
Intelligence and Nuclear Proliferation: Lessons Learned

Keith A. Hansen

Summer 2011



Security Studies Center

The Institut Français des Relations Internationales (Ifri) is a research center and a forum for debate on major international political and economic issues. Headed by Thierry de Montbrial since its founding in 1979, Ifri is a non-governmental, non-profit organization.

As an independent think tank, Ifri sets its own research agenda, publishing its findings regularly for a global audience.

Using an interdisciplinary approach, Ifri brings together political and economic decision-makers, researchers and internationally renowned experts to animate its debate and research activities.

With offices in Paris and Brussels, Ifri stands out as one of the rare French think tanks to have positioned itself at the very heart of European debate.

The opinions expressed in this text are the responsibility of the author alone.

ISBN : 978-2-86592-924-5

© Ifri – 2011 – All rights reserved

Ifri
27 rue de la Procession
75740 Paris Cedex 15 – FRANCE
Tel : 33 (0)1 40 61 60 00
Fax : 33 (0)1 40 61 60 60
Email : ifri@ifri.org

Ifri-Bruxelles
Rue Marie-Thérèse, 21
1000 – Brussels – BELGIUM
Tel : 32 (0)2 238 51 10
Fax : 32 (0)2 238 51 15
Email : info.bruxelles@ifri.org

Website : <http://www.ifri.org/>

Summer 2011

***Intelligence and Nuclear Proliferation:
Lessons Learned***

Keith A. Hansen

Proliferation Papers

Though it has long been a concern for security experts, proliferation has truly become an important political issue with the last decade, marked simultaneously by the nuclearization of South Asia, the weakening of international regimes and the discovery of frauds and traffics, the number and gravity of which have surprised observers and analysts alike (Iraq in 1991, Libya until 2004, North Korean and Iranian programs or the A. Q. Khan networks today).

To further the debate on complex issues that involve technical, regional, and strategic aspects, Ifri's Security Studies Center organizes each year, in collaboration with the Atomic Energy Commission (CEA), a series of closed seminars dealing with WMD proliferation, disarmament, and nonproliferation. Generally held in English, these seminars are structured around the presentation of an international expert.

Proliferation Papers is a collection, in the original version, of selected texts from these presentations. An anonymous peer-review procedure ensures the high academic quality of the contributions. Download notifications are sent to an audience of several hundred international subscribers upon publication.

Editorial board

Editor: Etienne de Durand

Deputy Director: Corentin Brustlein

Principal Scientific Adviser: Jean Klein

Layout Assistant: Laura Tanase

How to cite this publication

Keith A Hansen, "Intelligence and Nuclear Proliferation: Lessons Learned", *Proliferation Papers*, No. 38, Summer 2011.

About the Author

Keith A. Hansen served for over three decades with the US Government in both military and civilian assignments. He participated on several strategic arms control delegations (SALT II, INF and CTBT) as an expert on strategic nuclear force issues. In Washington he served in various national security positions, including in the National Intelligence Council, where he supported defense planning, treaty ratification and counter-proliferation efforts of various administrations by producing national intelligence estimates on nuclear and proliferation issues. Hansen retired from government service in 2005 and is a consulting professor of international relations at Stanford University and Sierra Nevada College as well as a guest lecturer at other universities and public groups.

He is the author of *The Comprehensive Nuclear Test Ban Treaty: An Insider's Perspective*, Stanford University Press, 2006; coauthor of *Spy Satellites and Other Intelligence Technologies that Changed History*, University of Washington Press, 2007; and coauthor of *Preventing Catastrophe: The Use and Misuse of Intelligence in Efforts to Halt the Proliferation of Weapons of Mass Destruction*, Stanford University Press, 2009.

Hansen earned his BA degree in history from Stanford University where he also earned an MA degree in Russian history and an MS degree in business management. He earned his third masters degree from the Johns Hopkins University School of Advanced International Studies, spending one year at the SAIS Bologna Center.

Contents

Introduction	7
What Are the Intelligence Challenges in Monitoring Nuclear Proliferation?	9
How Does Intelligence Support Efforts to Prevent Proliferation?	15
What Is the Intelligence Track Record in Monitoring Nuclear Proliferation Activities?	21
What Lessons Have We Learned from the Case of Iraq?	37
Is It Possible to Monitor and Prevent Further Proliferation?	45

Introduction

The failure of US intelligence to correctly understand the status of Iraq's WMD programs prior to 2003, when combined with the uncertainties that surround Iranian and North Korean nuclear activities, has led some to question the ability of intelligence to monitor small, clandestine proliferation activities. The lessons we have learned from past experience in monitoring are important, but proliferation rarely follows a predictable path as motivations and capabilities of those on the demand and supply side of the problem vary. Thus, the challenges in monitoring the activities of proliferant states and non-state actors are formidable, and unfortunately failures are inevitable.

In the 1960s, it appeared as if nuclear weapons might spread all over the world. President Kennedy sincerely believed that by "1970... there may be 10 nuclear powers instead of 4, and by 1975, 15 or 20," which he regarded "as the greatest possible danger and hazard."¹ Had such proliferation happened, there might have been many more nuclear weapon states today: over forty countries have nuclear reactors, and many of these countries, if sufficiently motivated, could become nuclear-weapon capable were they to gain the expertise and the ability to produce plutonium or enrich uranium to a weapon-grade level.² With such proliferation it would be increasingly difficult to keep nuclear weapons out of the hands of terrorists, and every conflict would run the risk of "going nuclear" through escalation, misunderstanding or miscalculation.

Countries seek a nuclear weapon capability for a variety of reasons – primarily prestige, influence, and/or security.³ Security issues may be global as with the United States and the Soviet Union during the Cold War, or regional. For example, Pakistani Prime Minister Zulfikar Ali Bhutto is reported to have said after the disastrous Pakistani defeat at the hands of India in 1971, that his country would build nuclear weapons even if the people had to "eat grass."⁴ Israel's nuclear weapon program appears to have been driven entirely by security motivations; the possession of nuclear weapons seemed necessary to ensure its survival. The former white-

¹ Robert Dallek, *An Unfinished Life: John F. Kennedy, 1917-1963*, Boston, Little, Brown, 2003, p. 615.

² Keith A. Hansen, *The Comprehensive Nuclear Test Ban Treaty: An Insider's Perspective*, Stanford, Stanford University Press, 2006, pp. 123, 126-127.

³ Sidney D. Drell and James E. Goodby, *The Gravest Danger: Nuclear Weapons*, Stanford, Hoover Institution Press, 2003, p. 32.

⁴ Jeffrey T. Richelson, *Spying on the Bomb: American Nuclear Intelligence from Nazi Germany to Iran and North Korea*, New York, W.W. Norton, 2006, p. 328.

minority South African government apparently believed that nuclear weapons would protect it against Soviet-inspired large-scale communist invasion from its neighbors. And, North Korea has appeared to be obsessed with its security, indeed its survival.

Some countries believe they will be perceived as the dominant state in their region just by possessing nuclear weapons. After the May 1998 Indian nuclear tests, Prime Minister Vajpayee announced, "We have a big bomb now. India is a nuclear weapon state."⁵ Saddam Hussein thought Iraq could dominate the Middle East and keep Iran in check. Prestige under the Shah, hostility with Israel after the 1979 revolution, and possibly deterrence against US military action have probably motivated Iran's desire for a nuclear weapon capability. In the case of Libya, motivations seem harder to discern; perhaps Qadhafi was merely a maverick seeking prestige. Brazil once pursued nuclear weapons for prestige, and Argentina was similarly motivated but largely in response to Brazil.

With regard to non-state actors, terrorists seek to advance whatever political agenda they may have by sowing terror with the most horrific weapons that can be obtained.

Whatever the motivations, it falls upon intelligence to understand the intentions, the inherent technical capabilities, and the relationships among states or non-state entities in order to thwart further nuclear proliferation which continues to be a threat to international security.

In an effort to shed light on the role and contribution of intelligence in national and international efforts to halt, if not prevent, further nuclear weapon proliferation, this paper first analyzes the challenges intelligence faces in monitoring small, clandestine proliferation activities and the role it plays in supporting non-proliferation efforts. It then reviews the intelligence track record in monitoring proliferation including the lessons learned from Iraq. Finally, it addresses whether it is possible for intelligence to accurately monitor future clandestine proliferation efforts.

⁵ Thomas Graham Jr., *Common Sense on Weapons of Mass Destruction*, Seattle and London, University of Washington Press, 2004, p. 66.

What Are the Intelligence Challenges in Monitoring Nuclear Proliferation?

The strategic challenge and threat posed by the Soviet Union during the Cold War spurred US intelligence to develop capabilities to monitor and analyze large and technically sophisticated strategic nuclear forces. As the Cold War became increasingly characterized by strategic nuclear arms competition, debates over the “bomber gap” and the “missile gap” led policymakers and intelligence officials, in conjunction with industry, to create remote technical collection capabilities to gather information on Soviet strategic forces. These capabilities included advanced reconnaissance aircraft, such as the U-2, and reconnaissance satellites. These systems, along with sophisticated analytic methodologies, eventually allowed the United States to monitor nuclear arms control treaties and the proliferation of nuclear weapons.⁶

However, the clandestine nuclear weapon programs of smaller countries lack the large infrastructure and signatures associated with the Soviet industrial enterprises and military forces. Although certain tell-tale signs may also be present in smaller nuclear weapon programs, such as reprocessing facilities, some of the intelligence capabilities developed to monitor large Soviet nuclear forces are less capable of monitoring clandestine programs that have a much smaller profile than the USSR’s activities and are often hidden in dual-purpose facilities masked by legitimate civilian nuclear activities. Countries, such as Iraq under Saddam, Iran and North Korea have become quite sophisticated in their concealment measures. Furthermore, the monitoring challenge is compounded by the international sale and transfer of knowledge, technology, and equipment, much of which may be legal and/or legitimate but which can be rechanneled into clandestine activities. Monitoring the technical and financial activities of countries such as North Korea and Iran is no small task. And when clandestine transfers and activities involve non-state actors, such as the A. Q. Khan network or international terrorists, the small signature and diffuse nature of transactions increase the complexity of the monitoring task.

⁶ Thomas Graham Jr. and Keith A. Hansen, *Spy Satellites and Other Intelligence Technologies that Changed History*, Seattle, University of Washington Press, 2007, p. x.

Collection

In many proliferation situations, only human sources have the potential to gain access to people or facilities to determine what is actually going on. Thus, especially following the intelligence failure to correctly understand the status of Iraq's WMD programs in 2003, an emphasis on clandestine human collection has reemerged against countries – and their suppliers – seeking nuclear weapon capabilities. Former DCI George Tenet acknowledged that the US had to rely heavily on technical data along with information provided by liaison services with regard to Saddam's WMD activities and did not have enough of its own human intelligence.⁷ However, finding and recruiting human sources with relevant access along with vetting their motivations and information is a significant challenge. When the goal is to infiltrate terrorist cells, where killing is a badge of honor, the challenge becomes even greater.⁸

It is often necessary to rely heavily on the information provided by the intelligence services of those countries that have better access and are willing to share. This was certainly the case in Iraq from 1998 to 2003, when the United States appeared to be aided by certain Middle Eastern and other countries, and in Syria in 2007 when the U.S. relied heavily on Israeli intelligence. And, as is discussed later, cooperation among various intelligence services was key to understanding and halting the A. Q. Khan nuclear proliferation network. However, the use of liaison intelligence information puts the recipient country one step removed from vetting the credibility and trustworthiness of the sources. "Curve Ball," a German-run agent who claimed to possess conclusive evidence about the Iraqi WMD program is a case in point.⁹ According to former DCI George Tenet, there were serious questions about this source's reliability, but the issue was never completely resolved before his information was used in Secretary Powell's presentation to the UN Security Council.¹⁰

Therefore, intelligence officers must systematically assess the shared information for consistency, seek other sources to confirm it, and check for any bias or ulterior motives by the liaison services. These biases can be conscious or the result of ignorance. The biases may be well known and, therefore, anticipated. These biases may also be voluntarily fabricated and calculated for a wide range of possible reasons. Therefore, with special quality control procedures, intelligence officers must determine the motivations of liaison services in sharing information to rule out an attempt to feed false information.

Sophisticated technical and human collection operations always face counterintelligence efforts by the target countries. These

⁷ Remarks by Director of Central Intelligence George Tenet at Georgetown University, 5 February 2004.

⁸ Mark M. Lowenthal, *Intelligence: From Secrets to Policy*, 3rd ed., Washington, CQ Press, 2006, p. 237.

⁹ *Ibid.*, pp. 96-97.

¹⁰ George Tenet, *At the Center of the Storm: My Years at the CIA*, New York, HarperCollins, 2007, pp. 375-380.

counterintelligence measures are often part of a comprehensive strategy which focuses on concealing program design, research & development and production using dual-use facilities and possibly clandestine or deceptive procurement, military site construction, networking, and coordination. Such a counterintelligence strategy may include political activities and diplomacy along with technical implementation. Proliferant countries design this strategy at the highest political level, coordinate the concealment activities through interagency entities, and implement and finesse their concealment measures in a timely manner with synchronized actions. This type of dedicated organization truly acts as a genuine centralized concealment chain of command in support of nuclear proliferation policies.

South Africa and India demonstrated the effectiveness of such concealment and deception strategies in confusing the international community regarding their nuclear activities. As a better understanding of technical systems, such as satellite imagery and rapid communications, has become publicly available, those who wish to hide their clandestine programs and facilities have become more adept at doing so. The Saddam Hussein regime used comprehensive, sophisticated concealment and denial measures to hide progress being made on its weapons programs from the United States and international inspectors. North Korea, Iran, and Syria, have done the same. Tehran has undertaken extensive efforts to provide false cover stories and to conceal, bury deeply underground, and sanitize its nuclear infrastructure against snooping satellites and sampling by IAEA inspectors.¹¹ Along similar lines, Syria tried to conceal its nuclear reactor near Al-Kibar with a false façade (hiding the reactor inside an ordinary-looking building with no external cables or other indicators of ongoing nuclear activity, such as a telltale cooling tower) both before Israeli aircraft destroyed the facility and then afterward, by removing indicators of the reactor before IAEA inspectors could arrive.¹² IAEA Director-General Amano stated that it was deeply regrettable that the facility was destroyed before the Agency had a chance to perform its verification role.¹³ This assumes, of course, that the Syrian government would have permitted an inspection by the IAEA.

Analysis

To discern whether a country or a terrorist organization has a clandestine nuclear program, analysts must address motivations, intentions, capabilities, and international connections. In some cases the first indication of a clandestine nuclear weapon program can come from a chance spotting of items or activities that are normally associated with such programs – which was the case for India’s test preparations in 1995 as well as tell-tale facilities in North Korea and Syria. In other cases, intelligence might be obtained regarding the desires of a country or group to have such

¹¹ Thomas Graham Jr. and Keith A. Hansen, *Preventing Catastrophe: the Use and Misuse of Intelligence in Efforts to Halt the Proliferation of Weapons of Mass Destruction*, Stanford, Stanford University Press, 2009, p. 28.

¹² Remarks by Central Intelligence Agency Director Michael Hayden at the Los Angeles World Affairs Council, 16 September 2008

¹³ IAEA Director General Amano’s Introductory Statement to Board of Governors, 6 June 2011.

weapons even though no signs of an actual program had yet been detected – which was the case with South Africa and is currently with al-Qaeda. In either case, analysts then look for the other pieces of the puzzle to corroborate any information in hand and to postulate what might be transpiring. Understanding the context of the detected activities (past efforts or actions, as well as attempts at concealment, denial, or deception) plays a key role and may lead analysts to conclude that a clandestine effort is underway. All of these factors must be included in collection and analytic efforts in order to compensate for uncertainty and to bridge gaps where the information is spotty or even contradictory. Although it is potentially easier to monitor the progress of a program in a highly-suspect country, the risk is high that intelligence understanding will be incomplete, that policy needs will not be fully satisfied, and that intelligence assessments will contain some errors. This was painfully clear in the cases of Iraq and India which had long-term suspect programs.

Political and legal issues

Efforts to detect and monitor clandestine proliferation activities can also lead to international political and legal complications. For example, in 2000 the CIA reportedly recruited a Swiss businessman to track and undermine A. Q. Khan's black market activities. The agent and his associates provided significant information confirming US suspicions about Iran's nuclear efforts. This also led to information enabling the seizure of centrifuge parts bound for Libya. CIA was able to secretly cripple other mechanical and electrical gear shipped to recipient states which slowed down the progress of the clandestine nuclear weapon programs in these countries.¹⁴

However, the Swiss agents were eventually arrested for exporting illegal equipment, and the authorities uncovered their intelligence association with Washington. The legal case against them immediately raised international tensions with the United States. In August 2007, the Swiss government cancelled its criminal case and destroyed the agents' electronic files and holdings.¹⁵ Some Swiss and European officials complained that the files could have been preserved and protected. Swiss intelligence, which undoubtedly is as concerned about nuclear proliferation as the CIA, may also have argued against prosecution.

Supply vs. demand

Proliferation concerns frequently focus on the demand side of the problem, particularly by nation states, but discovery of the A. Q. Khan nuclear black market network made clear that monitoring of proliferation must deal with both the supply and demand sides of the issue. Supply-side action requires focus on those countries that are most likely, either because of motivations or instabilities such as the collapsing USSR or North Korea, to be the source of expertise and materials. Fears regarding the relative lack of

¹⁴ William Broad and David Sanger, "In Nuclear Net's Undoing, a Web of Shadowy Deals", *New York Times*, 24 August 2008, available at: <http://www.nytimes.com/2008/08/25/world/25nuke.html>.

¹⁵ William Broad, "Swiss Suspect Released in Nuclear Case", *New York Times*, 24 January 2009, p. A7.

security and accountability for nuclear weapons and material during the breakup of the Soviet Union led to calls for increased collection and analysis of the activities surrounding the former Soviet nuclear arsenal and infrastructure. However, the supply of know-how and technologies may not always be deliberate: even benign assistance in the field of nuclear technology for legitimate purposes, such as for research or power reactors, can lead to the clandestine misuse of nuclear expertise and material. Such was the case of peaceful nuclear assistance given early on to India by the U.S. and Canada which, unfortunately, helped to fuel New Delhi's weapon program.¹⁶ Somewhat similarly, France provided peaceful nuclear assistance to Israel which was used for Tel Aviv's weapon program.¹⁷

In addition, we have witnessed an insistent Russian Federation selling nuclear expertise and technology to countries such as Iran. And China's traditionally loose controls have also been of concern, especially after it became known that China was instrumental in assisting Pakistan's nuclear program. Although China joined the Nuclear Suppliers Group in 1998 and has updated its export controls on nuclear technology, some remain concerned about Chinese nuclear assistance to Iran as well as to Pakistan. An IAEA team of experts recently completed a review of China's regulatory system and appears to have come away with increased confidence in its effectiveness.¹⁸ As discussed below, more recently North Korea was identified as the probable source of nuclear expertise of Syria.¹⁹

Finally, exposure of the A. Q. Khan network showed how the typical state-to-state supply-demand equation can be worked under the radar by non-state actors. Besides North Korea and Libya, it appears that Iran, Iraq, Syria, and perhaps other countries were approached by Khan's network with offers of nuclear weapon-related deals. There has been some speculation that Saudi Arabia was approached by Khan, but no direct evidence is apparently available.

¹⁶ Richelson, *Spying on the Bomb*, *op. cit.*, pp. 218-225.

¹⁷ *Ibid.*, pp. 238-243.

¹⁸ "International Nuclear Safety Experts Concluded IAEA Peer Review of China's Regulatory System", available at: <http://www.iaea.org/NewsCenter/PressReleases/2010/prn201010.html>.

¹⁹ Graham and Hansen, *Preventing Catastrophe*, *op. cit.*, pp. 74-77.

How Does Intelligence Support Efforts to Prevent Proliferation?

As is the case for most countries, the United States has both national and multinational options for ensuring its national security, including dealing with proliferation issues. The tools the United States may use depend on many factors including whether the target is a nation-state or a non-state actor. Diplomacy, economic sanctions, and military force are the main national tools for dealing with nation-states. However, the United States has learned that some adjustments in the way it employs its national capabilities, including intelligence, have been required to deal with the challenge of nuclear proliferation activities by non-state actors, including terrorists.

Israel provided the earliest and prime examples of unilateral military action to thwart proliferation in its air strikes against Iraq's Osirak reactor in 1981 and more recently against the suspected Syrian reactor in 2007. Although the Israeli strike in 1981 set the Iraqi program back for a few years, it ultimately drove the Iraqi nuclear weapon program underground; and by 1990, the program was more advanced than most were aware of.²⁰ The closest that the United States has come to taking unilateral military action in the proliferation arena was in the use of force to depose the Saddam Hussein regime and eliminate its suspected WMD capabilities and purported ties with terrorists.

The clandestine cooperation between those countries that want to obtain such weapons and those countries (or private black market traders) that are willing to supply the associated technologies, expertise, and materials requires a multifaceted intelligence focus. Monitoring terrorist organizations' efforts to obtain such weapons (or at least the relevant expertise, components, or agents) must include cooperation with local police, customs and financial transactions control authorities, and international organizations, such as the UN or International Criminal Police Organization (INTERPOL). Even within the United States, domestic intelligence has had to be strengthened and closer ties fostered between federal and local authorities.²¹

²⁰ Joseph Cirincione, *et. al*, *Deadly Arsenals: Nuclear, Biological, and Chemical Threats*, 2nd ed., Washington, Carnegie Endowment for International Peace, 2005, p. 30.

²¹ Barton Gellman, "How the G-Man Got His Groove Back: Inside Bob Mueller's 10-year campaign to fix the FBI", *Time*, 9 May 2011, pp. 22-32.

Multinational efforts and agreements designed to prevent proliferation necessarily include multinational monitoring and verification through international organizations, such as the IAEA, and arrangements or treaties, such as the NPT. The use of national technical means of verification, which came out of the US-Soviet SALT negotiations as a purely bilateral tool, took on an international focus in the negotiation in the late 1980s of the Conventional Armed Forces in Europe Treaty (CFE) and during the negotiation in the mid-1990s of the Comprehensive Nuclear Test Ban Treaty (CTBT). However, during the latter negotiations there was significant resistance from countries such as China, India, and Pakistan, which argued that the superpowers would use their superior national monitoring capabilities (read intelligence) to the disadvantage of less capable countries. This issue arose again in late 1999 during the brief and unsuccessful effort by the Clinton administration to achieve US ratification of the CTBT. The administration attached six conditions (so-called safeguards) to US ratification. One condition called for the enhancement of national monitoring (*i.e.* intelligence) capabilities to supplement international monitoring efforts.²²

Good non-proliferation policy, whether national or international, depends on good intelligence, but it also requires policymakers who know how to use intelligence properly without misusing or compromising it. And unfortunately, the role that intelligence should play and the contribution that it can make to national security policy are not well understood by the general public (and at times even by policymakers). Confusion and misinformation abound on the nature of intelligence and its legitimate role in supporting policymakers, and even the distinction between intelligence and policy is generally not understood.

Support to US National Security Policy

Defining and promoting US national security policy, such as nonproliferation, is the prerogative of the president and his National Security Council (NSC). Although Congress pays close attention and frequently questions administration officials, it is the role of the president and his national security advisors to devise policies that ensure the security of the United States. Meanwhile, the Intelligence Community (IC) provides support to policymakers and to Congress which oversees and critiques the entire process.

In the United States, there is a clear distinction between intelligence and policy. By its very nature, intelligence exists to support policymakers, not to recommend, advocate, or make policy. Its function is to provide timely, relevant, and objective information. It is a fact that US policymakers can formulate policy without the assistance of intelligence; indeed, sometimes they choose to ignore the intelligence they receive. In contrast, intelligence has no reason to exist apart from supporting the information needs of policymakers. However, the line between policymaking and intelligence can at times be blurred due to behaviors from one side or the

²² White House Fact Sheet, "Comprehensive Test Ban Treaty Safeguards", 22 September 1997.

other as appeared to happen in the case of Iraq prior to 2003 when policy attempted to politicize intelligence, and the intelligence community moved a bit too close to policy.

Generally speaking, policymakers are action-oriented and under pressure to devise and promote successful policies. As such, they are almost always looking for information that supports their policy preferences and contributes to their success. It is fair to say that policymakers typically seek information from multiple sources when they are trying to understand a situation and devise an appropriate policy. Once they settle on a policy, they naturally look for information that will support and promote that policy. If they are less than objective and lack professional integrity, they will dismiss good intelligence that does not help sell their policy to Congress, to allies, or even to the American public, and possibly create their own intelligence. As discussed below, this appeared to be the case with regard to administration claims about the imminent threat posed by Saddam's WMD programs and his connection to terrorists.

In contrast, intelligence officers are trained to provide the best intelligence available whether or not it enhances the prospects for a policy to succeed. The US Intelligence Community strives to neutralize personal or institutional biases in its judgments and reporting through conscientious management and the reporting of alternative views. And intelligence officers must be willing to deliver the "bad news" to policymakers even when they know their analyses and judgments will not be welcomed. Policymakers have the right and responsibility to pose hard questions regarding the intelligence they receive in order to understand how confident the intelligence agencies are in what they are saying. A good policy-intelligence dialogue will get all relevant information and views on a situation out on the table for a comprehensive review. However, when policymakers try to undercut the credibility of judgments because the information does not support their bias or policy preference, the situation can become seriously dysfunctional. As mentioned later with regard to analysis on Iraq, dysfunction can also result if some in the IC select data that may be useful to the administration while downplaying the veracity of contrary information which they know will not be well-received by policymakers. Thus, dysfunctional behavior can be caused either by involuntary or calculated biases in intelligence collection, analysis, or delivery.

Support to International Inspections

It appears to be standard practice for member states of the IAEA to provide national intelligence to support inspections. Indeed, diplomats having good contacts with the IAEA reported in early April 2008 that even China had provided intelligence linked to Iran's alleged attempts to make nuclear weapons. They commented that China was the most surprising entry among a fairly substantial list of nations recently forwarding information to the IAEA that adds to previously provided intelligence on Iran's nuclear weapons research.²³ The IAEA apparently expects member countries to

²³ "China Assists Nuclear Arms Probe of Iran", Associated Press, 2 April 2008.

provide national information to help its international inspections be more effective, but not all countries seem to follow that path. This inconsistency is probably due to countries wanting on the one hand to have the IAEA successfully expose activities that support their national security interests while on the other hand not wanting the IAEA to interfere with other national interests. Countries may also be concerned that giving intelligence to the IAEA might compromise their sensitive sources and methods.

Intelligence support to the IAEA has been critical to the success of many of its inspections but at times has created political tensions. In April 2008, IAEA Director-General Mohamed ElBaradei complained that the United States and Israel had failed to notify his agency in a timely manner of their concerns about the suspect facility in Syria and North Korea's alleged assistance. In response to ElBaradei's complaint, a US intelligence team was reportedly sent to Vienna to brief the IAEA.²⁴ Again, on 7 June 2010, IAEA's new Director-General Amano complained that Israel had not shared with the Agency any relevant information it may possess regarding Syria's nuclear weapon program.²⁵ More recently, some countries that abstained from the IAEA resolution sending the Syrian case to the UN Security Council raised concerns about the Agency's reliance on intelligence provided by other countries.²⁶

National services' involvement in inspections can also be a double-edged sword. As reported by Hans Blix, the former IAEA Director-General and head of UN inspections in 2002-3, US intelligence had not only provided useful information to UNSCOM inspections in Iraq during the 1991-98 period to help guide the inspectors, but US intelligence officers had actually participated in some of the inspections. Blix indicated that the head of UNSCOM, Rolf Ekeus, tried to prevent his inspections from serving as covers for national intelligence collection. Blix believes that the direct participation of US intelligence officers was unwise given that it risked the integrity and credibility of UN inspections.²⁷ He suspects that some of the Iraqis' resistance to his inspections can be explained by their awareness that intelligence-linked inspectors might help identify targets for bombing.

It appears that the UN Security Council finally reacted to this issue in 2002 when it authorized the establishment of the United Nations Monitoring, Verification and Inspection Commission (UNMOVIC), which Blix headed, to resume inspections in Iraq. In drafting Resolution 1284, which set up UNMOVIC, the council stipulated that the inspections staff should serve as international civil servants and not take instructions from any

²⁴ "IAEA Chastises U.S., Israel over Syrian Reactor", Associated Press, 25 April 2008.

²⁵ IAEA Director-General Amano's Introductory Statement to Board of Governors, 1 March 2010, available at: <http://www.iaea.org/NewsCenter/Statements/2010/amsp2010n001.html>.

²⁶ Peter Crail, "IAEA Sends Syrian Nuclear Case to UN", *Arms Control Today*, July/August 2011, available at: http://www.armscontrol.org/act/2011_%2007-08/%20IAEA_Sends_Syria_Nuclear_Case_to_UN.

²⁷ Graham and Hansen, *Preventing Catastrophe*, *op. cit.*, p.182.

government.²⁸ Despite this, however, almost all countries try to benefit from inspections to gain intelligence for their national decision making. When a country lacks “on the ground” presence, as with the United States in Iraq during most of the 1990s, international inspections offer a unique opportunity to collect information firsthand. Furthermore, when there is good reason to suspect that the inspected country is using every means to conceal and to deceive inspectors, the motivation is strong to ensure that suspicious sites and facilities are in fact inspected and that all means are used to defeat the inspected country’s countermeasures. Finally, it is only realistic that international operations, such as UNSCOM and UNMOVIC, which were essentially information-gathering activities, include officers with relevant experience from a number of the countries represented. Whether they are intelligence officers trained in collection techniques or nuclear experts who understand what to look for, such individuals are essential to successful international inspections.

²⁸ *Ibid.*

What Is the Intelligence Track Record in Monitoring Nuclear Proliferation Activities?

Over the past eight years, the public has been bombarded with articles about the failure of US intelligence to assess accurately the status of Saddam Hussein's WMD (nuclear, chemical, and biological weapons) programs. Some of this criticism is justified. Overall, however, the performance of the US Intelligence Community over the decades has been on target more often than not in assessing the status of clandestine nuclear weapon programs. The effort against nuclear proliferation has always had a high priority, although special attention has been paid to some countries' efforts over others. With non-state actors, the intelligence track record is less clear; little is known publicly about the success the United States or other countries have had against efforts by terrorist organizations to obtain nuclear material or weapons.

Monitoring Nation-States

The experience in South Asia is mixed. It seems that US intelligence analysts knew almost as much about the nuclear program in Pakistan as did Pakistani scientists. This is in contrast with significant surprises from India in 1974 and 1998. The United States apparently had monitored India less critically than Pakistan because the latter has been ruled often by a military dictatorship and because of its periodic political instability, not to mention its proximity to more unstable and dangerous areas to the north and links to radical Islamist groups.

India

Several US intelligence assessments in the latter part of the 1960s and early 1970s concluded that India could rather easily and quickly move from a peaceful nuclear program to a military one. Shortly before the 1974 Indian test, US intelligence concluded that over the next several years the chances that India would conduct a test were about even.²⁹ However, the drilling in the spring of 1974 at Pokhran, the designated test site, was incorrectly thought to be related to a search for water or perhaps oil. Thus, the Indian nuclear test on 18 May 1974 was a surprise.³⁰ The primary reason for this failure was the low priority for the use of technical collection

²⁹ Richelson, *Spying on the Bomb*, *op. cit.*, p. 231.

³⁰ *Ibid.*, p. 233.

assets allocated for this monitoring task along with the paucity of inside information.³¹

There was a different and more favorable outcome in May 1982. In response to a proposal from Indian nuclear scientists, Prime Minister Gandhi authorized two nuclear tests. However, India's Foreign Secretary, Maharaja Krishna Rosgotia, had been in Washington and learned that the United States had information on preparations for the planned tests. When Ragostra returned to India, he told Gandhi that there would be trouble if India conducted a nuclear test. She abruptly cancelled the two tests.³²

In the spring of 1995, Prime Minister Rao authorized the preparation of test shafts at the Pokhran nuclear test site. During the months that followed, these preparations were closely followed by US intelligence. On 15 December 1995, the U.S. Ambassador called on the private secretary of Prime Minister Rao and indicated that a test by India could bring sanctions from the United States. President Clinton phoned the Prime Minister soon after. Thus, for the second time good intelligence had helped prevent an Indian nuclear test.³³

In 1998, however, the outcome was different despite enhanced intelligence efforts to monitor India's nuclear weapon activities. On May 11, India unexpectedly carried out three tests at Pokhran, and then conducted two more tests on May 13. While the actual number and yields of the tests would remain controversial for years, there was no doubt that India had carried out nuclear tests, and US intelligence had not given policymakers advance warning. Some assert that the US had satellite imagery in early May showing unusual activity at the test site, but imagery analysts were slow to study the images and give warning.³⁴ If true, then the US Intelligence Community was clearly guilty of missing a chance to provide tactical warning. Given that the new Indian government had indicated its intent to test, however, it seems unreasonable to lay all of the blame for preventing the tests on the Intelligence Community's failure to provide warning of the time and place.

The Indian government in the previous months had engaged in a vigorous campaign of disinformation, and there was a tendency to believe that the BJP's statements were only campaign rhetoric. In late March 1998, senior foreign policy advisor N. N. Jha had reassured officials at the American Embassy that over the next three to six months his government would be reviewing Indian national security policy and had no plans for weapons tests. UN Ambassador Bill Richardson was similarly reassured by Prime Minister Vajpayee in April in New Delhi.³⁵

³¹ *Ibidem.*, p. 234.

³² *Ibidem.*, p. 428.

³³ Cirincione, *Deadly Arsenals*, *op. cit.*, p. 221.

³⁴ Richelson, *Spying on the Bomb*, *op. cit.*, p. 442.

³⁵ *Ibid.*, p. 443.

India also engaged in extensive concealment activities at the test site that included burying the cables, placing camouflage netting over the test area, and conducting as many operations as possible at night or when reconnaissance satellites were not overhead. The Indians took advantage of the May sandstorms, and vehicles used for activities at night were always back in the same assigned places for the day so as to not disclose increased vehicle movement. The Indian Intelligence Bureau ran a vigorous counter intelligence program; the CIA was apparently unable to recruit a single person who knew anything about the tests. And the US National Security Agency also could come up with no relevant intercepts because India's nuclear weapon establishment communicated via encrypted digital messages relayed through satellites.³⁶

Then Director of Central Intelligence George Tenet promptly appointed a review panel to investigate the Intelligence Community's failure to detect the Indian test preparations. One of the most important recommendations was to reorder collection priorities so that important issues such as the nuclear weapon programs in India and Pakistan would be treated with the same urgency as the monitoring of so-called "rogue states", such as Iran and North Korea.³⁷

Pakistan

After the Indian tests of May 1998, US intelligence analysts strongly believed that Pakistan would soon respond in kind. Director Tenet informed the congressional committees that preparations for an underground test by Pakistan in the Chagai Hills region had been detected. The tests – six in all – took place on May 28 and May 30, and came as no surprise. Six months prior Department of Energy experts had concluded that Pakistan was making significant progress in developing nuclear weaponry.³⁸ Pakistan had apparently not made a serious effort along the lines of India to mask its test preparations.

Over time, US intelligence had gained a good understanding of the major role played by China in providing nuclear material and expertise to Pakistan, due to an effective combination of overhead reconnaissance and the successful recruitment of spies with access to the Pakistani program.³⁹ However, as discussed later in this paper, there was at least one surprise when the extent of A. Q. Khan's proliferation activities became clear. And the question remains regarding the degree of support, if any, his proliferation activities received from the Pakistani government.

Israel

The intelligence record with regard to Israel also seems to have been mixed. Israel has never acknowledged that it possesses nuclear weapons, preferring to adhere to a policy of ambiguity, but it has never been a party

³⁶ *Ibidem.*, pp. 444-445.

³⁷ *Ibidem.*, pp. 445-446.

³⁸ *Ibidem.*, pp. 435-436.

³⁹ "Pakistan Nuclear Weapons", Federation of American Scientists, 11 December 2002, available at: <http://www.fas.org/nuke/guide/pakistan/nuke/>.

to the Nuclear Non-proliferation Treaty (NPT) and is regarded as a de facto nuclear weapon state. The only uncertainties appear to have been the precise size of its arsenal, use doctrine, targeting, and alert status.

US intelligence became interested in the Israeli program early on and by the late 1950s became convinced that Israel was engaged in a secret nuclear weapon program. The CIA learned of the Norwegian heavy water sale to Israel, and by 1960, Dimona was considered to be a "probable" nuclear weapon development site.

After taking office in January 1961, President Kennedy pressed for biannual inspections to resolve ambiguities in US understanding, but the Israelis refused and were successful in limiting the frequency and duration of US inspections, thereby concealing the true purpose of Dimona.⁴⁰ Officials at the CIA and State Department remained skeptical, however. While all US government agencies believed that Israel had the capability to build a nuclear weapon quickly if it so chose, there were differences of view as to whether it had actually done so.

By 1974, however, a national intelligence estimate concluded that Israel had already produced nuclear weapons -- between ten to twenty.⁴¹ By the 1980s, the estimate had increased to between twenty to thirty.⁴² However, an interview accompanied by photographs by Mordechai Vanunu, a former employee at Dimona, was published by the London Times on 5 October 1986, which revealed that the nuclear weapon program in Israel was much larger – one hundred to two hundred weapons – and disclosed an Israeli capability to build thermonuclear weapons.⁴³ Thus, while US intelligence provided policy makers early warning of an Israeli nuclear weapon program in the late 1950s, the size and capabilities of the program ultimately were underestimated.

Iran

US intelligence, along with the IAEA, has struggled to clearly understand the status of Iran's nuclear weapon efforts. In 1976 the Shah's government reached agreement with Siemens of Germany to build two reactors at Bushehr near the border with Iraq. It is unclear whether the Shah would ultimately have pursued a nuclear weapon capability. After the Islamic Revolution, Ayatollah Khomeini initially opposed the pursuit of nuclear weapons on religious grounds. Toward the end of the devastating 1980-88 Iran-Iraq war, however, he apparently changed his mind. Iran then hid sensitive nuclear activities from the IAEA for nearly two decades.⁴⁴

The United States had been concerned about the Iranian nuclear program for many years. In 1992, CIA Director Robert Gates testified to the

⁴⁰ Richelson, *Spying on the Bomb*, *op. cit.*, pp. 259-61.

⁴¹ *Ibid.*, p. 272.

⁴² *Ibidem.*, p. 361.

⁴³ *Ibidem.*, p. 365.

⁴⁴ Cirincione, *Deadly Arsenals*, *op. cit.*, p. 297.

Congress that Iran was seeking nuclear weapons and might acquire such weapons by the year 2000. Iran was attempting to purchase sensitive nuclear technology from Argentina and China, but these sales were blocked by the U.S. through diplomatic approaches to the two countries. As the years passed, and as stated earlier, increased intelligence regarding the Iranian nuclear sites was made available to the IAEA by China and other member states.⁴⁵

However, until 2000, US intelligence was not aware of the expanding cooperation between Iran and the A. Q. Khan network. Tehran was acquiring centrifuges for uranium enrichment from Khan for its facilities at Natanz. And, of course, it was not reporting these acquisitions to the IAEA as required by its NPT Safeguards Agreement. Meanwhile, during 2001 US intelligence was monitoring construction at Natanz that led some to conclude that suspicious clandestine activities were underway. And in 2002, the existence of the proposed heavy water reactor at Arak, along with the enrichment facilities at Natanz, were revealed to the world by the National Council of Resistance of Iran, the political arm of People's Mujaheddin, known as the MEK.⁴⁶

Disclosure of the nuclear facilities and Tehran's fear of US military power in the wake of 9/11 and associated military operations in Afghanistan apparently led Iran to agree to IAEA inspections at Natanz, Arak and other places which improved international understanding of Iran's program. Overhead collection was increased as well. But even with the on-site inspections and expanded surveillance, by early 2005 there still was much the United States did not know. The general assessment at that time was that Iran was five to ten years away from the capability to construct a nuclear weapon. By 2006, Iran had only a few more than 160 centrifuges operating. Even though in 2007, according to the Iranians, that number increased to 3,000, the Iranian program appeared to be proceeding slowly. And in 2007, the US Intelligence Community issued a new national intelligence estimate (NIE) that revised the Community's judgments regarding the status of Iran's nuclear weapon program.

Having experienced the political consequences of faulty intelligence regarding the status of Iraq's WMD programs, President Bush reportedly had begun questioning intelligence judgments on Iran's nuclear weapon program due to the limited intelligence available. At the same time, some in Congress began asking for a new intelligence estimate to update the judgments made in 2005.⁴⁷ The Intelligence Community reexamined its judgments and the result was quite surprising; after an additional scrub of old and new data, the Intelligence Community reported that Iran had apparently shut down, or at least suspended, its nuclear weapon program in 2003. The new judgments naturally posed a significant challenge to the Bush Administration's aggressive policy on Iran. The Intelligence

⁴⁵ "China Assists Nuclear Arms Probe of Iran," Associated Press, 2 April 2008.

⁴⁶ Richelson, *Spying on the Bomb*, *op. cit.*, p. 512.

⁴⁷ Peter Baker and Dafra Linzer, "Diving Deep, Unearthing a Surprise", *Washington Post*, 8 December 2007, p. A09.

Community reportedly set up a “red team” to determine whether the new information could be fake, but the IC concluded it was not.

It is important to examine how the 2007 judgments differ from those of 2005. The main Key Judgment made in the new NIE states: “We judge with high confidence that in fall 2003, Tehran halted its nuclear weapon program (*i.e.* its nuclear weapon design and weaponization work and covert uranium conversion-related and uranium enrichment-related work). This is not a reversal of a previous position but rather a new position; the previous 2005 NIE did not make a judgment on this issue. Left unchanged were the judgments that non-covert uranium enrichment development continued and that as a result Iran would have enough fissile material to have the option to build a nuclear weapon early to mid next decade. The new Key Judgments stated “We judge with moderate confidence Iran probably would be technically capable of producing enough highly-enriched uranium for a weapon sometime during the 2010-2015 time frame.”⁴⁸

As explained by the then Director of National Intelligence, Michael McConnell, the key factor in a nuclear bomb program is the production of fissile material, not nuclear weapon design work.⁴⁹ The NIE went on to state seven more Key Judgments regarding the status of Iran’s technical capabilities and prospects for producing a nuclear weapon, if it decides to resume such an effort.

Meanwhile, the IAEA continued to voice concern about Iran’s nuclear activities. In a report to the Board of Governors on 30 August 2007, Director-General ElBaradei warned that without full implementation of the Additional Protocol designed to prevent a repeat of Iran’s undeclared activities for nearly two decades, the Agency is not in a position to provide credible assurances about the absence of undeclared nuclear material and activities in Iran.⁵⁰ In February 2008, he concluded that Iran’s undeclared nuclear activities for over two decades undercut international confidence about the future intentions of Iran’s nuclear program.⁵¹ And on 7 March 2011, new IAEA Director-General Amano stated that the Agency cannot confirm that all nuclear material in Iran is in peaceful activities because Iran has not provided the necessary cooperation.⁵²

⁴⁸ NIE Iran: Nuclear Intentions and Capabilities (declassified Key Judgments), November 2007.

⁴⁹ Testimony of Director of National Intelligence Michael McConnell before the Senate Select Committee on Intelligence, 5 February 2008.

⁵⁰ Mohamed ElBaradei, “Implementation of the NPT Safeguards Agreement and Relevant Provisions of Security Council Resolutions 1737 (2006) and 1747 (2007) in the Islamic Republic of Iran”, Report by Director General, IAEA, GOV/2007/58, 15 November 2007.

⁵¹ IAEA Staff Report, “Latest Iran Safeguards Report Delivered to IAEA Board”, 23 February 2008 available at: <http://www.iaea.org/newscenter/news/2008/iranreport0208.html>

⁵² IAEA Director General Amano’s Introductory Statement to Board of Governors, 7 March 2011, available at: <http://www.iaea.org/newscenter/statements/2011/amsp2011n005.html>

With respect to the substantive judgments reached in the 2007 NIE, one should not gain great comfort in the US assessment that Iran had stopped work on only a portion of its nuclear weapon program. What the new NIE seemed to be reporting was that Iran had suspended only the engineering (i.e. design, weaponization, and covert enrichment of uranium) aimed at the production of warheads. And Iran's secret construction of another uranium enrichment facility near Qom deepened suspicions that Iran is interested in developing at least a breakout capability for clandestinely producing fissile material for weapons, independent of its existing LEU stockpiles which are monitored by the IAEA.⁵³ New Director of National Intelligence, James Clapper, testified early this year that Iran is keeping open the option to develop nuclear weapons and is technically capable of producing enough highly enriched uranium for a weapon in the next few years, if it chooses to do so.⁵⁴

Libya

Despite suspicions, US intelligence was able to pin down details of Libya's nuclear weapon efforts only after discovering the extent of Libya's dealings with the A. Q. Khan network. However, intelligence subsequently played a significant role in the dismantlement of that program.

Between 1970 and 1990, Libya made numerous attempts to acquire a nuclear weapon capability, but after many years, Qadhafi had nothing to show for his efforts. The Libyan nuclear program was regarded in several US intelligence studies as rudimentary, plagued with poor leadership, and unlikely to produce a nuclear weapon in the foreseeable future.⁵⁵ In 1995, the Libyans approached A. Q. Khan and offered to buy the complete capability to develop and construct nuclear weapons internally. The Khan network made some initial deliveries in 1997 – twenty centrifuges and parts for more – which would permit Libya to begin research. The Khan network was expanded, establishing facilities in Malaysia and elsewhere, to carry out the Libyan deal with final agreement reached in 2000.⁵⁶ By 2002 Libya had assembled a few centrifuge machines and had been supplied with a design for a bomb. By 2003, all this was beginning to come together.

Meanwhile, the CIA had been working closely with Britain's MI6 on the Libyan case, and by 2003, penetration of the Khan network was leading to growing concerns about Libya. It was decided that something needed to be done, but sources had to be protected and it was necessary to be sure of getting the whole network.

⁵³ Greg Thielmann, "The Iran Nuclear NIE of 2007: Revise, Reject, or Reiterate", Arms Control Association, *Issue Briefs*, vol. 1, no. 18, 12 August 2010, available at: <http://www.armscontrol.org/issuebriefs/irannie2007>.

⁵⁴ Statement for the Record on the Worldwide Threat Assessment of the U.S. Intelligence Community for the House Permanent Select Committee on Intelligence (HPSCI), James R. Clapper, Director of National Intelligence, 10 February 2011.

⁵⁵ Richelson, *Spying on the Bomb*, *op. cit.*, pp. 336-337.

⁵⁶ Gordon Corera, *Shopping for Bombs: Nuclear Proliferation, Global Insecurity, and the Rise and Fall of the A.Q. Khan Network*, Oxford and New York, Oxford University Press, 2006, pp. 108-109.

In March, 2003, Qadhafi secretly approached the British government with the proposal to negotiate on weapons of mass destruction, including Libya's nuclear program. Months of difficult negotiations involving CIA, MI6 and key figures in the Libyan government followed. The March 2003 invasion of Iraq may have been the tipping point for him as he might have thought that he would be next, but it is more likely that Qadhafi had already concluded that he needed to change his relationship with the international community. The negotiations dragged on until September, and then the tip off came that a ship named the BBC China was headed for Libya from the Khan network with key nuclear technology for the Libyan program. Germany was the owner of the ship, and it was stopped and searched in Italy before it arrived in Libya. The crates containing the equipment – centrifuge components – were opened and their contents confirmed. It was clear to the Libyans that British and American intelligence knew exactly what Libya was doing. The game was up, and within two weeks the first western inspectors visited the key Libyan sites.⁵⁷

North Korea

US intelligence was alert to the construction of North Korea's reprocessing facility at Yongbyon, but it took longer to confirm the covert uranium enrichment activities. North Korean interest in acquiring nuclear weapons goes back to agreements signed on nuclear research in 1956 and 1959 with the Soviet Union and in 1959 with China. After the first Chinese nuclear weapon test in 1964, Kim Il Sung sent a delegation to China seeking assistance in developing nuclear weapons. He tried again unsuccessfully in 1974. Finally, Kim gave the order to his government in the late 1970s to build nuclear weapons on their own.⁵⁸

The Soviet Union had sold a small 2-4 megawatt research reactor to North Korea in the 1960s which was sited near Yongbyon, and North Korean and Soviet scientists also established a nuclear research center there. In the early 1980s, North Korea began work on a significantly larger research reactor in the 20-30 megawatts-thermal range (providing about 5 megawatts-electric output). This reactor was designed as a dual-purpose reactor – producing heat and electricity as well as plutonium. Although monitoring the progress of North Korea's nuclear weapon program was a significant challenge, given the lack of US presence in the country, US intelligence closely followed the construction activity at Yongbyon during the 1980s.⁵⁹ And in 1989, a CIA analysis concluded that North Korea was rapidly expanding its nuclear-related activities and identified what appeared to be a reprocessing plant. By 1991, there were intelligence estimates in Washington that North Korea was about three to five years away from a weapon.⁶⁰

⁵⁷ *Ibid.*, pp. 176-194.

⁵⁸ Richelson, *Spying on the Bomb*, *op. cit.*, p. 332.

⁵⁹ *Ibid.*, p. 346

⁶⁰ *Ibidem.*, pp. 351, 357.

In early 1992, North Korea finally signed its NPT Safeguards Agreement with the IAEA, but early in the IAEA inspections process, the IAEA gathered samples of nuclear waste and upon analysis concluded that more than the admitted 90 grams of plutonium had been reprocessed. And during their visit in late 1992, Director General Blix and IAEA inspectors became suspicious of two apparent nuclear waste storage areas at Yongbyon. In late February 1993, the IAEA Board approved a strongly worded resolution requesting a “special inspection” of the two sites, which it believed (based on satellite imagery presumably provided by a member country) would reveal evidence of undeclared plutonium production. This request was immediately rejected by North Korea, and a few weeks later the IAEA Board approved a resolution forwarding the North Korea case to the UN Security Council for consideration of sanctions.⁶¹

In December 2002, North Korea expelled the IAEA inspectors, and in January 2003, North Korea withdrew from the NPT. This led to considerable uncertainty regarding how much reprocessing had taken place. By April 2004, US intelligence revised its estimate of the North Korean nuclear arsenal upward to eight nuclear weapons.⁶² In the spring of 2005, there were concerns that a nuclear weapon test was being planned which occurred on 9 October 2006. Intelligence analysis indicated that it was an unsuccessful test – an attempted four-kiloton test resulting in probably less than a one-kiloton explosion. IAEA inspectors left North Korea in April 2009, and in May North Korea conducted a second nuclear test.

There were concerns within the US Intelligence Community as early as 1999 that North Korea was also pursuing a covert uranium enrichment program. It was believed that the A. Q. Khan network and Pakistan had delivered the necessary assistance to North Korea.⁶³ And by the fall of 2002, the United States had what it believed was “irrefutable evidence,” most likely from what it learned from penetration of the A. Q. Khan network, that North Korea possessed a covert program to produce nuclear weapons through uranium enrichment. In November, 2010, North Korean officials admitted to US visitors that North Korea had constructed and started operating a uranium enrichment facility at Yongbyon supporting the longstanding US assessment that the DPRK was pursuing a uranium-enrichment capability.⁶⁴

South Africa

The existence of South Africa’s nuclear arsenal caught US intelligence by surprise. Pretoria’s white minority government had begun a small uranium enrichment program, and in the mid-1960s it was moved to Pelindaba to permit more sophisticated experiments. In 1970, Prime Minister Vorster

⁶¹ Mitchell Reiss, *Bridled Ambition: Why Countries Constrain Their Nuclear Capabilities*, Washington, Woodrow Wilson Center Press, 1995, pp. 40-52.

⁶² Richelson, *Spying on the Bomb*, *op. cit.*, pp. 529-534.

⁶³ Charles L. Prichard, *Failed Diplomacy: The Story of How North Korea Got the Bomb*, Washington, Brookings Institution Press, 2007, pp. 27-29.

⁶⁴ DNI testimony to HPSCI, 10 February 2011.

authorized the construction of the first nuclear bomb – a gun type device. A test site was located in the Kalahari Desert.

In the 1970s, South Africa began to be of interest to US intelligence. In a 1974 intelligence estimate, South Africa was judged unlikely to develop a weapon program, even though it possessed enrichment technology that would permit such a decision. It judged further that a weapon program would only be pursued if a serious threat from one of its African neighbors should appear.⁶⁵

In 1977, South Africa was preparing to conduct a nuclear weapon test at its Kalahari test site when a Soviet reconnaissance satellite passed over the test site in early July. After the photographs were analyzed in Moscow, a second satellite was deployed on 20 July for a closer look. After these photographs were analyzed, the Soviet government asked for US government help in stopping the test. US intelligence apparently had not independently detected the test preparations but quickly reprogrammed collection assets to check out the test site and confirmed what the Soviets had reported⁶⁶ even though a US interagency study concluded that South Africa had no overriding reason to test at that time.

South Africa did not carry out a nuclear weapon test at the Kalahari site, but a mysterious double flash of light (a normal signature of a nuclear explosion) emanating from the South Atlantic was detected by a U.S. VELA satellite in 1979. For years there was disagreement among experts as to whether or not this event had been a nuclear weapon test.⁶⁷ However, in 1997 after the change in South African governments, the new South African foreign minister stated that the 1979 incident was a joint South African-Israeli test, although the minister's office later claimed that he had said only that there was a "strong rumor" that such a test had taken place.⁶⁸ Nevertheless, the credibility of the official's statement, which not surprisingly has never been acknowledged by Israel, is bolstered by reports of Israeli-South African cooperation on nuclear issues and by the fact that the previous white-minority South African government continued to build nuclear weapons through the 1980s. President de Klerk stopped the program in 1989 and ordered the six existing weapons destroyed; IAEA observers were invited to witness their destruction in the early 1990s.⁶⁹ Although US intelligence had strong suspicions regarding the program, South Africa's activities had been kept secret from US intelligence, and apparently other intelligence services, through effective concealment as well as lack of priority collection focus.

⁶⁵ Richelson, *Spying on the Bomb*, *op. cit.*, pp. 270-271.

⁶⁶ *Ibidem.*, pp. 278-282.

⁶⁷ Reiss, *Bridled Ambition*, *op. cit.*, p. 10.

⁶⁸ David Albright, "A Flash From the Past", *Bulletin of the Atomic Scientists*, November-December 1997.

⁶⁹ Hansen, *Comprehensive Nuclear Test Ban Treaty*, *op. cit.*, p. 56.

Syria

In what appears to be a good news story, intelligence was able to detect Syria's clandestine nuclear program early on, but some uncertainty remains regarding Syrian intentions. On 6 September 2007, Israel destroyed a facility built near a location named al-Kibar, in northern Syria, 90 miles from the Iraqi border. Satellite imagery suggests it could have been a small nuclear reactor under construction similar in design to the 5-megawatt, gas-cooled, graphite-moderated reactor at Yongbyon in North Korea. This was later confirmed by a video that had been taken inside the building.

Even though Syria has never been credited with having a nuclear weapon program, this is not the first time that one had been suspected. The Bush administration had reportedly been skeptical prior to the Israeli attack in September 2007 that the facility, which had been monitored by reconnaissance satellites since 2001, was a nuclear reactor built with North Korea's assistance. However, in late April 2008, the CIA reportedly testified to Congress that the facility had included a tall, boxy structure like those used to house gas-graphite reactors, and a video secretly taken prior to the Israeli raid showed that the Syrian reactor's core design was the same as that of the North Korean reactor at Yongbyon. This video reportedly also showed North Koreans inside the unfinished reactor which convinced the Israelis to destroy it.⁷⁰ How the individuals were positively identified as North Koreans is unclear.

US intelligence officials were quoted as claiming that they had high confidence that North Korea had aided Syria but only low confidence that the facility was meant for weapons development. And in his public comment on the facility, then CIA Director Michael Hayden stated that the plutonium reactor was within weeks or months of completion, that it was a similar size and technology to North Korea's Yongbyon reactor, and that it could produce enough nuclear material to fuel one to two weapons a year.⁷¹ However, there was no sign of a reprocessing plant that would be required to convert spent fuel from the reactor into weapon-grade plutonium.⁷²

The US Intelligence Community admitted that its low-confidence judgment regarding an association between the facility and weapons development was based on the lack of an identifiable plutonium reprocessing facility in the region of al-Kibar. Also absent was an identifiable means for Syria to manufacture the uranium fuel needed to operate the reactor. However, the Intelligence Community claimed that the absence of power lines and switching facilities needed for a facility required to provide energy increased suspicion that the facility was not being built for peaceful purposes. Moreover, the Community was able to conclude that

⁷⁰ Robin Wright, "North Koreans Taped at Syrian Reactor", *Washington Post*, 24 April 2008, p. A01.

⁷¹ "CIA: Syria reactor could make 1-2 bombs a year," Reuters, 28 April 2008, available at: <http://uk.reuters.com/article/2008/04/29/korea-north-usa-idUKN2820597020080429>

⁷² "IAEA Chastises U.S., Israel over Syrian Reactor", MSNBC, Associated Press, 25 April 2008, available at: <http://www.msnbc.msn.com/id/24306434/>.

nuclear cooperation between North Korea and Syria had begun as early as 1997.⁷³ And on 6 June 2011, Director General Amano repeated his earlier statement that the Syrian Government had failed to cooperate fully. He then reported that the IAEA had concluded that it is very likely that the building destroyed was a nuclear reactor which should have been declared to the Agency. On 9 June, the IAEA Board of Governors found Syria to be in non-compliance with its Safeguard obligations for failing to declare the alleged reactor and for not providing design information for the facility prior to construction. The Board then referred the Syrian nuclear case to the UN Security Council.⁷⁴

Russia

As stated earlier, the main policy and intelligence concern with regard to Russia was the disposition of its nuclear arsenal, fissile material, fabrication plants, and the availability of experts who were either going without pay or out of jobs after the breakup of the Soviet Union. It is safe to say that at least some nuclear material left the former Soviet Union, but it is highly doubtful that any nuclear weapons were stolen. It is also highly probable that some Soviet nuclear experts found employment in those countries interested in developing their own nuclear arsenals.

Since the end of the Cold War, the United States has provided over \$10 billion to assist in securing Russian nuclear weapons and material through the Cooperative Threat Reduction (CTR) Program, which includes the development of a modern warhead accounting and tracking system.⁷⁵ Russia has the world's largest stocks of weapons-grade and weapons-useable nuclear materials. Elements of the US Intelligence Community, including experts from the Department of Energy, have been intimately involved in tracking the implementation and effectiveness of this program.

Monitoring Non-State Actors

Efforts to detect, follow, and understand the proliferation activities of non-state actors, such as the A. Q. Khan network and international terrorist organizations, are even more challenging than those for individual nation-states described above. Non-state entities do not generally own territory or have facilities that can be monitored, at least by normal remote intelligence technical means. It takes the on-scene assistance of local police or others to detect and monitor any suspect activity. However, non-state actors often depend on the assistance of nation-states, or entities within those states, which means that the monitoring of suspect nation-state suppliers may expose their support to terrorists. Earlier this year, the Director of National Intelligence testified that US intelligence has no information indicating that a

⁷³ Peter Crail, "US Shares Information on NK-Syrian Nuclear Ties", *Arms Control Today*, May 2008, available at: http://www.armscontrol.org/act/2007_12/IAEAIran.asp?print.

⁷⁴ Peter Crail, "IAEA Sends Syria Nuclear Case to UN", *Arms Control Today*, July-August 2011, available at: <http://www.armscontrol.org/epublish/1/v41n6>.

⁷⁵ Cirincione, *Deadly Arsenals*, *op. cit.*, pp. 131-132.

nation state has deliberately provided nuclear assistance to any terrorist group.⁷⁶

In a fall 2008 speech, IAEA Director-General ElBaradei stated that the number of reports of radioactive material stolen around the world during the previous year was disturbingly high. Although the total amount of material missing was not enough to build one nuclear device, ElBaradei said that the possibility of terrorists obtaining nuclear or other radioactive material remains a grave threat. Most of the concern centers on countries of the former Soviet Union.⁷⁷

Thus far, little has been made public regarding efforts by the United States or other countries to follow and disrupt proliferation activities of international terrorists. We suspect that the successful detection of such activities is so sensitive that governments do not want to alert non-state actors to their tracking methods. From time to time, however, one reads about the arrest of individuals supposedly handling some type of nuclear, chemical, or biological item. And much has now been written about A. Q. Khan's proliferation activities.

A. Q. Khan network

Abdul Qadeer Khan was once described by CIA Director Tenet as "at least as dangerous as Osama Bin Laden."⁷⁸ After completing his university studies in Pakistan, he went to work for a subcontractor of URENCO in the Netherlands, where he had access to sensitive information relating to uranium enrichment and the nuclear fuel cycle. Traumatized by Pakistan's defeat in the 1971 war with India, Khan secretly transferred centrifuge plans and other sensitive information to which he had access at URENCO to Pakistani agents. Toward the end of his stay in the Netherlands, Khan's activities were discovered by the Dutch security service. The Dutch government was prepared to move against him; however, CIA reportedly urged that this not happen so that the U.S. could learn more about his activities and associates. In less than a year Khan was able to establish the Engineering Research Laboratories (ERL) and begin playing a significant role in the Pakistani nuclear weapons program.⁷⁹

Khan reappeared on the CIA's radar screen in Islamabad in early 1976.⁸⁰ By 1979, experts at the CIA realized that Khan had assembled everything he needed to construct his own centrifuge plant. US intelligence closely followed Khan's work, but what wasn't known for over a decade was that Khan had emerged, after the maturity of the program in Pakistan, as a worldwide middleman of nuclear proliferation. In the 1980s, the CIA and

⁷⁶ DNI Testimony to HPSCI, 10 February 2011.

⁷⁷ Neil MacFarquhar, "Rates of Nuclear Thefts Disturbingly High, Monitoring Chief Says", *New York Times*, 28 October 2008, p. 7.

⁷⁸ Correra, *Shopping for Bombs*, *op. cit.*, p. xiii.

⁷⁹ Douglas Frantz and Catherine Collins, *The Nuclear Jihadist: The True Story of the Man Who Sold the World's Most Dangerous Secrets... And How We Could Have Stopped Him*, New York, Hachette Book Group, 2007, pp. 68-71

⁸⁰ *Ibid.*, p. 84.

British Intelligence learned that Khan had obtained a design for a Chinese nuclear weapon tested in 1966 (which he later supplied to the Libyans and probably the Iranians). However, the CIA didn't fully understand that Khan was using his program to support other countries, most importantly Iran, North Korea, and Libya. In addition, in October 1990, Khan sent an emissary to Baghdad to offer a package of nuclear weapons technology. The Iraqis were interested, but no action was taken.⁸¹

Khan's travels in Africa apparently in search of uranium raised suspicions, and in the late 1990s, information on the developing relationship with Libya began to emerge as US intelligence understood better how the Khan network operated. A far greater concern was intelligence that Khan was increasing his cooperation with North Korea to include enrichment technology. However, while the CIA had detected Khan's work with North Korea, it was not as fortunate with Khan's cooperation with another troublesome regime – Iran.⁸² Finally, in early 2000, as mentioned earlier the CIA was able to recruit one of the key figures in Khan's illegal supply ring and obtained proof that two of the most dangerous regimes in the world were pursuing nuclear weapons with Khan's assistance.⁸³

In the fall of 2000, Pakistani President Musharraf initiated his own investigation, and on 10 March 2001, Khan's career in Pakistan's nuclear industry came to an end.⁸⁴ This did not stop Khan, however; he simply relied more on his network. The development of a complete nuclear weapon program for Libya continued at his facility in Malaysia, as did the frequent trips to North Korea to assist with the uranium enrichment program there. The CIA and British Intelligence, having so deeply penetrated the network, were fully aware of all of this. When, in August 2002, the National Council of Resistance of Iran blew the cover on the Iranian program, Khan immediately realized that he was in serious trouble, as IAEA investigations could reveal that he had provided the prototypes and blueprints for Iran's program, which now was running largely on its own.

Once Qadhafi decided to come in from the cold, the United States had the opportunity to break the Khan network and put an end to his career. CIA Director Tenet confronted President Musharraf in New York in September 2003, and insisted that Musharraf close down the Khan operation by arresting Khan. Seizure of the BBC China forced Musharraf to act. Khan publicly confessed, but Musharraf pardoned him and placed him under long-term house arrest. Many of Khan's associates were arrested and jailed at least for a time. Khan later said his confession was forced upon him.

Because the A. Q. Khan network was international, various concerned countries had to work together and share intelligence to monitor

⁸¹ Graham and Hansen, *Preventing Catastrophe*, *op. cit.*, p. 81.

⁸² Frantz and Collins, *The Nuclear Jihadist*, *op. cit.*, p. 210.

⁸³ *Ibid.*, pp. 249-251.

⁸⁴ *Ibidem.*, pp. 252-260.

and analyze the extent of the nuclear proliferation activities being carried out. Cooperation was required to piece together the intelligence and to develop policy efforts that would be successful in stopping further proliferation. Much of the credit for ending this threat goes to the US and British intelligence services, although the U.S. and UK delayed taking preventative action in order to better understand the extent of Khan's network and proliferation activities. As a result of the delay, significant proliferation had taken place before the network was properly understood or before measures were taken to halt its activities. The advances made in the Libyan program with Khan's help and the potential for actually building a bomb was a dramatic demonstration of the dangers of permitting Khan to operate all those years, even while being watched by the CIA and presumably other services.⁸⁵

International terrorists

There is no question that terrorist groups, such as al-Qaeda, would use a nuclear weapon, or at least nuclear material, in an attack if possible. Before he was killed, Bin Laden had said repeatedly that he considered acquisition of nuclear weapons "a religious duty."⁸⁶ Crude nuclear devices, such as a gun-type device like the weapon used against Hiroshima, could probably be fabricated by an organization such as al-Qaeda, but terrorists still need to get their hands on a sufficient amount of fissile material. State-owned and controlled stockpiles of fissile material remain the most likely gateways to nuclear terrorism. However, unless a nation-state gives fissile material to a group, security may be too great to steal it, and the price may be too high.

We can hope that international efforts to monitor and limit proliferation have been at least partly responsible for the absence of nuclear material thus far in terrorist attacks. A terrorist group, especially one possessing nuclear capability, would not likely be deterrable in the traditional Cold War sense. However, the good news is that a complicated chain of events must take place for a terrorist organization to obtain nuclear material, fabricate even a crude device, and deploy it successfully. To carry out a nuclear attack, the terrorist organization must successfully complete each step in the process. For a country to defend against an attack, it needs to detect and disrupt only one step of the process. With nuclear attacks, then, the odds may work against terrorists and for the defenders.⁸⁷

⁸⁵ Correra, *Shopping for Bombs*, *op. cit.*, pp. 176-216.

⁸⁶ CIA Director Hayden Remarks at the Los Angeles World Affairs Council, 16 September 2008.

⁸⁷ William Potter, "Using Murphy's Law Against Nuclear Terrorists", *Arms Control Today*, November 2007, available at: http://www.armscontrol.org/act/2008_04/BookReview.

What Lessons Have We Learned from the Case of Iraq?

The US Intelligence Community's effort to accurately assess the status of Iraq's WMD programs and how that information affected policymakers prior to the introduction of US military forces in 2003 provide an important case study of the challenge intelligence faces in correctly understanding small, clandestine nuclear weapon programs.

Prior to 1991, it was clear that Iraq was pursuing a nuclear weapon capability. Following the Israeli attack on the Osirak reactor in 1981, Baghdad continued its pursuit of nuclear weapons but by a different clandestine route – uranium enrichment, and US intelligence believed this program existed, in spite of the failure of the IAEA to find anything significant during NPT safeguards inspections over the years. But, it is fair to note that neither the United States nor the IAEA had successfully detected the extent of the program until the UN-mandated inspections began after the 1991 Gulf War.⁸⁸ When UN and IAEA inspectors examined Iraq's nuclear weapon program following the war, it was a surprise how much progress had been made. The IAEA discovered that the nuclear facility at Tuwaitha was far larger and more extensive than had been imagined and that Iraq could likely have constructed a nuclear weapon in two or three more years. Although the IAEA believed it had entirely eliminated this nuclear infrastructure by 1996, Iraq retained capable nuclear scientists and knowledge that could not be erased, so by 2003 reconstitution could not be ruled out.

After Saddam Hussein barred further inspections in 1998, the international community was denied considerable ground truth regarding efforts to reconstitute his WMD programs, and uncertainties grew as time moved on without the aid of inspections. His intentions were to do so, and the international community subsequently learned that he skimmed off large profits from the Oil for Food Program, circumventing sanctions to finance the reconstitution efforts.⁸⁹ Meanwhile, the United States and other countries were trying to monitor the progress of his efforts through indirect human sources (i.e. defectors, émigrés, and liaison reporting) which meant that they were unable to fully determine the reliability of the sources or the accuracy of their reporting. Moreover, Saddam Hussein's regime had demonstrated its sophistication in concealing activities from inspectors, which made it difficult to know who was telling the truth and who actually

⁸⁸ Richelson, *Spying on the Bomb*, *op. cit.*, p. 448.

⁸⁹ Iraq Survey Group Report "Regime Strategic Intent", 6 October 2004.

knew the truth about Iraq's reconstitution efforts. And because most of the clandestine work took place in laboratories or dual-use facilities, or it was otherwise hidden through extensive concealment efforts, US remote technical monitoring capabilities were generally unhelpful in accurately monitoring the progress being made. As a result, no one was inclined to doubt reports regarding his attempts to move ahead, especially on chemical and biological weapons programs. Unfortunately, we subsequently learned that some of the information obtained, particularly from liaison human sources and defectors, was misleading or just plain wrong.

Intelligence Judgments

Based on the history of Saddam Hussein's regime, his efforts to deceive, his incomplete accounting to the UN Security Council, and his intentions, US intelligence analysts reached what most people at the time believed were reasonable judgments that he was, in fact, reconstituting his WMD programs. In late 2002, the main uncertainty was regarding how much progress he had made. No one believed he had yet produced nuclear weapons; and when inspections resumed, the IAEA reported that it found no evidence of a reconstituted nuclear weapon program. But, all believed that he probably had chemical and biological warfare agents waiting to be used, even though former UNMOVIC Director Hans Blix stated that by "January 2003, we had performed quite a lot of inspections to sites which were given by intelligence and they had not shown any weapons of mass destruction, so we began to be doubtful." He admitted, however, that until about May 2003, inspectors still thought it possible to find evidence of WMD programs.⁹⁰ Now, more than eight years after the beginning of US military operations, no significant evidence for such weapons has been uncovered. It appears that the Intelligence Community, for a variety of reasons overestimated the progress that the Iraqi regime had made in reconstituting its programs.

As mentioned above, no one in the US Intelligence Community believed that Iraq had nuclear weapons, but all believed that Saddam Hussein desired them. There were, however, clear differences of view regarding how much progress had been made. The majority view was that "... if left unchecked, it [Iraq] probably will have a nuclear weapon during this decade." CIA and other agencies concluded that because of Iraq's aggressive attempts to obtain what they believed were high-strength aluminum tubes for centrifuge rotors, the Iraqi nuclear weapon program was moving forward. The US Department of Energy (DOE) agreed that reconstitution of the nuclear program was underway, but it concluded that the aluminum tubes were not part of the program. The US State Department's Bureau of Intelligence and Research, persuaded by DOE's analysis of the aluminum tubes issue, was the most reserved and stated that "Saddam continues to want nuclear weapons and available evidence

⁹⁰ Hans Blix, interview with Jim Lehrer, Online News Hour, 17 March 2004, available at: http://pbs.org/newshour/bb/international/jan-june04/blix_3-17.html.

indicates that Baghdad is pursuing at least a limited effort to maintain and acquire nuclear weapon-related capabilities.”⁹¹

Unfortunately the aluminum tubes were included in Secretary of State Powell's February 2003 speech to the UN Security Council presenting the US case for using military force. Both policymakers and the US Intelligence Community were discredited as a result.

One of the better researched analyses of the debates within the Intelligence Community is provided in a book by Jeffrey T. Richelson, *Spying on the Bomb: American Nuclear Intelligence from Nazi Germany to Iran and North Korea*. He concludes that the Intelligence Community had made reasonable assumptions regarding Saddam Hussein's desires and intent, but senior IC management allowed the views of nuclear experts in DOE to be overridden by the majority of analysts at CIA and DIA.⁹² Moreover, there was imagery, SIGINT, and human source information that seemed to confirm their assumptions. Liaison information also confirmed what most US analysts believed to be true.

A legitimate question can be posed regarding the sources that the Intelligence Community had at the time. Former DCI Tenet admitted that the Intelligence Community had precious few human sources of its own and was highly dependent upon those friendly liaison intelligence services which had sources.⁹³ This was echoed in a subsequent speech by the former CIA Deputy Director for Operations who explained the difficulty the United States had in recruiting and vetting reliable human sources on Saddam Hussein's regime.⁹⁴

Critiques of the intelligence

After many months of investigation, most concluded that US intelligence had overestimated Saddam Hussein's success in reconstituting his WMD programs. As a result, several studies were conducted in an effort to identify what had gone wrong in leading to the judgments made in the October 2002 NIE. The studies, especially the WMD Commission Report, generally concluded that the intelligence failures were in large part due to analytical shortcomings; analysts were wedded to their assumptions, there was little new information to analyze and much of what existed was misleading and of dubious credibility (such as information provided by the German-run human source, "Curve Ball"), and the Intelligence Community failed to adequately explain how little good current information it actually had. Absent new information, analysts fell back on old assumptions. However, these assumptions were not foolish or unreasonable, and the

⁹¹ National Intelligence Estimate "Iraq's Continuing Program for Weapons of Mass Destruction" October 2002 (declassified Key Judgments, released in February 2004)

⁹² Richelson, *Spying on the Bomb*, *op. cit.*, pp. 476-487, 501-502.

⁹³ DCI Tenet Remarks at Georgetown University, 5 February 2004.

⁹⁴ James Pavitt, Remarks at the Foreign Policy Association, 21 June 2004, available at: https://www.cia.gov/news-information/speeches-testimony/2004/ddo_speech_06242004.html.

failures were not repeated everywhere, pointing to good analyses on Libya and the A. Q. Khan network.⁹⁵ A panel of retired CIA analysts echoed the WMD Commission's conclusion that the human source information was misleading and often unreliable. Intelligence analysts were forced to rely heavily on liaison reporting for key judgments, but some of that information proved to be false.⁹⁶

Based on the above analyses and the various reports cited, the following conclusions seem balanced and fair:

(1) The IC made reasonable assumptions based on the context, history, and intentions of Saddam Hussein's regime. The analysis of the Iraqi nuclear weapon program was essentially correct, but the IC incorrectly believed that Iraq had stockpiles of chemical and biological precursors and agents.

(2) The differing views regarding how much progress Iraq had made in reconstituting its nuclear weapon program after the dismantlement efforts by IAEA inspectors in the 1990s demonstrated that significant uncertainty existed. The Intelligence Community would have been well-advised to at least acknowledge that there were other plausible explanations, such as rampant disinformation and lying, for the contradictory information on Iraq's WMD programs. The IC apparently failed to fully understand Saddam Hussein's logic and objectives such as his concerns regarding Iran.

(3) The gap between what the Iraqi Survey Group eventually reported in 2004 and the judgments provided by the Intelligence Community in 2002 shows an urgent need for the IC to enhance its capabilities to monitor and correctly understand small, clandestine WMD programs and the regimes that are pursuing them. This requires better human sources and understanding of the technical aspects of proliferation activities.

(4) The Iraq case shows that it is critical also for the Intelligence Community to have a sophisticated understanding of the countries that are pursuing clandestine WMD programs. Former CIA Director Hayden stated that CIA analysis put too little reliance on experts on Iraq and too much reliance on technical experts with regard to Iraqi progress.⁹⁷ Although many experts on Iraq apparently also believed that the Iraqi regime was hiding its WMD programs, perhaps a more insightful understanding of the internal dynamics of the Saddam Hussein regime would have shed critical light on the actual progress that had been made. It is possible that some regime officials hid from Saddam Hussein the real situation by exaggerating the progress that had been made in reconstituting his WMD programs.

⁹⁵ The Commission on the Intelligence Capabilities of the United States Regarding Weapons of Mass Destruction, 31 March 2005, p. 4.

⁹⁶ Richard Kerr, Issues for the US Intelligence Community, July 2004, available at: https://www.cia.gov/csi/studies/vol49no3/html_files/Collection_Analysis_Iraq_5.html.

⁹⁷ Graham and Hansen, *Preventing Catastrophe*, *op. cit.*, pp. 146-147.

(5) The IC's judgments were not politicized directly by policymakers, but sufficient pressure was put on the IC by policymakers so that a thorough scrub was not made of the evidence, especially that provided by human sources, or of the underlying assumptions. And, Director Tenet appears to have gotten dangerously close to providing the intelligence desired by the White House, rather than ensuring that the Intelligence Community explored and gave warning that their assumptions might not be accurate. It is likely that intelligence managers were frustrated and were willing to look for information that might substantiate policymakers' intentions, although this does not mean that they would have necessarily withheld contrary information.

(6) Finally, the October 2002 NIE should have at least acknowledged the possibility that due to denial, deception, and lying both to the outside world and within Saddam Hussein's own regime, Iraq may not have still had chemical and biological weapons in its inventory. It appears that no one in the IC, at least as evidenced by the Key Judgments of the 2002 NIE that were made public, was willing to suggest that Saddam Hussein needed to give credence to his WMD capabilities for domestic and regional reasons. Too much emphasis was placed on the technical side of the issue at the expense of Saddam Hussein's motivations and his regime's cultural background and political imperatives. Alternative explanations for the discrepancies between the Iraqi leader's declarations, the results of the inspections, and the reports from human sources would have been useful.

It is obvious that mistakes in process (*i.e.* vetting sources), analysis, and judgment were made by various components of the Intelligence Community with regard to Iraq's WMD programs prior to 2003. However, it seems clear that even a more accurate assessment of Iraq's WMD programs by the Intelligence Community would not have deterred policymakers from pursuing the course of action they desired.

What Did US Policymakers Declare?

Some policymaker comments about intelligence on the Iraqi regime's WMD programs and its relations with terrorist groups made it sound like a more imminent threat than the Intelligence Community had conveyed, at least as reflected in the declassified NIE. It is likely that this was due in part to the fact that some policymakers were basing their comments on analysis provided by sources other than the US Intelligence Community. This seems evident from a statement by the Pentagon's Inspector General in April, 2007, that the Defense Department had inappropriately undercut the Intelligence Community's analysis by issuing its own reports of close Iraqi-terrorist connections.⁹⁸ This smells of an attempt by some policymakers to create their own intelligence basis for decisions and actions when the Intelligence Community's analysis and judgments did not provide sufficient justification for their preferred policy.

⁹⁸ Carl Levin, "Hussein-Qaeda Link 'Inappropriate', Report Says," *New York Times*, 6 April 2007, p. 6.

Even though there was no evidence of direct politicization of the intelligence judgments by policymakers, these judgments certainly were exploited, over stated, and sometimes simply ignored.⁹⁹ Policymakers' assertions about potential Iraqi "mushroom clouds" or efforts to obtain yellowcake were clearly exaggerations. According to Tenet, Iraq's interest in yellowcake was not a major factor in the Intelligence Community's assessment despite policymaker assertions. Finally, according to Tenet, the Intelligence Community's Key Judgments in the 2002 NIE on Iraqi WMD programs were more categorical and less nuanced than the text in the main body of the NIE.¹⁰⁰ Similar criticisms have been made regarding the 2007 NIE on Iran's nuclear weapon program mentioned earlier. Senior policymakers rarely read beyond the shorter key judgments of an estimate which are crafted especially for them. It is a continuing challenge for intelligence to communicate its judgments in a short, concise manner without distorting the message.

Implications

It is incumbent upon the US Intelligence Community to learn from this episode in order to avoid making similar mistakes in the future. With regard to the selective use of intelligence by policymakers, the Iraq episode is not unique. There will always be efforts on the part of some policymakers to use only the information that helps and to ignore that which does not. Thus, it is imperative that the Intelligence Community maintain its integrity by being objective, bold and professional enough to report what policymakers need to know even when they do not want to hear it.

Despite the risks involved in using information provided by liaison intelligence services, there will continue to be situations where that is likely to be the best source of information available due to the lack of US entrée. The United States must also carefully consider information from international inspections. Hans Blix states that in the case of Iraq during the 2002-early 2003 period, UNMOVIC carried out some 700 inspections at some 500 different sites, including some three dozen at sites suspected and suggested by US intelligence. UN inspection teams reported no significant WMD-related finds.¹⁰¹ However, one must keep in mind that having inspectors on the ground, as helpful as that can be even with national intelligence guidance and participation, does not necessarily ensure the defeat of concealment and deception efforts by the country being inspected. Former DCI Tenet stated that a sensitive source reported that Iraq knew the inspectors' weak points and how to take advantage of them. The source said there was an elaborate plan to deceive inspectors and to ensure that prohibited items would never be found.¹⁰² Nevertheless, having inspectors on the ground has the potential to confirm suspicious activity or facilities detected through satellite imagery, and inspections certainly force the country trying to hide activities to take additional steps to do so. This was clearly the case in Saddam Hussein's Iraq, in the early

⁹⁹ George Tenet, *At the Center of the Storm*, New York: Harper Collins, 2007, p. 326.

¹⁰⁰ *Ibid.*, p. 327.

¹⁰¹ Graham and Hansen, *Preventing Catastrophe*, *op. cit.*, p. 150.

¹⁰² DCI Tenet Remarks at Georgetown University, 5 February 2004.

days of Israel's nuclear weapon program, and today in the case of Iran's secret nuclear activities.¹⁰³ Both technical and human collection efforts need to work together with international inspections to increase the chances of gaining a correct understanding of clandestine activities.

Finally, the US Congress is likely to be much more skeptical of intelligence estimates and judgments on clandestine nuclear programs, such as was the case in 2007 regarding Iran. There will be concerns about White House pressure or "spin" put on intelligence analysts by the Administration to serve policy goals. Thus, senior intelligence analysts and officials may become less willing to make firm judgments for fear of being judged as simply responding to political pressures. There also could be an effect on Congressional funding of intelligence programs in emphasizing technical intelligence collection, e.g., satellite reconnaissance, intercepts, etc., over support for human intelligence. This would be unfortunate in today's world of small but potentially deadly, nuclear weapon programs where human sources often provide the best information.

¹⁰³ Graham and Hansen, *Preventing Catastrophe*, *op. cit.*, pp. 108 -109.

Is It Possible to Monitor and Prevent Further Proliferation?

The urgency of detecting the existence of and correctly understanding the details about clandestine programs has increased with the possibility of additional states, such as Iran, developing nuclear weapons, or even international terrorists obtaining and using nuclear material if not weapons themselves. Consequently, the Intelligence Community and policymakers have had to adjust their thinking about the nature of the threat and the approach that needs to be taken to deal with it. Unfortunately, rogue states and non-state actors, such as black-marketeers and terrorists, can learn from successful efforts to expose and halt proliferation efforts which provide them a better understanding of the intelligence capabilities being used to monitor and restrain them.

Even though over the past 50 years the United States and international community have had considerable success in slowing down the proliferation of nuclear weapons by nation states, the difficulty in quickly understanding the extent of the A. Q. Khan proliferation network demonstrated that the supply of technology and equipment is difficult to track, especially when in the hands of non-state actors. It is clear that good intelligence, wise policymaking, good cooperation between federal and local law enforcement and intelligence organizations, and effective international cooperation will be required to prevent such weapons from entering the military arsenals of additional countries, such as Iran, or reaching the hands of terrorists.

Some have questioned whether US intelligence is up to the task of monitoring and correctly reporting on the status of small, clandestine proliferation programs. As former DCI Tenet stated and as echoed by subsequent senior intelligence officials, the Intelligence Community has tried to learn from its past mistakes and to correct its shortcomings in part through a more thorough vetting of its sources, rebuilding its clandestine service with officers who possess the language and cultural understanding required to operate successfully in denied areas, improving analytical tradecraft, and in presenting its findings more clearly.¹⁰⁴

The US Intelligence Community's responsibility to monitor clandestine nuclear programs may have been made more difficult by the exposure of some sensitive sources and methods of collection and analysis

¹⁰⁴ DCI Tenet Remarks at Georgetown University, 5 February 2004.

in public discussions, such as the presentation by former Secretary of State Powell before the UN Security Council in February 2003, and the subsequent statements by former DCI Tenet and former CIA Director Hayden in their efforts to explain the IC's support to non-proliferation efforts. Moreover, the organizational changes made to the Intelligence Community through legislation in 2004 may also have contributed, at least in the short term, to a weakening of the IC's effectiveness. Foreign intelligence services are probably somewhat unsure as to who is actually running US intelligence, which may make them more hesitant to share key pieces of information.¹⁰⁵

Success in effectively monitoring proliferation activities in the 21st Century is not assured, just as it was not for Cold War efforts to monitor Soviet military forces. Effective human source collection requires careful planning and execution of agent recruitment and development programs, diligent vetting of human sources, and patience. In terms of technical collection, creativity and ingenuity are required to break into the covert activities of those using every means available to deny, conceal, and mislead. For analysts, success in understanding the bits of information collected requires, as learned from the Iraq case, the ability to think "outside the box" and to apply the relevant cultural, historical, and "real-politik" lenses. Challenging assumptions and considering alternative explanations are critical to increasing the chances of reaching accurate judgments.

The Intelligence Community must remain apolitical and objective in its judgments while being creative and aggressive in its effort to detect and understand unique efforts to proliferate. The US Intelligence Community's chief responsibility is to warn policymakers and help them avoid potentially tragic blind spots regarding the threats facing them. Intelligence, at least in the United States, serves as the first line of defense against the threats in the twenty-first Century, including the proliferation of nuclear weapons and material, especially to terrorists. Intelligence officers must have the courage to report to policymakers what they need to hear, whether or not they wish to hear it.

Former Director Tenet's remarks seem appropriate, not as a rationalization for the Intelligence Community's failure to correctly assess the status of Iraq's WMD programs but rather as a realistic recognition of the challenges intelligence faces. In brief, he said that intelligence deals with the unclear, the unknown, and the deliberately hidden. Uncertainties in intelligence information are significant, and analysts must fill in the gaps with informed judgments. He concluded that mistakes are disappointing and dangerous, and when the Intelligence Community gets it wrong, it must figure out why and fix the problem.¹⁰⁶

¹⁰⁵ David Ignatius, "Repairing America's Spy Shop", *Washington Post*, 6 April 2008, p. B07.

¹⁰⁶ DCI Tenet at Georgetown University, 5 February 2004.

Finally, an increase in the number of countries possessing and shipping nuclear material around the world, especially in the Middle East, would give terrorists additional opportunities to purchase, if not steal, the fissile material critical to producing and using at least crude nuclear or radiological bombs in the future.¹⁰⁷ Thus, it is imperative that intelligence stay abreast of developments, such as those now unfolding in the Middle East, South Asia, and elsewhere, in order to provide warning and understanding to policymakers to prevent further nuclear weapon proliferation. Intelligence organizations in the United States and elsewhere must consider the unusual and unthinkable, cooperate, and protect sensitive sources and methods in order to stay ahead of would-be nation state and non-state nuclear proliferators.

¹⁰⁷ Joby Warrick, "Spread of Nuclear Capability Feared", Washington Post, 11 May 2008, available at: <http://www.msnbc.msn.com/id/24572974/>.

Information

All published issues of the Proliferation Papers series can be downloaded from the Ifri website.

www.ifri.org

The latest contributions include:

- Pavel Podvig, “Russia’s Nuclear Forces: Between Disarmament and Modernization”, *Proliferation Papers*, No. 37, Spring 2011.
<http://www.ifri.org/downloads/pp37podvig.pdf>
- David S. Yost, “Strategic Stability in the Cold War: Lessons for Continuing Challenges”, *Proliferation Papers*, No. 36, Winter 2011.
<http://www.ifri.org/downloads/pp36yost.pdf>
- Charles D. Ferguson, “Potential Strategic Consequences of the Nuclear Energy Revival”, *Proliferation Papers*, No. 35, Summer 2010.
<http://www.ifri.org/downloads/pp35ferguson.pdf>
- Jing-dong Yuan, “Chinese Perceptions of the Utility of Nuclear Weapons: Prospects and Potential Problems in Disarmament”, *Proliferation Papers*, No. 34, Spring 2010.
<http://www.ifri.org/downloads/pp34yuan.pdf>
- Jonathan D. Pollack, “North Korea’s Nuclear Weapons Development: Implications for Future Policy”, *Proliferation Papers*, No. 33, Spring 2010.
<http://www.ifri.org/downloads/pp33pollack.pdf>
- Bobo Lo, “Russia, China and the United States: From Strategic Triangularism to the Post-modern Triangle”, *Proliferation Papers*, No. 32, Winter 2010.
http://www.ifri.org/downloads/pp32bobolo_1.pdf
- William C. Potter, “In Search of the Nuclear Taboo: Past, Present, and Future”, *Proliferation Papers*, No. 31, Winter 2010.
<http://www.ifri.org/downloads/pp31potter.pdf>

For further information on the *Proliferation Papers* collection, please feel free to contact Ifri’s Security Studies Center: strategie@ifri.org.