PRAEGER SECURITY INTERNATIONAL
TERRORISM, HOMELAND SECURITY, STRATEGY

ROBERT KENNEDY. *Of Knowledge and Power*. Westport, CT: Praeger Publishers, . http://www.praeger.com.ezproxy2.apus.edu/.

ANALYSIS: TORMENTS OF SISYPHUS

> "Quality is not an act. It is a habit."
>
> —Aristotle

Once requirements have been clearly defined, and trained resources have been allocated to an intelligence task, it falls to an intelligence analyst (or team of analysts) to evaluate the information at his or her disposal in order to determine specific patterns that suggest relevant answers to the intelligence needs of policymakers. Analysis invariably involves many unknowns, demands a sharp mind and clear thinking and, in general, an extraordinary understanding of peoples, cultures, issues. It is a complex process and there are few, if any, "slam dunks."

Analysts must first evaluate the sources, then the channels through which the information was passed. Finally, they must evaluate the evidence itself. Along the way they will face innumerable challenges. They must have a sound understanding of the strengths and limitations of both the technical and human collection processes. They often must draw conclusions from a paucity of information. Or on the other hand, they may be forced, nearly always under the pressure of time, to sift through an extraordinary amount of collected information for the relevant. In either case, they must separate the important from background noise and see through any attempts to deceive. They must overcome their own biases. They must beware of the dangers of "groupthink." They must avoid the temptations of wishful thinking or the desire to please superiors. And in all of this, they must think imaginatively and strategically as they confront the daunting complexities of estimating the future. Only then will they be in a position to make sound judgments about a given situation or a given set of factors. Moreover, given the growing global interests of the United States, all of this usually must be accomplished in an environment of personnel scarcity.

PRINCIPAL TASKS

Evaluation of Sources

The first step an analyst must take is to evaluate the sources of the information he or she has received.[1] For example, if the information came from human sources, how many sources were involved? Were the sources in agreement? Did any of the sources have direct access to the information reported? Were they competent or knowledgeable enough to accurately report on the issues? What

was their motivation for reporting—did they have a financial or political agenda they might be seeking to advance? Have they been a source of information in the past? If so, has the information they provided in the past been accurate? Are they a likely conduit for disinformation—that is, false information designed to obscure the truth? On such issues, the analyst could consult any number of individuals within the intelligence community or elsewhere in the government, academe, the business community, etc. who may have had contact with the sources.

If the information came from technical means, the analyst must have some understanding of the technical capabilities and limitations of the collecting source and be prepared to make judgments on the quality and accuracy of the information obtained. For example, if the information required came from satellite observation, was the quality of the pictures received adequate to make judgments about what was observed? If the satellite was nongeosynchronous,[2] is it possible that the opponent concealed whatever was to be observed from view as the satellite passed overhead? If the information came from acoustic or other submarine tracking technologies, was that means sufficiently capable to differentiate between say a Russian Delta class submarine and a Typhoon class submarine with its significantly greater capabilities? If the information was a product of conversations garnered through communications intelligence, was the communication speculative or specific? Was the source reporting or kibitzing? Or perhaps, an adversary, knowing full well that his conversations were being monitored by U.S. communications intelligence, was deliberately passing on false information.

Does an increase in the number of signal intercepts from an adversary's military forces indicate an increase in activity in a particular area or along a particular military front? Or perhaps it is an effort to deceive by suggesting activity that doesn't exist (as was done during World War II to convince the Germans that the allied invasion would come at Paz de Calais instead of Normandy). Or is it simply a reflection of increased collection activity on the part of one's own military intelligence community?

Evaluating the Channels

Next the analyst must evaluate the channels though which the information was communicated. Like the old story told at a bar that changes dramatically from one end to the other as it is passed along, information when passed through multiple channels is likely to become distorted and sometimes unrecognizable from the original message. Thus the analyst must determine whether the information at hand has arrived undistorted. Is the information "primary source information?" For example, have intelligence sources recorded the words of a president, prime minister, or senior civilian or military official ordering a specific action; or from secondary sources—for example, an intermediate source or sources reporting on what a primary source has said or written. The more intermediate channels the message has traveled the greater the suspicion that the message may have been distorted and therefore either incomplete, overdrawn, or perhaps totally inaccurate.[3]

Evaluating the Evidence

Finally, the analyst must evaluate the evidence itself. He or she must examine each piece of evidence to ascertain whether worthy judgments can be made about the information as a whole. Such an examination involves a three-step determination. First, how much of the evidence is an indisputable fact. Second, how much is knowable, but either not known or only partially known by the United States. Finally, how much of the evidence is not truly known by anyone and therefore speculative.[4] For example, during the Cold War an analyst or group of analysts might have been given the task to ascertain whether the Soviet Union had the *capability,* using its land- and sea-based intercontinental ballistic missiles and strategic nuclear bombers, to launch a first strike eliminating all or most of U.S. strategic nuclear forces.

It was an indisputable fact that the USSR had large numbers of land- and sea-based intercontinental missiles and long-range bombers armed with nuclear warheads. Beyond that, much of the information available to the analyst more than likely fell into one of the latter two categories. Thus, in responding to the tasking, the analyst was called on to make reasoned judgments on a host of issues. On first inspection, the information available may have indicated that the land-based missiles were accurate enough to be able to deliver a potential knock out blow to U.S. missile silos. But the analyst would have had to dig much further before any reasoned answer could be delivered to a policymaker. Among the questions the analyst might be obliged to ask: how was the information on the accuracy obtained? Was it from an analysis of data transmitted by telemetry to Soviet ground stations that had been intercepted by U.S. signals intelligence capabilities? Or was it from some other source, and if so, how reliable has that source been in the past? Was the information about the accuracy of Soviet missiles the result of data from a single test or multiple confirming tests? Were the tests undertaken under simulated operational conditions or in a highly controlled test environment? Were Soviet Intercontinental Ballistic Missile (ICBM) tests run on an east-west trajectory or a north-south trajectory, which might provide a better measure of the accuracy of a Soviet missile attack on the United States that would traverse the North Pole region? Had Soviet onboard inertial navigation systems solved the problem of the earth's polar magnetic/gravitational anomalies that might well affect the accuracy of their missiles as they traversed the polar regions? Could the arrival of attacking missiles be so timed to avoid the thermal radiation, violent upper atmosphere winds, and debris caused by previously arriving missiles that might either destroy or cause later arriving missiles to be thrown off track? Additionally the analyst(s) would be forced to evaluate Soviet capabilities for detecting and destroying U.S. submarines that carry Sea-Launched Ballistic Missiles, as well as U.S. nuclear bombers before any final evaluation could be made. In short, the analyst not only must understand the problem in detail, from beginning to end, but also understand how much of the information he/she is relying on rests on facts and how much on judgments about information that is knowable as well as not knowable.

Furthermore, if policymakers had asked a subsequent question about whether the USSR might *intend* to launch such an attack, the analyst or group of

analysts would be obliged to posit a range of scenarios, and their responses most assuredly would be solely speculative, since the answer to the question might not even be known to Soviet leaders until the moment of decision.

Of course not all tasks assigned to the Intelligence Community are so complex. However, if analysts are to have any hope of responding to policymaker needs with useful intelligence, most tasks they face will require a reasonably detailed knowledge of the issues involved. Furthermore, it is likely that there will always be some part of an issue for which solid information is not available to the analyst—either because it hasn't been collected, hasn't been made available to the analyst, or simply can't be known. Here the analyst must rely entirely on his/her experience and judgment.

Thus, analysts are not mere conduits for raw intelligence. Through their expertise and experience they add value to the intelligence that has been collected. They separate the wheat from chaff. They identify issues that are likely to need timely policymaker attention. They apply their experience and judgment and bring historical, cultural, and contemporary perspectives to information available, not only from other technical, functional, and area/country experts in the Intelligence Community, but also from the vast array of other sources—new media, embassies, military commanders, other government analysts, and academe. All of this when combined with the objectivity of an analyst detached from policy, provides decision makers with a more informed picture of a particular problem than might otherwise be available from the sometimes conflicting and frequently incomplete raw intelligence.

IMPEDIMENTS TO SUCCESS

Analyst–Collector Disconnect

Technology has become a great friend of the analyst. Not only is information from around the world instantly available via the Internet, the global media, and the like, analysts also benefit greatly from data automation within the Intelligence Community. Automated data handling has greatly reduced the time between intelligence collection and its availability to analysts. It has also increased efficiency, since data arrives at the desk of the analyst "often presorted based on keyword searches."[5] But there can be a downside to this automation. With all of the data now available to analysts, they may not take or have time to understand fully the nature of the collection effort, including the scope of the effort, its limitations, and the relative worth of intelligence sources, which sometimes can only come about through greater collector–analyst dialogue.

In their examination of the U.S. failure to correctly determine the nature and extent of Saddam Hussein's chemical weapons capabilities prior to the U.S. invasion of Iraq in 2003, the President's Commission on Weapons of Mass Destruction noted that an important part of the failure could be attributed to the absence of a close connection between analysts and collector. For example, the absence of close dialogue between collectors and analysts may have led analysts to believe that there had been an increase in activity at suspected Iraqi

chemical warfare sites when in fact there was none. According to the President's Commission, collectors did not adequately communicate the limitations of imagery collection, specifically noting that analysts did not realize that the observed increase in activity at suspected Iraqi chemical weapons sites may have been the result of increased imagery collection by U.S. satellites rather than any increased activity.[6] Until 2000, imagery collection on Iraq had been focused primarily on supporting military operations associated with the no-fly zones. However, in 2001 and 2002, imagery collection on targets suspected to be associated with Iraqi weapons of mass destruction more than doubled. Apparently not all Intelligence Community analysts were aware of this change, resulting in a failure to distinguish between *actual* increased activity at suspected chemical warfare sites and the *appearance* of increased activity due to increased satellite coverage. "Not coincidentally," the commission concluded, this was "the same time that analysts began to see" new activity they associated with CW [Chemical Warfare] transshipments.[7]

Former CIA analyst and executive Robert M. Clark sees another problem associated with the apparently all too frequent disconnect between collectors and analysts. According to Clark, analysts "too seldom try to stimulate collectors, and thereby they restrict the breadth or focus of what flows to them."[8] For example, the National Security Agency reported some but not all communications intercepted in 1999 and early 2000 involving a suspected terrorist facility in the Middle East linked to al-Qaeda. Included in the information it did not report were communications involving this facility and associated with a participant in a January 2000 meeting in Malaysia, 9/11 hijacker Khalid al-Mihdhar. In explaining this to the joint House-Senate committee inquiry into 9/11, National Security Agency officials noted that those communications fell below the Agency's reporting threshold, a threshold that is subjective and can change daily. Agency officials further emphasized that the threshold

> is a product of several factors including the priority of the intelligence topic…, *the level of customer interest in a particular subject*, *the perceived value of the information* [emphasis added], and the amount of intercept available for analysis and reporting.[9]

In short, collection agencies have considerable discretion in what they pass on. The major concern is that vital but seemingly irrelevant information, perhaps that small piece of information that completes the mosaic, will not get passed on to analysts. Through closer connections between analysts and collectors, analysts will better be able to stimulate collectors and collectors will be better able to gage the level of customer interest in a particular subject, as well as the potential value of a specific bit of information they have collected. On this National Security Agency officials complained that while they deploy many people to customer agencies to understand their needs and help shape their reports, customer agencies rarely reciprocate.[10]

Too Little Information

Often analysts are confronted with too little information. This can be the product of a number of factors, including limited collection capabilities, clever efforts by an adversary to deny or deceive, contradictory information, insufficient sharing of information within the Intelligence Community itself, or lack of activity on the part of the target nation. For example, prior to the U.S. attack on Iraq in 2003, there was little information available on Iraq's nuclear weapons programs. In 1998 the Intelligence Community noted that there was only limited and oftentimes contradictory intelligence reporting on Iraq nuclear weapons efforts, with some human intelligence sources indicating that Iraq had continued with "low-level theoretical research for a weapons program" following the Gulf War of 1991. At the same time, other sources reported "all nuclear-related activity [had been] halted."[11]

Similarly, there was little information available on Iraq's Biological and Chemical Warfare programs or on Iraq's intended use of Unmanned Aerial Vehicles as delivery vehicles for biological or chemical weapons.[12] In such circumstances, analysts, under pressure of time, politics, or other factors, may well be tempted to draw conclusions that go well beyond the evidence at hand. Such was the case in analytical judgments rendered by the Intelligence Community before the Iraq War. Indeed, the Intelligence Community assessed with "high confidence" that Iraq "has" biological weapons and that "all key aspects" of Iraq's offensive biological warfare program "are active and that most elements are larger and more advanced than before the Gulf War."[13]

The problem is often compounded when the little information that is available is too vague to yield *actionable* intelligence. For example, after bin Laden's February 1998 press conference in which he called for attacks against all Americans and announced al-Qaeda was merging with eleven other militant Islamic groups to form the World Islamic Front for Jihad Against Crusaders and Jews, the Intelligence Community began acquiring information that bin Laden's network intended to strike inside the United States. This information was widely available within the Intelligence Community and disseminated to senior policymakers. However, the information lacked specifics, such as where, when, and how such attacks might or would occur. The credibility of sources was sometimes questionable. And there was no corroborating information. Furthermore, information about possible al-Qaeda attacks within the United States was dwarfed by threat information the Intelligence Community received during this period, which pointed toward al-Qaeda attacks against U.S. overseas interests.[14]

Focus on Limited Sources

Too little information often can lead analysts and their supervisors to an overreliance on limited sources or even a single source or type of intelligence, as they attempt to discern a meaningful picture of unfolding events. For example, On January 21, 1968 the North Vietnamese Army attacked the American Marine base at Khe Sanh, South Vietnam. The attack was not unexpected. Toward the end of 1967, North Vietnam had been boasting of great victories to come and several North Vietnamese army divisions had been

observed moving into the Khe Sanh region. In response, General William Westmoreland, commander of U.S. military forces in Vietnam, aware of the mistakes made by the French at Dien Bien Phu, reinforced Khe Sanh and had additional reinforcements positioned at Hue.

However, while the battle waged at Khe Sanh, North Vietnam Army and Viet Cong forces, disguised as peasants, workers, refugees, and South Vietnamese soldiers and operating in small groups, were infiltrating major cities and towns throughout South Vietnam. With the world still focused on Khe Sanh, in the early hours of January 31, 1968, the first day of the Vietnamese "Lunar" New Year, over eighty thousand Viet Cong and North Vietnamese troops and commandos launched what became known as the "Tet Offensive," attacking virtually every major town and city in South Vietnam and most of the important American military bases. The attacks came as a near total surprise everywhere.

How could this happen? In late November 1968, CIA analyst Joseph Hovey, reporting from the Agency's Saigon station, correctly predicted the Tet Offensive. Basing his judgments largely on captured enemy documents, he foresaw an attempt by the Viet Cong and their North Vietnamese allies to launch the long-promised "general uprising" aimed at occupying and holding some urban centers in South Vietnam and isolating others. The Directorate of Intelligence at CIA Headquarters in Langley, Virginia, disagreed, contending that Hovey was not privileged to important intelligence. The intelligence which he lacked "was probably Signal Intelligence." Only five percent of the CIA Saigon station personnel were cleared for Signals Intelligence and Langley was focused on information gathered by that method.[15]

Normally a reliable source of information under certain circumstances, Signals Intelligence can give a distorted impression of the disposition of enemy forces. The movement of regular forces usually requires coordination among units, which generates a significant amount of radio traffic. Hence Signals Intelligence was able to provide sound intelligence on North Vietnamese regular forces, preparing for an assault on Khe Sanh but little on irregular forces infiltrating South Vietnamese cities.[16] In Saigon alone, while generating little radio traffic that might draw the attention of Signals Intelligence personnel, the equivalent of about five North Vietnamese Army and Viet Cong battalions infiltrated the city prior to the offensive.[17]

Similarly, in its October 2002 National Intelligence Estimate of Iraq's alleged chemical warfare program, the Intelligence Community, confronted with a "paucity of supporting human and signals intelligence"[18] and the complexity of differentiating chemical warfare production facilities from legitimate chemical infrastructure, concluded that Iraq had reinitiated the production of chemical weapons.[19] This judgment was heavily influenced by a single source, imagery intelligence.[20] It also was a departure from past Intelligence Community judgments. As late as 2001 the Intelligence Community maintained that there was no evidence that Iraq had started large-scale production of chemical weapons. However, imagery began showing trucks transshipping materials to and from ammunition depots, including previous chemical warfare sites. At

nearly a dozen of these locations analysts saw a number of "indicators," including trucks regularly associated with chemical weapons shipments in the late 1980s and during the Gulf War, which suggested to them that some of these trucks might be transporting chemical munitions. Since numerous shipments were observed though imagery, analysts wrongly concluded that Iraq had a significant number of chemical weapons and therefore had restarted the production of chemical weapons.[21]

Likewise, in the National Intelligence Estimate produced in the fall of 2002 the Intelligence Community assessed with "high confidence" that Iraq "has" biological weapons and that "all key aspects" of Iraq's offensive biological warfare program "are active and that most elements are larger and more advanced than they were before the Gulf War."[22] Like the Intelligence Community's assessment of Iraq's Chemical Warfare program, this judgment stood in contrast to previous assessments that had concluded that Iraq *could* have biological programs.[23] This new assessment was based primarily on information, largely received from a single human source.[24] The single source was a chemical engineer codenamed "Curveball." Curveball was handled by Germany's Federal Intelligence Service.[25]However, they could not verify his reporting, considered him a "flake,"[26] and would not permit U.S. agents direct access to him. Lack of access to the source clearly complicated efforts to ascertain the truthfulness of Curveball's reporting. Unfortunately, between January 2000 and September 2001 Department of Defense Human Intelligence personnel disseminated nearly a hundred reports from Curveball regarding mobile biological warfare facilities.[27] By spring 2000 this information was provided to senior policymakers. In December 2000 the Intelligence Community produced a Special Intelligence Report based on Curveball reporting, noting that while it could not confirm that Iraq had produced biological agents, "credible reporting from a single source suggest" that Iraq had done so.[28] Reliance on a single human source of intelligence, on occasion, can be very valuable, especially if that source has direct access to specific information and his or her judgment and performance have proven reliable in the past. Such was the case in the early 1960s with the information provided by Russian Colonel Oleg Penkovsky. For eighteen months he supplied U.S. intelligence with highly valued information, including information that enabled President Kennedy to deal effectively with the Soviet Union during the Cuban missile crisis of October 1962. Unfortunately, Curveball was not a credible source. Questions about his reliability were well known before the United States went to war with Iraq and he had no significant track record of good judgment or accurate reporting. Equally unfortunate, Defense Intelligence Agency human intelligence personnel made no attempt to determine Curveballs' veracity. In the end, unsurprisingly his reporting was found to be unreliable.[29]

Too Much Information

While the Intelligence Community is often confronted with a paucity of information, it is perhaps more likely to be confronted with a plethora.

Twentieth-century advances in transportation and communications technologies and in miniaturization, in missile and satellite technologies and the like greatly increased the information available to intelligence analysts. Hence, lack of information has not been the usual problem. For example, though the United States, according to President Nixon, was completely surprised by the simultaneous attacks by Syria and Egypt on October 6, 1973, the Jewish holy day of Yom Kippur, it was not for lack of intelligence. British historian Christopher Andrew has noted,

> …the sheer volume of SIGINT came close to swamping the system as analysts were faced with the classic problem of distinguishing the crucial signals pointing to the Egyptian-Syrian attack from the mass of distracting, and sometimes misleading, background noise.[30]

Later, a leaked report of the House select committee on intelligence chaired by Congressman Otis Pike concluded:

> NSA intercepts of Egyptian-Syrian war preparations were so voluminous—an average of hundreds of reports each week—that few analysts had time to digest more than a small portion of them.[31]

The problem has been further exacerbated in the late twentieth century. Information age technologies, especially the computer and the Internet, coupled with the collapse of the Soviet Union, have greatly increased global political, economic, and social activity, while improvements in information gathering, storage, and retrieval technologies have resulted in an exponential increase in the volume of data available to analysts. Today, one of the Intelligence Community's major challenges is to transform the "mountains of heterogeneous, noisy, and incomplete information into actionable intelligence. …"[32] To further complicate the task, information about a given issue of interest to policymakers is often "faint, subtle, and transient and imbedded in a myriad of databases maintained by separate agencies." And "[e]ach of these databases contains massive amounts of heterogeneous, incomplete, inaccurate, and even contradictory information, the overwhelming majority of which has no relevance to the task at hand."[33] They may even contain information deliberately planted by an adversary or a mischievous hacker to confuse, deceive, or deflect the attention of others.

For example, the Jeremiah report detailing causes for the Intelligence Community's failure to foresee India's May 11, 1998 nuclear tests noted that the nation's spy satellites typically produce far too much information for overworked and under-trained intelligence analysts to handle.[34] Similarly, as one looks back at the events leading up to the attacks of 9/11, paucity of information is not what comes to mind. Throughout 1999 there were many reports of possible attacks by bin Laden. Among the dozens of reports that flooded in were the threat to blow up the FBI building in Washington, D.C., and a possible threat to an airline flight from Los Angeles or New York.[35] By spring 2001 the level of information on possible terrorist threats and planned attacks increased dramatically. In March 2001 Richard Clarke, then National Security

Council counterterrorism coordinator, informed National Security Advisor Condoleezza Rice that he thought there were terrorist cells, including al-Qaeda, operating in the United States. Shortly thereafter, Rice was briefed on the activities of Abu Zubaydah, a senior al-Qaeda figure. In the weeks that followed, then Director of Central Intelligence George Tenet issued warnings that Abu Zubaydah was planning an operation in the near future. By May 2001 the "drumbeat of reporting grew louder," including a report by a "walk-in" to the FBI claiming that there was a plan to launch attacks on London, Boston, and New York. In mid-May there was a phone call to a U.S. embassy that warned of a possible attack by bin Laden supporters on the United States using "high explosives." Later that month was a report that terrorists might hijack an aircraft or storm a U.S. embassy. There were reports of possible attacks in Israel, Yemen, and Italy. By midsummer Saudi Arabia, Bahrain, and Kuwait were added to the list of warnings. In June there was a report that Khalid Sheikh Mohammed (who later confessed to having masterminded the 9/11 attacks) was recruiting people to travel to the United States to meet with colleagues already there in order to conduct terrorist attacks on bin Laden's behalf. Then there was the information that led to the late June advisory that there was a high probability of near-term "spectacular" terrorist attacks resulting in numerous casualties. Other reports warned of imminent attacks by bin Laden. In early July the CIA briefed Attorney General Ashcroft on al-Qaeda, warning that preparations for multiple attacks were in the late stages, if not already complete and that a significant attack was imminent. On August 6, in response to questions raised by President Bush on several occasions to his intelligence briefers as to whether any of these threats pointed to attacks on the United States, an article was inserted into the President's Daily (Intelligence) Brief titled "Bin Laden Determined to Strike in U.S." The article indicated that bin Laden had wanted to conduct terrorist attacks in the United States since 1997, had al-Qaeda members in the United States, was planning to exploit an operative's access to the United States to mount a strike, and that FBI information indicated patterns of suspicious activity in this country consistent with preparations for hijackings or other types of attacks.[36]

What is evident is that prior to the 9/11 attacks there was no dearth of information about the possibility of an attack, though some asked whether all these threats might be a deception. As then Director of Central Intelligence George Tenet later noted, "the system was blinking red."[37] What were missing were the specifics. There were no targets, no timing, or evident method of attack identified in the gathered information. And information that might have led to answers to some of those questions often found itself at the bottom of a pile of information, some of which related to information of more immediate concern to already overworked intelligence staffs, or were imbedded in databases maintained by separate agencies.

One evident example was the case, mentioned in Chapter 3, of the FBI agent in the Phoenix office who sent an "Electronic Communication" to FBI Headquarters expressing his concerns, based on firsthand knowledge, that bin Laden was sending students to the United States for civil aviation-related training and expressing his suspicion that this was an effort to establish a cadre of

individuals who might later engage in terrorist activity.[38] The Phoenix agent testified to the joint House-Senate intelligence committee on 9/11 noting:

> I understand that the people back at FBI Headquarters are terribly overworked and understaffed, and they have been for years.…I knew that this was going to be at the bottom of the pile…because they were dealing with real-time threats, real-time issues trying to render fugitives back to the United States.[39]

The Phoenix agent guessed right. His communication remained at the bottom of the pile and, presumably though in the FBI database, was not made available to other agencies at the time.[40] Nor did outside agencies have easy access to the FBI database.

Denial and Deception

The objective of denial and deception is to protect secrets. Denial is aimed at limiting the availability of information to insure that it does not fall into unwanted hands or to mislead the adversary. Denial comes in many forms. Among its more common forms are classification of materials, encryption, and jamming, all as a means to limit access to information, and camouflage, as a means of hiding information from view.[41] Camouflage is usually used to deceive an adversary by disguising what one does not wish the opponent to know. Army personnel wear battle dress uniforms that are designed to blend in with the background in which they are operating. Military personnel and equipment might be hidden from view by nets. Aircraft that frequently operate at low altitudes or land mobile missiles might be painted to match surrounding terrain in the area of operations. A bombed runway that has been repaired might be disguised to look like it remains cratered and therefore unusable. Chemical or biological warfare facilities might be designed to appear as just another facility for the production of pharmaceuticals or common use chemicals. These are all examples of denial.

Deception, on the other hand, is generally a more proactive effort. It generally involves deliberately attempting to lead an opponent to a false conclusion. Arguably camouflage may be considered by some to be a passive form of deception.[42] However, half-truths, outright lies, false messages, bogus codes, increased communications activity in order to suggest military activity in a particular location, and other forms of disinformation or misinformation are clear efforts to deceive. Both denial and deception play prominent roles in both intelligence collection and analysis. On the one hand, denial limits collectors on what they can report. However, often the absence of information, in and of itself, is information to analysts. On the other hand, deception is useful in providing false or misleading information in hopes that intelligence analysts will interpret it as true.

History is replete with examples of the skillful use of denial and deception. The first recorded example of deception was the Mycenaean Greek use of the "Trojan Horse." Prominent recent examples include Hitler's use of deception to

mislead Stalin prior to the German invasion of Russia in 1941; Japanese efforts to disguise preparations for attacks on U.S. military forces on Oahu in 1941; Soviet efforts prior to the Cuban missile crises of 1962; North Vietnamese and Viet Cong deception prior to the Tet offensive in 1968; Soviet deception prior to the invasion of Czechoslovakia in 1968; Arab efforts to conceal preparations for the 1973 war against Israel; and of course, Saddam's counterproductive deceptions that ultimately resulted in the March 2003 war and his downfall.

Perhaps the most celebrated use of deception in the last sixty-plus years was by the Allies in preparation for the invasion of Europe in 1944. As the month of June approached, the German's knew the Allies planned to invade Europe. The problem the Germans confronted was knowing where the Allies would invade. On the ground the Allies, with eight divisions, including three airborne, available for the initial assault, confronted fifty-nine German divisions in occupied France. If the German's were able to concentrate their forces against an Allied attack, there would be little chance for an Allied success. Ultimately, success depended on convincing the German's that the assault that was to take place at Normandy was only a feint to draw German forces away from their elaborate defenses around Calais, and thus weaken the German ability to defend against the supposed main attack that would come at Pas de Calais, the narrowest point in the English Channel. So convinced, the German's then might limit the forces positioned in Normandy, position the bulk of their forces to confront an impending attack at Calais, and delay the movement of German reserves to Normandy in a counterattack. To deceive the Germans, the Allies concocted an enormous ruse, codenamed "Operation Fortitude."[43] Across the Channel from Calais, they created a nonexistent 50-division force of over one million men, the First U.S. Army Group commanded by General George S. Patton. To add to the ruse the Army Group was replete with nonexistent units, inflatable rubber tanks and trucks, plywood vehicles and guns, false radio transmissions, and dummy landing craft and supported by all-night truck convoys supposedly delivering supplies and munitions and a papier-mache giant oil pumping head. This enormous force was to attack after the attack at Normandy. They also employed captured or defecting German agents to send back false information to German intelligence services and used controlled leaks of information through diplomatic channels.

Deception was greatly aided by "Ultra." Earlier in the War Britain had broken the code used by the Germans on their standard enciphering machine, Enigma. Information obtained, codenamed "Ultra," was used to determine how well the German's were taking the bait. If the Germans had bought on to the ruse, information could be planted that reinforced those beliefs. If there were doubts, additional information could be passed to the Germans to encourage them to believe the attack would come at Pas de Calais.[44]

The grand deception worked. Hitler, convinced that the attack would come at Pas de Calais, positioned his strongest forces in that region. When the Allies landed at Normandy, they were able to secure the beachhead and achieve a strategic advantage.

Intelligence professionals recognize that an opponent's use of denial and

deception can be a significant impediment to collection and analysis, and understand well that an opponent's successful use of denial and deception can swing the balance in its favor in peace and war.

Cognitive Bias

Perhaps the most insidious and pernicious impediment to successful analysis is what is often called the "mind-set problem." As with collection, analysis is all too frequently plagued by adverse effects of the personal biases and predispositions held by the analyst. As one former CIA deputy director for intelligence put it, "…intelligence is a profession of cognition…how we absorb and mentally process information coming to us."[45] Cognition is about how we come to know something. It involves not just the rational and intellectual processes of thinking, reasoning, and remembering, but also, in the first instance, the processes by which we filter the vast amount of information our senses confront in the world around us and how we interpret the filtered information. And those processes are largely shaped by our prior attitudes and beliefs, as well as our physical and psychological needs. They are also influenced by emotions, such as fear, anger, surprise, and acceptance, which have both evolved over thousands of years and are influenced by those attitudes and beliefs we currently hold, both consciously and unconsciously. Thus, for example, it is not surprising that Adolph Hitler chose nighttime torchlight parades and the drumbeat of rhetoric and marching boots to insure that his message was absorbed by those listening. Nor is it surprising that candidates for office in the United States like to have their picture taken with the American flag in the background and use bumper stickers that are in red, white, and blue to advertise their candidacy. For most Americans, the flag and its colors evoke positive emotions that candidates hope will be transferred to them. As noted earlier, cognitive bias is a normal part of human behavior. As such, it can never be completely eliminated from the analytical processes.

Nor perhaps should it. Many psychologists and cognitive scientists see cognitive bias as a distortion of reality. A more compelling case can be argued that cognitive bias is what defines reality. As a product of our past experiences and emotions, our cognitive biases shape the way we see things. Thus cognitive bias can have effects that are positive as well as negative. We develop attitudes and beliefs about phenomena around us based on our experiences. The more experiences we have, the more informed are those attitudes and beliefs. Moreover, emotions have served the human species well: alerting us in time of danger, for example, calming us in times of stress and providing adrenaline when situations dictate. Together these cognitive processes can frequently assist us in quickly interpreting events and screening the relevant from the irrelevant, and thus enable us to quickly focus our attention on what is essential or critical. Indeed, previously formed attitudes and beliefs coupled with emotions are the likely basis for quick and ready insight or what is commonly called "intuition." When time is lacking for investigation and reasoned analysis, intuition can be of great help, especially if it is informed by extensive knowledge of the issues at hand. Thus, the cognitive bias of highly experienced analysts can be of substantial initial assistance as they sort through the mountains of information with which they are confronted.

The truly pernicious side of cognitive bias is related to the insidious way it can undermine our capacity to think beyond our initial interpretations of a given situation. When the President's Commission on Weapons of Mass Destruction, for example, criticized the Intelligence Community for it lack of imagination in its failure to "even consider the possibility that Saddam Hussein would decide to destroy his chemical and biological weapons and to halt work on his nuclear program after the Gulf War,"[46] they were indicting the Intelligence Community for its inability to think "outside the box," so to speak. The Intelligence Community was not able to go beyond its predispositions, its biases, and think imaginatively. When it has been accused of engaging in mirror imaging, what the Intelligence Community was being criticized for was its predisposition to think that others would act in a given situation in the same way the United States would. When those investigating past failures of intelligence contend that the Intelligence Community engaged in "groupthink" or "wishful thinking," they were emphasizing their concern that the Intelligence Community fell back on what was comforting, what was consonant with their psychological needs, avoiding what potentially threatened those needs. In the case of "groupthink," perhaps it was the need to be a part of the group, to not stand out, especially if you might be wrong. Those of us who have spent years in government know well the power of the phrase "get on the team." In the case of "wishful thinking," perhaps it was to avoid the discomfort associated with confronting the cold realities of what might lie ahead should an alternative assessment be indicated. Here the "cold realities" might include the displeasure of superiors eager to please policymakers, or the wrath of policymakers themselves, who believe they "know" the answers, and are simply seeking confirmation before policy implementation.

Well-trained, highly disciplined minds frequently will recognize when bias is playing a role in analysis and can reduce its impact. Aware that, from the very selection of information upon which to focus during their initial analysis, their efforts have been shaped by their predispositions, disciplined analysts will actively seek information that challenges those predispositions. Equally aware that adversaries, through the use of deception and subterfuge, often seek advantage through exploitation of preconceptions, the disciplined analyst will test as many alternative explanations of events that the expansiveness of his or her mind and the extent of his or her contacts with others suggest. Unfortunately not all analysts are so disciplined or highly trained. On this Sherman Kent has commented:

> Some minds when challenged respond with a long-harbored prejudice, some with an instantaneous cliché. Some minds are fertile in the generation of new hypotheses and roam freely and widely among them. Other minds not merely are sterile in this respect but actively resist the new idea.[47]

Certainly, the history of intelligence failures bears witness to Kent's comments. Pearl Harbor in 1941, the 1973 Arab-Israeli War and, more recently, the intelligence analysis leading up to the 2003 U.S. invasion of Iraq are among the more noteworthy examples where analysis fell prey to the darker effects of cognitive bias, where unchallenged predispositions resulted in assumptions

about a potential adversary's behavior and a resultant rejection of contrary indicators or an unwillingness or inability to examine alternative hypotheses.

•*Pearl Harbor*, *1941.* In the early morning hours of "December 7, 1941—a date that will live in infamy—the United States of America was suddenly and deliberately attacked by naval and air forces of the Empire of Japan."[48] When the final count was over, 2403 Americans lost their lives. Another 1178 were wounded. Five battleships, three destroyers, three cruisers, and 188 aircraft were destroyed. The attack crippled America's Pacific Fleet and left the United States with insufficient military power in the region to retaliate for more than a year. Though there had been indications of an impending Japanese attack somewhere in the Pacific region, the attack on Pearl Harbor came as a total surprise. Our forces had not been placed on heightened alert. No torpedo nets protected the harbor. No scout aircraft were airborne. Antiaircraft weapons were not manned. Most munitions were stored. Army Air Corps aircraft were parked wingtip to wingtip to protect against sabotage not air attack.

Of course, many factors contributed to the inability of American intelligence to foresee such a well-prepared, well-practiced attack. Undoubtedly, as suggested by Roberta Wohlstetter, in her famous 1962 study of intelligence failures preceding the attack, some very significant information was lost in the background noise of communications traffic and signals,[49] Certainly, the absence of a centralized system of intelligence assessment played a role, resulting in the President receiving multiple and frequently differing assessments of the situation.[50] Other factors such as a lack of trained analysts, the underresourcing of the various intelligence providers, the absence of a single analysis of all available evidence, and interservice rivalry played a role.[51] Perhaps if President Roosevelt had shown more interest in Signals Intelligence or if the U.S. Navy had done so and had assigned an adequate number of cryptanalysts to work on breaking the Japanese Naval code (JN25b), which was introduced in 1940, the attack could have been foreseen.[52] And, of course, Japan employed deception. For example, the Japanese task force rendezvoused off of remote northern islands where it was unlikely to be noticed, even by Japanese citizens, Aware that others would notice the absence of Japanese aircraft carriers and other capital ships from the normal port locations, deceptive communications were employed to create the impression that the task force was training off Kyushu, the southernmost of Japan's four main islands.[53]

However, perhaps the single greatest failing was that the United States fell prey to its predispositions. It didn't think the Japanese could or would engage in a direct and deliberate attack on the military forces of the United States. In an article adapted from an award-winning monograph and published in conjunction with the 50th anniversary of the Japanese attack on Pearl Harbor, Harold Ford noted that despite mounting evidence to the contrary,

- there was a predisposition in the Army Command at Pearl Harbor to view the Japanese threat as one that would probably arise primarily from sabotage, not air attack;

- the prevailing belief in top military circles before the attack, with a few notable exceptions, was that the chances of a Japanese air attack on Pearl Harbor were "negligible" and "very remote"; and
- that Pearl Harbor's waters were too shallow to permit the Japanese to launch aerial torpedo attacks; and
- if the United States did not have such a capability; then the Japanese did not."[54]

Such attitudes, undoubtedly, were a reflection of the views held in the United States about the Japanese, which included racial prejudice and cultural arrogance, coupled with limited knowledge and understanding of Japan and the Japanese military, and more than a modicum of mirror imaging. Many thought "the Japanese people lacked inventive powers." "They could imitate but not innovate." "Their arms were no more than copies of Western models. Japan's industry could not turn out a durable product."[55] And finally, since under similar circumstances the United States would not go to war, then Japan, because of her limited industrial and military capability, would never engage in a war against an enemy it could not hope to defeat.

So captive of its cognitive biases, the United States could not bring itself to believe that the "little yellow men," as Churchill sometimes spoke of them and Roosevelt thought of them, were capable of such an astonishing feat of arms.[56] When General Douglas MacArthur first heard of the attack, he insisted that the pilots must have been white mercenaries.[57]

•*Arab–Israel War*, *1973.* Following the Israeli victory in the 1967 War with Syria and Egypt, Israeli Defense Minister General Moshe Dayan was asked how the Israeli Defense Forces were able to defeat three armies in six days. What was their secret? His answer: "*Fight Arabs*." In other words, the Arabs don't have a military culture and therefore they can be easily defeated in combat.[58] Israeli Chief of Staff Haim Bar-Lev, reflecting the same mind-set declared in 1970: "The Arab soldier lacks the characteristics necessary for modern war."[59] The speed with which Israel forces handily dispatched the numerically greater Arab force in what became known as the "Six Days' War" no doubt contributed to the Israeli sense of superiority manifest in the Dayan and Bar-Lev comments.

At approximately 2 PM on October 6, 1973, Egypt and Syria launched a coordinated attack against Israel, which resulted in one of the most intense and devastating conflicts since World War II. The Arab attacks caught the Israelis by surprise. On the eve of the attack, Israeli intelligence reported that war was unlikely. Major General Eliyahu Zeira, chief of Israeli Intelligence, was convinced that Egypt and Syria, which had deployed to the Golan Heights and along the Suez Canal, were only conducting routine training and engaged in saber rattling and would not attack.[60] Indeed, Major General Shmuel Gonen, commander of Southern Command,[61] received an intelligence evaluation two days before the war began that the possibility of war was "the lowest of the low."[62] How could the Israelis, regarded to have one of the world's best intelligence services, have been caught so off-guard?

There were many factors suggesting conflict. Many Arabs continued to feel the humiliation of the disastrous defeat of 1967. Egyptian president Anwar Sadat believed that in order to solve Egypt's political, economic, and military problems it was necessary to restore Egypt's self-confidence and the respect of the world community. To do this it would be necessary to "wipe out the disgrace and humiliation [of 1967]."[63] In 1971 Sadat began seeking arms and ammunition from the Soviet Union. That same year he began to "beat the drums of war." In January 1973 Syria signaled its interest in military action against Israel, entering into negotiations over combined military operations against Israel. In February Egypt and the USSR concluded the largest arms "deal" ever and deliveries of surface-to-air, and surface-to-surface (SCUD) missiles and other munitions and equipment began immediately. Sadat approached Jordan's King Hussein in an effort to bring him into the alliance with Syria.[64] Surely, Israeli intelligence was aware of most, if not all of these efforts. Furthermore, in the month before the attack, Syria began moving forces to the Golan Heights bordering Israel. And, Egypt began calling up its reserves and, on six occasions, maneuvered combat forces up to the Suez Canal in elements as large as divisions.

Yet, a degree of uncertainty remained. Signals throughout this period were mixed. In February 1971 Sadat had launched a "peace initiative."[65] In July 1972, distressed by Soviet delays in the delivery of weapons, Sadat sent packing the 15,000 Soviet military personnel and technicians that were present in Egypt and began making conciliatory gestures toward the West. Moreover, as war approached, Egypt and Syria were extraordinarily adept at deception. In May 1973 the Egyptians, contending that they needed equipment for a fire brigade, purchased powerful, turbine-driven water canon from a West German manufacturer of fire-fighting equipment. The equipment actually would be used to cut through the ramparts on the sides of the Suez Canal so Egyptian forces could cross. Even in mid-September, as the Egyptians and Syrians began to assemble their forces, few Israelis were worried. For the past ten years, except in 1967, the Egyptian Army had held maneuvers every autumn and had moved forces up to the Suez Canal so regularly that there was nothing in the movements on the eve of the attack to necessarily lead to the conclusion that war was imminent.[66] In fact on the morning of the attack Egyptian forces lounged and sunned themselves along the canal.[67] On the Golan, Syria's methodical buildup of forces was seen as a response to recent Israeli air raids into Syria. Claiming concern over the possibility of an Israeli attack, the Syrians deployed their armor in full view of Israeli observation posts in what appeared to be defensive positions—hull down, dug in to resist assault rather than mount one, with medium artillery placed to cover Syrian territory, not Israeli.[68] The Egyptians added to such deceptions through cleverly planted rumors—about poor maintenance of Egyptian weapons systems, that Egyptian forces could not properly operate the Surface-to-Air (antiaircraft) Missiles (SAMs) acquired from the Soviet Union, and there had been a falling-out between Egypt and Syria.[69]

However, it wasn't the uncertainty, the mixed signals, the clever deception on the part of the Egyptians and Syrians so much as Israeli preconceptions,

prejudices, and mirror imaging, wishful thinking, that is, cognitive biases, call it "mind-sets" if you will, that led to the Israeli intelligence failure. "Past military successes led to a certain amount of hubris" and an Israeli belief that their inherent superiority would serve as an adequate deterrent to an attack by their Arab neighbors.[70] Indeed, "an attitude of disdain for Arab military capability had etched itself insidiously into the national psyche."[71] Less than two months before the attack, Moshe Dayan reportedly told the Staff College of the Israeli Defense forces, "the balance of forces is so much in our favor that it neutralizes the Arab considerations and motives for immediate renewal of hostilities.[72] Thus, Israeli intelligence was vulnerable to the cleverly devised campaign of deception. Particularly as conflict approached and warning signs increased, the Israelis interpreted Egyptian troop movements as training exercises or saber rattling and were inclined to accept the Syrian explanation for the disposition of its forces in the Golan. Neither Egypt nor Syria would be so foolish to attack such a superior enemy, an enemy they could not defeat. The Israelis refused to contemplate that the Egyptians and Syrians might measure success in ways that differed from their own, that rather than defeating the Israelis, their strategy might have contemplated limited military action followed by political pressure to compel recovery of the occupied territories.[73]

Moreover, the United States reinforced the overall Israeli assessment. Then Secretary of State Henry Kissinger, looking back on the events of October 1973, has commented that our erroneous assumptions about Egyptian and Syrian views of Israeli military superiority resulted in "an intelligence failure" that grew out of "our mindset."[74] On this Christopher Andrew has added:

> The root cause of the [U.S.] intelligence failure…was that, at all levels in Washington from the president to junior analysts, the Egyptians and Syrians were not thought capable of the offensive that they launched on October 6.[75]

More to the point, Abraham Robinovich writes:

> The intelligence chiefs believed they knew a deeper truth…that rendered irrelevant all the cries of alarm going on around them. Zeira and his chief aides were to demonstrate the ability of even brilliant men to adhere to an *idée fixe* in the face of mountains of contrary evidence. Explaining away every piece of information that conflicted with their thesis, they embraced any wisp that seemed to confirm it.[76]

This was "Cognitive Bias" at its best.

•*Iraq 2002–2003.* In its examination of the intelligence failures preceding the 2003 U.S. attack on Iraq, the President's Commission on Weapons of Mass Destruction concluded "that the Intelligence Community was dead wrong in almost all of its pre-war judgments about Iraq's weapons of mass destruction."[77] In the "Overview of the Report" the commission noted:

> On the brink of war, and in front of the whole world, the United States government asserted that Saddam Hussein had reconstituted his nuclear weapons program, had biological weapons and mobile biological weapon production facilities, and had stockpiled and was producing chemical weapons. All of this was based on the assessments of the U.S. Intelligence Community. And not one bit of it could be confirmed when the war was over.[78]

How could this have occurred? The Intelligence Community's prewar assessments of Iraqi weapons of mass destruction did not occur in a vacuum. Rather they were grounded in the Intelligence Community knowledge about Iraq since before the 1991 Gulf War and dating at least as far back as the Iran–Iraq war of 1980–1988. For example, it was well documented that Iraq had used chemical weapons in its war with Iran: indeed, perhaps with targeting assistance from the CIA.[79] Information also was available that Iraq had imported, under licensing agreements with the United States, potentially "dual use" (i.e., pharmaceutical and/or weapons use) biological agents, including anthrax bacillus and other biological research materials from the United States.[80] Moreover, there was evidence that Iraq had undertaken efforts to develop its nuclear capability since the 1960s. In 1981 Israeli aircraft attacked and crippled the light-water reactor at Osirak to prevent the Iraqis from using the reactor for the creation of nuclear weapons.

Following the 1991 Gulf War, UN inspectors were deployed to Iraq to monitor Iraqi compliance with UN Resolution 687, which confirmed the end of the war and established an inspection regime designed to preclude the future development of Iraqi chemical, biological, and nuclear weapons and missiles with ranges greater than 150 kilometers.[81] Two teams were deployed. The United Nations Special Commission was charged to monitor compliance with the removal and destruction of chemical and biological weapons and missile capabilities. International Atomic Energy Agency personnel had similar responsibilities related to Iraqi nuclear weapons programs. What UN inspectors found out, and the Iraqis later admitted, was that prior to the 1991 war Iraq had been trying to enrich uranium. More significantly, International Atomic Energy Agency's chief inspector David Kay found an Iraqi paper describing their planned nuclear weapons program.[82] Indeed, the U.S. Intelligence Community was surprised to discover the extent of Iraq's nuclear weapons program, which indicated that Iraq had been much closer to developing a nuclear weapon than anyone expected.[83] Indeed, following his defection to Jordan in 1995, one of Hussein's sons-in-law and the Minister of Industry, General Hussein Kamal, reported that he had ordered a crash program to develop a nuclear weapon in August 1990.[84]

Following Kamal's defection, Iraq also admitted that prior to the 1991 war it had a program to develop biological weapons, had produced large quantities of a bulk biological weapons agent, and had actually produced biological weapons.[85] Such an admission was even more troubling in light of the fact that throughout the post-1991 war period not only were there discrepancies between what Iraq

was reporting on the number of chemical weapons they had destroyed and what UN Special Commission could actually verify, but UN inspectors were also confronted with increasing Iraqi intransigence.[86] A common practice of the Iraqis was to conceal information or procrastinate on the delivery of information. More significant, however, was the denial to UN inspectors of access to certain sites or delaying entry while vials, diskettes, documents, and the like could be removed or concealed.[87] In July 1998 a group of international biological experts concluded the Iraqi declaration of its biological weapons program was not verifiable.[88] In August 1998 the Revolutionary Command Council and the Ba'ath Party command decided to end cooperation with International Atomic Energy Agency and the UN Special Commission until the UN Security Council lifted sanctions and reorganized and moved the Special Commission to Geneva or Vienna. In December, then chairman of the UN Special Commission Richard Butler submitted a report to the Security Council, concluding:

> Iraq had not in fact provided the full cooperation it promised…that the Commission is not able to conduct the substantive disarmament work mandated to it by the Security Council and thus, to give the Council the assurances it requires with respect to Iraq's prohibited weapons programmes.[89]

Finally, in mid-December 1998, in anticipation of Operation Desert Fox bombings by British and American forces in response to Iraq's continued failure to comply with UN Security Council resolutions and its interference with UN inspections, inspectors were withdrawn.[90] They did not return for four years. Freed of the constraining influence of UN inspections, Saddam Hussein would have an opportunity to reconstitute his chemical, biological, and nuclear weapons programs should he chose to do so.

In 1999 "small streams" of intelligence began to appear that suggested that Iraq might be restarting its biological warfare program. Among the key reports were: a foreign source reported that two large companies were involved in the production of nerve gas; a report from a source with "good but historical access" contending that, as of 1998, Iraq was producing mustard and binary chemical agents; and another report from a defector, who contended that he was an expert on VX nerve gas production, claimed Iraq was producing "tons" of nerve agents in mobile laboratories. In September 2002, a liaison service also reported that a senior Iraqi official had indicated that Iraq was producing and stockpiling chemicals weapons and imagery data suggested transshipment activity associated with chemical weapons.[91]

In early 2002 there was a "substantial volume" of "new information" regarding Iraq's biological warfare programs from a source codenamed Curveball. Reports claimed that Iraq had several mobile production facilities and that one of those units had begun production of biological warfare agents. Reports from three additional sources confirmed the existence of mobile facilities.

As for the reconstitution of Iraqi nuclear program, following the overseas

seizure of a ship bound for Iraq, the Intelligence Community obtained samples of high-strength tubes made of an aluminum alloy and in March 2001 reported its findings. Some specialists believed the tubes most likely were for centrifuges for enriching the uranium needed for nuclear weapons.[92] In late 2001 and early 2002 the Intelligence Community received three reports from a foreign liaison service that Iraq was seeking to procure uranium ore and yellowcake and that "Niger planned to send several tons" of yellowcake to Iraq. Yellowcake, a uranium concentrate, is an intermediate step in the processing of uranium ore and is used in the preparation of fuel for nuclear reactors. Yellowcake can also be refined to bomb grade material needed in the production of nuclear weapons. One report received from a foreign intelligence service was that in meetings between the Iraq ambassador to the Vatican and Niger officials an agreement was signed for the sale of 500 tons of uranium.[93] In mid-October 2002 a copy of a letter was delivered to the U.S. embassy in Rome written in French, addressed to Saddam Hussein. The letter approved the sale to Iraq of 500 tons a year of pure uranium, which according to nuclear weapons specialists could produce about 10 nuclear weapons a year if properly refined. Mamadou Tandja, president of Niger in 2000, purportedly signed the letter.[94]

Given such a backdrop, it is unsurprising that as the situation began to escalate into a crisis following 9/11, initially one might be predisposed to believe indeed that Saddam Hussein had something to hide and Iraq might well have clandestinely embarked on efforts to reconstitute its chemical, biological, and nuclear weapons programs. However, as war drew closer and policymakers charged the U.S. Intelligence Community to provide them with all the Community knew about Iraq's nuclear, biological, and chemical weapons programs, there was other, often clarifying, sometimes contradictory information available to Intelligence Community analysts, which included the following:

- In addition to reporting that prior to the 1991 war he had ordered a crash program to develop nuclear weapons, General Kamal also reported that *all chemical and biological weapons had been destroyed* on his orders in 1991.[95]
- "The long period of inspections from 1992 to the end of 1998 had yielded much insight into Iraqi weapons programs but *no significant finds of hidden weapons* [emphasis added]." This was even more significant given the techniques and tools developed during this period, not the least of which included environmental sampling that had advanced to a point where "even small particles found in installations or equipment or in the air could yield information about past presence of nuclear, chemical, or biological material."[96]
- Of the earlier "small stream" of reports on Iraq's biological warfare capabilities, none was considered "highly reliable" and only six were considered "moderately reliable." The "substantial volume" of "new information," beginning in 2000 and increasing significantly in 2002, was largely from a single source codenamed "Curveball." Yet *doubts about Curveball's reliability* arose within the CIA's Directorate of Operations as early as May 2000. By early 2002 the foreign intelligence service handling

Curveball sent a message to the CIA noting that Curveball's behavior was typical of individuals who they would normally assess as fabricators, and inconsistencies in his reporting have caused them "to have doubts about Curveball's reliability."[97] Of the three other sources that provided reports that seemingly corroborated Curveball's contention that Iraq had developed mobile labs for the production of biological agents, one source, a member of the Iraqi National Congress had been judged a fabricator in early 2002. The other two also proved problematical.[98]

- The National Ground Intelligence Center, a component of the U.S. Army and recognized as national experts on conventional military systems, largely discounted the notion that the aluminum tubes might be used for rocket bodies rather than for nuclear uses. The Department of Energy, the U.S. government's primary experts on nuclear matters, concluded that although the tubes "could be used to manufacture centrifuge rotors," they were "*not well-suited for centrifuge application" and were more likely intended for use in Iraq's 81 millimeter Multiple Rocket Launcher program* [emphasis added]. The International Atomic Energy Agency agreed with this assessment.[99]
- At the request of Vice President Cheney, the CIA sent Ambassador Joseph Wilson to Niger to ascertain whether reports of Iraqi attempts to procure yellowcake could be substantiated. In early March 2002 Ambassador Wilson informed the CIA that he "had found nothing to substantiate the rumors" of Iraq's efforts to purchase yellowcake. In addition, according to Wilson, there were two other similar reports filed, one by American ambassador to Niger Barbro Owens-Kirkpatrick and the other by General Carlton Fulford,[100] who as Deputy Commander of European Command had military responsibility for forty-two countries in Africa, including Niger. The Owens-Kirkpatrick report presumably was what led the State Department Bureau of Intelligence and Research on March 1 to conclude that the Niger sale of uranium to Iraq was unlikely. Moreover, after receiving the documents presented to the U.S. embassy in Rome in October 2002, which seemingly confirmed the Niger sale of "yellowcake" uranium to Iraq, the State Department Bureau of Intelligence and Research alerted the Intelligence Community that it had serious doubts about their authenticity.[101]
- Finally, following their reentry into Iraq on November 17, 2002, UN inspectors, having the best information the United States and other states were willing to provide about possible locations of weapons of mass destruction or their precursors, could find no evidence that Iraq had reconstituted its biological, chemical, or nuclear weapons programs.

Thus the question remains: Why did the Intelligence Community fail so miserably in its assessment of Iraqi weapons of mass destruction programs? How could it have continued to hold fast and so assuredly to the view that Iraq had reconstructed its biological programs, including the use of mobile labs to develop biological agents? How could it have supported the notion that Iraq had reconstructed its nuclear weapons program based on, as the October 2002 National Intelligence Estimate put it, the "compelling evidence" provided by

Iraq's aggressive pursuit of high-strength aluminum tubes?[102] How could it have ignored the fact that UN inspectors on the ground in Iraq could find nothing? Why did the Intelligence Community engage in "mirror imaging," assuming that Saddam would act as we would under similar circumstances and only make it difficult for inspectors to verify his compliance with the 1991 agreement to destroy his weapons of mass destruction, if he had something to hide? Why did the Intelligence Community fail to imagine that domestic and regional pressures or other political or psychosocial factors might have prompted Saddam Hussein to destroy his stockpiles of prohibited weapons, yet continue to make it difficult for inspectors to verify that he had done so, or that Saddam might have concluded that uncertainty about whether Iraq had weapons of mass destruction or not might serve as a deterrent to any future attack by the United Sates or others?

Perhaps it was because the Community did not want to make the same error of underestimation it had before the 1991 Gulf War. On this the President's Commission on Weapons of Mass Destruction concluded:

> Th[e] humbling discovery that Iraq had successfully concealed a sophisticated nuclear program from the U.S. Intelligence Community exercised a major influence on the Intelligence Community's assessments throughout the early 1990s and afterwards.[103]

Surely there were other factors also at play. Information was indeed scarce. As it turned out, of course, this was because there were no weapons of mass destruction programs. Perhaps it was the pressure of events. Troops had been deployed to the region. Hot weather was on the way. Decisions had to be made or troops would bake in the desert. Perhaps the political environment played a role. Policymakers don't like the word "maybe." Rather, they prefer a definitive answer, especially if it supports a policy they seek to pursue. On the other hand, operating in an environment in which essential information is often unavailable, analysts can seldom respond definitively. Uncertainty is frequently the coin of the realm. Thus, while analysts feel compelled to communicate uncertainty where it exists so that policymakers will have an unadulterated basis upon which to address policy alternatives, they often feel pressured to provide more definitive answers.

Most assuredly, the failure was driven by a failure within the Intelligence Community, from top leadership levels to analysts, to adequately challenge their own predispositions. Given Iraq's past history of producing chemical and biological weapons and its inability to account for previously declared stockpiles, and given that Iraq had effectively concealed its nuclear program prior to the 1991 Gulf War, analysts operated from the initial premise that it was very likely that Iraq still possessed chemical and biological weapons, was hiding them from inspectors, and continued to seek to rebuild its nuclear weapons program. However, as the President's Commission on Weapons of Mass Destruction noted:

> The analytical flaw was not that this premise was unreasonable (for it was not); rather, it was that the premise hardened into a

> presumption and analysts began to fit the facts to the theory, rather than the other way around.[104]

The commission went on to note that it "appears that in some instances analysts' presumptions were so firm that they simply *disregarded* [emphasis in original text] evidence that did not support their hypotheses."[105]

In short, as the nation approached war with Iraq, the critical analysis demanded was sidetracked by cognitive biases. Call them assumptions, predispositions, mind-sets, or groupthink, mirror imaging, or lack of imagination—they all are products of cognitive bias.

"Worst Case" Analysis

Though truly a subset of the mind-set problem, worst-case analysis, because it can so insidiously undermine sound analysis, deserves special mention. Richard Betts has written:

> A common reaction to traumatic surprise is the recommendation to cope with ambiguity and ambivalence by acting on the most threatening possible interpretation. If there is *any* evidence of threat, assume it is valid, even if the *apparent* weight of contrary indicators is greater. [emphases in original text][106]

Given Russia's history of invasions by Cumans, Mongols, Swedes, Teutonic Knights, Lithuanians, Crimean Tartars, Poles, French, and Germans—twice in the last century, it is likely Russian Cold War policies were heavily influenced by a desire to not experience any such traumas in the future. Likewise, there is little doubt that in the United States thinking at all levels of government was influenced by the events of December 7, 1941. When addressing issues of Soviet strategic nuclear capabilities or Soviet military capabilities in Europe, from policymaker to analyst there was a singular determination not to be caught by surprise yet again. More recently, the traumatic events of 9/11, proved to have had a lingering effect on the mind-sets of analysts as they engaged in assessments of Iraqi weapons of mass destruction.

The general assumption that it is better to overestimate an adversary's capabilities or intentions than pay the price of underestimating is, in many respects, completely understandable and justifiable. Yet worst-case analysis can have truly pernicious effects. It can be extremely costly and counterproductive. For example, as opponents seek to procure armaments to offset what they perceive as the worst-case trajectory of each other's force structures, armaments costs can spiral upward. Moreover, increases in armaments may threaten to produce a more intensive and/or extensive conflict and thus actually provide for less security rather than more. Increases in arms expenditures also may well result in an increase in mutual suspicions, which in turn feed the next round of worst-case analysis. Worst-case analysis, oft-repeated, also can dull the senses, lulling one side or the other into a false sense of security. Analysts can only "cry wolf" a limited number of times, especially if there are significant costs in responding, before no one listens. Betts notes, for example, between

1971 and 1973 the Egyptians engaged in three exercises similar to those that led to the 1973 Arab-Israeli War. In each case Israel, at great cost, mobilized in response, and nothing happened. As a result, the Israeli Chief of Staff was sharply criticized for the unnecessary cost. Betts also notes that General Westmoreland recalls that U.S. headquarters in Saigon had predicted each year a winter-spring offensive, without any dire results. In ignoring the warnings Westmoreland received prior to the Tet offense in 1968 the inevitable question was: What's new?[107]

Worst-case analysis also can thwart efforts to resolve differences with others through negotiation, with each proposal offered by the opponent interpreted in its worst light, it is likely to be difficult to find solutions that will satisfy all alternative worst-case scenarios. It may even be difficult to get negotiations underway. Worse-case analysis might well suggest to either or both sides that efforts to negotiate are futile, since the other side would only accept a solution that provided it with an advantage. Worst-case analyses can also lead to unwarranted and unwanted conflicts.

Among other things, the tendency to favor worst-case analysis may well have played a role in inviting only tepid efforts to seek alternative hypotheses as explanations for Saddam's unwillingness to cooperate with UN inspectors, who then could clearly establish that Iraq had truly eliminated its biological and chemical weapons and had not attempted to reconstitute any programs involving the acquisition of weapons of mass destruction. As the President's Commission on Weapons of Mass Destruction noted, following the Gulf War of 1991 the Intelligence Community had been traumatized by "the humbling discovery that Iraq had successfully concealed a sophisticated nuclear program."[108] This had a major influence on Intelligence Community assessments of Saddam's biological, chemical, and nuclear programs. Add to that the trauma resulting from its failure to uncover the 9/11 plots and you have the ideal mixture for worst-case analysis, the result of which was an unwarranted and, to many today, unwanted war.

Competence

The issue of "competence" means many things to many people. For example: "His knowledge and experience equipped him with the competence to render an assessment of the situation." Or, "Though he was well-trained and knowledgeable, his assessment reflects an absence of competence." In the first case the judgment of competence was based on the individual's level of knowledge and experience on a given subject. Let us call this Type A competence. In the second case the word "competence" was used to denote his level of skill in applying his knowledge and experience or Type B competence. Intelligence services are frequently confronted with issues associated with Type A competence. Changing threats, personnel turnovers, and lack of personnel to cover the variety of tasks are among the problems that can lead to a failure of Type A competence. Type B competence is usually the result of a failure of the mind to merge knowledge and experience with an understanding of the current situation and its level of seriousness and to engage in the effort required in order to make timely and effective decisions based on the information at hand.

Of the two types of competencies, Type B is by far the more problematical. Both types are susceptible to improvement through education and training and the close monitoring and mentoring of supervisors. However, the potential for Type B failure is less easily identifiable and frequently is the unnoticed impediment to effective analysis. For example, if a person has never worked Middle East issues, it is usually obvious to all that there will be a need for some period of education to provide at least a basic level of country, area, and issue competence. On the other hand, Type B competence is more difficult to identify. Unfortunately, often it can only be identified ex post facto. In the intelligence business Type B failures frequently go under the euphemism "failure to exercise good tradecraft" and are often disguised and/or accompanied by other factors that affect one's judgment. Several recent examples stand out as excellent illustrations of this obstacle to successful analysis.

- The Intelligence Community's case in support of the contention that Iraq not only had reconstituted its biological weapons program, but was also producing biological agents in mobile labs largely rested on the reporting of Curveball. Yet, Defense Intelligence Agency personnel did not attempt to validate Curveball's reporting—"a major failure in operational tradecraft."[109]
- The Intelligence Community's judgment about Iraq's nuclear program hinged chiefly on an assessment about Iraq's intended use of high-strength aluminum tubes it was seeking to procure. This error was, in the final analysis, "the result of poor analytical tradecraft—namely, the failure to do proper technical analysis.…"[110]
- The Intelligence Community failed to authenticate the documents regarding an alleged agreement for the sale of uranium yellowcake from Niger to Iraq.[111]

Thinking Strategically

Effective analysis requires that analysts think strategically as well as tactically. They must not only be able to identify what are the known facts in a given situation and be able to separate them from their own presumptions and those of others, but also understand the concerns that their country has about the given situation in the context of their country's broader concerns and its short-, medium-, and long-term objectives. But this is just a starting point. Analysts must also have a firm understanding of the tactical and strategic objectives of the other parties involved, as well as their short- to long-term concerns. All this is essential if they are to be able to place the information they receive in its proper perspective and thus provide policymakers with the intelligence required to craft policy alternatives. For Example, Douglas MacEachin noted:

> …some historical studies have…concluded that the more fundamental shortfall that led to the surprise attack on Pearl Harbor was the strategic intelligence produced in the preceding year. [These studies] cite information going back well before the summer of 1941 that revealed that Japanese imperial aspirations in the pacific region were already in conflict with U.S. interests there, and that these were

> taking Japan on a path that could result in a military confrontation. According to this interpretation, it was the U.S. failure to absorb this strategic risk fully that resulted in military forces' and intelligence resources' unpreparedness, their failure to give priority attention to intercepted communications that suggested that some significant action by Japan was imminent.[112]

Certainly a case can be made that the inability to think strategically was one of the factors that led to the intelligence failures leading up to 9/11. The FBI's Assistant Director for Counterterrorism acknowledged:

> We will never move away from being reactive. We understand that. And that's what people want to talk about most of the time is how's that case going in East Africa, or how's the *USS Cole* investigation going? But if you step back and look at it strategically you need to have people thinking beyond the horizon and that's very difficult for all of us. It's particularly difficult for law enforcement people.[113]

The lack of emphasis on strategic thinking was also evident at the CIA. The former chief of the CIA's Counterterrorist Center testified before the joint House-Senate 9/11 committee:

> We have under-invested in the strategic only because we've had such near-term threats. The trend is always toward the tactical.…The tactical is where lives are saved. And it is not necessarily commonly accepted, but strategic analysis does not…get you to saving lives.[114]

There is little doubt that many factors are at play that limit the time and inclination to think strategically. Over-tasking, shortages of personnel, what counts for promotion, and demands of policymakers for current intelligence and its corollary, the prospect of face time with the policy pachyderms, are among the many. Nevertheless, reflecting on the intelligence failures of 9/11, former Director of Central Intelligence George Tenet underscored the importance of strategic thinking:

> [T]he single lesson learned from all of this is the strategic analytical piece of this has to be big and vibrant to give you the chance to be predictive, even when you don't have much information to go on.[115]

Politicized Analysis

Chiseled over the main entrance to CIA headquarters in Langley, Virginia, are the words: "And ye shall know the truth and the truth shall make you free." There is no greater service that analysts within the Intelligence Community can provide the nation's policymakers than objective, thoughtful intelligence, untainted by the personal preferences of supervisors or those of the policymakers themselves. In accomplishing this task it is, of course, paramount that the analyst clearly understand policymaker needs. Understanding those needs requires a dialogue between analysts and their supervisors and

policymakers. However, there is a danger in the latter that often threatens the former. Thus, analysts and their supervisors, all the way up to the Director of National Intelligence, should not get so close to policymakers that judgments become "politicized." In short, they should not "become part of the team." It is difficult to measure the magnitude of the politicization problem, though it is likely that the large majority of analysts, as well as their supervisors, are strongly committed to objective analysis. However, on occasion and sometimes with significant adverse consequences, intelligence can and does get politicized.

Politicization of analysis "involves the deliberate distortion of analytical judgments to favor a preferred line of thinking irrespective of evidence."[116] It can occur in several ways. For example, intelligence products can be forced to conform to policymakers' views or to the pressures by management to define and drive certain lines of analysis and substantive viewpoints. It can occur more subtly as a product of efforts on the part of management or policymakers to encourage changes in tone or emphasis or limit the expression of alternative viewpoints made during the normal review or coordinating processes.[117] Or analysts themselves may intentionally skew their views "in order to support the options or policy outcomes preferred by policymakers." Such actions may stem from a variety of motives, including "an effort to be supportive, career interests, or outright pandering."[118] Finally, "analysts have sometimes gone overboard to prove the policymaker wrong."[119] Some years ago, then Deputy Director of Central Intelligence Robert Gates noted: "there is sometimes a strong impulse on the part of intelligence officers to show that a policy or decision is misguided or wrong, to poke an analytical finger in the policy eye."[120]

There is yet another avenue open to the politicization of analysis: that is, the careful manipulation of minds by policymakers through repetitive explanations of events, sometimes reinforced by a compliant press, the consistent discrediting of alternative explanations, and persistent expressions of unadulterated certainty concerning their own conclusions. All of this is intended to affect the development or reinforcing of "conventional wisdoms" about a given situation or series of events, and to shape, at least in part, the body of supposed knowledge available to the public and Intelligence Community analysts and to suppress alternative explanations.

The problem of politicized intelligence predates recorded history. More recently, during the Cold War, concerns that intelligence was politicized were expressed, for example, over reporting of the missile gap of the late 1950s, during the Vietnam War, particularly with regard to reporting on Viet Cong strength, and about the infamous "Team B" findings expressed in the National Intelligence Estimate on Soviet strategic objectives commissioned in 1976.

Following his confirmation as Director of Central Intelligence in 1991, Robert Gates appointed a task force to examine the issue of the politicizing of intelligence. The task force reported that half of those interviewed in the CIA Directorate of Intelligence said, "forcing intelligence to conform to a view higher up the chain of command occurs often enough to be of concern."[121] Indeed, during his confirmation hearings, several intelligence analysts accused Gates

himself of politicizing intelligence while serving as Deputy Director of Intelligence under Director William Casey.[122] In 1985 Gates had a meeting with Casey. Casey, not one to divorce himself from politics,[123] expressed the view that the Soviet Union had been behind the 1981 attempt to assassinate Pope John Paul II. Following the meeting, Gates commissioned a paper that was to assemble all the evidence the CIA had that supported the view that the Kremlin was in fact behind the assassination attempt.[124] Nor was former Director of Central Intelligence (1966–1973) Richard Helms, according to some in the CIA, loath to overlay intelligence with politics. Though Helms is reported to have rarely entered the fray until a deadline was looming. "At that point he would often approve one version or another without much by way of explanation, editing out inconvenient information and making other decisions that some saw as arbitrary. Others saw it as cooking the books to [President] Johnson's taste."[125] Later on during his term as Director of Central Intelligence, as the United States was preparing to secretly invade Cambodia and interdict supplies funneled from China through Cambodia to Vietnam, Helms decided not to pass on to the President a CIA report that warned of dangers of invading Cambodia. Helms said he didn't pass the information on because President Nixon and his advisor for national security Henry Kissinger had made up their minds and the report would have just angered them.[126]

Having served as an analyst for nine years at the U.S. Army's Strategic Studies Institute, I became all too familiar with the frequent disparities that existed between analytical products produced by Defense Intelligence Agency and the CIA. More often than not, defense department analysts viewed Soviet strategic, theater nuclear, and conventional capabilities as more capable and more threatening than did CIA analysts. Afforded access to highly classified, even compartmented information, I was charged by the Army to examine some of these same issues. In doing so, I often wondered whether Defense Intelligence Agency analysts were producing truly objective analyses, or as "part of the team," they were reflecting the preferred views of their military and Department of Defense masters. On this Stansfield Turner has commented: "The intelligence agencies in DOD [Department of Defense] are all subject to pressures not to produce intelligence that undercuts policies DOD is pursuing."[127]

Politicization of analysis also can be found outside of government, in organizations that are in theory paid to provide an independent and presumably objective view. While interviewing for a position at a well-known think tank in Washington D.C. in the mid-1970s, it was made clear to me by a senior official at the think tank that the Army was a principal customer and it was "important that our findings met their needs." To this, the senior official added, "on occasion that might mean bending a little, if you know what I mean."

More recently, the issue of politicized intelligence has arisen with regard to Iraq and its weapons of mass destruction programs. The President's Commission on Weapons of Mass Destruction noted: "…there is no doubt that analysts operated in an environment shaped by intense policymaker interest in Iraq." And that some analysts were affected by the "conventional wisdom" that Iraq had weapons of mass destruction "and the sense that challenges to it—even refusal

to find its confirmation—would not be welcome."[128] A careful reading of the Commission's report might lead one to conclude that while there may not have been direct and overt pressure on the Intelligence Community, a climate had been created that resulted in the politicized intelligence. Since 9/11 there was a growing drumbeat that not only supported but also may well have helped shape the so-called conventional wisdoms about Iraq's weapons of mass destruction—conventional wisdoms that were reiterated and reinforced by a compliant press. The result may have been a subtle, even subconscious, self-inflicted psychological pressure on the part of analysts and their supervisors to conform, which, in turn, may well have led to an altering of tone or emphasis in reporting and a suppression of alternative views.[129]

LOOKING TO THE FUTURE

Like Sisyphus, the tasks that confront intelligence analysts are unending and like Sisyphus each task involves many uphill challenges. Strengthening the relationships between analysts and collectors will require intra- and interagency educational efforts to insure analysts are well informed of the capabilities and limitations of the various collection methods and the complexities collectors face. Collectors will need to have a better understanding not only of the information an analyst needs in order to round out the picture, but also what challenges analysts face as they try to make head or tail of the information they receive. In the past, cross-assignment to other agencies within the Intelligence Community has had some success. But that process has received uneven support. Both education and cross-assignment can help, but both approaches consume the resources of time, energy, and, in the latter case, personnel. In an environment where tasks outstrip resources and are likely to do so for the foreseeable future, transforming the desire for a closer relationship between analysts and collectors into a reality will remain a significant challenge.

As we look to solving the challenges of information, there is little doubt that analysis has benefited greatly from the blossoming of technical capabilities. Technology has overcome many of the complexities imposed by too little information. However, as threats have shifted away from a few nation-states of security concern to a plethora of international actors, analysis can only benefit from further Intelligence Community investments in human intelligence resources. This will require significant efforts by the Intelligence Community to encourage young people to take up studies in regions and languages of growing security interest. Among other things, it will require advertising and providing attractive career opportunities for those same people. It also will require a well-constructed continuing program of advanced education within the Intelligence Community not only to add depth and currency to an analyst's perspective, but also to provide a means for adapting to changing threats.

However, the oft-forgotten piece in the information puzzle is that many human intelligence sources are not homegrown Americans or émigrés. Rather, they are citizens of other countries, willing to serve the interests of the United States, sometimes at the cost of their own lives. In this sense, the ability of the Intelligence Community to expand its Human Intelligence resource base, and thus reduce its dependency on limited sources, even overcome some efforts by

others to deny or deceive, is completely intertwined with the overall success of American foreign policy. Those foreigners who risk their lives by serving the United States do so for a variety of reasons. However, one reason we should not ignore is that some do so because they believe that advancing the interests of the United States is a worthy cause. Thus, America needs to maintain a strong reputation for advancing global interests, not just its own.

The problem of "too much" information is likely to remain. Indeed it is likely to grow. The information age has greatly increased the flow of communications and information. Political, economic, and social globalization have greatly increased the number of those communicating and traveling cross-nationally. Such factors will inevitably add to the information problem. Improvements in data sorting and information sharing can alleviate some of the existing problems by contributing to more efficient, more effective, and timelier analysis. Whether such improvements can keep pace with the increasingly large volumes of information remains to be seen.

The frequently hidden roadblock on the pathway to sound analysis is, of course, cognitive bias—those attitudes, beliefs, and predispositions that we hold, sometimes knowingly and at other times subconsciously, which obscure reality, blind imagination, impede creativity, lead us to seek a haven in comfort of the crowd, and cripple our ability to think "outside of the box." The first step in confronting this challenge is recognizing it not only as an "inherent human frailty,"[130] but also as the point of departure for normal human inquiry. This is a step already taken by the large majority of intelligence professionals. However, in an environment typically characterized by uncertainty in which the analyst is frequently called to render his or her best judgment, it is absolutely essential in follow-on steps that analysts separate what are the known facts from what are hypotheses and cross-examine each and every hypothesis, with a particular emphasis on those derived from their known predispositions and particularly aware of the dangerous role emotions such as fear, anger, hubris, and shame can play.

Education, competitive analysis, brainstorming, and separate teams are among the approaches that can be taken to limit the impact of cognitive bias. Education can be a tool to help analysts better recognize and understand their own attitudes, beliefs, needs, and emotions that filter their perceptions of the external world. It also can help in understanding the outward manifestations of underlying predispositions that color the views of others.

Another approach is to encourage competitive analysis. One of the reasons frequently advocated for maintaining the relative autonomy of the various intelligence agencies has been to encourage and sustain competitive analysis. By encouraging more than one agency to examine issues of national importance, the premise is that "these components would bring their distinct points of view to an issue, increasing the likelihood that all aspects would be considered."[131] Of course the problem today is that with too few resources to address the tasks at hand, the trend has been toward increased specialization among agencies.[132] Furthermore, efforts to further centralize the intelligence processes may improve the sharing of information but run counter to the

concept of competitive analysis.

A third method is brainstorming. Brainstorming can be used to enlarge the pool of potentially useful insights. It might include the so-called "brown bag" sessions where analysts present their views to colleagues who may or may not be experts in the specific material under discussion, but are well-versed in the "rules of logic, evidence, and inference."[133] This method is much like that used at professional academic conferences where a paper is presented in hopes that colleagues will challenge the validity of the arguments presented.

Yet another method for limiting the impact of cognitive bias has been to rely on what has become known as the "Team A–Team B" approach. One of the early uses of this approach was in 1976 in the latter days of the Ford administration. Concerned that the CIA had systematically been underestimating Soviet strategic capabilities, the President's Foreign Intelligence Advisory Board first asked Director of Central Intelligence William Colby to establish a "Team B" of outsiders to offer a competitive analysis of the same materials available to the CIA—Team A, so to speak. This approach was finally approved by Colby's successor George H.W. Bush. Team B included team leader Professor Richard Pipes, General John Vogt, Lt. General Daniel Graham, Dr. Thomas Wolfe, and Professor William Van Cleave. The team's advisory panel was composed of Paul Nitze, Ambassadors Foy Kohler and Seymour Weiss, Major General Jasper Welch, and Dr. Paul Wolfowitz. Whether such an approach risks being undermined by fundamental cognitive biases of members of the alternative team remains an open question. Certainly in the 1976 variant, Team B players shared a strong conservative bias in their thinking about Soviet strategic capabilities. Indeed, in a subcommittee report, which examined the 1976 Team A–B episode, members of the Senate Select Committee on Intelligence concluded that Team B "reflected the views of only one segment of the spectrum of opinion." Thus "the outcome of the exercise was predetermined."[134] The team was also accused of falling prey to "worst case" analysis.[135] The subcommittee, however, did note that when properly structured and tasked, such competitive estimates can be helpful and on occasion should be encouraged.[136]

Whatever approach, or combination of the above approaches, is taken to combat cognitive bias, it will not necessarily assist in helping analysts think strategically. Today's education system does not educate people to think strategically. For some, thinking strategically is a self-developed habit of the mind. For others, it is a totally underdeveloped skill. Lawyers learn the rules of evidence and this has made them a valuable commodity in government. But they are not trained to think strategically. Knowledge of the background history and culture of a people and the facts in a given situation is essential, but it is only the starting point and should not be confused with thinking strategically. There are, however, educational tools available to help develop such skills. Some crisis management courses provide techniques that assist in developing the ability to separate facts from assumptions, outline a spectrum of long-term concerns and objectives that might drive the current actions of others, and thus assist analysts in developing the habit of thinking strategically. Certainly,

education is a first stop on the agenda in overcoming this impediment to effective analysis. Such education should begin early in an analyst's career and sustained through continuing education.

Finally, while it is difficult to ascertain just how widespread the problem of politicized intelligence really is, the task force appointed by then Director of Central Intelligence Gates following his appointment to examine politicization found that "most analysts and managers remained determined to resist direct or indirect pressures from policy officials for products conforming to their view." The task force also concluded that "concerns about politicization [*sic*] are serious enough to warrant action."[137] Yet it is likely that the problem is more common among political appointees who serve in the Intelligence Community, primarily in supervisory positions, up to and including the Director of National Intelligence and perhaps among some analysts in the Defense Intelligence Agency or on service intelligence staffs. However, the proper relationship between policymakers, and here I include senior Department of Defense and military officials, and the Intelligence Community should be one in which the policymakers "influence which topics intelligence agencies address, but not the conclusions they reach." For its part, the Intelligence Community should limit "its judgments to what is happening or what might happen" in situations under examination.[138]

A great disservice is done to supervisors, policymakers, and the nation, by permitting policy or personal political considerations to skew analyses.