enhanced with consumer participation. Brei suggests: "[L]isten to their complaints."³³ However, this does not guarantee that the responses will address the product of interest. Rather, the analyst needs to ask directly for specific feedback from the consumer. This is most effective if the analysts and managers have collaborative relationships with consumers. Lacking such relationships, producers may attach survey questions to intelligence products, prompting consumers to respond regarding the utility of the service provided. Admittedly, this elicitation may be disturbing, as consumers are more likely to respond when they are unhappy with the product than when they are pleased. Further, regardless of the assessment of worth or value, some consumers will never respond.

Brei's principles provide a means for evaluating a given intelligence product based on the meaning it conveys and the value of that intelligence to the consumer. His approach, when combined with an "insider's" view of the intelligence production process, analytic methods and personnel management practices, makes a comprehensive evaluation of intelligence analysis appear possible. In the sections to follow, the concept of core competencies for intelligence analysis is developed, from which may emerge some useful suggestions for operationalizing the concept of an "art and science" of intelligence analysis.

³¹Brei, 6.

³²Brei, 6.

³³Brei, 5.

CHARACTERISTICS OF SUCCESSFUL INTELLIGENCE ANALYSTS

A sophisticated intelligence analyst is one who is steeped in the history and culture of a region, has lifelong interest in the area, and approaches the study of the region as a professional responsibility, and probably as an avocation as well.

— Ronald D. Garst and Max L. Gross³⁴

Who are the most successful intelligence analysts? What makes them successful? In setting forth the functional core competencies for successful intelligence analysis we observe there are characteristics which, while not necessary for successful intelligence analysis per se, do seem to be associated with analysts considered to be the most successful at their trade.³⁵ It should be noted, however, that not all successful analysts exhibit all these characteristics. The characteristics highlighted in the graphic below are a representative superset, and while individual analysts do seem to share certain characteristics, they do not share all of them in equal measure.

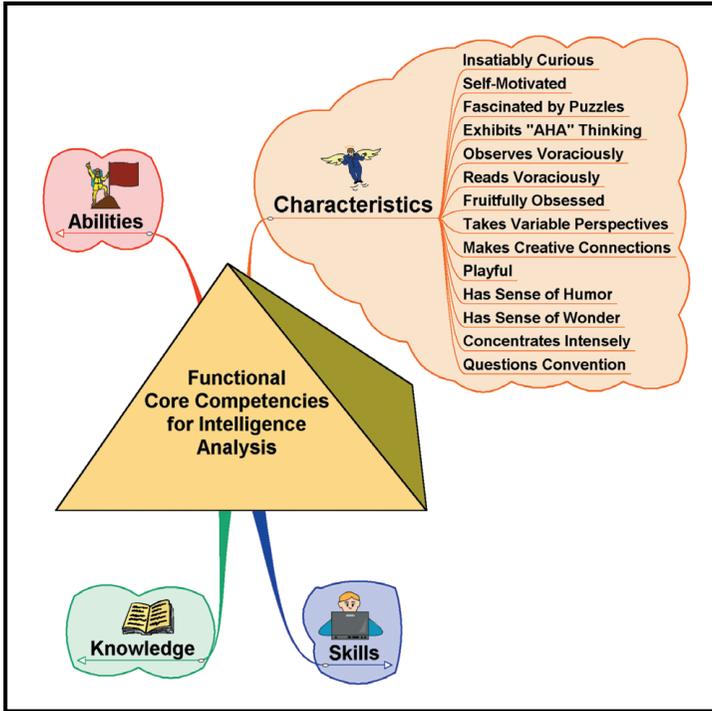
Probably the most indispensable characteristics of successful intelligence analysts are high self-motivation and insatiable curiosity. Analysts want to know everything they can about the objects under their scrutiny. Reading and observing voraciously, they ferret out every possible piece of information and demonstrate a sense of wonder about what they discover. As new fragments appear, novel connections are discovered between the new and older information as a result of intense concentration leading to epiphanous moments of “aha” thinking. The most successful analysts tend to enjoy their work—“It’s play, not work.” Indeed, they often will stay late at the office to pursue a thorny problem or an engaging line of reasoning.

These characteristics also describe the values, standards, and beliefs of a dynamic, living analytic culture. As such, they may be used as preliminary indicators during the hiring process to identify prospective employees. A person with many of the characteristics listed may be predisposed to being a successful analyst, if the appropriate skills, abilities, and

³⁴Ronald D. Garst and Max L. Gross, “On Becoming an Intelligence Analyst,” *Defense Intelligence Journal* 6, no. 2 (Fall 1997): 55.

³⁵The authors base their establishment of core competencies primarily on two initiatives taken as NSA in recent years. The first is an extensive formal job analysis conducted by industrial psychologists in the mid-1990s. Identification of some of the knowledge areas, skills and abilities required for intelligence analysis came out of that study, which is cited extensively in Lisa Krizan, *Intelligence Essentials for Everyone*, JMIC Occasional Paper Number Six (Washington, DC: JMIC, 1999). The second initiative is the ongoing work of the Arts and Science of Analysis research organization established at NSA in early 2000. As members of that organization, the authors participated in studies and interviews yielding insights into the behaviors applied by NSA intelligence analysts on the job.

necessary knowledge to perform the work are also present. Employee orientation programs that acknowledge these characteristics may be most successful in initiating new employees into the analytic culture. When personal characteristics are embodied in compelling “war stories” told by mentors and peers, they can reinforce the cultural values of the agency, building corporate loyalty by reinforcing the sense of membership.



Characteristics of successful intelligence analysts.

Indoctrination into a particular analytic culture can also have negative implications. Although it may build loyalty, enhance behaviors, and inculcate values, it can also prevent objective analysis by reinforcing “group” thought patterns and analytic methodologies. The culture must allow for “a spirit of creativity to emerge and prosper.”³⁶

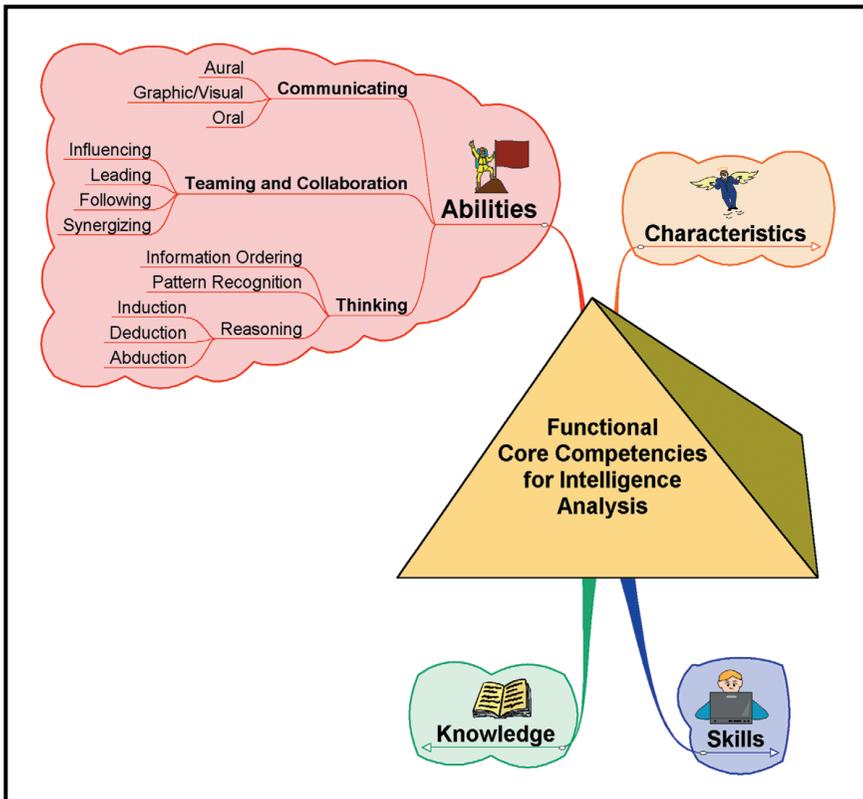
These personal characteristics of successful intelligence analysts are but one factor among many in influencing the success of intelligence process and product. Abilities and skills provide the tools for performing good intelligence analysis. Knowledge provides raw material for analysis as well as for an appreciation of the context and relevance of information.

³⁶Don McDowell, *Strategic Intelligence: A Handbook for Practitioners, Managers, and Users* (Cooma, Australia: Istana Enterprises, Pty. Ltd., 1998), 216.

ABILITIES REQUIRED FOR INTELLIGENCE ANALYSIS

The competent intelligence analyst must have a unique combination of talents.
— Ronald D. Garst and Max L. Gross³⁷

Abilities arise from aptitudes that can develop from an individual's innate, natural characteristics or talents. Although aptitudes may largely be determined by a person's genetic background, they may also be enhanced through training.³⁸ We find the abilities shown here to be necessary for intelligence analysis.



Abilities required for successful intelligence analysis.

³⁷ Garst and Gross, 47.

³⁸ Conversation with Dr. S. Alenka Brown-Vanhoozer, Director, Center for Cognitive Processing Technology, Advanced Computing Technologies, BWXT Y-12, Oak Ridge, TN, April 2001.

Communicating

Almost all animate life communicates, but humans are unique in possessing a brain structured to permit abstract, symbolic communication. Three communication abilities appear necessary for various aspects of intelligence analysis:³⁹

- **Aural:** The ability to hear, listen to, and understand spoken words and sentences is one of the essential means humans employ to take in information. Aural ability can be improved through specific techniques of “active listening.” This ability greatly enhances analysts’ performance of certain technical tasks, and their interaction with consumers, peers and managers.
- **Graphic/Visual:** The ability to see, view, and understand graphic/visual symbols developed early in human history. Along with the ability to interpret symbols came the ability to present information in a graphic or visual manner so that others could understand. Even in speech, a majority of human communication remains non-verbal (that is, graphic or visual).⁴⁰ Developing this ability allows for effective graphical presentation of intelligence, which can dramatically heighten its impact.
- **Oral:** The ability to communicate via spoken words and sentences so that others will understand is unique to humans. While the physical capability has evolved over eons, key developmental milestones occur during the first years of life. The development of oral and aural abilities are closely linked. Effective oral communication directly affects the intelligence analyst’s credibility.

Teaming and Collaboration

Humans are a social species, and associated abilities have evolved with human development. Teaming and collaborating were essential when proto-humans moved from the relative safety of the trees onto the more dangerous plains of Africa. Their collective lives depended on social abilities to solve problems and overcome threats. While today’s threats have changed, humans retain these abilities in order to live and work together.

Teaming and collaboration abilities enhance intelligence analysis, since the analyst’s relationship with consumers, peers, subordinates, and supervisors shapes the intelligence production process. Formalized means of enhancing all these abilities can lead intelligence professionals to considerably greater effectiveness as analysts and leaders of analysts. This is why the Director of Central Intelligence has indicated that collaboration is a cornerstone of strategic intelligence.⁴¹ A collaborative environment also minimizes the likelihood of intelligence failures. For example, had imagery analysts communicated

³⁹We do not suggest that individuals lacking one or more of these abilities due to physical impairment would be unable to perform intelligence analysis. However, we do suggest that in the absence of corrective technologies, an impaired person may not be able to perform certain functions of analysis or production that depend on the impaired ability.

⁴⁰Conversation with Dr. S. Alenka Brown-Vanhoozer, April 2001.

⁴¹Director of Central Intelligence National Security Advisory Panel, accessed 1 June 2001.

effectively with their counterpart area analysts in 1999, the “Yugoslav War Office” bombed by U.S. forces that spring may have been identified as the Chinese Embassy in time to avoid the resultant tragedy.⁴²

We identify four distinct teaming abilities, to show the complexity of the concept. Typically, formal training programs address leadership abilities only in the context of the management function; here, we focus on the analysis process itself.

- **Influencing:** Those with this ability effectively and positively influence superiors, peers, and subordinates in intelligence work. Analysts often need to persuade others that their methods and conclusions are valid, and they often need to leverage additional resources. The ability to influence determines the level of success they will have in these areas.
- **Leading:** Those who are more senior, more skilled, and more successful in intelligence analysis have an obligation to lead, that is, to direct others and serve as role models. The ability to lead involves working with and through others to produce desired business outcomes. Thus, developing leadership abilities enhances the field of intelligence analysis.
- **Following:** Almost every grouping of humans has a leader. Everyone else is a follower. Analysts must enhance their abilities to work within a team, taking direction, and acting on it.
- **Synergizing:** Drawing on the other three teaming abilities, players in the intelligence process cooperate to achieve a common goal, the value of which is greater than they could achieve when working alone.

Thinking

As our species designation—*sapiens*—suggests, the defining attribute of human beings is an unparalleled cognitive ability. We think differently from all other creatures on earth, and we can share those thoughts with one another in ways that no other species even approaches.

— Terence W. Deacon, *The Symbolic Species*.⁴³

Intelligence analysis is primarily a thinking process; it depends upon cognitive functions that evolved in humans long before the appearance of language.⁴⁴ The personal characteristics of intelligence analysts are manifested in behaviors that reflect thinking and/or the inherent drive to think. Our national survival may depend on having better developed thinking abilities than our opponents. Three basic thinking abilities are

⁴²Gregory Treverton, 10.

⁴³Terence W. Deacon, *The Symbolic Species: The Co-Evolution of Language and the Brain* (London: W.W. Norton & Company, Ltd., 1997), 21.

⁴⁴Keith Devlin, “The Role of Conceptual Structure in Human Evolution” in Bernhard Ganter and Guy W. Mineau, eds, *Conceptual Structures: Logical, Linguistic, and Computational Issues*, 8th International Conference on Conceptual Structures (Berlin: Springer Verlag, 2000), 1.

required for intelligence analysis. Given the limitations imposed by each one of them, only simultaneous application of all three may yield successful intelligence analysis.

- **Information Ordering:** This ability involves following previously defined rules or sets of rules to arrange data in a meaningful order. In the context of intelligence analysis, this ability allows people, often with the assistance of technology, to arrange information in ways that permit analysis, synthesis, and extraction of meaning. The arrangement of information according to certain learned rules leads the analyst to make conclusions and disseminate them as intelligence. A danger arises, however, in that such ordering is inherently limiting—the analyst may not look for alternative explanations because the known rules lead to a ready conclusion.
- **Pattern Recognition:** Humans detect patterns and impose patterns on apparently random entities and events in order to understand them, often doing this without being aware of it. Stellar constellations are examples of imposed patterns, while criminal behavior analysis is an example of pattern detection. Intelligence analysts impose or detect patterns to identify what targets are doing, and thereby to extrapolate what they will do in the future. Pattern recognition lets analysts separate “the important from the less important, even the trivial, and to conceptualize a degree of order out of apparent chaos.”⁴⁵ However, imposing or seeking patterns can introduce bias. Analysts may impose culturally defined patterns on random aggregates rather than recognize inherent patterns, thereby misinterpreting the phenomena in question.
- **Reasoning:** The ability to reason is what permits humans to process information and formulate explanations, to assign meaning to observed phenomena. It is by reasoning that analysts transform information into intelligence, in these three ways:
 1. **Induction:** Inductive reasoning combines separate fragments of information, or specific answers to problems, to form general rules or conclusions. For example, using induction, a child learns to associate the color red with heat and heat with pain, and then to generalize these associations to new situations.⁴⁶ Rigorous induction depends upon demonstrating the validity of causal relationships between observed phenomena, not merely associating them with each other.
 2. **Deduction:** Deductive reasoning applies general rules to specific problems to arrive at conclusions. Analysts begin with a set of rules and use them as a basis for interpreting information. For example, an analyst who follows the nuclear weapons program of a country might notice that a characteristic series of events preceded the last nuclear weapons test. Upon seeing evidence that those same events are occurring again, the analyst might deduce that a second nuclear test is imminent.⁴⁷ However, this conclusion would be made cautiously, since deduction works best in

⁴⁵ Garst and Gross, 47.

⁴⁶ Jerome K. Clauser and Sandra M. Weir, *Intelligence Research Methodologies, An Introduction to Techniques and Procedures for Conducting Research in Defense Intelligence* (Washington DC: Defense Intelligence School, 1975), 81.

⁴⁷ Clauser and Weir, 81.

closed systems such as mathematics, making it of limited use in forecasting human behavior.

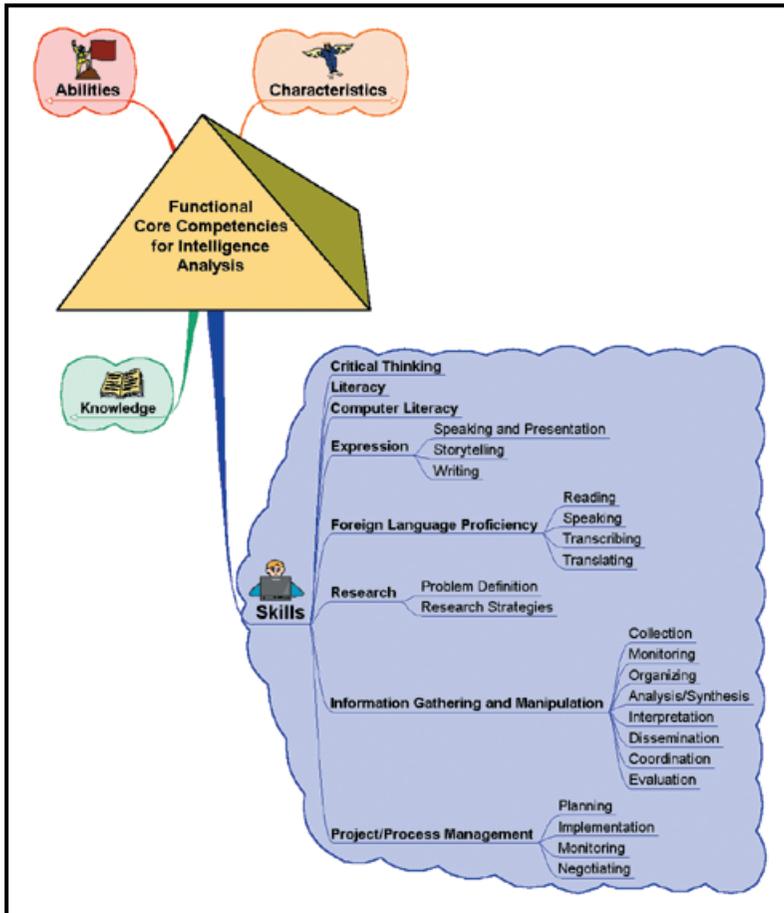
3. **Abduction:** Abductive reasoning describes the thought process that accompanies “insight” or intuition. When the information does not match that expected, the analyst asks “why?,” thereby generating novel hypotheses to explain given evidence that does not readily suggest a familiar explanation. For example, given two shipping manifests, one showing oranges and lemons being shipped from Venezuela to Florida, and the other showing carnations being shipped from Delaware to Colombia, abductive reasoning is what enables the analyst to take an analytic leap and ask, “Why is citrus fruit being sent to the worldwide capital of citrus farming, while carnations are being sent to the world’s primary exporter of that product? What is really going on here?” Thus, abduction relies on the analyst’s preparation and experience to suggest possible explanations that must then be tested. Abduction generates new research questions rather than solutions.⁴⁸

⁴⁸ Chong Ho Yu, “Abduction? Deduction? Induction? Is There a Logic of Exploratory Data Analysis,” Paper presented at the annual meeting of the American Education Research Association, New Orleans, LA, April 1994, URL: http://seamonkey.ed.asu.edu/~behrens/asu/reports/Peirce/Logic_of_EDA.html, accessed 6 June 2001.

SKILLS REQUIRED FOR INTELLIGENCE ANALYSIS

Any institution that relies on professionals for success and seeks to maintain an authentic learning climate for individual growth must require its members to read (to gain knowledge and insight), research (to learn how to ask good questions and find defensible answers), discuss (to appreciate opposing views and subject their own to rigorous debate), and write (to structure arguments and articulate them clearly and coherently).

— Gregory D. Foster⁴⁹



Skills required for successful intelligence analysis.

⁴⁹Gregory D. Foster, "Research, Writing, and the Mind of the Strategist," *Joint Force Quarterly* 11 (Spring 1996): 74-79.

Whereas aptitudes and related abilities probably stem from an analyst's genetic makeup, a skill represents learned expertise or proficiency based on a particular ability or set of abilities. At least eight types of skills, shown here, are required for successful intelligence analysis.

Critical Thinking

It is by thinking that analysts transform information into intelligence. Critical thinking is the cognitive skill applied to make that transformation. Critical thinking can be defined as

[An] intellectually disciplined process of actively and skillfully conceptualizing, applying, analyzing, synthesizing, and/or evaluating information gathered from, or generated by, observation, experience, reflection, reasoning, or communication, as a guide to belief and action....Thinking about [our] thinking while [we're] thinking in order to make [our] thinking better.⁵⁰

There is a clear need to educate and train intelligence analysts to use their minds...[Only] by raising their awareness can the intelligence unit be assured that the analysts will avoid the traps in being slave to conformist thought, precedent and imposed cultural values—all enemies of objective analysis.⁵¹

An ordered thinking process requires careful judgments or judicious evaluations leading to defensible conclusions that provide an audit trail. When the results of analysis are controversial, subject to alternate interpretations, or possibly wrong, this audit trail can prove essential in defending the process used to reach the conclusions.

Effective critical thinking also includes routine, systematic questioning of the premises upon which decisions are based. Without critical thinking, current beliefs and methods are not questioned, as long as they appear to produce results that can be reasonably explained. Yet they can prevent analysts from making alternative interpretations. Writing rhetorically, Gregory Treverton asks, "If intelligence doesn't challenge prevailing mind-sets, what good is it?"⁵²

Intelligence failure can be the result when alternative premises are ignored, as happened from the mid-1970s to the mid-1990s in Sweden. During that time, the Swedish Navy expended considerable effort and ordnance attempting to "destroy" intruding Soviet submarines. Swedish naval analysts (and others) repeatedly acknowledged failure, rationalizing it as a "David versus Goliath" contest: Sweden's tiny navy was no match for the

⁵⁰National Drug Intelligence Center, *Basic Intelligence Analysis Course*, # 9, PowerPoint Presentation, April 2001.

⁵¹McDowell, 216.

⁵²Treverton, 5.

technologically advanced Soviet submarine fleet. It was not until 1995 that Swedish defense chief Owe Wiktorin revealed the truth; detected intruders previously believed to be submarines were in fact minks swimming in the waters off the Swedish coast. Blinded by the premise that the Soviets wanted to make war against Sweden, the navy had ignored this possible explanation for their failure to destroy “enemy” submarines, despite the fact that the alternative premise had been suggested as early as 1987.⁵³ An obvious conclusion from this story is that corporate mechanisms for questioning analytic premises could have resolved this intelligence question nearly a decade earlier. The lesson for present-day intelligence analysts is clear: corporate processes for intelligence analysis must allow for, and indeed, institutionalize, the questioning of premises.

Literacy

Intelligence analysis requires the reading and comprehension of written sentences and paragraphs, often in multiple languages, at many points in the intelligence process. Prospective intelligence analysts must be literate in order to perform their work at the most basic level, making this skill a prerequisite for employment. Literacy skills are crucial for understanding the target, the consumer and the intelligence process. Literacy is also necessary for conducting research.

Computer Literacy

It is a given that in the 21st Century, the computer is an essential tool for intelligence analysis. Today, analysts must be highly skilled in the use of computers themselves and in the use of software that will aid analysis. Word processing, spreadsheet, and presentation programs, as well as specific programs that assist at all stages of the analytic process, are the essential tools that can bolster success. However, tools themselves do not provide “truth” (if such can be said to exist in the intelligence analysis context). Rather, these tools for manipulation, correlation, and presentation of information are a means to an end: the production of intelligence. An analyst’s skillful use of them hastens arrival at that end.

The fact that analysts are faced with massive volumes of data also makes use of selection and filtering tools essential. The analyst depends on these tools to make a “first cut” on the collected information. The tools are used to filter non-relevant information items and retain only those items that are pertinent to the issue being analyzed.

Expression

The results of analysis are useless if they are poorly presented. “The capable analyst must be competent and experienced in presenting analysis both orally and in writing.”⁵⁴ Effective oral and written skills are therefore essential for the intelligence analyst. Fail-

⁵³ William H. Starbuck, “Unlearning Ineffective or Obsolete Technologies,” *International Journal of Technology Management* 11, nos. 7/8 (Winter 1996): 725-726.

⁵⁴ Garst and Gross, 49.

ures of intelligence can indeed occur when the results of analysis are inadequately presented. For example, Berkowitz and Goodman note that lengthy daily or weekly briefings may be inadequate means for informing officials, regardless of their content. Warnings go “unheard because the officials [find] the hour-long briefings to be an inefficient use of their time and [stop] attending.”⁵⁵ Similarly, they conclude that inadequate intelligence reporting of unrest in Iran in 1978 contributed to the U.S. Intelligence Community’s failure to predict the fall of the Shah.⁵⁶ These examples also make it clear that whichever method of informing policymakers is selected, the resultant products must be concise, tailored ones that masterfully present the intelligence to the intended consumer or in the consumer’s frame of reference.

- **Speaking and Presentation:** The oral presentation of information, particularly to senior officials, otherwise known as “briefing,” and often accompanied by visual aids, allows an effective analyst to tailor both the content and delivery method to the consumer’s abilities or predilections. The briefing’s timing, level of detail, format and tone may all be matched to the consumer. In particular, key facts and conclusions come at the beginning of the exchange and determine its organization.⁵⁷ Effective briefing goes beyond these technical considerations. The heart of the intelligence briefing is the presenter’s relationship with the consumer, thus, “the essence of briefing is not simply the projection of information, but rather the art of promoting understanding between individuals.”⁵⁸ Through the briefing process, the presenter puts information into the consumer’s frame of reference, making clear the possibilities for decision, action and consequences, thereby creating intelligence.
- **Storytelling:** While well-honed speaking and presentation skills allow effective intelligence dissemination, well developed storytelling skills ensure that intelligence is convincingly conveyed. Storytelling involves more than just creating the story. Its power lies in the way the story is told. In the words of transformational storytelling expert Stephen Denning, “[the] look of the eye, the intonation of the voice, the way the body is held, the import of a subtle pause, and [the storyteller’s] own response to the audience’s responses—all these aspects ... make an immense contribution to the meaning of the story for [the] audience.”⁵⁹ Too often the consumer does not understand a poorly told but important story buried in a sophisticated presentation, making storytelling an essential skill for intelligence professionals.

⁵⁵ Bruce D. Berkowitz and Allan E. Goodman, *Strategic Intelligence for American National Security* (Princeton: Princeton University Press, 1989), 32.

⁵⁶ Berkowitz and Goodman, 202.

⁵⁷ Krizan, 40, 42-46.

⁵⁸ Benjamin T. Buring, LT, USN, *Function vs. Form: Successfully Briefing the Intelligence Story*, MSSI thesis (Washington, DC: JMIC, August 2001), 24.

⁵⁹ Stephen Denning, *The Springboard: How Storytelling Ignites Action in Knowledge-Era Organizations* (Boston, MA: Butterworth Heineman, 2001), xxii.

Storytelling in this context is not about fiction; it is not about “once upon a time.” Rather, intelligence storytelling involves creating scenarios and alternative futures for consumers. Intelligence assessments that provide a variety of possible outcomes, recounted in considerable detail, can give the consumer clues to the most effective policies or strategies. An example of varying analytic outcomes expressed as scenarios can be found in the National Intelligence Council’s *Global Trends 2015*. Four alternative futures for the next 15 years are outlined in addition to the principal scenario. These alternatives suggest a variety of possible outcomes based on population trends, resource availability, technological advances, economic conditions, ethnic identity and governance, and local and regional conflicts. The significance for the policymaker is that the future is fluid.⁶⁰ While all the alternatives are possible, certain political and strategic decisions could influence which outcome is most likely to occur. Being prepared for various outcomes enables the policymaker to be proactive and to respond appropriately as events unfold.

- **Writing:** The basic vehicle by which intelligence historically has been purveyed is the written report. At the beginning of the 21st Century this remains the case. Yet many contemporary intelligence analysts lack this basic skill, and improvement “of writing skills, basic though it may be, is often required as part of becoming a competent intelligence analyst.”⁶¹

Foreign Language Proficiency

To be truly successful, analysts must be proficient in the language(s) employed by the subjects of their analysis. Without such proficiency they cannot completely comprehend target intentions and actions. When analysts misunderstand their targets, the intelligence they provide to consumers thus will be inaccurate or misleading.

Once upon a time, many intelligence analysts could rely upon the skills of professional linguists for translation of target information. Now this luxury has become unavailable to all but a few intelligence analysts working the largest, best-funded intelligence problems.⁶² Foreign language proficiency has thus become a necessity for all who perform intelligence analysis.

If budget and personnel cuts are insufficient reason for analysts to have foreign language proficiency, changes in intelligence targets provide additional arguments for its necessity. Although targets of interest have traditionally used their native language(s) for internal communications, many employed non-native languages such as English for international communications and publications. This was especially true of the first decade of

⁶⁰National Intelligence Council, 2000, 83-85.

⁶¹Berkowitz and Goodman, 54.

⁶²For one view of the staffing cuts at the National Security Agency, see Mathew M. Aid, “The Time of Troubles: The US National Security Agency in the Twenty-First Century,” *Intelligence and National Security* 15, no. 3, (Autumn 2000): 5-9.

the popular use of the Internet, when English was the *lingua franca* of that medium. However, this is changing. The use of native languages in international communications is growing both on and off the Internet. Thus, proficiency in non-English languages is necessary for analysis of information, approximately 80 percent of which “is *not* secret, is *not* online, is *not* in English, is *not* government associated, but is in the private sector, and is *not* available locally to the analyst.”⁶³

Furthermore, foreign language proficiency provides more than just a translation of non-English materials. The structure of a target’s language and that target’s culture are closely related. One well-known theory of this relationship, by Edward Sapir and Benjamin Whorf, posits that “language is a force in its own right and it affects how individuals in a society conceive and perceive reality.”⁶⁴ Thus concepts essential to understanding the target are communicated in a context that goes beyond simplistic translation.

For example, the German terms *Gemeinschaft* and *Gesellschaft* both translate into English as “community.” Yet this translation ignores the interpersonal nature of the relationship among the members of the first type of community, and the business context of the second. An analyst relying on translation by another might not be aware of the nature of the “community” in the material being analyzed.

In Somali there are two pronouns for the English “we.” A speaker of Somali uses the pronoun *annagu* when referring to the speaker and someone other than the person being addressed. Conversely, the use of the pronoun *innagu* includes the person being addressed. So if someone says in English, “We are going to the movie,” the question of “Who is ‘we’?” must be asked. In Somali there is no doubt: If *annagu* are going to the movies, the person being addressed is not going; if *innagu* are going to the movies then the person being addressed is going. Again, an analyst depending on a translation into English must rely on the translator to convey that contextual information. This inclusion or exclusion from a group can be quite significant. There is a considerable difference between “*annagu* are going to blow up the embassy,” and “*innagu* are going to blow up the embassy.” This distinction is especially significant to the intelligence analyst in this case, even if the implications for the embassy remain the same.

Even the distinction between intelligence and information is language-derived. The Sinitic term *qingbao* refers to a concept that can be understood either as “information” or “intelligence.”⁶⁵ This latter distinction is a “Western one not shared by East Asian languages or presumably their speakers,” according to the Foreign Broadcast Information

⁶³ Robert David Steele, “The New Craft of Intelligence: an Alternative Approach Oriented to the Public,” Conference on The Future of Intelligence in the 21st Century, Priverno, Italy, 14-16 February 2001. The quote is from Steele’s remarks and is not in his published version of the paper. Clarification was made via personal email communication, 18 May 2001. Because the conference operated under the “Chatham House Rule,” Mr. Steele is quoted with permission.

⁶⁴ Carol R. Ember and Melvin Ember, *Anthropology*, 9th ed. (Upper Saddle River: Prentice Hall, 1999), 225.

⁶⁵ *Concise English-Chinese/Chinese-English Dictionary*, 2nd ed. (Oxford: Oxford University Press, 1999), 363.

Service editor of the Chinese intelligence collection manual, *Guofang Keji Qingbaoyuan ji Houqu Jishu*.⁶⁶ Context must determine the translation, and an analyst lacking foreign language skills must trust the linguist to correctly understand that context. The expertise required for that understanding might render the linguist a better intelligence analyst than the original analyst. This begs the question: “Is such duplication of personnel affordable?”

We recognize that certain forms of technical analysis have previously not required foreign language proficiency. We suggest, however, that it is not truly known, nor can we know, whether foreign language proficiency would have enhanced that analysis. Some technical metadata analysis clearly does not require language proficiency. However, analysis of other types of metadata may indeed require foreign language proficiency and we caution against dismissing out of hand the need for it. Furthermore, staffing cuts require that analysts review both data and metadata. Even if the metadata do not require foreign language competency, the underlying data do require it. In addition, essential technical meaning is lost in the translation between linguist and technical analyst; technical analysts often need that original source and its context. This can be gained only from proficiency in the original language. Ultimately, foreign language proficiency enables the analyst to engage in a holistic, comprehensive analytic process.

We see a connection between the depth at which the analyst must work a target and the degree of required foreign language proficiency. If analysts work a great many targets at a superficial level, they need only have a casual acquaintance with their language(s). Similarly, when analysts are assigned to an *ad hoc* crisis cell working a specific target for a finite period, they may also need only superficial language skills. In this latter case, if the crisis is of sufficient importance, dedicated language assets will be assigned to compensate for their ignorance. However, should the crisis become long-term, it is reasonable to expect them to acquire more than a passing skill in the target’s language(s).

Research

Research skills provide discipline and consistency for the creation of value-added intelligence. By providing methodologies for defining the requirement to be answered, as well as methodologies for answering that query, research skills ensure analytic consistency and enable thorough exploration of the issues. Necessary research skills include methods of problem definition that ensure that, in collaboration with the consumer, analysts correctly define or redefine the problem in terms of a “research question,” so as to understand the consumer’s and the analyst’s own objectives.⁶⁷ Research strategies, when based on the issue to be answered, help identify required sources of information, the means of information collection, and the means of analyzing and synthesizing the data.

⁶⁶FBIS Editor’s comments on the English translation of Huo, Zhongwen and Wang, Zongxiao, *Guofang Keji Qingbaoyuan ji Houqu Jishu* (Sources and Techniques of Obtaining National Defense Science and Technology Intelligence) (Beijing: Kexue Jishu Wenxuan Publishing Co., 1991).

⁶⁷Russell G. Swenson and others, “Research Design,” in *Research: Design and Methods* (Washington DC: Joint Military Intelligence College, 2001), 19-20. This publication is an essential guide for Community analysts developing research and analytic strategies for long-term projects.

Information Gathering and Manipulation

Information is the grist for intelligence analysis, and to be successful, analysts must aggressively seek it out. Different information/data manipulation skills are required for the various stages of the intelligence process.

- **Collection:** This stage involves gathering information from all sources. The intelligence analyst directs the collection process, causing specific resources to be tasked. Related information manipulation skills include selecting and filtering in order to assess whether the information and its sources are of value.
- **Monitoring:** Reliability of sources and the validity of the information are always in question. Monitoring skills focus on information review, and often may involve analysis of descriptors and summaries of that data.
- **Organizing:** Skillful arrangement, formatting, and maintenance of data for analysis and technical report generation ensure access to materials in a usable format.
- **Analysis/Synthesis:** Information manipulation skills can point to patterns, relationships, anomalies and trends.
- **Interpretation:** This is the stage in the process where information is transformed into intelligence by cognitive manipulation, that is, assigning meaning to analyzed and synthesized information using critical thinking. Computers aid in this step, however, a study of 12 major “analytic” software tools concludes “true analysis will remain a people function, assisted by computer technology.”⁶⁸
- **Dissemination:** Dissemination, except for some graphic products, is now of course mostly electronic. Information preparation and presentation skills allow its transformation and publication, so that the results of analysis appear in usable formats, which may be further tailored by users.
- **Coordination:** Coordination requires analysts as well as their managers to employ “collegial” skills in the bureaucratic environment; these skills are also needed to avoid diluting the intelligence message down to the “lowest common level of agreement.”
- **Evaluation:** Internal and intra-community evaluation allows the intelligence to be discussed and placed in larger contexts than that viewed by a single agency. Such collaboration may also identify the additional intelligence required to clarify issues. Evaluation can become a continuous part of the production process.⁶⁹

Project/Process Management

Few analysts enjoy the luxury of working full time on only one problem or on one aspect of a particular problem. We distinguish between projects and processes. The former tend to have finite scope and goals whereas the latter are open-ended. Both require planning, imple-

⁶⁸Leonard Fuld, Fuld Associates, “Intelligence Software: Reality or Still Virtual Reality,” *Competitive Intelligence Magazine* 4, no. 2 (March-April, 2001): 24-25.

⁶⁹See also Brei.

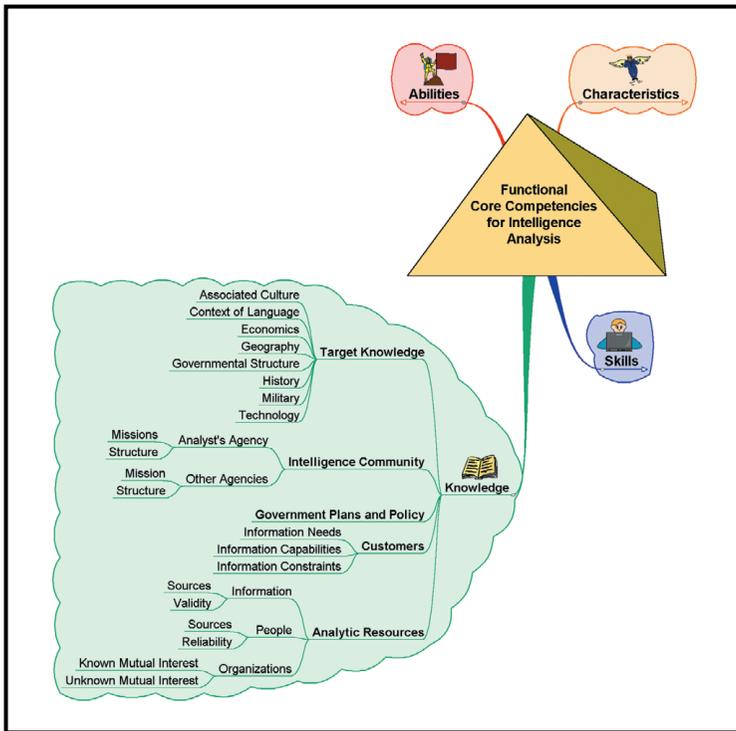
mentation, monitoring, and negotiating skills.⁷⁰ A project/process plan defines and clarifies what needs to be accomplished; identifies necessary resources; creates a timeline, including milestones; and makes the analyst accountable for successful completion.

KNOWLEDGE REQUIRED FOR INTELLIGENCE ANALYSIS

Without a solid knowledge base concerning the region or issue to which the analyst is assigned, . . . the individual will not even know what questions to ask. That is, the person will not really be qualified to be called an “analyst.”

— Ronald D. Garst and Max L. Gross⁷¹

Knowledge consists of familiarities, awareness, or understanding gained through experience or study; it includes both empirical material and that derived by inference or interpretation.⁷² Depending on the specific target, the knowledge required can vary widely. Our essential subset is shown in the figure and discussed below.



Knowledge required for successful intelligence analysis.

⁷⁰Clifford C. Kalb, “Core Competencies: A Practitioner’s View,” document 207612, Merck & Co., Inc, n.d.

⁷¹Garst and Gross, 50.

Target Knowledge

Doing intelligence analysis in the information age is often like “being driven by someone with tunnel vision.”⁷³ In the quest to answer a consumer’s questions, the analyst often pushes aside “all the fuzzy stuff that lies around the edge—context, background, history, common knowledge, social resources.”⁷⁴ Yet, to do so is perilous, for these provide balance and perspective. They offer breadth of vision and ultimately allow analysts to make sense of the information under study. By providing the context into which analysts place their work, fields of study such as anthropology, comparative religion, economics, geography, history, international relations, psychology, and sociology all interact to contribute vital knowledge about the target, which both analysts and consumers need to understand. Changes in the culture, religion, geography, or economic systems (among others) of a target may themselves be subjects of an intelligence requirement.

Gregory Treverton asserts that intelligence “is supposed to have the people who understand Bonn and Delhi better than they do Washington.”⁷⁵ Without such understanding, intelligence and policy failures can occur. Treverton blames the failure of the U.S. Intelligence Community to predict India’s 1998 nuclear test partially on a lack of understanding by U.S. analysts of “true” Indian motivations. He asserts that a questioning of premises coupled with greater knowledge of the reasons why India would want to conduct a nuclear test should have led U.S. analysts to different conclusions.⁷⁶

The following selection of topics exemplifies some non-traditional but essential target knowledge areas required for thorough intelligence analysis.

- **Culture:** Culture can be defined as a group’s values, standards, and beliefs. In turn, culture defines that group. The study of culture reveals the roles of individuals in the community, and how they relate to non-members of the culture. This provides insights into behaviors that are of value in predicting future behavior. This is true when the target is a people or a nation as well as when the target is a specific subgroup or individual member within a culture. Adda Bozeman points out that because political systems are grounded in cultures, “present day international relations are therefore by definition also intercultural relations ... [A]nalysts and policymakers in the West would be more successful in their respective callings if they would examine the cultural infrastructures of the nations and political systems they are dealing with.”⁷⁷
- **Message of Language:** The message of language is a part of culture, and while isolating it makes an artificial distinction, we do so to reiterate its importance for intelli-

⁷² Knowledge,” *The American Heritage Dictionary*, 2nd College Edition, 1976 Ed.

⁷³ John Seely Brown and Paul Duguid, *The Social Life of Information* (Boston: Harvard Business School Press, 2000), 1-2.

⁷⁴ Garst and Gross, 49.

⁷⁵ Treverton, 5.

⁷⁶ Treverton, 5.

⁷⁷ Adda Bozeman, *Politics and Culture in International History: From the Ancient Near East to the Opening of the Modern Age*, 2nd ed. (New Brunswick, NJ: Transaction Publishers, 1994), 5.

gence analysis. What languages are utilized, by whom, and in what context, is essential in understanding the target's culture. For example, much is revealed if members of an insurgent group primarily communicate using the language of the elite members of their culture. Additionally, what the language indicates about class and personal relationships may provide clues to behaviors.

- **Technology:** Technology itself can be the subject of study by the intelligence analyst. Someone developing a target may analyze specific technologies and their infrastructure as they pertain to that target. Further, the role of technology within a region, nation, or people is an indicator of behavior. The domains of communications, utilities, transportation, manufacturing, and others, as well as the attitudes of the people to them, are rich sources of study. Technology also can provide insights into sources of information that will be available to the intelligence analyst.

Professional Knowledge

In addition to understanding their targets, intelligence analysts need to know a great deal about the context and nature of the intelligence profession, and the resources available to help them do their job well. Understanding the plans and policies of their own government enables analysts to frame their work in terms of the nation's strategic and tactical objectives. Intelligence consumers are government officials. Their needs drive analytical process and priorities. Analysts base collection tasking on the imperative to match information sources to consumer needs. These information sources, such as human-source reporting, signals intercepts and documentary research, provide the analyst with raw materials for the creation of intelligence through analysis, synthesis and interpretation.

Determining what information must be analyzed is a precursor to the analytic process. Berkowitz and Goodman identify "four different types of 'information' [used by intelligence analysts] in preparing reports and estimates: known facts, secrets, disinformation, and mysteries."⁷⁸ Known facts and secrets must be placed in context or "revealed," disinformation must be discounted, and consumers must be informed that mysteries cannot be answered. For this to occur, the types of information available and their validity, as well as the sources of that information and their reliability, must be determined.

In addition, analysts need to know what specific sources of information relevant to a particular inquiry are available for exploitation. Knowing which expert sources and subject matter experts can guide the analytic process, or can offer different or additional perspectives, enhances intelligence work. The reliability of these sources is also critical. When different sources provide contradictory information, the reliability of one source versus another may provide insights into which information is accurate; the sources may be open or secret, technical or human.

Finally, others, known and unknown, may be examining similar information for the same or different consumers. Awareness that sources of information, possibly vital infor-

⁷⁸Berkowitz and Goodman, 86.

mation, exist, even though they remain undiscovered or untapped, keeps the analyst constantly seeking out new connections.

IMPLICATIONS FOR THE INTELLIGENCE ANALYSIS WORKFORCE

Returning to our thesis, what makes an intelligence analyst successful? Given that the analyst's purpose is to create intelligence, success means following an effective process (rigorous analysis, sound management) and creating a quality product (that conveys intelligence and meets the consumer's needs). To do this requires appropriate abilities, knowledge and personal characteristics for rigorous intelligence analysis and production. Well-honed capabilities to communicate, cooperate and think, coupled with the skills that ensure technical competency, provide the means for intelligence work. Informed, deep knowledge of the issues and their background provides both content and context for analysis. Analysts who are motivated to succeed, to know targets, and to share that knowledge ensure that consumers receive intelligence of the highest caliber.

But do intelligence analysts today approach this ideal? And can we find or grow such talent to serve the Community's mission well into the 21st century?

Of all the personnel problems the intelligence community will face in the coming years, the most difficult to solve is likely to be maintaining the base of talent the community requires to carry out its mission.... [Much] of the work of the intelligence community is highly specialized and requires exceptional creativity.... It is also safe to say that some of the most pressing analytic skills the community will require are precisely those we cannot even foresee at this time.

— Bruce D. Berkowitz and Allan E. Goodman⁷⁹

Berkowitz and Goodman's judgment from 1989 remains true in 2002. The Intelligence Community remains significantly challenged to maintain and enhance an analytic talent base against numerous rapidly changing threats to national security. Further, a possible uptick in hiring and rising rates of eligibility for retirement mean that, at the least, the savvy of the analytic population will continue to dwindle at the lower end and retire from the upper end.⁸⁰ Even an adequately sized analytic workforce, lacking adequate mentoring and training from senior, expert analysts, will leave the Intelligence Community unable to meet security challenges. For example, while NSA's technological capability remains widely recognized, former director General Kenneth A. Minihan noted, "If we

⁷⁹ Berkowitz and Goodman, 154.

⁸⁰ External Team Report: A management Review for the Director, NSA, 22 October 1999, URL: <http://www.nsa.gov/releases/nsa_external_team_report.pdf>, accessed 4 June 2001. For a different but related perspective see also the report of the "internal" New Enterprise Team, URL: http://www.nsa.gov/releases/nsa_new_enterprise_team_recommendations.pdf.

don't win the talent war, it doesn't matter if we invest in the infrastructure.”⁸¹ According to the Council on Foreign Relations' independent report on the future of intelligence, “less than a tenth of what the United States spends on intelligence is devoted to analysis; it is the least expensive dimension of intelligence....This country could surely afford to spend more in those areas of analysis where being wrong can have major adverse consequences.”⁸² Winning the talent war requires smart investment in the hiring, training, and deployment of analysts.

With simultaneous greening and greying of the analytic workforce, analysts as a group may lack many of the core competencies necessary for successful intelligence analysis. A strategic requirement exists to resolve this problem. However, the authors know of no stratagem under consideration other than their own focus on identifying core competencies for management attention. It may be feasible to conduct small-scale, *ad hoc* or more systematic experimentation with specific analytic techniques such as that pioneered by Folker, to determine which techniques may hold the most promise for improved rigor of analysis.⁸³ We suspect that some experienced analysts do already match the ideal described above, although others are still operating within the outdated Cold War paradigm. Further, many novice analysts also have the willingness and potential to develop toward the ideal. But they need tradecraft mentors and teachers. Presently, there are not enough expert analysts to do both the teaching and the performance of sophisticated intelligence production.

Therefore, the Intelligence Community needs ways to enable intelligence analysts now on the job to enhance their professional skills. One approach to this problem is to provide widespread, specialized training in analytic methods. In order, however, to ensure that subsequently produced intelligence is accurate and useful, such training must focus on rigorous analytic processes that minimize biases introduced by the analyst, the consumer, the sources of the information, or the information itself. Collaborative training efforts such as those proposed in the *Strategic Investment Plan for Intelligence Community Analysis* offer another way by which intelligence analysts can acquire the skills necessary to bring greater rigor to their analyses.⁸⁴

One analytic method in particular, known as “Analysis of Competing Hypotheses,” as presented by Central Intelligence Agency (CIA) analyst Richards J. Heuer, Jr., provides a readily applicable approach to rigorous intelligence analysis. In Heuer's methodology, as used at the CIA, the analyst begins with a full set of alternative possibilities rather than the apparent single most likely alternative. Then the analyst compares each piece of evidence against each hypothesis, and determines if that evidence supports or refutes it. Evi-

⁸¹ Quoted in Robert K. Ackerman, “Security Agency Transitions from Backer to Participant,” *Signal* 54, no. 2 (October 1999): 23.

⁸² Council on Foreign Relations, 1996, 11-12.

⁸³ Folker, *Intelligence Analysis in Theater Joint Intelligence Centers: An Experiment in Applying Structured Methods*.

⁸⁴ Director of Central Intelligence National Security Advisory Panel, 29ff.

dence that has no diagnostic value is taken out of consideration. After noting the evidence chain attached to each hypothesis, the analyst selects as the most probable hypothesis the one with the least amount of evidence against it. This contrasts with conventional analysis, which generally entails looking for evidence to confirm a favored hypothesis. Following the scientific method, Analysis of Competing Hypotheses seeks to eliminate hypotheses, whereas conventional analysis seeks to prove them.⁸⁵ The end result of the former is an actionable intelligence product that adds value to the consumer's development and execution of policy or strategy.

Folker's recent experiments in Theater Joint Intelligence Centers provide enticing evidence that such rigorous methods do foster analytic excellence. In four experiments, Folker provided analysts with one hour of training in Analysis of Competing Hypotheses, and then presented them with two realistic scenarios requiring analytic judgments and conclusions. A significantly greater number of the newly trained analysts derived the correct answers to the scenarios than analysts in a control group that used their own *ad hoc* methods. These findings demonstrate that while "exploiting a structured methodology cannot guarantee a correct answer, using a structured methodology ensures that analysis is performed and not overlooked."⁸⁶

Folker therefore recommends widespread teaching of these methodologies during "both initial and subsequent training."⁸⁷ However, training is of little value unless it can be immediately applied. Thus organizational structures, culture, and processes must be aligned to permit and to reward rigorous analysis. Unless analysts are recognized and appreciated for performing sophisticated analysis, they will not embrace change. Significant recognition for high-level analysis will inspire others to follow, creating a culture that fosters and sustains excellence in tailored intelligence production.

Even if the entire analytic workforce were to adopt rigorous analytic techniques, the Intelligence Community may still lack sufficient resources to meet consumer needs. It will still need to hire new analysts, either from outside the agency or from within. However, these new employees must be highly qualified. The government cannot afford remedial training for prospective new employees lacking the necessary abilities and skills for intelligence analysis. Similarly, employees transferring into the analytic disciplines from other fields must have the prerequisite abilities and skills for analysis before joining this discipline. The field of intelligence analysis cannot safely be a catchall for employees transferring from downsized career fields.

⁸⁵ For a discussion of the Analysis of Competing Hypotheses see Chapter 8 of Richards J. Heuer, Jr., *The Psychology of Intelligence Analysis* (Washington, DC: Center for the Study of Intelligence, 1999).

⁸⁶ Folker, 33.

⁸⁷ Folker, 33.

Some prospective new hires do come to the discipline with an academic background in intelligence, and many current employees pursue continuing studies related to intelligence. However, intelligence studies at the university level tend to focus on intelligence and policy, not on tradecraft. Further, it is questionable whether the fledgling field of intelligence studies by itself yet offers the wherewithal to support a claim of expertise by someone educated in that specialty, except in the narrow, self-assessed areas of intelligence process or organization. Only one non-governmental institution in the U.S. offers an undergraduate degree in intelligence research and analysis: Mercyhurst College in Pennsylvania; there, too, advanced studies are offered in conjunction with a law-enforcement related degree. Within several years, the University of New Mexico expects to offer undergraduate through doctoral degrees in intelligence; the stated goals of this program are to focus on the tradecraft of strategic intelligence.⁸⁸ Other institutions, such as Wright State University in Ohio, are beginning intelligence analysis programs. But these academic programs are too small and too limited to meet the needs of government intelligence agencies for qualified analysts.

Furthermore, general academic preparation is not enough. Training new and current intelligence analysts in professional tradecraft is a Community responsibility and obligation. Analysts need both specific job-related training and enculturation appropriate to their agencies' missions. With the investment of adequate resources, including the development of modern curricula in intelligence tradecraft, Community training programs can meet these specialized analytic training needs. This investment also can include partnering with academic institutions offering "distance learning" programs and other means of outsourcing instructional resources.

The Aspin-Brown Commission on the Roles and Capabilities of the United States Intelligence Community identified several additional actions to improve the quality of analysis. These include a minimal prerequisite to visit target countries as part of analytic orientation, rewards for acquiring and maintaining foreign language proficiency, encouragement to remain within substantive areas of expertise, and periodic rotational assignments to consumer agencies.⁸⁹ Enacted as part of employee training and orientation, these measures can substantially enhance analysts' target knowledge and skills.

In combination with the right knowledge, skills, abilities, characteristics, and methodologies, the organizational and structural changes under consideration offer a possibility to genuinely transform the analytic work force. Specific changes in analytic culture, processes, and techniques offer the Intelligence Community a unique opportunity to rebuild analysis to effectively cope with a changed world. The recognition that technol-

⁸⁸ James Hold en-Rhodes, personal communications, 11-14 June 2001.

⁸⁹ Aspin-Brown Commission, *Preparing for the 21st Century: An Appraisal of U.S. Intelligence* (Washington DC, GPO, 1 March 1996), 87.

ogy supports, and is not a replacement for, the mental processes of analysis, highlights this opportunity.

However, it remains to be seen whether the agencies and their personnel are willing and able to carry out this essential work. Organizational changes now underway may not go far enough. Agency structures remain large and centrally planned. More agile responses to intelligence challenges, as yet undefined, may be required to counter them.⁹⁰

A Community strategy focusing both on what consumers require, and how a professional analytic workforce can be developed is a logical follow-on to the transformations the Intelligence Community already has begun. The results of implementing such a strategy will be profound, if the transformations remain grounded in mission and are sustained through changes in leadership. In this climate, talented and motivated analysts who are highly knowledgeable about their consumers and their targets will apply rigorous analytic techniques to create actionable intelligence for decisionmakers. Under expert management, analysts will apply critical thinking skills in evaluating their own work, ensuring that it is of the highest caliber. As these analysts collaborate extensively across the Intelligence Community, the example they set will inspire others to excellence. Making this vision a reality requires action. The ideas developed here can be used as a guide to action and an instrument of change.

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⁹⁰For an examination of how intelligence analysis might be done in the 21st Century, see chapter 4 of Bruce D. Berkowitz and Allan E. Goodman, *Best Truth: Intelligence in the Information Age* (New Haven: Yale University Press, 2000).

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