



Power, National Security, and Transformational Global Events

Challenges Confronting America, China, and Iran

Edited by
Thomas A. Johnson

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*For her wisdom,
encouragement, and deep and enduring love,
this book is dedicated to my wife, Colleen Rose Johnson.*

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Preface

The era of globalization, which has characterized growth within the international community, has been deeply curtailed, if not destroyed by the great recession of 2008. This book explores the power shifts that have occurred and have precipitated major transformational global events, principally within America, China, and Iran. The national security of the United States has been based upon its power resources, specifically its economic power and wealth, which has permitted our military power to be unmatched in the world. As a result of the great recession of 2008, and the impact of the economic meltdown on the United States and the nations of the European Union, we find a transfer of wealth from the West to the East, as well as many new challenges to the national security of nations espousing democratic principles.

The economic growth of China since Deng Xiaoping laid the foundation for modernization and reform in 1978, following Mao Tse-Tung's death in 1976, has been nothing short of an economic miracle. China's wealth has been marked by the fact that today it is the world's largest exporter and holds the world's largest foreign currency reserves. The power of the economic system of China is now permitting its ability to make massive investments in its military, and to begin challenging the "Blue Water" naval strength of the United States. If China had not purchased such an incredible amount of U.S. Treasury bills and bonds, the great 2008 recession in America might have been a great depression. Because China holds so much of America's debt and has not modified its monetary policies as frequently requested by the United States, the path forward between America and China will be characterized by an increased adversarial relationship.

The transformational global events occurring in the Middle East, in which 15 nation/states are being impacted, has increased America's concern regarding Iran and its policies. Iran's continued declarations against Israel, and the potential for military action by its proxy armies Hezbollah and Hamas, as well as the potential for a full fledged Middle East war breaking out is a major concern. Also, Iran's continuing effort to develop itself into a nuclear power, does not eliminate the possibility of Israel's concern and interest in neutralizing this capability. Of particular concern is the prospect of nuclear proliferation, particularly in an area that lacks political stability, and which could easily draw the two global super powers, the United States and China, into an increased adversarial status. Furthermore, as the Arab revolution

of 2011 in the Middle East continues, how will the United States, China, and Iran use their power to position their future interests?

The future key resource drivers that will impact each nation will be examined, and the emergence of cyber power and its capabilities for cyber attack, cyber warfare, and cyber defense is described and analyzed. Also, the information revolution that has provided instruments such as Facebook, Twitter, and YouTube is described in terms of its social media role and its impact on the revolution in the Middle East nation/states.

Finally, the fallacy of the decline of the United States as a superpower is discussed in terms of its formation and distribution of power resources and its continued military and national security strengths. The challenges confronting America to establish working relationships with both China and Iran, and to formulate solutions based upon the use of power with each, as opposed to power over them, require our nation's best diplomacy and the wisdom of our leaders as well as the leadership of both China and Iran.

Acknowledgments

This book is the result of many dedicated colleagues who have contributed their wisdom and a great deal of their time to make this textbook possible. It is with a deep sense of appreciation that I thank each of my contributing authors for their excellent chapters and for their years of service to our nation.

Our publisher, CRC Press, Taylor & Francis Group, has provided us the support and opportunity to once again work with their excellent personnel. Carolyn Spence and Jill Jurgensen are not only consummate professionals who have offered their assistance and encouragement but the most skilled and thoughtful colleagues an author could ever hope to work with, and for this we are most grateful.

Finally, the guidance, wisdom, and support offered by my wife, Colleen, as she worked with each of our contributing authors and myself on a range of issues from constructively critiquing our manuscript to her editorial assistance has been critical to the preparation of this book. We are indebted to her for her tireless effort and her knowledgeable insights, advice, and support.

Thomas A. Johnson
University of Wisconsin-Parkside
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Editor

Dr. Thomas A. Johnson

Dr. Thomas A. Johnson currently serves as a faculty member of the Criminal Justice Department at the University of Wisconsin-Parkside. He also is a co-founder and Chairman of the Board of Directors of the California Sciences Institute in Livermore, CA. He serves as a member of the Board of Directors of the SANS Technology Institute. He received his bachelor's and master's degrees from Michigan State University and his doctorate in Criminology from the University of California-Berkeley.

Dr. Johnson has developed programs in Cybercrime and Forensic Computer Investigation and also founded the Graduate National Security program offered at two of our National Nuclear Security Administration Laboratories in California and New Mexico.

Dr. Johnson also currently serves as a member of the FBI Infraguard program and also is a member of the Electronic Crime Task Force, New York Field Office, and San Francisco Field Office, U.S. Secret Service. The U.S. Attorney General appointed Dr. Johnson a member of the Information Technology Working Group, and he served as Chair, Task Force Group on Combating High Technology Crime for the National Institute of Justice. Dr. Johnson was also appointed an advisor to the Judicial Council of California on the Court Technology Task Force by the California Supreme Court.

Dr. Johnson has published 6 books and 13 referred articles and holds copyright on 4 software programs, and his chapter "Infrastructure Warriors: A Threat to the U.S. Homeland by Organized Crime" was published by the Strategic Studies Institute of the U.S. Army War College ("*... to insure domestic Tranquility, provide for the common defence ...*" *Papers From the Conference on Homeland Protection*, 2000). In addition to lecturing at the U.S. Army War College, Carlisle Barracks, he has also lectured at the Federal Law Enforcement Training Center and numerous universities.

Dr. Johnson has appeared in both State and U.S. Federal courts as an expert witness, and was a member of the Select Ad Hoc Presidential Investigative Committee and consultant to the American Academy of Forensic Sciences in the case of Sirhan B. Sirhan regarding evaluation of ballistics and physical evidence concerning the assassination of U.S. Senator Robert F. Kennedy.

Contributors

Colonel Andrew J. Budka

Colonel Andrew J. Budka's excellent chapter, "The Arab Revolutions of 2011: Promise, Risk, and Uncertainty," is rich in both historical insights and the depth of its analysis, which is critical for a thorough understanding of the Middle East. Many of Colonel Budka's insights are drawn from both his knowledge and experience in the Middle East as he served for 26 years in the U.S. Marine Corps from 1973 until 1999. He held a variety of command, intelligence, and nuclear security and guard force positions to include Middle East and Counterterrorist analyst at the Pentagon Navy Annex; Intelligence Staff Officer at several Marine Corps Regiments and Divisions; Commanding Officer of a Marine Detachment; Intelligence Staff Officer at the United States Central Command; and Chief of Staff at the United States Training Mission to Saudi Arabia. He also served as military program advisor to the Royal Saudi Navy and Marine Force in Riyadh from 1996 until 1999 and participated in Operations Desert Shield and Desert Storm in 1990 and 1991 and in Somalia in 1993. He also participated in assignments in Tunisia, Egypt, Morocco, Kuwait, Saudi Arabia, Bahrain, Somalia, Italy, Norway, and the Mediterranean littoral.

Since 2003, he has served at Los Alamos National Laboratory (LANL) as the Group Leader for Physical Security Group-4—Deployed Security—and in this capacity manages and supervises 50 to 60 security professionals who are embedded in the line organizations at LANL and provide all manner of security support and security risk mitigation to these units. In addition, he also frequently conducts information sessions with security professionals and intelligence analysts at LANL and other police and security organizations in New Mexico that focus on the understanding of Islamic radicalism and other Middle East and South Asian issues. Colonel Budka holds a bachelor's degree from the University of Kansas (1973) and has a Master of Arts in National Security and Strategic Studies from the U.S. Naval War College at Newport, RI (1995). Colonel Budka also completed the Marine Corps Foreign Area Officer's Arabic language and culture program, a 2-year course of study, at the Defense Language Institute in Monterey, CA, and the Foreign Service Institute, then located (1983–1984) in Tunis, Tunisia.

Marsh E. Burfeindt

Marsh E. Burfeindt's chapter, "Rapprochement with Iran," is an insightful and thought-provoking assessment of the challenges confronting the United States and the West in efforts designed to engage a working relationship with Iran. Building on Robert Bears' insights into Iran, we see additional important points that Burfeindt calls to our attention and which will merit further analysis and critical discussion by policy makers of the member nations of our international community. Burfeindt's background and education has provided her the opportunity to analyze the complexity of the strategic and operational issues involved in the articulation of policy development of nation-to-nation relationships.

Burfeindt is currently employed as an administrative research assistant in the Nuclear Weapons Program at Sandia National Laboratories, Albuquerque, NM, where she has been responsible for research, analysis, and compilation of data to support the Nuclear Weapons Program organizational and strategic planning decisions. Her responsibilities also have included managing a \$12 million laboratory-directed research and development program for Nuclear Weapons Programs. Additional responsibilities have included administrative support for the Nuclear Weapons Integration Planning Department and the Weapons Engineering and Technology Maturation Center. As liaison to various governmental agencies for the Nuclear Weapons Program Office, she has been engaged in the development of online training for foreign government interactions based on international treaties. She has more than 15 years of experience in medical and basic science research with a focus on dual-use technologies and extensive experience working with various national defense programs. Burfeindt received a Master of Science in National Security and Public Safety from the University of New Haven and an MBA from the University of Texas. She is currently enrolled in the National Security PhD program at the California Sciences Institute.

Julie Lowrie

Julie Lowrie's chapter, "China: Economic Intimidation and Runaway Corruption," provides a very frank discussion on both the culture of corruption and the nature of economic intimidation that China must forcefully address and resolve not only for its internal harmony but also to become a more effective and respected member of the international community. Lowrie has served as a senior investigator for the U.S. Department of Labor and currently is an associate corporations investigator for the California Department of Managed Health Care. Lowrie has more than 21 years of experience conducting more than 50 complex financial and economic crime investigations involving health care, pension, bank, and bankruptcy fraud.

She has testified before federal grand juries and at trial and has extensive trial experience in the federal court system both in a lead and supportive investigative role, as well as having prepared for and participated in numerous major fraud criminal trials in Santa Ana and Los Angeles, CA, and Honolulu, HI.

Her investigations have entailed unraveling complex financial transactions through multiple investment structures and entities in order to obtain legally admissible evidence needed in criminal prosecutions. The dollar amount of losses involved in the cases she has successfully completed ranges from approximately \$100,000 to \$50 million, with multiple victims ranging from less than 100 to over 22,000. She has received the U.S. Attorney's Office Outstanding Achievement Award in 2009 and the U.S. Attorney's Office Exceptional Achievement Award for her work in the United States vs. James Graff conviction in 2007. Julie Lowrie's educational background includes a bachelor of arts degree from the University of California-San Diego; a law degree from the American College of Law; and two Master of Science degrees, one from Utica College in Economic Crime Management and the second from the California Sciences Institute in Advanced Investigations.

Charles M. Preston

Charles M. Preston's chapter, "The Information Revolution: The Emergence of Cyber Power," not only is written with great clarity but has captured the substance of technology and so eloquently presented the manner in which cyber power has become such a transformational power in and of itself. This chapter discusses the manner in which social media is emerging as a vehicle in which individuals, groups, and organizations are changing the nations and the world as we know it. Preston's background and experience is most impressive as he started working with computers as a microcomputer builder and programmer when the first commercial kits became available. Some previous background in electronics and radio made this hands-on approach easier. As a law-enforcement investigator and manager, he was an early adopter of information technology for law enforcement purposes. After his law-enforcement experience, he worked as a consultant, researcher, technical trainer, and analyst in information protection and information technology for more than 20 years. This includes work on technical and nontechnical issues associated with vulnerability and penetration testing, electronic eavesdropping detection, open source intelligence, secure network analysis, security evaluations, policy and compliance reviews, and protection posture assessments. He has provided security seminars on five continents and has consulted in energy, banking, financial services, transportation, computer, telecommunications, and pharmaceutical industries. He has a Master of Science degree from the California Sciences Institute in Advanced Investigation focused on digital forensics.

Power Shifts and Transformational Global Events

1

THOMAS A. JOHNSON

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Most predictions of shifts in the relative standing of one nation to another nation regarding its global power status have been premised on one factor, namely, the projections of growth in the gross national product. Joseph S. Nye, Jr.'s recent book *The Future of Power* adds insight into those transformational global events that occasionally occur, by providing a set of analytical tools he terms military power, economic power, soft power, and smart power.¹ These tools can be of assistance in evaluating whether in fact a true transformational global event is occurring or whether there is a power shift among the standing of nations. This chapter begins by examining the four power constructs to set

the stage for an analysis of major global events that will challenge the nations of America, China, and Iran.

1.1 Nation/State's Sources of Power Resources

The power of any nation is traditionally measured in terms of its military resources and capabilities, as well as its economic resources. In fact, a nation intent on acquiring a major military capability must first have the economic power to acquire the necessary military tools of personnel, equipment, technology, and financial resources to sustain a well-equipped fighting force.

For a nation to truly be powerful, it requires soft power in addition to its hard power as evidenced by its military might. Soft power is simply one form of power, or one strategy of obtaining desired outcomes. A nation's source of soft power is from its culture, political values, and its policies, which, when viewed by others, are deemed as being legitimate and having moral authority. However, if perceived as manipulative or seen as propaganda, its credibility is lost.²

According to Joseph Nye, smart power is about finding ways to combine resources into successful strategies. Since a strategy relates means to ends, this will require clarity about the goals or the preferred outcomes one hopes to achieve, as well as the resources and tactics that will be used. Smart power then provides an ability to evaluate which forms of power behavior are most likely to succeed and to gauge the probability of success. So from a nation's point of view, the concept of smart power is the intelligent integration and networking of diplomacy (soft power) and military (hard power), used in combination to achieve one's ends or preferred outcomes.³

A new form of power known as information power has emerged throughout the world, and this power base is built on the combination of technology and information systems. The fascinating aspect of information power is that no one nation has exclusive control over it, nor does it belong solely within the sphere of governments. Information power can be exercised by non-governmental agencies and is fully within the reach of any individual with minimal technological tools and financial resources. Information power is growing beyond the reach of governmental controls and can, therefore, be utilized in both beneficial and harmful ways.

Today, there are major power shifts occurring within three nations: America, China, and Iran, and a series of transformational global events has impacted each nation. These transformational global events have not been episodic or rash but have emerged over at least three decades, and in some cases, even a longer time line is involved. As America, China, and Iran are addressing these transformational global events, the concept of power is fundamental to the national security of each nation.

The status of superpower for any nation interested in acquiring this level of respect from other nation/states is dependent on its acquisition of economic resources or power, military power, political power, and cultural sophistication. A nation that has the capacity to project its influence and power anywhere in the world and to sustain this power in multiple regions of the world simultaneously would have all of the necessary characteristics that would define its status as a superpower. In terms of the recent historical past, we can identify the British Empire, the Soviet Union, and America as three superpower nations. Of course, today, only America remains as a superpower, and China is clearly emerging as one.

1.1.1 Military Systems and Power

In examining the concept of military power and how America, China, and Iran have each embraced this form of power, we are interested in observing and analyzing the power shifts that currently confront each nation. For example, no nation in the recorded history of the world has ever seen the acquisition of military power that today exists in America. The combination of electronic warfare capabilities with the most sophisticated weapons systems, a sophisticated officer corps with combat experience, an Air Force with aviation equipment capable of space warfare technologies, and a blue-water navy capable of positioning assets on every ocean in the world provides a military power base. The critical question of power shift that America is addressing centers on whether its economic power will continue to permit the allocation of resources that are necessary to support its military in its current form while also providing the resources to maintain its cutting edge research and development in engineering the next generation of weapons systems.

Of the three nations, Iran is clearly not a superpower but aspires to become a regional superpower within the Middle East. Iran's military power is based on its calculated use of its proxy armies; namely, Hezbollah and Hamas. Iran sees its efforts in obtaining nuclear weapons and the accompanying missile systems to enable its goal of achieving regional superpower status. The power shift that Iran has dealt with centers on other nation's condemnation of its developing nuclear weapons programs and delays caused by the Stuxnet computer viruses targeting its nuclear weapons development program. Iran has aligned its interests with those of Syria, the only Arab nation in the Middle East to openly support and work with Iran. As a result of the Arab Spring and the current revolution occurring in Syria, there is a potential major power shift, which could well impede Iran's use of its proxy armies, particularly Hezbollah, since Syria will not have the capacity, interest, and focused attention to continue its support for Iran's use of Hezbollah in Lebanon and elsewhere. In fact, Hezbollah and Iran may well move weapons and missiles currently in Syria to Lebanon. Iran has had to maintain a

low profile in the Syrian Revolution for fear of losing possible support by young Arabs throughout the Middle East.

Amer Taheri recently reported that the Islamic Majlis, Iran's ersatz parliament, published a report on the Arab Revolution and asked for urgent action to protect their strategic interests, in case President Bashar-al-Assad is toppled. Currently, Syrian opposition forces to President al-Assad's regime have claimed that Iranian trained snipers or agents have been used to kill demonstrators, just as the Iranian regime used snipers to kill protestors during the 2009 presidential election of Mahmoud Ahmadinejad in Iran. Whether or not Iran has indeed sent agents to Syria to assist President Bashar al-Assad, Iran is bound by treaty to assist Syria against any threats to its security and stability and that includes intelligence and security issues with regard to dissident armed groups. Iran's interest in Syria is also premised on the fact that Syria's geographical location permits Iran a crucial role in channeling arms to both Hezbollah who operates in Lebanon and Hamas who has a reinigorated role in the Palestine territories. Further, Syria's location provides Iran deep water port access to the Mediterranean.⁴

China is a nation that has the ability to obtain true global superpower status along with America. While America's economic power is currently creating major problems as a result of its \$14 trillion deficit, China, on the other hand, sees its economic power growing at a rate which has now permitted it to replace Japan as the number two nation with the highest gross domestic productivity. Regarding China's power shift in terms of its military power, it no longer is content with being a regional superpower, but now has its aim on becoming a global military superpower, similar to America.

The Chinese have been very keen observers of the military power of America, and because of their concern regarding Taiwan, they have continued to strengthen their military. Now, because of their power shift and their economic power growing at such a phenomenal rate, they have decided to shift some of their economic wealth to create a power shift in their military and to set their design on obtaining a carrier-based blue-water navy, and they have recently developed their J-20 stealth aircraft fighter. Also, they have demonstrated their capabilities in using space-based weapons, and they have the world's largest army, with more than 1.25 million active personnel in their People's Liberation Army (PLA).

However, it is interesting to note that China's military strategy is based on a realization that a conventional confrontation with America would be unsuccessful, so it has developed a strategy of "unrestricted warfare" that combines electronic, diplomatic, cyber, terrorist proxy, economic, and propaganda tools to deceive and exhaust the American military.⁵ This strategy is congruent to the asymmetric challenges the United States has prepared for and is consistent with how other terrorist organizations have confronted American military power.

When evaluating a nation's military power, one has to measure and compare the economic resources and capabilities of the opposing force. This analysis includes budgets, manpower, military infrastructure, defense industries inventory of aircraft, naval vessels, armor, tanks, and weapons systems. Other important factors that must be considered are such items as doctrine, military strategy, training, officer corp experience, recent combat experience, research and development, capacity for innovation, and the will of the nation's civilians to support and finance a military power.⁶ A more detailed view of military power, especially with reference to China's power shift, will be presented later in this and subsequent chapters.

1.1.2 Economic Systems and Power

A nation's economic system and its ability to produce wealth is measured by its size and quality of gross domestic product, per capita income, educational system, technology, natural resources, industrial capability, financial institutions, and human resources as these are the basic building blocks of a vibrant and sound economic structure.

This book takes the position that it is the economic power of a nation that is fundamental to the creation, support, and growth of a nation's military power. As a nation's economic power grows, and only if it grows, will there be an opportunity for the nation's military power to gain strength and stature. The decision to shift economic resources into the military is a decision of the appropriate governing bodies with the concurrence of the people of the respective nation. The allocation of scarce and limited economic resources is fundamental to the health, welfare, and national security of any nation seeking to possess a military power. It is the wealth and prosperity of a nation that determines the type, size, capabilities, and mission of a military power. Without a robust and formidable economic system, there is little likelihood that any nation could afford to have a military.

In terms of economic resources being allocated to the military power systems of both America and China, a 2010 Pentagon report estimated China's total military spending to be \$150 billion compared to the military spending in the United States of \$719 billion. China was spending 4% of its gross domestic production on the military, while the United States was spending 2% of its gross domestic production on its military.⁷ As America's economic deficit increases, its corresponding shift of resources to the military will decrease, and already the Secretary of Defense has recommended a \$90 billion decrease to the military. We have every reason to believe that as China's economy grows, it will continue to make much larger increases to its military budget as the costs to equip and support the PLA Navy and its carrier and blue water goals will be substantially increased.

1.1.3 Information Systems and Technology

As a result of sophisticated technology and computers linked to information systems, which are networked via incredible telecommunications speed and capability, we now are in an era where the information revolution has changed the very nature of power as traditionally used by governments. Today, thanks to the Internet and the access it provides to file servers containing databases throughout the world, information has become available at virtually no cost to anyone in the world with a computer and connectivity to the Internet. The new forum of access to information is in reality access to a form of diffused power that can be exercised either beneficially or harmfully. Since governments have always spent an enormous amount of time, effort, and money to acquire and, in some cases, control information by classification, we now find governments focusing on the danger of losing information or having it modified by those who might hack into their information systems. So, the flow and control of information is a source of power that must be retained by governments but could now be within the power realm of individuals and nongovernmental organizations. For example, terrorist groups can now use the Internet and achieve a global presence in any country in the world, and as noted in *The War on Terrorism: A Collision of Values, Strategies, and Societies*, the connection between the World Wide Web and worldwide terrorism can be visualized as follows:

Perhaps one of the most effective tools for terrorist organizations to use today is the World Wide Web, as it provides unparalleled communications capability for the terrorist to use in any number of ways. The use of the Internet can be directed in such a manner that terrorists can use their computers as tools to achieve any of the following tasks.

1. Collecting Information
 - Use as an intelligence-gathering device
 - Collect information on selected target sites and infrastructure targets
 - Plan attacks on target sites
 - Data mining of websites in target country
2. Providing Information
 - To recruit new terrorist members
 - To justify the rationale for declaring a fatwa
 - To provide information to remote sites and countries
 - To request funding and donations to support the cause
 - To circulate attack plans
 - To provide new manifestos
 - To share training materials
3. Acting as an Instrument of Attack
 - Cyber-attack opponent's websites
 - Cyber-attack electronic weapons systems

Cyber-attack electronic transfer of funds
Cyber-attack financial and stock exchanges
Cyber-attack electronic grid sites⁷

1.1.3.1 The Internet as an Instrument of Change

It is quite obvious that the operational significance of the Internet will change the organizational structures of terrorist groups, as well as the nature of the conflict. The Internet makes possible the virtual terrorist cell and permits a level of decentralization of the terrorist group never before experienced. The Internet has accelerated the spread of radical Islamist ideology, and accompanied this message with a rationale for attacking the West, and has spread this message to every corner of the Muslim world.

Email along with a full panoply of electronic and digital communications has transformed the religious terrorist group by providing instantaneous ability to disseminate battle plans, tactics, training, and intelligence to terrorist members in the most remote areas. Even more alarming is the nature of material already available on the web. People can download various computer viruses and Trojans and launch an attack with minimal computer skills necessary as the attack script is already prepared and easily available for downloading and launching.⁸

1.1.3.2 The Internet as a Tool of Cyber Warfare

The military organizations of many nations have found that cyber warfare strategies may well provide an opportunity to amplify other weapons systems they possess. For example, the ability to use the Internet to insert malware including worms and Trojan Horses software programs into an enemy's computer systems can be an effective weapon. A recent point to demonstrate the strength of such an approach was the Stuxnet worm that was directed and programmed to attack certain industrial processes of Iran's nuclear facilities, resulting in what has been reported by Iranian nuclear experts as a major interruption in their nuclear program.

It has also been reported by both the U.S. Defense Intelligence Agency and the Central Intelligence Agency that in 2007, when Syria's secret nuclear program was near completion, Israel neutralized Syrian Air Defense systems through cyber warfare and then proceeded to send aircraft to bomb and destroy the nuclear facility.⁹ Just as cyber warfare has very potent offensive capabilities and provides an enormous range of power to those nations utilizing this technology, there is also a down side to equipping your military with this capability. The down side is the need to develop sophisticated defense programs that protect your information resources from penetration and attack from opposing forces.

Both China and America have developed very sophisticated cyber war programs, and each has also taken great pains to develop defense systems to

prevent attacks or insertion of malicious software programs. In short, both nations have appreciated the power of information systems, and each is dedicating enormous financial resources and trained personnel to meet the challenges inherent in using this form of power.

1.1.4 Educational Systems

Another form of power that resides in any nation is the investment made in higher education as institutions dedicated to advancing knowledge, research, and development will be the hallmark of that society's ability to make advancement in its culture, values, and political systems. Further, the power a nation aspires to develop in its military, economic, and information systems are all dependent on its educational systems producing the graduates who will assume a leadership role within each of these respective power systems. A nation committed to developing its infrastructure and state-of-art military, economic, and information systems must not only have a steady pattern of growth of college and university graduates but must also possess world-class graduate and research programs.

As we examine the capacity of college and university systems of America, China, and Iran, one of the striking features is the growing number of female students enrolled in each nation's academic programs. Another aspect is the breadth of college and university programs as they are not all publicly financed institutions but a mixture of public, private, and religious-based institutions. Almost all of the institutions in China are government based, and few are private or religious-based institutions. In Iran, we observe some public and private institutions but a growing number of religious-based institutions. In fact, those institutions that are considered too "westernized" are experiencing great pressure to assume a perspective more in line with Moslem law dictates and tradition. In America, we have not only public, private, and religious-based colleges, but we also have "for-profit"-based private institutions, which have increased their enrollments due to their openness in planning for adult learners. Another aspect of our private institutions centers on some being "corporate owned," with branch campus locations throughout the United States. In contrast to the "corporate owned," we have corporate universities that are owned by a company, but they restrict their programs solely to their employees, and in this case, they really are not "for-profit" institutions but are their own programs. In fact, it is more likely than not that their courses will have a "training" perspective and not an educational perspective, although it is conceivable that some of their programs will be designed to enhance the research capabilities of their employees.

The U.S. Department of Education reports that in 2007 there were 4,861 colleges and universities in America with 18,248,128 students of which 57%

were female students.¹⁰ The number of graduates of these institutions was 1,563,000, and the degrees were conferred in the following fields¹¹:

Business	335,000
Social science	167,000
Health sciences	111,000
Education	103,000

While those at the graduate level received degrees in the following fields:

Health professions and clinical sciences	9,900
Education	8,500
Engineering	8,100
Biological and biomedical sciences	6,900
Psychology	5,300
Physical sciences	4,800

According to the Shanghai Jiao Tong University's ranking of academic programs throughout the world, more than 30 of the highest ranked institutions are in the United States, and this ranking is based on research output, articles published, highly cited researchers in 21 broad subject areas, and Nobel prizes and awards.¹²

China, during the same time period of 2007, had 2,236 colleges with 25,346,000 students enrolled, 48% were female students, and they graduated approximately six million students in 2007. According to the Ministry of Education of the People's Republic of China, higher education in China has played a significant role in the economic growth, scientific progress, and social development of its country. This growth is remarkable since its educational system was only given approval to resume operations in 1977 by Deng Xiaoping. Even more amazing, this occurred after China's Cultural Revolution in which the impact on China's higher education system between the years 1967 and 1976 saw the number of students enrolled drop to 47,800 students from 674,400.¹³ Thus, in the period of 30 years, China's educational system increased from 47,800 students enrolled to 25,346,000 enrolled in 2007, and almost six million students graduated from Chinese universities. This clearly has to be considered a major transformational event within China.

China's educational system continues its rapid emergence, and the wealth of its economic system is being reinvested in its educational system. Most recently, China has created its version of the China Ivy League by structuring nine of its most prestigious universities to work together. Also, one should note the extraordinary commitment China has made in the creation of engineering colleges and its emphasis on the physical sciences and mathematics. In short, China is on the move, in its development of the hard sciences, and it is directing its efforts to produce world-class universities.

Iran's educational system has experienced very profound changes since the 1979 Revolution, which in effect ended all American–Iranian academic relations. In 1980, Ayatollah Khomeini declared the “Iranian Cultural Revolution,” and this had an effect on the curriculum of the various colleges and universities in Iran. Tracking essentially the same time period of 2007 as we viewed American and Chinese higher education, we find in Iran 385 colleges and universities in which most, 289, were private universities with 54 state-operated universities and 42 state medical schools. There were 2,829,000 students enrolled in which 52% were female students. A total of 40,000 students were enrolled in master degree programs and 20,000 students enrolled in doctorate programs. One result of the Iranian Cultural Revolution was to require those universities that had courses or programs considered too “westernized” to modify them to comply with Moslem law and culture or face closure.¹⁴

America, China, and Iran have each valued their respective higher educational systems, and each has over the years experienced domestic events and stress points in which they have decided the value of their colleges and universities is important and meaningful to the stability and growth of their respective national goals.

1.2 Transformational Global Events

Fundamental to the transformational events impacting America, China, and Iran is the overarching presence of deep and important economic issues. Both America and China are involved in concerns as to how each nation will address its respective currency issue disagreement. As America is addressing a \$14 trillion deficit, China is concerned with inflation and domestic problems with the distribution of its wealth.

1.2.1 America and China Economic Dependency

Ever since the financial crisis of 2008, America and China have expressed deep concerns over currency valuation, and America has taken the position that China should let its currency float upward on the world market. China has countered this argument by stating America should focus on reducing its \$14 trillion deficit. Central to this disagreement is the economic reality that currency manipulation can become an important aspect of economic power in the global trading and financial marketplace. America maintains that China has fostered economic policies that have resulted in limiting the convertibility of its currency, the Yuan. As a result, China has increased and achieved huge trade surpluses with America by suppressing the value of its Chinese currency. Trade officials in the United States indicate the Chinese have also recycled their trade surpluses into America by buying American assets.¹⁵

Further, many American economists maintain this practice has depressed American interest rates and contributed to America's excessive use of credit. China totally rejects this line of reasoning and cites its view that the Japanese economic miracle ended by American pressure on Japan's currency to let the Yen rise against the dollar, which resulted in severely damaging the competitiveness of the Japanese industry.¹⁶

There is an interesting parallel between America's current financial relationship with China and the financial relationship America had with Japan three decades ago. In part, this explains some of the concern China has regarding America's continuing insistence that the Chinese currency, the Yuan, should be floated to the market and not kept at such a depressed value. This parallel relationship can best be portrayed by Joseph Nye's assessment in his excellent book, *The Future of Power*:

In the 1980s, when President Ronald Reagan cut taxes and raised expenditures, the United States became dependent on imported Japanese capital to balance its federal government budget. Some argued that this gave Japan tremendous power over the United States. But the other side of the coin was that Japan would hurt itself as well as the United States if it stopped lending to the Americans. In addition, Japanese investors who already had large stakes in the United States would have found their investments devalued by the damage done to the American economy if Japan suddenly stopped lending to the United States. Japan's economy was little more than half the size of the American economy, and that meant the Japanese needed the American market for their exports more than vice versa although both needed each other and both benefited from the interdependence.

A similar relationship has developed today between the United States and China. America accepts Chinese imports and pays China in dollars, and China holds American dollars and bonds, in effect making a loan to the United States. China has amassed \$2.5 trillion of foreign exchange reserves, much of it held in U.S. Treasury securities. Some observers have described this as a great shift in the global balance of power because China could bring the United States to its knees by threatening to sell dollars. But in doing so, China would not only reduce the value of its reserves as the price of the dollar fell, but it also would jeopardize American willingness to continue to import cheap Chinese goods, which would mean job loss and instability in China.¹⁷

Ironically, the American debtor and Chinese creditor relationship is now so dependent on one another that it represents a financial version of "mutually assured destruction," not unlike the nuclear balance of terror that existed between America and the Soviet Union during the Cold War.¹⁸

1.2.1.1 Quantitative Easing: Currency Dispute

China's economy is growing three times as fast as America's economy, demonstrating the divergent paths of the world's two largest economic nations.

While China is extremely concerned and preoccupied with its inflation, America worries about prices stagnating and the U.S. Federal Reserve continues to pump cash into the economy under its quantitative easing (QE) program. The QE2 as it is known has placed \$600 billion into the economy as a stimulus with precious little to show for it. U.S. banks are still not lending money to small businesses, and U.S. corporations simply are not hiring American workers. U.S. corporations, however, are expanding their jobs in foreign countries, and most of the employment opportunities are extended to those nations' workers. The Federal Reserve closed the QE2 program in June 2011 since its effort to provide stimulus to the economy has simply not worked. The real estate market remains depressed, and without employment picking up, people will simply not be able to return to the housing market as in past years.

Chinese officials blame their nation's inflation problem on the loose monetary policies of America, and once again American officials counter this argument by stating that China could control its inflation by simply allowing its currency to rise more against the dollar, which would lower the cost of imported goods. However, China is concerned that too steep a rise in its currency would harm its export business and have the impact of losing jobs in China for its workers. This is a domestic issue China is reluctant to accept since the political consequences to their leader would be unacceptable to them.

1.2.1.2 Federal Deficit: Interest Payments

The U.S. Federal Reserve continues to hold interest rates at close to zero, and the Federal Reserve has stated they will maintain the low rates on money for an extended period of time. Meanwhile, central banks in other nations are doing just the opposite by raising their rates. China has signaled its support for the Euro and euro-zone bonds, and American investors are now increasing their purchase of foreign stocks.¹⁹

The Federal Reserve remains committed to its monetary policy, simply because they have few other stimulus programs that have been effective in reducing America's high unemployment rate. Even more frustrating, Congress and the White House have not been able to agree on a coherent plan for reducing our nation's \$14 trillion deficit.

Goldman Sachs continues to forecast that China will overtake America in terms of gross domestic production by 2027. The shift of global economic power from America to China will accelerate because of the fiscal crisis in America and our enormous federal deficit. In fact, the Congressional Budget Office projects the interest payments on our federal debt will rise from 9% of federal tax revenue to 20% by 2020; will rise to 36% by 2030; and will rise to 58% by 2040. Only America's ability to print the world's premier reserve currency provides some economic relief. However, this privilege is under mounting attack from the Chinese government.²⁰

As America and China continue to debate their differences in currency valuation, America's largest challenge is directly related to how seriously it will address its \$14.29 trillion deficit, which is the debt ceiling set by law. When this debt level is reached, federal spending will have to be significantly reduced or totally stopped. If new revenues or taxes were to go to the U.S. Treasury, it would still not be sufficient to continue governmental operations; therefore, the government would be forced to default on various financial commitments, limiting or delaying payments to creditors and the thousands of vendors who work with the government. Eventually, social security, Medicare, and unemployment benefits would be affected or temporarily suspended. Should the federal debt ceiling not be raised by Congress, the impact on the value of the U.S. dollar would be to significantly lower its value, and the international community would call for its termination as the world's reserve currency. This may also have the effect of creating a "run" on the dollar in the international markets as nations would unload large portions of their holdings.

Since America's deficit level of \$14.29 trillion reached its legal limit by May 16, 2011, with only a permissible extension for 2 months, one can appreciate the concern of Congress in finding a workable solution to our financial debt limit. Standard and Poor's notified both Congress and the White House of its intent to lower the U.S. credit rating from its typical AAA status to AA, a downgrade from "stable" to "negative." There exists a condition of material risk that Congress may be unable to reach agreement with the White House as to how the United States will respond to the financial challenges by 2013. While it is critical for Congress to act on our financial debt limit, it is also extremely serious to begin programs that reduce our nation's continuing need and dependence on borrowing money from other nations. As our federal debt increases, the amount of interest to repay this debt will eventually reach a point where it will consume the future of our nation and cripple the standard of living for the future generations of our citizens.

This problem is larger than simply viewing it as an economic problem that might be ameliorated by an economic solution. The inability of Congress and the White House to work together in a collaborative fashion to address and propose remedies for our financial deficit is illustrative of the political gridlock that is gripping our nation. Unfortunately, this has resulted in further economic damage to our nation's very fragile financial system. The fact that elected members of Congress and our president are incapable of proposing solutions and working in a harmonious manner to resolve the greatest challenges our financial system has experienced since the Great Depression in 1929 has elevated the fears of both our citizens and the business community. Sacrifices will have to be made throughout America's entire society, and there can be no special interests termed untouchable as our nation is

confronting a transformational event of a magnitude our political system has been ill equipped to address.

Perhaps, Fareed Zakaria best captures the challenge America confronts by his observation “America’s economic system is its core strength, its political system is its core weakness.”²¹ Now is the time for our politicians to assume the role of “statesmen” and set forth a series of new policies that address our nation’s economic vulnerabilities and implement plans that benefit America as a nation, and rise above political party’s interests.

1.2.2 Middle East Nation/State’s and Iran

1.2.2.1 Arab Revolutions

On December 17, 2010, an event occurred in Tunisia that would create a power shift for 17 Middle East nations and have profound effect on Iran and America as well. Mohamed Bouazizi poured gasoline on himself and set himself on fire. His act of self-immolation was, according to his cousin, due to his disillusionment with the poverty in his life and the absence of any future. The cousin captured this event on his cell phone camera and notified Al Jazeera, which aired this event, as well as peaceful protests throughout the Middle East. Facebook, with more than three million Internet users in Tunisia, also picked up this story, and soon Twitter was carrying news throughout the Middle East. On January 4, 2011, Mohamed Bouazizi died from his injuries, and a nationwide civil protest was made possible due to the technology and functionality of the social media. Tunisian President Zine-Al-Abidine Ben Ali tried to shut down the online social media and Internet but was unsuccessful in doing so. On January 13, 2011, the president spoke to his nation and promised to cut the cost of food and not run for reelection in 2014. The next day, on January 14, 2011, he disabled the government, handed control of the nation to the prime minister, and fled the nation.²²

This event served as the catalyst to young people throughout Tunisia who also felt overwhelmed by their hopelessness. More importantly, this very significant protest viewed as monumental by young people in other Mideast nations empowered them with the belief they could also peacefully protest for governmental changes in their respective nations. So, the Jasmine Revolution, as it was known in Tunisia, became the catalyst of hope in which one nation’s experience inspired another nation.

The very next nation to feel the protest of its population was Egypt, and on January 25, 2011, the young people called for a “day of rage” and demanded President Hosni Mubarak resign from office. On February 4, 2011, protesters filled Tahrir Square in Cairo, in what they called the “Day of Departure,” and by February 11, 2011, President Mubarak decided to step down from office, handing over power to a military council.²³

On February 14, 2011, another nation was to experience the Arab Revolution; this time it was Bahrain. Three days later, on February 17, 2011, and only 6 days from President Mubarak's departure, Libya was next to experience protests that found Muammar Qaddafi using such force against the protestors that the Arab League and United Nations mandated a no-fly zone, in the hopes of preventing civilian casualties.

In assessing the cause of the Arab Revolution and the speed within which it occurred, it appears as though the following six variables were consistent to the revolution in each nation.

1. Corruption of the government or elite members of the ruling party
2. Poverty
3. Youthful population
4. Literacy
5. Unemployment
6. Use of social media

Also, virtually all of the Middle East nations had experienced prior protests and unrest, so there was a growing level of resentment that made possible the depth of the protestors' demands for regime change. In fact, so many of the rulers have held office for decades, such as Zine-Al-Abidine Ben Ali of Tunisia for 23 years, Mubarak of Egypt for 30 years, Qaddafi of Libya for 42 years, President Saleh of Yemen for 33 years; protestors simply could not tolerate family members passing the ruling office to another set of family members with the continuation of corruption, poverty, and unemployment.

Ironically, as the various Middle East nations established programs to reduce illiteracy within their nations and to encourage their youth to obtain higher education credentials, it resulted in many youths becoming frustrated by the absence of employment or the opportunities that normally attach to one's educational achievements. It was this group of unemployed, disenfranchised, educated youth that was central to the Arab Revolution occurring in each nation.

The Arab Revolution, which began in Tunisia, moved to Egypt, Yemen, Bahrain, Libya, and Syria, and has alarmed Jordan, and especially Saudi Arabia. One of the major problems confronting Saudi Arabia is the age gap between the ruling prince who is 83, and the 60% of Saudis who are under 18 years of age. As a result of satellite television, the Internet, and the social media of Facebook, Twitter, and other programs, the youth are now more informed of what is occurring in the world. They see corruption of the ruling party, which in Saudi Arabia consists of more than 7000 princes, and they also see that 40% of the Saudis live below the poverty line and 70% cannot afford their own homes.²⁴ These factors can set the stage for an uprising of the youth against the Saudi ruling party. King Abdullah has made efforts to

address some of these issues, but beneath the surface, there still continues to be problems in the kingdom.

The many nations of the Middle East have for so many decades depended on the status quo of their ruler's ability to rule and their subject's passive acceptance of this condition. It is clear that because of this sweeping Arab Revolution, the status quo is no longer sustainable. The populations of these nations are no longer fearful or accepting of the ruling parties.

This condition has profound effects on the United States as for many years we have supported the monarchs and ruling party members because this assured our nation certain advantages. For example, our relationship with Egypt and our financial support to them provided America a partner who would support Israel. It also provided America access to Egyptian air space for our military flights and finally assured safety of the Suez Canal.

Jordan has provided both leadership and assistance to America for its important role in maintaining positive relations with Israel. Nevertheless, just as transformational changes occurred in Egypt, as a result of the Arab Spring, we may find pressures being placed on the Jordanian government, thus creating the possibility for diminishing support of a diplomatic relationship with Israel. So, as we continue to observe these transformational changes in the Middle East, some American policy makers may have to realize that there is no short-term benefit for America in the Arab Revolutions, and as a matter of fact, these revolutions could be most harmful to our interests.²⁵

As violence continues in Syria, Iran may get involved because of its security treaties with Syria, and this portends further difficulty for America as this violence is now moving into an area where Jordan, Israel, and Lebanon exist, and this will further complicate American policy issues. Of course, one of the concerns is the revolutionary's general demand for more democracy in their respective nations, something which America believes in and supports, yet these shifting demands may undermine some of America's security interests. For example, the autocratic president of Yemen, Ali Abdullah Saleh, has been one of our strongest allies in fighting terrorism. In Bahrain, we have enormous intelligence operations, as well as the U.S. Navy's Fifth Fleet being based in that nation. Also, both Jordan and Egypt have worked most diplomatically to assist America in attempting to resolve the conflict between Israel and the Palestinians.²⁶

As American political leaders observe the Arab revolutions, we continue to be told that our support for the Middle East rulers has created a deep strain of Islamic opposition both violent and deeply anti-American. America must navigate this terrain very carefully since we will be developing policies and programs with new elements of Arab leadership. At the same time, we are aware of the fact that many of these revolutions have not achieved what the protestors may have expected. A good example is the current situation in Egypt where the military ruling party has deferred a great deal to the

Egyptian Muslim Brotherhood and has hindered the efforts of creating a new Egyptian constitution. As a result, many young protestors who participated in starting the revolution now realize that finishing a revolution is more difficult than starting one.

1.2.2.2 Iran's Influence in the Middle East

The revolution spreading through so many Arab nations has now been referred to as the "Arab Spring," and it is definitely ushering in major transformational changes that are precipitating a shift in the balance of power in the entire Middle East. The abdication of Hosni Mubarak has resulted in the new Egyptian prime minister taking a leading role in the brokering of a peace arrangement between Hamas and Fatah, thus placing Palestine in a more realistic role to present its case to the United Nations in seeking statehood in September 2011. This event is clearly contrary to all past Egyptian relations with Israel. Since Hamas is designated as a terrorist organization by the United States, and because Hamas calls for the extermination of Israel, the new diplomatic arrangements between Egypt and Israel will be undergoing a striking change. America will also have to reassess its \$2 billion annual aid it provides Egypt since it appears as though Iran is gaining more influence not only with Egypt but in the entire Middle East as well.

A measure of recent Iranian influence with Egypt is the new Egyptian military leaders permitting Iran to have passage of two warships through the Suez Canal. This event has not occurred in over 32 years, and it clearly would not have been allowed were Hosni Mubarak still in office. A policy challenge for America is to analyze the new Egyptian actions and to determine whether these new Egyptian policies are an expression of Egypt asserting a new role in the Middle East, or whether Egypt is moving on a pathway to embrace Iran.

Many observers throughout the world have carefully watched the Arab Spring emerge with calls for major changes in leadership of one Arab nation after another and have seen this revolution as the possibility of a new strain of democracy emerging in the Middle East. However, in Egypt, we see a different course of action, as following President Mubarak's resignation, the Egyptian military has allowed the Egyptian Muslim Brotherhood to emerge with greater influence and possibly a strong role in the past revolution government. After being officially banned from politics for more than 40 years, Egypt's interim government has officially recognized the Egyptian Muslim Brotherhood's new political party known as the Freedom and Justice Party and has permitted it to participate in September 2011's parliamentary elections. This action has disappointed many of the young protestors who played such a strong role in the Tahrir Square protest movement leading up to President Mubarak's resignation. Once again many of these youthful protestors are returning to Tahrir Square seeking a government that is not so

bound by the Egyptian military leaders and more responsive to their seeking a role in the new governance constitution.

Not only have there not been calls for democracy as the West conceives of democracy, but there has been an increase in tensions between Saudi Arabia and Iran, as Iran views this Arab Spring as its opportunity to gain traction and support from those Middle East nations who have historically been more aligned with the United States and Saudi Arabia. Saudi Arabia is convinced that Iran has been responsible for unrest in Bahrain and Yemen, and as a result, the Arab Spring has created an environment in which we can observe two nations striving to become the regional superpower in the Middle East, Saudi Arabia or Iran.

As Iran rises to challenge Saudi Arabia for regional superpower status, America must now confront the Arab Spring and determine if it is a result of Arab youths seeking a greater role in their respective nations to no longer suffer poverty and unemployment under monarch-based systems of government, or whether Iran has used these youthful protests as a tool which its intelligence operatives can continue to use and forge unrest within the Arab nations. In short, has America misperceived the Arab Spring as a movement of populations seeking democracy or as a cold and calculated move on Iran's part to create instability and assume major superpower status in the Middle East? Saudi Arabia firmly believes that the United States has been outflanked by Iran and that America has betrayed its responsibilities to Hosni Mubarak by calling for him to resign from his leadership role. Saudi Arabia was further angered by the weak American response in Yemen and in Bahrain.²⁷

Some might suggest that Saudi Arabia's concern is based on its geographical location to the very nations in play. Others might suggest that America has suffered a major State Department policy failure for simply asking Arab leaders to modernize and reform their systems into more open governments, when for more than four decades, the strategic interests of America have been based on America's support of Arab dictators and monarchs who enabled America to achieve its core security interests. Now, as many of these regimes are in trouble or challenged, Saudi Arabia's charge of betrayal resonates with them and at least is viewed as a disappointment or America's weakness.

The Arab nation of Bahrain directly informed Iran to stop interfering and encouraging protest by the Shiite minority population. Since Iran is a Shiite Islamic Republic and Bahrain a Sunni Muslim nation, Bahrain wanted no further Hezbollah undercurrents encouraging unrest. Saudi Arabia, also a Sunni Muslim Kingdom, did not want to be vulnerable to an Iranian presence on its southern border, so it sent Saudi troops into Bahrain to protect the ruling Al-Khalifa family. Hezbollah, a proxy army of Iran, has publicly supported the Bahrainian protesters and criticized Arab nations for their support of Bahrain.²⁸ Of course, this is a direct challenge to Saudi Arabia. It is

important to note that Bahrain serves as the naval port for the U.S. Navy Fifth Fleet; thus, Bahrain is critical to the United States, and Iran's effort to assist in the overthrow of the Al-Khalifa ruling party would be a major disaster for America and a major victory for Iran. So, Iran's use of Hezbollah to encourage Shiite minority groups in Bahrain not only to ask for more jobs and relief in their economic standing but to go further and call for the overthrow of the Al-Khalifa family and its monarchy is a clear signal to intelligence agencies that Iran is using the "Arab Spring" to advance its own geopolitical interests.

Another Middle East nation receiving Iranian support and help is Syria. Iran has long viewed Syria as a major asset because it has used Syria to achieve considerable geopolitical support. Iran continues to use its proxy armies Hezbollah in Lebanon and Hamas to achieve its objective. Syria's continued approval of Iran shipping weapons through its borders to Hezbollah has been and remains critical to Iran. In essence, Syria has become a key conduit for Iranian influence in the Middle East, and because of its relationship with Lebanon, it has helped Iran's proxy Hezbollah overthrow the Lebanese government and install a prime minister friendlier toward Iran.²⁹ For Hezbollah, Iran's proxy army to now have virtual control of the Lebanese army and its weapons systems provides a major challenge and problem for Israel. U.S. intelligence agencies have intercepted communications in which Iran is aiding Shiite opposition groups in Bahrain and also sending Iranian agents to Syria in order to help Syria monitor protestors' use of the Internet, cell phones, and other social media such as Twitter and Facebook.

Iran has accused America of hypocrisy by participating in the effort to attack Libya's Muammar Qaddafi for Libya's military assault on civilians, while ignoring the Saudi Arabia military assault on civilian opposition forces in Bahrain. Of course, America counters by accusing Iran of hypocrisy by its actions against protestors opposing the Syrian government. In any event, what is emerging is the fragile vulnerability of those protestors seeking redress of their grievances and how governments throughout the Middle East as well as nongovernmental agencies are focused more on power and less on democracy.

Iran appears to be promoting Hezbollah and Syria with portions of Lebanon's military for an eventual war with Israel, as part of an overall strategy to further weaken Saudi Arabia and make further inroads into the Middle East. Iran can also use this as a major tool for distracting concerns around its continuing program of developing nuclear weapons. In fact, this was the strategy Iran used in 2006 when the Hezbollah attack on Israeli soldiers resulted in Israel's full scale response, which in the process destroyed numerous Lebanese buildings, killing many civilians and becoming such a worldwide focal point that the matter of Iran's nuclear program was overshadowed. Both the United Nations Security Council and the G8 were in no position to debate international sanctions against Iran.

America has continued its effort to obtain international sanctions against the Iranian nuclear weapons program, and Iran knows that if conflict is to occur over their nuclear weapons program, it will be largely with America and Israel. As a result, Iran has engineered Hezbollah's role from fighting Israel in Lebanon to fighting Israeli and American influence in the Middle East, and the "Arab Spring" has been an excellent vehicle to this end. So, once again the issue of Iran's nuclear weapons program is removed from the concerns of the international community. Events such as these plus Iran's non-negotiating strategy have provided them the time to continue and further develop their nuclear weapons program.³⁰

The Arab nations observing the years of negotiations over the Iranian nuclear program wonder how the Iranian nuclear program will be stopped. Since Saudi Arabia and others place little to no faith in the success of the endless negotiations between Western diplomats and the Iranians, they have now positioned themselves to acquire and purchase nuclear weapons from such countries as Pakistan and North Korea. In short, as Yousef Al Otaiba, the United Arab Emirates Ambassador to the United States stated, "We cannot live with a nuclear Iran."³¹ Bernard Lewis, one of the leading scholars of the Middle East, observes that in his view, Iran will not be able to be contained if it does go nuclear. Further, the former "mutually assured destruction" concept that prevented the use of nuclear weapons between the Soviet Union and the United States since each side knew that if the other used a nuclear weapon, the other would retaliate and both nations would be destroyed would not apply should Iran develop nuclear weapons.

... the Mullahs "are religious fanatics with an apocalyptic mindset. In Islam, as in Christianity and Judaism, there is an end-of-times scenario – and they think it's beginning or has already begun." So mutually assured destruction is not a deterrent – it's an inducement.³²

Perhaps, as a result of years of unsuccessful Western government's negotiations with Iran regarding its determination to build a capability of nuclear weapons, the emergence of Stuxnet arrived in Iran in the form of a digital super weapon with the clear intention of destroying and disrupting the uranium enrichment efforts of Iran's nuclear weapons program. It is reported that the software worm was introduced into Iranian computers in five locations probably by an "infected thumb drive" inserted into the network by unwitting Russian engineers who were working at the Iranian nuclear facility. Once inside the system, computer analysts say that Stuxnet sought out its target, the computer controlled Stuxnet nuclear centrifuge system, and may have damaged up to 1000 of the systems centrifuges. This all occurred without any human help and without anyone clicking a mouse or guiding it electronically.³³ The manner in which the Stuxnet worm operates is based on

how the software program code was written so that it looks for devices called “frequency converter drives,” which are connected to the SCADA system. SCADA is an acronym that means supervisory control and data acquisition, and it refers to an industrial control system that collects data from various sensors and routes the data to a central computer, which then manages and controls the data. Since there are many components to a SCADA system, such as input and output hardware, controllers networks, communication equipment, and software, the Stuxnet worm can be programmed to seek out specific components and drivers.

Such “frequency converter drives” take electrical current from a power grid and then change the output to a much higher frequency, typically 600 HZ or higher. The high-frequency output from the frequency charger is fed to the high-speed gas centrifuge drive motors. The Stuxnet worm looks for converter drives operating between 807 HZ and 1210 HZ and then resets the frequency to 1410 HZ for 27 days, then drops the frequency to 2 HZ, and later increases it to 1064 HZ. The Stuxnet worm repeats this process; thus, interfering with the speed of motors, it sabotages the industrial control process, and, as some researchers have suggested, may even cause the machines to break apart.³⁴

Experts believe that Stuxnet was developed by a nation with an excellent covert cyber weapons team and at a cost of millions of dollars. However, now that elements of the software code or its electronic blueprint have been made available on the Internet, the fear is that it might be reverse-engineered by cyber weapons “hactivists” or rogue nations and made available to anyone who wishes to buy and own a cyber super weapon.³⁵ Stuxnet is, at the very least, an important wake-up call for digitally enhanced and reliant countries and, at worst, a blueprint for future attackers.³⁶

The transformational nature of this worm has not only changed the computer defense systems environment but now created massive computer system vulnerabilities to Western nations and especially the United States’ Department of Defense systems.

It is clear that the entire Middle East is at a “tipping point,” and because of the information revolution in the Internet, Facebook, Twitter, and other social media, Arab youths have access to both information and power that were never previously available to them. The Arab youths see no reason why they should be subjected to the repressive Arab regimes and monarchs and are now involved and central to a political transformation for a better democratic and peaceful future for themselves.³⁷

The challenge for the United States is to carefully assess how involved Iran is in this “Arab Spring” process and to make certain there is no Iranian hijacking of a sincere process begun by Arab youths throughout the Middle East, only to be used by Iranian intelligence programs and operations.

1.2.2.3 Arab Spring's Impact on the Israeli–Palestinian Peace Process

Over the years, the Israeli–Palestinian process for resolving their differences has engaged nations and statesmen throughout the world, and we now stand at a pivotal point in time that will possibly result in a major transformation of their respective positions. At the close of World War II, numerous changes in nation's geographic territories were underway, but few had the enormous and sustained impact on the world as the 1948 United Nations decision to create the State of Israel and to provide Israel land, which to this day the Palestinians maintain was their homeland.

Each side of this 63-year-old unresolved search for resolution has deep and bitter issues, which have been fought over and have cost literally thousands of lives. There are numerous issues confronting each side, but the more profound and difficult ones are as follows:

Palestinian Issues:

1. Right of return to their perceived homeland
2. Israeli settlements in the West Bank

Israeli Issues:

1. Israel's right to exist
2. Security concerns regarding terrorism, violence, and suicide bombers

Andrew Krepinevich has observed that ever since the State of Israel was created in 1948, conflict has occurred between Israel and the neighboring Muslim states building to a point that wars occurred on three occasions—1956, 1967, and 1973—resulting in clear Israeli victories. These major conflicts were followed by a new and different form of conflict that was created by Hamas in Palestine and Hezbollah in Lebanon and their strategy for using a sustained program of guerrilla warfare and terrorism. This strategy was followed by the First Intifada (1987–1993) and then again by the Second Intifada beginning in (2000–2003) in which Palestinian nationals used tactics ranging from mass protests and general strikes to suicide bombing.³⁸

By 2006 Hezbollah had acquired a sizable arsenal of fairly sophisticated weapons, with thousands of rockets in its inventory, and had become a state-within-a-state in Lebanon. The Second Lebanon War, waged between Israel and Hezbollah in July and August 2006, marked a significant watershed in the long struggle between Jews and Muslims in the Middle East. During the span of little more than a month Hezbollah fired some 4,000 rockets of various types into Israel. Of them, over 900 rockets hit near or on buildings, civilian infrastructure, and industrial plants. The ferocity of the attack, which

averaged some 130 rockets per day, far exceeded any attack suffered by Israel up to that time, including the Iraqi Scud missile attacks during the First Gulf War in 1991. Some 2,000 homes were destroyed, and more than fifty Israelis died, with several thousand being injured. Haifa, Israel's major seaport had to be shut down and its oil refinery as well.

As enemy rockets rained down on northern Israel, the Israeli Defense Forces (IDF) initially sought to defeat Hezbollah using air power and precision firepower-based operations. When this failed, the IDF employed its ground forces in limited raids and probes into southern Lebanon, Hezbollah's center of power. Yet Hezbollah managed to sustain the rocket campaign during the entire thirty-four days of conflict. Hezbollah's use of anti-tank guided munitions and rocket-propelled grenades against Israeli tanks proved both clever and effective. Over 25 percent of the 114 IDF personnel killed during the war were tank crewmen; out of the 400 tanks involved in the fighting in southern Lebanon, 48 were hit and 40 were damaged.³⁹

In short, Hezbollah's action in this 34-day war proved to be an enormous victory for them, as Israeli defense forces who had previously won in the 6-day wars against the armies of Egypt, Syria, and Jordan were not able to defeat this totally new transformed army of Hezbollah. The implications of this 2006 war were profound for as Robert Baer observes, "Israel lost its deterrence credibility and in Arab eyes, Israel is now beatable. It's no longer the giant they thought it was."⁴⁰

The popular Arab Revolution is moving toward Israel in the form of the Arab Spring with protestors challenging all governments in the Middle East that are diminishing the rights and opportunities for the youth of the Middle East. The Palestinians are using this new found enthusiasm for popular protest and civil disobedience to make these tactics the cornerstone of their struggle against Israel. Many Israeli authorities fear that this may mark the beginning of the Third Intifada. Charles Levinson and Joshua Mitnick reported a television interview in which Israeli Defense Minister Ehud Barak warned "the events today may only be the beginning of a new type of battle for Israel as Palestinian activists move away from armed confrontation in favor of popular protests aimed at winning wider support for their cause. Once the headline of terrorists is dropped, we are left with a picture for the world of us in control of another people, which has continued for 43 years. This is the way that they use the weapon of soft power to embarrass Israel."⁴¹

It is interesting that many other Israeli leaders, including Prime Minister Benjamin Netanyahu, see this not so much as an extension of the Arab Spring but more as a response by both the Iranian and Syrian governments. Most particularly, they see Syrian President Bashar al-Assad as attempting to defuse the protests in Syria by encouraging a protest movement across their border into Israel. Israel should carefully assess this situation, as the wrong

set of tactics in response to this new movement could cause major unrest and many people could die by the incorrect tactical and operational response to these protests.

If indeed this new peaceful protest movement is the beginning of a Third Intifada, all evidence points to the fact that the protestors will use civil disobedience similar to what America experienced in the 1960s, and if it is conducted along these lines, it will be totally different from the past two Intifadas. The Israeli defense forces and police have been trained in totally different strategies to cope with violence, and this will present a challenging form of engagement.

Another major transformational change is currently underway in Egypt as the new government that currently serves in a caretaker capacity while waiting for a new Egyptian constitution and new election has made a major decision that has already impacted Israel and Palestine. Egypt has hosted and brokered the new arrangement between Hamas and Fatah that has resulted in a new power-sharing agreement, which has been extremely disappointing to both Israel and the United States. If Egypt and other Middle East nations recognize such a unified government, this would amount to tacit recognition of Hamas as a legitimate political entity alongside the more moderate Fatah, which in effect ignores the fact that Hamas has been and remains defined as a terrorist entity not only by America but also by the European Union as well. This recognition would mark a major split between Egypt and Israel since Hamas has publicly declared Israel should not exist.⁴²

George Friedman reports in his article “The Arab Rising, Israel and Hamas” that Egypt is a key for Hamas and its future. Hamas was trapped by the former Israeli–Egyptian blockade, as this blockade limited its ability to access weapons as well as basic supplies needed to build a functioning economy and movement in the West Bank. In short, Hamas was cornered and isolated in Gaza, and this new brokered arrangement sponsored by Egypt has created the opportunity for Hamas to become militarily and politically more effective.⁴³

Amr Moussa, the Arab League Chief, simply states the new Egyptian military-led government negotiated the power-sharing agreement between the Palestinian Authority and the militant Islamist party Hamas and also pledged to work toward normalizing estranged relations with Iran simply as a diplomatic reopening rather than a realignment.⁴⁴ Of course, these events would never have occurred under the Egyptian government of Hosni Mubarak.

One outcome of the brokered agreement between Hamas and Fatah has been the statement by Hamas leader Khaled Meshaal that his movement will make decisions about how to wage its struggle with Israel, including if and when to use violence, in consensus with more moderate Palestinian factions. He further stated that Hamas was prepared to adopt a strategy of nonviolent

resistance, at least for the time being.⁴⁵ Meanwhile, Prime Minister Benjamin Netanyahu of Israel has called on President Mahmud Abbas of the Palestinian Authority to annul the agreement with Hamas since the Hamas Charter calls for the destruction of Israel and an all-encompassing Jihad. On the other hand, America remains open to including Hamas in the Mideast peace process, provided Hamas formally renounces violence and recognizes Israel's right to exist. Interestingly, some Palestinian officials expect that Hamas will forego violence, and Fatah will forego its strategy of negotiation.⁴⁶ If this occurs, it implies a Third Intifada based on peaceful protest and civil disobedience falling within the current movement of the Arab Revolution. It also implies that as the United Nations member states deliberate on Palestine's request for statehood, the question would be more seriously considered and evaluated by an absence of Hamas-instigated violence as well as their recognition of Israel's right to exist.

Karin Laub's article "Palestinians Test Tactic of Unarmed Mass Marches" reports that Palestinian activists are calling their peaceful mass march on Israel borders as a preview of the new tactics they will use to pressure Israel and win world support for statehood. These marchers have been galvanized by the Arab Spring and brought together by Facebook, Twitter, and other social media, and they intend to continue to descend on Israeli borders with the intention of crossing the borders and daring the Israeli soldiers to use their weapons to stop them. This could well be a more effective weapon than the suicide bombings and other violence of the past Intifada's.⁴⁷ Actually, the very nightmare scenario that Israel has feared since its inception may become real is, as Aluf Benn observes, Palestinian refugees would simply start walking from their camps directly to the Israeli border and would try to exercise their "right of return" enmass.⁴⁸

The impending transformational event that Palestine has prepared for is an appeal to the United Nations seeking recognition as a state in the West Bank and Gaza strip. The president of the Palestinian Authority, Mahmud Abbas, has simply lost faith in America and has observed that "minutes after the State of Israel was established on May 14, 1948, the United States granted it recognition, while our Palestinian State remains a promise unfulfilled." So, the Palestinian request for statehood really boils down to the choice not between Palestinian unity and peace with Israel but a choice between a two state solution and settlement colonies.⁴⁹

Regarding the support that Palestine may receive from other nations supporting its request for statehood, both France and Britain have stated they are prepared to support a unilateral declaration of a Palestinian State if peace talks are not restarted by the September 2011 meeting of the United Nations. More than 110 countries have also recognized Palestine diplomatically.⁵⁰ The chances for peace process talks to begin between Israel and Palestine are virtually impossible for two major reasons. First, Israel will not discuss

peace with Palestine as long as Hamas is part of the united Palestinian government. Second, Palestine has lost total faith in both Israel and the United States seriously engaging in a peace process; moreover, Palestine's goals are now pitched much higher, to achieve statehood. Palestine also envisions the attainment of statehood as an opportunity to pursue legal claims against Israel and to present its case before the International Court of Justice and the United Nations human rights treaty organizations.

In retrospect, the Arab Revolution that began in Tunisia, swept through Egypt, and has impacted so many other Middle East nations is now knocking on the door of Israel. Not one of these Middle East nations, and certainly not America, had anticipated the ferocity of the revolution and the inabilities of governments and their officials to respond to the demands of the protestors. The thought that some governments were manipulated by the protestors becomes irrelevant in the present but may still be important to the future.

1.2.2.4 The Arab Spring Revolution's Impact on China

As the Arab Spring has swept through Tunisia, Egypt, Libya, Yemen, and Bahrain toppling the regimes in Tunisia and Egypt, the Chinese government has strengthened its security and has limited Internet usage while also maintaining close surveillance of activists who may wish to respond to the Internet calls for a "Jasmine Revolution" in China similar to the prodemocracy demonstrations in the Middle East nations. In fact, the Internet messages urging Chinese protests such as Tunisia's "Jasmine Revolution" called for demonstration rallies in 13 cities including Beijing and Shanghai, and these online posts first circulated on an overseas Chinese news website, Boxun News Network (<http://www.Boxun.com>). The online messages called for the Chinese to gather peacefully in a show of people power to promote fairness and democracy. The response of the police was to arrest more than 100 people, with five people being charged with subversion or other similar national security charges.⁵¹

One would assume that China's phenomenal economic growth plus its increasing status among nations of the world would create a certain level of confidence among the Chinese leadership. However, like so many authoritarian governments, they become very concerned when there is an opportunity for protests to have the potential to engage people of various classes that are likely to resonate throughout the nation. The Chinese also remember how the protests of the Solidarity Movement in both Eastern and Central Europe brought down the Communist Party in those countries in 1989. Jeffery Wasserstrom has observed that while "it might seem at first blush that the Egyptian crisis stemmed from factors so different from China's situation that Beijing would not be troubled by any comparison. Nevertheless, a central grievance in Egypt which resonates powerfully with many Chinese was official corruption."⁵² In addition, another major reason for the protests was inflation and the rising cost of food.

Another concern for the Chinese leadership centers on their economic growth, which has resulted in vast disparities between the Chinese coastal and inland regions and the enormous inequities between the Chinese rural and urban populations. Also of great concern are the level of corruption and the lack of accountability, which could potentially diminish Chinese cohesion.⁵³

Bret Stephen's excellent article on "Beijing and the Arab Revolt" discusses rising economic expectations of a nation coupled with a growing inequality all within the environment of an authoritarian government as having all of the necessary ingredients for a potential revolution. Further, he states as follows:

Ever since Deng Xiaoping launched the "Four Modernizations" in 1978, China's leaders have gambled that they could turn the country into a great economic power without risking their political monopoly. When challenged on this score—as they were by dissident Wei Jingsheng's "Fifth Modernization" (democracy) in 1978 or by the students in Tiananmen Square in 1989, or more recently by the Charter 08 movement—they have resorted to brute repression. But in quieter times, they, along with like-minded authoritarians, have been confident enough to stake a philosophical claim for their style of rule.

For many years, that claim was defended as a function of "Asian value": the idea that the public welfare was best served by enlightened one-party rule that nurtured economic growth but drew the line at anything that threatened social harmony, political competition most of all. "I do not believe that democracy necessarily leads to development," Singapore's Lee Kuan Yew once said. "I believe that what a country needs to develop is discipline more than democracy."⁵⁴

Daniel Bell, a professor of political theory at Tsinghua University in Beijing, raises the question as to whether the authoritarian regime in China will go the way of the Middle East dictatorships of Tunisia and Egypt. Professor Bell suggests that the similarities are found in China's absence of political freedoms: the gap between the rich and the poor, the rampant corruption, the rising cost of food, and the high rate of unemployment among recent university graduates. On the other hand, Professor Bell observes that the differences are equally obvious, for example, China is not ruled by a family, and because of this, there is no one clear source to blame. Also, Chinese corruption is seen more at a lower level as opposed to the central government, which is the case in most Middle East nations. There are far more opportunities for social mobility via education and entrepreneurship in China than in the Middle East nations. Finally, China's population is older than the Middle East nations exploding youthful population cohorts.⁵⁵

Francis Fukuyama draws on Samuel Huntington's classic book *Political Order in Changing Societies* to provide insight into today's events in the Middle East and how China will also be impacted by this theory of the development gap. This gap theory is premised on increasing levels of economic and

social development creating opportunities for societal unrest as measured by revolutions, coups, or military takeovers due to the fact that a gap exists between the newly mobilized, educated, and empowered people and their existing political system. In other words, the aspirations between their hopes for political participation are at odds with the governmental institutions that provide them little or no voice or opportunity to participate. The gap theory further postulates that attacks against the existing political order are seldom driven by the poor in such societies, but more often they tend to be led by the rising middle classes frustrated by their lack of political and economic opportunity. When one examines the protest movements that began in Tunisia and then moved to Egypt, it was the educated, technologically aware middle class youth who expressed their frustrations with societies in which they were not permitted to voice their views, or challenge the incompetence of governing officials. Further, their inability to obtain employment, the political connections that favored the few from the ruling families, and the clearly observed corruption of officials or officials who permitted corruption were simply no longer tolerable to this educated cohort of youth who are seeking participation in their perspective nations based on their skills, merit, and achievements.⁵⁶

When comparing China to Egypt, especially with reference to the expanding middle class, those in China certainly have benefitted from the economic growth of China; however, they have little to no opportunity for political participation. Another feature of China, unlike the Middle East nations, is that Chinese leadership changes regularly around 10 years of service as compared to Middle East nations in which many of the regimes remain in power for over three decades. Fukuyama notes the advantage of the political leadership turnover in China is indicative of greater policy innovation in sharp contrast to Middle East nations in which there has been both little leadership change and virtually no policy innovation. Another interesting feature of China as compared to the Middle East nations is the security apparatus of China, and particularly the PLA, which is decidedly more supportive and responsive to the state political leadership. China not only controls its Internet space but also has banned Facebook and Twitter and any social media that might be used in conjunction with organizing any protest.⁵⁷

One concern that Chinese leadership is focused on is that of creating jobs as they are fully aware of the fact that every year China graduates more than seven million students from its universities, and these graduates are struggling to find employment. The Chinese government recognizes that several million unemployed college graduates are much more dangerous to a modernizing regime than the hundreds of millions of poor peasants; therefore, the political leadership knows its legitimacy is based on working to provide new jobs and in securing some role or participation for this new educated middle class into some aspect of Chinese society. The forward looking issue for the new emerging Chinese middle class is not only jobs and a

rising income to support their new life style but also their desire for greater personal freedom from the political party. The issue centers on whether this new Chinese middle class will be content with trading political freedom for rising incomes and greater economic stability, or whether they will demand both political freedom as well as economic stability.⁵⁸ In short, as we examine authoritarian regimes whether in the Middle East or in China, it is clear that economic growth will not sustain the stability of the political regime. Nor will strategies of appeasement or repression control of the population. In reviewing the Arab Spring and the revolution of the hundreds of thousands of people in each of the nations such as Tunisia, Egypt, Bahrain, Yemen, and Libya, the lesson conveyed to authoritarian regimes is quite clear: provide the people participation in their society, with access to political freedoms and the opportunity to improve their livelihood. This message has certainly been received by the political leadership in China, and their ability to work with their rapidly expanding middle class will have to be based on more than their control of information, as it is only a matter of time before the educated millions of students graduating each year will demand a free open Internet as other nations have provided and will also demand access to the social media available throughout the world. It is not a question of “If” the Chinese leadership will be confronted with addressing and responding to these issues; it is the question of “When” this transformational tipping point will occur.

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The 2008 Great Recession's Impact on Globalization

2

THOMAS A. JOHNSON

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Perhaps the single largest cause of a major shift in power for both America and China was the creation of mortgage-backed securities, which resulted in the process of securitization and a financial process that would allow Wall Street to bundle mortgages, auto loans, credit card loans, and commercial loans and convert these into bonds. These bonds were then bundled into pieces or “tranches” and sold to investors offering different types of interest rate yields. This process that started more than 30 years ago gradually emerged into the Great Recession of 2008 and culminated in the near destruction of the world's financial system. The consequences of creating new financial instruments in unregulated markets required the cooperation, assistance, and approval of not only financial rating houses, but also government regulators, Congress, and even policies approved at the highest levels of government, including the White House. The ultimate effects of this process resulted in major Wall Street bankruptcies and congressional approval of a \$700 billion dollar TARP program known as the Toxic Asset Relief Program, to prevent the wholesale collapse and bankruptcies of Wall Street investment banks.

This major transformational event not only totally disrupted our nation's economic system, but it diminished our nation's economic power. As a result of diminishing our economic power, it has impacted our nation's military power and our fundamental national security. It is important to document how this process of creating new financial instruments began so that we understand all of the latent and dysfunctional consequences involved in the process of securitization so that we fully appreciate the historical precursors and missed warning signals involved in unregulated financial markets.

2.1 China's Move to Superpower Status 1978–2008

Our story begins in 1978 in Beijing, China, at the Third Plenary Session of the Eleventh Central Committee of the Chinese Communist Party where Deng Xiaoping laid the foundation for the opening of China and his nation's

long journey to become an economic superpower. Pivotal to Deng's efforts to transform China, now that Mao was dead, was the "four modernizations" to industry, which resulted in a shift of authority from the higher level personnel to the lower level personnel, which meant local managers were given more authority to use their judgment in operating their businesses. Chinese peasants were now permitted to hold a second job and not simply spend all of their effort and energy on the collective farms. Also recognized was a need for a more independent judicial system to arbitrate disputes that would eventually occur as these new modern commercial efforts were being planned. The most important of these transformational changes was the planning for the establishment of "special economic zones" for foreign investors. Together these efforts toward modernization resulted in lowering the population that lived in poverty from 28% of the nation in 1978 to less than 10% by 1985. That is a reduction of 270 million people living in poverty in 1978 to 97 million people living in poverty by 1985. By 1993, China was receiving more foreign direct investment than any other country in the world. By 2008, China was the world's largest exporter and one of the nations with the most foreign currency reserves.¹ This amazing growth parallels an equally astounding transformational set of events that were occurring in America and the West.

2.2 America's Move to Avoid Depression 1978–2008

Again, moving back to the period of 1978–1991, the transformational changes were being set forth by the Reagan Revolution to reverse the growth of the American welfare state, and during this same time in England, Prime Minister Margaret Thatcher was focused on reversing decades of British economic decline and eliminating the militancy of the trade unions. Both addressed problems that some suggested were radical reforms, while others sensed the focus on the economic systems of each nation resulted in a resurgence of the "free market" ideas and a reconceptualization of the role of government.² So, while China was transforming itself from a closed nation with high levels of poverty and unemployment, America was in the process of transformation that resulted in its deepest recession and by 2008, almost destroying the entire financial system of the world.

Ironically, this transformation occurring in both China and America resulted in a set of mutual dependencies that each nation bestowed upon the other, all intertwined on the financial health of each nation's economy. What specifically occurred in the United States to precipitate such changes that came so close to creating a worldwide economic depression? In the same 30-year period of time, 1978 through 2008, China emerged from its closed society to a world class superpower, while America almost destroyed its total financial system and became a nation with over \$14 trillion in debt.

2.3 The Process of Securitization

It was not one transformational event in America, but a number of seemingly unrelated events that were created and later interfaced and enabled system changes in our economy over an extended 30-year period of time. These events culminated in America's deep economic recession because of the combination of complex new financial instruments created in an unregulated market, with a new model of business by all Wall Street firms, and the accompanying involvement of the major bond rating agencies all operating in an environment characterized as avarice and greed and involving people at all levels of society. Yet, these new financial instruments became the unintended weapon, which was coupled with greed, selfishness, lack of moral judgment, and an absence of standards that almost ruined our nation.

2.3.1 Mortgage-Backed Securities

The events that unfolded in America began with the creation of a new financial instrument called a mortgage-backed security developed by three individuals associated with Wall Street firms. Lewis Ranieri, a bond trader at Salomon Brothers, Larry Fink at First Boston, and David Maxwell, the Chief Executive of the Federal National Mortgage Association, better known as Fannie Mae, a quasi-private/governmental corporation with the responsibility for providing home mortgages with the financial backing of the U.S. government. These three entrepreneurs created this new innovative bond, and the major benefit of this mortgage-backed security was that it responded to the increased investor demand for mortgage bonds resulting in an increasing level of home ownership in the United States.

Home ownership in America was very important to both Congress and the White House, and as a result the government-sponsored entities (GSEs), best known as Fannie Mae and Freddie Mac, worked closely with Wall Street firms and real estate companies to support and approve these new mortgage-backed bonds, believing this would increase home ownership. However, the most latent and dysfunctional consequence of the creation of the mortgage-backed securities was the decoupling of the lender from the bank that provided the original mortgage; thus, creating the sale and repackaging of the homeowner's mortgage into a complex bond termed a collateralized debt obligation or CDO in which both secured and unsecured mortgages were placed. Another dysfunctional aspect created by mortgage-backed securities was the emergence of a subprime financial mortgage market in which all previous standards of eligibility for home ownership were bypassed as long as the home buyer was willing to accept balloon payments and other esoteric features of these new mortgage market approaches, which eventually created massive amounts of home foreclosures in America.³

Although Lewis Ranieri and Larry Fink were responsible for inventing the process of securitization, a process that enabled Wall Street to bundle not just mortgage bonds but any and all loans made by any financial institution, this would not have been possible were it not for the government changing laws that would have prevented the creation of this new market. Therefore, the involvement and support of the government-sponsored entities (GSEs), namely, Fannie Mae and Freddie Mac, was critical to the creation of these new financial instruments and this entirely new market.

2.3.2 The Process of Tranching Mortgage Bonds

Another variable and key part of the securitization that made this new market possible was the technique of tranching, as developed by Larry Fink of First Boston. The process of securitization enabled the creation of mortgages into a bond or a security instrument. This bond could then incorporate numerous mortgages and the process of tranching that permitted the securitizer to carve up a mortgage bond into pieces, called tranches, and according to the different risks involved, each tranche would result in a different yield. The higher the risk, the greater the return of interest on the yield to the bond holder. The more secure or lower the risk, the lower the rate of return to the bond holder.

2.3.3 The Rating Agencies

Only one critical factor remained to permit this process of securitization to fully emerge as a market and that required the involvement of the credit reporting agencies, namely, Standard and Poor's, Moody's, and the Fitch Ratings. In fact, without the buy-in of the rating agencies, investors would never purchase a security, which was comprised of hundreds or thousands of mortgages within each individual security. The potential investor would not begin to know how to evaluate a security of this type, or be interested in an investment, unless a bond rating such as an AAA or BBB was attached to such a security.

Since Congress and the various governmental regulators placed such trust in the rating agencies, they were designated as Nationally Recognized Statistical Rating Organizations or NSRSROs, which conveyed a sense of professionalism and responsibility, which in turn created a level of confidence for the investor of the mortgage-backed bonds.⁴ The mere fact that the rating organizations approved of these securities and the entire securitized process allowed other financial instruments to be created and become a critical part of the securitization process. For example, during the 1980s and 1990s, junk bonds, hedge funds, and collateral debt obligations and "derivatives" were created and became an instrumental part of the destruction of our financial system, but each required the participation and approval of government

regulators, the GSEs, and the rating agencies. The clear presence of conflict of interest and the need for Wall Street investment firms, GSEs, and the rating agencies to all become an integral part of this process enabled investors to rely on a false sense of security and confidence. This was the foundation on which the subprime and Alt-A mortgage industry emerged and worked within the shadows of corrupt organizations such as the Long Beach savings and loan organizations, and Ameriquest and Countrywide Financial. Each provided fraudulent or risky mortgages to the Wall Street firms of Lehman Brothers, J.P. Morgan, Bear Stearns, Merrill Lynch, Goldman Sachs, and the American International Group (AIG), and each consistently required more mortgages to continue the charade of their greedy and avarice investment practices.

2.3.4 Wall Street Firms Business Model Changes to Initial Public Offering

The surprising process of each of the major Wall Street firms moving from their partnership status to an Initial Public Offering (IPO) status enabled their ability to assume levels of risk they would never consider in the days in which they were solely owned by their partners, and this permitted their full participation in this risky securitization market.

As the large Wall Street firms converted from private partnerships to public companies in the 1980s, Charles Gasparino recognized that these firms were no longer risking their own money but were using the money of their public shareholders, and as a result the bets got larger and their use of borrowed funds, known as leverage, grew more risky.⁵ As Michael Lewis observes, it was Salomon Brothers in 1981 that was the first Wall Street firm to move from a private partnership into a public corporation, and in the process, the partners made an enormous profit and then transferred the ultimate financial risk of their firm from themselves to the public shareholders.⁶ This of course enticed other Wall Street firms to follow this course of action. Further, the result of changing an investment bank into a public corporation changed the entire culture of the organization as the firm now became fixated on such measures as growth, return on capital, and stock performance. The trading side of the firm became more important than the investment banking side of the firm.⁷ The resulting emphasis on the trading side of Wall Street firms clearly ordained a willingness to assume larger risk and pursue more and greater profit return.

2.4 Birth of the Subprime Mortgage Industry

The securitization process not only remade the way Wall Street firms did business but also had a profound effect on main street with the enablement of new business organizations that could now provide mortgages to

homeowners looking to purchase their homes. In the past, and before the securitization process, if someone were interested in purchasing a home, they would only have two options, either go to their local bank or else a savings and loan association. However, in 1987 the savings and loan institutions would no longer be an option since they invested so heavily in speculative ventures and in junk bonds, and the damage was so great that the government had to rescue the industry through a bailout of the entire savings and loan industry, known as the Resolution Trust Corporation. This in effect protected the mortgages within the bonds held by investors.⁸

2.4.1 High-Yield Junk Bonds

Prior to the formal birth of the subprime industry, the Wall Street firm of Drexel Burnham Lambert had a bond trader by the name of Michael Milken who developed a very innovative investment bond known as high-yield bonds, or more commonly known as junk bonds. Investment-grade bonds are those deemed by the rating agencies to have a low risk for default and will result in the bond holder receiving the full rate of interest, and at the end of the bond the return of principal. Milken's analysis of the corporations in America was such that it would be unlikely they would default on a loan or a bond. Therefore, he suggested the offering of "high-yield" bonds, which would pay the investor more interest since the rating agencies would not consider these bonds of investment-grade caliber, and they would then be termed "junk bonds." In short, Milken sold this concept to his firm on the basis that investors were missing an opportunity to earn higher rates of return on debt that was quite safe and unlikely to default. Interestingly, Milken also sold the concept of raising capital to finance growth as part of a "noble" vision of capitalism since it would permit newly formed companies to secure the financing needed to start their business operations. This concept proved most beneficial since it was difficult for new companies to acquire capital financing unless they agreed to high-interest bank loans, which most new companies could not afford. The option of investment capital by the investor community also proved untenable since investment capital was only provided by high percentages of stock equity being assigned to the investors while diluting the stock ownership of the company owners. Milken's concept proved correct as the market for high-yield debt grew from \$7 billion in 1978 to \$187 billion by 1987. Soon Merrill Lynch, Bear Stearns, Salomon Brothers, and First Boston followed Drexel Burnham Lambert into this new innovative junk bond debt market.⁹ It was not long before the junk bonds issued were of greater risk, and leverage reached levels never fully envisioned. So once again, an unanticipated consequence of a new innovative financial instrument became dysfunctional both to America and to Wall Street.

As Charles Gasparino states, “in almost a 180-degree turn from the original intention, instead of creating and growing businesses, junk bonds were now being used to purchase businesses and then dismember them in order to pay off the high cost debt used in the takeover, a process known as a leveraged buyout, or LBO.”¹⁰ The leveraged buyouts permitted takeover entrepreneurs the ability to issue bonds and then to offer the targeted company’s shareholders a very large premium over current market prices resulting in the change of management of the targeted firm and a change in ownership to those who could secure the most debt. The Wall Street firms prospered by the massive fees they received for underwriting the bonds.¹¹ Eventually, the process of using junk bonds got to a point that when interest rates changed, the environment became very unstable. The savings and loan associations were so highly invested in junk bonds they could not withstand the fallout from increased interest rates. Thus, their holdings of pension funds, mortgages, and other speculative investments caused their demise in 1987 and resulted in the governments rescue package issued by the Resolution Trust Corporation.

2.4.2 The New Mortgage Originators

Since rising interest rates doomed the savings and loan associations, the new process of securitization provided new mortgage originators the ability to enter the market and offer mortgages to interested home buyers. Companies like Countrywide Financial, Ameriquest, and many others were now able to enter this market. The role of the GSEs was critical to the success of Countrywide Financial and others, simply because these new mortgage loan originators could now meet the underwriting standards of Fannie Mae and Freddie Mac and thus sell their conforming mortgages to Fannie Mae and Freddie Mac. This model made more growth possible, which met with the approval of HUD, Congress, and the White House since increased home ownership was a stated goal of the White House under four different U.S. presidents from both political parties.

Another manner in which these new mortgage loan originators were provided enormous assistance occurred because of action taken by Congress. They approved a series of loans ostensibly to assist the savings and loan associations in the hope of their getting reestablished, but they had profound unintended consequences. For example, the Depository Institutions Deregulation and Monetary Control Act abolished state usury caps, which had limited how much money financial firms could charge on first-lien mortgages. It also erased the distinction between loans made to buy a house and a loan such as home equity that was secured by a house.

Each of these congressional actions would prove very important in the emergence of the subprime mortgage industry. This was followed by the Alternative Mortgage Transaction Parity Act, which made it legal for lenders

to offer creative mortgages, such as the adjustable rate mortgage (ARM) or those mortgages with balloon payments. As a result of these new rule changes, the savings and loan associations were exempted from the former limits imposed on them, and they, along with a host of new mortgage originators, began the process of lending to consumers who would have never been previously qualified for a mortgage, and this is exactly when the subprime mortgage industry was born.¹²

One of the profound implications with the emergence of the new mortgage originators was centered on their particular advantage of being outside the boundaries of the regulators within our financial banking system. Unfortunately, the disadvantage to the consumer was expressed in higher interest rates in the short term, and ultimately, their exposure to the massive amount of foreclosures in the long term.

2.5 Risk Management: Creation of New Financial Instruments

When dealing with financial transactions, it is critical to demonstrate due diligence and develop risk management programs to protect the range of investments made for clients, and the firm or bank itself. J.P. Morgan had both a history and reputation for taking most seriously their responsibility for managing risk. In fact, J.P. Morgan wanted to measure risk, model risk, and manage risk better than any other firm or company, and as a result, they employed a range of very sophisticated mathematicians and physicists to develop quantitative programs. The risk models were statistical programs based on probability theory and designed to minimize the risk of banking or trading securities. The risk product developed, which the rating agencies and regulators took great comfort in, was the value-at-risk, or VAR, product, and this methodology was adopted by virtually all Wall Street firms.¹³ As important and valuable as this risk product was, the emergence of the new subprime mortgage industry required additional tools to measure and manage the risk present within these new markets.

2.5.1 The New Financial Instruments: Derivatives and Swaps

The new security instruments were designed to shift risk from one Wall Street firm's books to another Wall Street firm. After the transaction was completed, the original security remained on the first firm's books, but the risk it represented had moved. These new products were called derivatives because they were "derived" from another security. Therefore, the essential purpose of the derivative was to swap one kind of risk for another, which is why many common derivatives are simply called swaps. The first use of these

derivative swaps occurred in the 1980s when the currency market and interest rates fluctuated so unpredictably. An interest rate swap would permit one firm or company to lock-in an interest rate and pay a fee to another entity, termed a counterparty, that was willing to take the risk that interest rates would suddenly fluctuate. If the rates dropped, the counterparty would make a nice profit. The counterparty would in turn want to “hedge” or reduce its risk by entering into an offsetting trade with another entity.¹⁴

2.5.2 Credit Default Swaps

As banks attempt to manage their risk that a borrower may not be able to repay its loan, they traditionally have two fundamental forms to manage this risk, the first being their underwriting loan standards and the second is to hold capital in reserve, which is a regulatory requirement placed on banks. Since banks prefer not to tie up their capital by its presence in a reserve account, which is a nonrevenue-making fund, they have used credit default swaps to minimize the amount of capital they would have to place in non-working accounts. The international banking rules have been based on a Basel Committee or banking supervision, which adopted a risk-based capital requirement of the amount a bank had to set aside in capital depending on the riskiness of the asset. These rules stated that commercial loans were the riskiest, requiring the full capital ratio, but mortgages were viewed as less risky presumably because people would go to great lengths to avoid defaulting on their home loans, so these required less capital than a commercial loan.¹⁵

Banks are interested in obtaining mortgages issued by Fannie Mae or Freddie Mac since both are GSEs backed by the U.S. Treasury; thus, the Basel rules permit 20% or a lower percentage of the bank’s capital to be retained in a capital reserve account as a nonrevenue-producing financial vehicle. This permits the bank to then allocate larger portions of their capital for other investment and revenue producing options. As a result, banks were very interested in the mortgages a loan originator sold to either Fannie Mae or Freddie Mac since banks could then hold highly rated securitized tranches requiring less capital, and most importantly, they could swap their potential credit default and hold the securities rather than the loan. The next advance banks had in wearing down the regulators was to obtain approval to set up an off-balance sheet investment vehicle, which meant that as long as the duration of the credit line was less than a year, the bank would not need to hold capital against that loan. A bank could then sell its riskiest tranches of a mortgage-backed security, set the credit line to last one day short of a year, and not have to hold any capital against it. The credit default swap was the product that would be the greatest capital reducer of all products since it was designed to accomplish the same task as an interest rate or currency swap, which is to move risk from a party that does not wish to hold the risk to a

party that is interested in holding the risk because of the annual fee they will receive for assuming this risk. Therefore, the counterparty or the one holding the credit default risk will keep receiving a fee for providing this insurance until such time as the loan is fully repaid; however, if there is a default, the counterparty is responsible for the full amount of the loss.¹⁶

Ironically, the Wall Street firms needed government assistance for the derivatives market to fully succeed, yet they fought bitterly against any attempt to regulate the derivatives market or to have the trades posted on an exchange. The industry took the view that the market would impose the discipline necessary to keep it running effectively. Moreover, they insisted that government regulations would stifle the innovation that the Wall Street firms stated they needed. Eventually, insurance companies also began using derivatives and both the Wall Street firms and insurance companies such as AIG would later encounter severe problems with swaps, but of a type that would become developed as collateral debt obligations with specific triggers attached that hid their very dangerous nature.

The derivatives market became both massive and opaque, plus the bonds were not properly disclosed on the balance sheets of the participating banks. The phenomenal growth and complexity of these off-balance sheet activities, as well as the total absence of any regulatory authority, was a prescription for a disaster in the making. In the early 1990s, the total value of credit derivatives was approaching \$11 trillion, and by the end of the decade, it exceeded \$100 trillion. All during this time, the government refused to move forward with any serious attempt to regulate this derivatives market. In fact, the Federal Reserve and its Chairman Alan Greenspan did not see anything wrong with the derivatives market, and as Charles Gasparino reported, Greenspan was viewed as an ally of the antiregulation message being broadcast at every opportunity by the Wall Street firms.¹⁷

As Wall Street firms first expressed interest in the concept and practice of risk management, it turns out that the products they introduced to measure and manage risk were both counterproductive to their firms' ability to withstand the devastating financial collapse they created by 2008. In retrospect, it appears as though the derivatives were more embraced as a vehicle to obtain lower thresholds of reserve capital than as a vehicle to ultimately permit their ability to argue for less regulation and more freedom to engage in trading that would enhance their profits at the expense of a sound financial system.

2.6 Collateralized Debt Obligations

The credit risk derivatives really engaged both J.P. Morgan and AIG into some of the very first credit risk swaps. In reality, these swaps were really insurance on the loans J.P. Morgan made, termed as the Broad Index Secured Trust

Offering, or BISTRO. The credit risk swaps covered \$9.7 billion of corporate credit spread out among 307 companies. J.P. Morgan's analysis of the diversification of credit would require \$700 million of notes to insure the entire \$9.7 billion. Since J.P. Morgan did not want to be responsible for repayment in the event of a default, it bought insurance from AIG, who then assumed the risk of any default. Since AIG was an insurance company with both a history of working in derivatives as well as its A rating, the regulators gave their approval of the credit risk swaps.

Of course, other Wall Street investment banks began to bundle their credit risks similar to J.P. Morgan, and the business with AIG increased substantially and would later become part of a process that would require the federal government to bail out AIG, the largest insurance and reinsurance provider in the world. The credit derivative trades were the precursors to the CDO, or the collateralized debt obligation market. There was one very important difference between the BISTRO trades of 1997 and the CDOs of 2007: the BISTRO swaps involved corporate debt, whereas the CDO market involved home mortgages and was substantially more dangerous to our financial system.¹⁸

The sharp rise in the value of homes contemporaneously with the low interest rates created a real estate and housing loan environment, which had the effect of pricing out of the housing market a substantial number of families. The mortgage industry responded by creating new loan types, such as the ARM, to assist those families who could not qualify for conventional mortgages. To respond to the increase in this type of mortgage loan, Wall Street firms introduced a new type of bond, namely, the CDO bond. Since there was a concern regarding default in the mortgage market, CDOs were supposed to be the very best financial instrument in risk reduction. The reason for this reputation of a risk reducing bond is due to the fact that a CDO bond is packaged with other bonds, which are made up of not only mortgages but also automobile loans, credit cards, high-yield securities, and anything that allows the risk of defaults in one class of debt to be offset by other classes of debt.¹⁹

2.6.1 Structured Finance

Structured finance was a process involving complex computer modeling of risk, the diversification of borrowers on the basis of geography, income levels, and the types of loans made, which in theory was supposed to prevent the CDO bonds from going into default.²⁰

As borrowers interested in becoming home owners found their inability to obtain qualification for conventional mortgage loans, other loans besides adjustable rate loans were offered. Soon, negative amortization "ARM" loans, as well as many other varieties of balloon payment loans, were also being offered. Since these subprime loans were now being packaged in CDO bonds,

it became more dangerous for our financial system. Larry Raneri, who invented mortgage-backed securities along with the securitization process back in 1980, was now warning about the complexity of the CDO bond and how it was being used. He maintained that the buyers of these bonds really did not understand them and the risk they were taking; in fact, he maintained it would be difficult to track down the risk, and in some cases, people may not have known they were holding the risks.²¹

2.6.2 Synthetic CDOs

The next two financial instruments developed by Wall Street firms were synthetic CDO and the CDO squared. Both of these financial instruments were derivatives of the original security bond, but under the accounting laws, the more exotic the security, the more likely it could be defined as a derivative and not a bond, which then meant it could be hidden in the off-balance sheet structures and other subsidiary corporations.²²

Synthetic CDOs combined credit default swaps on a variety of corporate bonds and created CDOs out of them. They were termed synthetic CDOs because the CDOs did not contain “real” collateral; rather, they were based on the performance of existing bonds held by someone else. The synthetic CDO required two counterparties, one on the long side and the second on the short side of every triangle; thus, this is a zero-sum investment in which for someone to win, someone had to lose. Another important factor with the synthetic CDO was that it no longer required new mortgages from the loan originators since synthetic CDOs made of credit default swaps referenced mortgage bonds already in existence. This meant the same risky tranches could be cloned as many times as anyone wanted and the supply of securities became infinite.

Unlike a corporate bond backed by the assets of the corporation, or even a mortgage-backed security backed by actual mortgages, these existed solely to make complex bets on securities that existed somewhere in the system (which, as often as not, were bets on securities that existed somewhere else in the system). Synthetic CDOs were made possible by the invention of credit derivatives and the rating agencies providing AAA ratings despite the fact that many of the mortgages within the CDOs were poorly underwritten sub-prime mortgages.²³ It was the bond maker who put this trade together for long and short positions and who had the advantage, since they selected the quality of the bonds from the riskiest if they wanted them removed from their books, or to take a position themselves such as Goldman Sachs had done, in which case they knew everything possible about the likelihood of a default and had a clear advantage over the counterparty. By 2007 and 2008, these synthetic CDOs were the financial equivalent of a nuclear bomb as to the destruction they created for our financial system.

2.7 The Consequences: Fraud, Abusive Practices, and Greed

Once the process of creating all of the new financial instruments was in place, and with the demand for home ownership increasing, it simply required Wall Street firms to use their new securitization process to move from conventional fixed rate 30-year mortgages to the more unconventional high-risk mortgages to provide a higher profit and rate of return on their securities. However, high-profit returns were not the only results of this process, and by 2003, the risk being built into the CDOs and the synthetic CDOs was increasing at such an alarming rate, that the next major consequence to emerge in the 2004–2008 time period was fraud, abusive practices, and greed.

2.7.1 High-Risk Lending: The Washington Mutual Bank

The U.S. Senate Permanent Subcommittee on Investigations, a Committee on Homeland Security and Governmental Affairs, released its report, *Wall Street and the Financial Crisis: Anatomy of a Financial Collapse*, and issued findings of fact and made recommendations to be considered for implementation so as to avoid future scandals and problems that were representative of the current financial crisis.²⁴ Among the many issues the congressional subcommittee reviewed, their inquiry into the high-risk lending of the Washington Mutual savings and loan association was most instructive. The Washington Mutual Bank was the nation's largest thrift and sixth largest bank, with more than \$300 billion in assets, \$188 billion in deposits, 2300 branches in 15 states, and more than 43,000 employees. In 2003, Washington Mutual initiated a lending strategy designed to attract high-risk loans so that they would be able to acquire higher profit. From 2003 to 2006, their higher risk loans grew from 19% to 55%, while their lower risk, fixed rate conventional loans fell from 64% to 25% of all loan originations. Additionally, during this same period, Washington Mutual increased its securitization of subprime loans sixfold, primarily through its subprime lender, Long Beach Mortgage Corporation, increasing these loans from \$4.5 billion in 2003 to \$29 billion in 2006. Together, Washington Mutual and Long Beach Mortgage Company ("Long Beach") securitized at least \$77 billion in subprime loans from 2000 to 2007. The rationale for embarking on such a high-risk loan strategy was premised on the idea that higher risk loans and mortgage-backed securities could be sold to Wall Street firms for higher prices. Further, selling or securitizing the loans also removed them from Washington Mutual's books and appeared to insulate the bank from risk.²⁵

As Washington Mutual was implementing its high-risk lending strategy, both Washington Mutual and its primary loan originator, Long Beach, were engaging in a host of shoddy loan practices that contributed to our financial crisis. The congressional subcommittee reported these practices included

qualifying high-risk borrowers for larger loans than they could afford, steering borrowers to higher risk loans, accepting loan applications without verifying the borrowers income, using loans with teaser rates that could lead to payment shock when higher interest rates took effect later on, promoting negatively amortizing loans in which many borrowers increased rather than paid down their debt, and authorizing loans with multiple layers of risk. In addition, Washington Mutual and Long Beach failed to enforce compliance with their lending standards, allowed excessive loan error and exception rates, exercised weak oversight over third party mortgage brokers who supplied half or more of their loans, and tolerated the issuance of loans with fraudulent or erroneous borrower information. They also designed compensation incentives that rewarded loan personnel for issuing a large volume of higher risk loans, valuing speed and volume over loan quality.²⁶

As a result of a loan program with so many deficiencies, both Washington Mutual and, especially, Long Beach became notorious within the industry, and even the most sophisticated investors were aware of their securitizations as being among the worst performing in the industry. For example, one common practice at Washington Mutual was to use stated income loans in which they permitted the borrower to “state” the amount of their annual income in their loan applications without any direct documentation or verification by the bank. By the end of 2007, 50% of Washington Mutual’s subprime loans, 73% of its option ARMs, and 90% of its home equity loans were stated income loans. Another loan practice Washington Mutual used was the 80/20 loan in which a package of two loans are issued together, imposing an 80% loan-to-value first lien and a 20% loan-to-value second lien on the property for a total combined loan-to-value at 100%. Loans that provide financing for 100% of a property’s value are extremely high risk because the borrower has no equity in the property and can stop payments on the loan without losing any personal investment.²⁷

Internal reviews of two high-volume Washington Mutual Loan Centers described “extensive” fraud by employees who willfully circumvented bank policies, and on at least one occasion, senior managers knowingly sold delinquency-prone loans to investors.²⁸ It is important to note that Washington Mutual did have internal investigations, which presented evidence of fraud to senior managers and executives only to have the evidence ignored and the practice to continue.

Perhaps the clearest example of how Washington Mutual’s senior executives ignored documented fraud and even permitted the practice to continue involved a Washington Mutual internal investigation that uncovered substantial evidence of loan fraud in 2005 in the two top producing loan offices in Southern California. The Washington Mutual Home Loans Credit Risk Mitigation team conducted the investigation in response to a sustained history of confirmed fraud findings over a 3-year period involving two offices,

one in Downey and one in Montebello, California. Each office was located in a low-income area of Los Angeles and headed by a loan officer who had won repeated Washington Mutual awards for high-volume loan production. The internal investigative report cited specific examples of fraud and fabrication of qualifying criteria and recommended firm action by the bank against the offending employees. Despite the year-long investigation, the written materials prepared, the meetings that were held, and fraud rates in excess of 58% and 83% at the Downey and Montebello offices, no action was taken by Washington Mutual management to address the fraud problems in either office. No one was disciplined or terminated; no antifraud program was installed; no notice of the problems were sent to the bank's regulators; and no investors who purchased residential mortgage-backed securities (RMBSs) containing loans from those offices were alerted to the fraud problem.²⁹ Perhaps even more striking, the congressional report noted the following:

Over the next two years, the Downey and Montebello head loan officers, Mr. Ramirez and Mr. Fragoso, continued to issue high volumes of loans and continued to win awards for their loan productivity, including winning trips to Hawaii as members of WaMu's "President's Club." One of the loan officers even suggested to Bank President, Steve Rotella, ways to further relax bank lending standards.³⁰

Another example of a Washington Mutual employee notifying the very highest officials only to be ignored occurred when the chief risk officer, Jim Vanasek, expressed his concern in 2004 over the unsustainable rise in housing prices and the risky lending standards, and he circulated a memorandum to the mortgage underwriting and appraisal staff warning of a bubble in housing prices and encouraging tighter underwriting. Since Vanasek was the senior risk officer and had frequent interaction with Kerry Killinger, the CEO, and the board of directors, he expressed his concerns, and while they may have been heard, they were not heeded. In fact, he earned the derisive nickname of "Dr. Doom." On another occasion, Vanasek testified that Long Beach did not have an effective risk management regime; again it did not seem to matter to senior Washington Mutual officers and managers since the strategy was to sell those loans and pass the risk on to investors.³¹

Diane Kosch who worked as a quality assurance controller in the Long Beach Loan Fulfillment Center also endeavored to perform her job in an honest and ethical manner and informed her supervisors of the potentially fraudulent loans she observed, and she also complained about being restricted to evaluating loan papers with only 15 minutes on each file. When she tried to stop approval of a loan that did not meet quality standards, it would be referred to management and approved anyway. Jalm Ngo, the senior loan coordinator for Long Beach, was questioned by the FBI about a

scheme to buy houses in Stockton, California, with fake documents and stolen identities. The FBI discovered that Ngo had received more than \$100,000 in payments from a mortgage broker to approve bad loans. Ngo pled guilty to perjury and agreed to testify against his Long Beach sales associate, Joel Blanford. Ngo admitted in his plea agreement that most of the payments he received were to ensure that fraudulent loan applications were processed and funded. Further, he knew many of the loan applications were fraudulent, and he and others took steps to “fix” applications by creating false documents or adding false information to the application or to the loan file.³²

By 2006, the high-risk loans began incurring record rates of delinquency and default, and its securitizations also experienced losses. In 2007, the shareholders lost confidence and depositors began withdrawing funds, eventually causing a liquidity crisis. On September 25, 2008, 119 years to the date of its founding, Washington Mutual was seized by its regulator, the Office of Thrift Supervision (OTS), and sold to J.P. Morgan Chase for \$1.9 billion. Washington Mutual became the largest bank failure in U.S. history.³³

So, a corporation founded 119 years prior to the day of its seizure depended on the leadership of its CEO, president, CFO, and board of directors, all of whom failed not only the 43,000 employees but the numerous investors whom also lost untold billions of dollars. Our nation's financial system was put at severe risk, as was the global financial system.

Ironically, the questionable compensation practices of Washington Mutual provided Killinger nearly \$100 million for the period of 2003–2008, the very precise time in which the bank was unraveling because of the high-risk loan strategy Killinger implemented. Washington Mutual provided Killinger with four retirement plans, a deferred bonus plan, and a separate deferred compensation plan. In 2008, when he was told to leave the bank, Killinger was paid \$25 million, including \$15 million in severance pay.³⁴

Perhaps, those investors who lost so much money because of the unethical leadership provided by Killinger will be in a position to file clawback law suits since so much of their money has found its way to Killinger.

Finally, it is important to note the specific findings of fact summarizing the congressional investigation of the Washington Mutual Bank and the role of high-risk loans in the financial crisis.

1. *High-Risk Lending Strategy.* Washington Mutual (“WaMu”) executives embarked upon a high-risk lending strategy and increased sales of high-risk home loans to Wall Street because they projected that high-risk home loans, which generally charged higher rates of interest, would be more profitable for the bank than low-risk home loans.
2. *Shoddy Lending Practices.* WaMu and its affiliate, Long Beach, used shoddy lending practices riddled with credit, compliant, and operational

deficiencies to make tens of thousands of high-risk home loans that too often contained excessive risk, fraudulent information, or errors.

3. *Steering Borrowers to High-Risk Loans.* WaMu and Long Beach too often steered borrowers into home loans they could not afford, allowing and encouraging them to make low initial payments that would be followed by much higher payments, and presumed that rising home prices would enable those borrowers to refinance their loans or sell their homes before the payments shot up.
4. *Polluting the Financial System.* WaMu and Long Beach securitized over \$77 billion in subprime home loans and billions more in other high-risk home loans, used Wall Street firms to sell the securities to investors worldwide, and polluted the financial system with mortgage-backed securities, which later incurred high rates of delinquency and loss.
5. *Securitizing Delinquency-Prone and Fraudulent Loans.* At times, WaMu selected and securitized loans that it had identified as likely to go delinquent, without disclosing its analysis to investors who bought the securities and also securitized loans tainted by fraudulent information, without notifying purchasers of the fraud that was discovered.
6. *Destructive Compensation.* WaMu's compensation system rewarded loan officers and loan processors for originating large volumes of high-risk loans, paid extra to loan officers who overcharged borrowers or added stiff prepayment penalties, and gave executives millions of dollars even when its high-risk lending strategy placed the bank in financial jeopardy.³⁵

2.7.2 Ameriquest

Ameriquest Capital Corporation was under the full control of Roland Arnall, as a result of his sale of the Long Beach Savings and Loan to Washington Mutual and the money he needed to launch his new subprime empire. Ameriquest Capital Corporation became a holding company for more than a dozen entities and two retail subprime lenders, and the volume of subprime loans from 2001 to 2004 grew to more than \$82.7 billion, making Ameriquest one of the top subprime lenders in the nation. Arnall's strategy was to sell high-priced loans to people who would have trouble paying them back, and to remove his risk, by selling the loans to Wall Street firms, very much in the manner with which he did business when he owned the Long Beach enterprise. An example of the core product loan that Ameriquest offered was the 2/28 loan, which meant that for the first 2 years it had a low fixed rate and then converted to a higher adjustable rate for the remaining 28 years. Since this

loan had a 3-year prepayment penalty, it meant the borrower had to refinance the loan in year two and pay a large fee or be confronted with an adjustable rate for the balance of the loan.³⁶ Since these borrowers were fundamentally unable to qualify for conventional mortgages because of their income levels, it would only be a matter of time before they would default. Ameriquest would not be concerned as they would have already sold this loan to Wall Street, and the investment bank would securitize this loan among thousands of other loans and in turn remove their risk by selling the CDOs to investors who would assume the risk without the knowledge that they had invested in a high-risk loan.

One of the strategies employed by Ameriquest was to hire high school students who had just graduated and have them serve as a loan officer, or to employ car salesmen or carwash workers and have them work under a senior loan officer who would instruct them on how to sell loans. This enabled Ameriquest to pay low starting salaries but to incentivize the high-pressure sales techniques by offering hefty sales commissions for closing a loan. Many times the high-pressure sales effort would cross the line and become fraudulent. For example, in the Ameriquest office in Minnesota, it was not uncommon for a loan sales person to alter W-2 forms, and in the Sacramento, California office, Ameriquest loan management personnel condoned, encouraged, and participated in extensive document alteration, manipulation, and forgery to sell more loans. In the Fresno, California, Ameriquest office employees were manipulating bank statements to make it appear as though the borrower had more income than they actually had. At other California branch offices, "stated" income letters were being manufactured that misrepresented the age and income of elderly borrowers.³⁷

Another example of the quality of Ameriquest loan sales personnel and the environment they worked in was clearly reported by Mclean and Nocera as follows:

Later, after everything had come to an end, an Ameriquest loan officer named Christopher Warren—who, like Bob, worked in the Sacramento office—posted a rambling confession online about his years in the mortgage business. Of his three years at Ameriquest, where he said he started as a teenager, he wrote: "[M]y managers and handlers taught me the ins and outs of mortgage fraud, drugs, sex, and money, money and more money. My friend and manager handed out crystal methamphetamine to loan officers in a bid to keep them up and at work longer hours. At any given moment inside the restrooms, cocaine and meth was being snorted by my estimates [by] more than a third of the staff, and more than half the staff [was] manipulating documents to get loans to fund, and more than 75 percent just made completely false statements A typical welcome aboard gift was a pair of scissors, tape and white out..." he left, he said, with the personal information of 680,000 Ameriquest customers to start

a company called WTL financial. His new company, he admitted, faked credit scores, pay stubs, and bank statements in order to sell \$810 million in securities backed by his loans. He could get away with it because Wall Street didn't care.³⁸

It is interesting to note that many of the subprime loan originators have stated they were not the villains and that the problem was not on Main Street, but was in fact on Wall Street, since it was the Wall Street investment firms that were dictating what kind of mortgages they would buy and at what price. They wanted the high-risk subprime mortgages because those were the mortgages that generated the most yield, seven times more profitable than prime mortgages. One former Ameriquest executive stated that it is Wall Street that set product guidelines and that "Wall Street design it and present it to you, if they say don't put it in my warehouse line, that means you can't make the loan."³⁹

Another Ameriquest executive, Jon Daurio, who had worked with Arnall at Long Beach and then went on to form several other subprime companies, recalled a meeting in 2003 with representatives of Bear Stearns in which Bear Stearns asked how he could increase the loan volume. Daurio replied they could do 100% loan-to-value stated income for 580 FICO scores. This meant making a full 100% loan with no down payment and no income verification to prospective borrowers with very low credit scores. "The Bear Stearns representative said, 'okay' and Dariou said, 'no problem, let's do this all day,' and we did it in massive quantities."⁴⁰

It is not surprising that Ameriquest's reputation within the industry was so low, yet their practices were copied by other subprime competitors, simply because they would lose their business sales to Ameriquest if they did not follow suit. For example, if they denied a loan, they would later discover Ameriquest would accept the loan and would be successful in selling the loans to Wall Street firms.

2.7.3 Countrywide Financial

Countrywide Financial was one of the first of the new mortgage originators, and their approach was to provide loans to borrowers with good credit because these loans were conforming to the standards of the GSEs, namely, Fannie Mae and Freddie Mac. Countrywide was able to sell these loans on a consistent basis to both Fannie and Freddie. Angelo Mozilo never forgot the fact that the GSEs made Countrywide's growth and success possible.

By 1992, Countrywide had become the largest originator of single family mortgages in the country. With the advent of falling interest rates in 1992, Countrywide began a new product of refinancing for those people who already owned their home, thus providing the concept of people using their home as a piggy bank to take out equity and use the money in other ways. By 2003, Countrywide's market share was eclipsed by the subprime

companies, and Mozilo realized that Ameriquest under Arnall's leadership had now set the stage for Countrywide to remain as a solid lender or to move into the subprime market space and compete directly with Ameriquest. Ironically, Countrywide, who originally provided conforming loans, decided they had no choice but to move into the subprime market, and they later became the one loan originator most closely associated with the excesses of the subprime business.⁴¹ As far as Mozilo was concerned, Ameriquest changed the game, and as an aggressive CEO, Mozilo met the challenge by hiring aggressive executives whom would later implement programs that would permit Countrywide to become one of the highest producers of subprime high-risk loans. In fact, Countrywide soon offered prospective customers over 180 different products to select from in making their loan. One of the items in which Countrywide incurred the wrath of the Securities and Exchange Commission (SEC) was Countrywide's sales strategy "If your customer can legitimately qualify for a loan anywhere else in the United States, they will qualify at Countrywide." The second complaint was directed at Mozilo, David Sambol, COO for the Home Loan Division, and CFO, Eric Sieracki.⁴² Further, under these new aggressive executives, Countrywide began to match the risk layering of loans as Ameriquest had been doing so effectively. Risk layering is the combination of loans with different types of risks such as no-documentation loans, credit-impaired loans, and adjustable rate loans, then bundle these together as one loan. These are risks that were never meant to coexist, and blending them together increased the chance of default. There was one more loan that Countrywide offered that eventually would have a major consequence and that was their exception pricing system. Under this system, if a borrower could not meet the loan guidelines, Countrywide would make the loan work anyway—under this exception pricing system. According to the SEC, Countrywide's use of this exception pricing system was too excessive.⁴³

While Mozilo had been concerned about the credit quality in the overall subprime industry, he stated to a group of analysts that he suspected fraud within the stated income loans; more importantly, in an internal email within Countrywide, he described their 80/20 subprime loan "as the most dangerous product in existence and there can be nothing more toxic"; Mozilo also sent another internal email to his staff and top executives stating that he personally observed a serious lack of compliance within their organization system as it relates to documentation and generally a deterioration in the quality of loans originated versus the pricing of those loans.⁴⁴ Since Countrywide continued to make these products available to their borrowers and to the investment community, the discrepancy between Mozilo's private worry and public proclamation caused the SEC to charge Mozilo and several of his top aides with fraud for not disclosing Countrywide's growing risks to investors.

2.7.4 American International Group

AIG was a premier worldwide reinsurance company, and under Howard Greenburg, president and CEO, its growth and importance to the insurance world was extraordinary. Greenburg was a very controlling executive, who valued his company more than words can convey. In a financial system that was generating very complicated and expensive risks, AIG-Financial Products (FP) Division assumed a great number of contracts or risks. However, in 1998 AIG-FP entered a new market for credit default swaps, and it sold insurance to banks against the risk of defaults by huge numbers of investment-grade public corporations. The key term is “investment grade” as this indicated a quality of the risk AIG could underwrite. Joe Cassano who managed the AIG-FP division generated \$300 million per year for AIG or 15% of AIG profits. In short, this was a solid business for AIG. In the early 2000s, since the financial markets had developed new financial instruments, they, in essence, outfoxed AIG by first using the model of requesting insurance on corporate credit risk to their new model of insurance on consumer risk, which now included submitting such items as credit card debt, student loans, auto loans, prime mortgages, and aircraft leases. Clearly, this reinsurance on consumer loan risk was much more risky than the previous insurance of credit defaults on corporate loan risk, which consisted primarily of investment-grade securities. The problem that AIG-FP was to encounter began in 2004 when the investment banks started to submit credit defaults on U.S. subprime loans. AIG assumed there was no difference in this product from their corporate default credit risks.⁴⁵

Goldman Sachs helped project this bait and switch by asking AIG to insure 2% subprime mortgages to 95% subprime mortgages. In a matter of months, AIG-FP in effect bought \$50 billion in BBB-rated subprime mortgage bonds by insuring them against default. Evidently, everyone at AIG rubber stamped the contract assuming they were being paid premiums to take basically the same sort of risk they had been doing for nearly a decade. They were not, as they now in effect were the world’s biggest owners of subprime mortgage bonds. In short, Goldman Sachs transferred to AIG the responsibility for all future losses in the BBB subprime mortgage bonds in exchange for a few million dollars a year for the life of the bonds. In the process, Goldman Sachs created a security so opaque and complex that it would forever remain misunderstood by the investors, as well as the rating agencies as they created a synthetic subprime mortgage-backed bond CDO, or a collateralized debt obligation.⁴⁶

An additional feature of the CDO was the fact that embedded in the AIG-FP’s swap contracts were three important collateral triggers. This meant that the counterparties to AIG-FP, who had been paying millions of dollars

to insure their BBB- tranches, had the following rights to demand a cash margin call if one of the following three things happened:

1. If AIG's rating dropped to a single A or below
2. If the rating on the super senior tranches AIG was insuring were lowered by the rating agencies
3. If the value of the tranches fell-even without a ratings downgrade⁴⁷

These three collateral triggers were like a hidden landmine, which AIG did not see, until a cash margin call was made by Goldman Sachs.

The issue of the three collateral triggers was in effect putting the entire AIG Corporation at risk. While AIG was heavily capitalized because they were an insurance company, their capital was strictly regulated and very little of the capital could be transferred to the AIG-FP division. In short, AIG-FP division's sudden vulnerability to cash margin calls due to any one of the three triggers being activated by Goldman Sachs endangered the entire AIG Corporation.⁴⁸

As a number of events happened on Wall Street, and as the government realized the seriousness of a collapse of AIG and the domino effect it would have throughout the entire world, it was decided on September 23, 2008, the U.S. Federal Reserve would lend \$85 billion to AIG to pay off the losses on subprime credit default swaps that AIG had provided to Wall Street banks. It is interesting to note that the largest swap was for \$13.9 billion AIG owed to Goldman Sachs, and when you add the \$8.4 billion in cash that AIG had already provided Goldman Sachs when the collateral triggers activated, the U.S. taxpayer not only lent the \$85 billion to AIG, but at the same time they permitted Goldman Sachs to recover over \$21 billion since it was, in fact, being provided by the U.S. taxpayer.⁴⁹

The consequence of the creation of very opaque and complex synthetic subprime mortgage-backed bonds permitted massive transfer of financial risk, and we now realize how perilously close we came to creating a world-wide depression through these unregulated synthetic CDOs.

2.7.5 Investment Bank Abuses

When investment banks are operating and performing in the role for which they were originally designed and created, they will serve to help businesses raise capital by either finance or selling financial products such as stocks and bonds. Also, when corporations need additional capital to fund such things as a large construction project, an investment bank will assist it in arranging a bank loan or in raising capital by helping to market a new issue of shares or corporate bonds to investors. Investment banks also provide expertise and assistance with corporate acquisitions or corporate mergers. More recently, investment banks have offered broker-dealer and investment advisory

services, which have also included trading in derivatives and commodities. Of course, most recently investment banks have been active in the mortgage market and have participated with lenders and mortgage brokers to package and sell mortgage loans and mortgage-backed securities, and it is in this domain that unanticipated consequences of several new financial instruments they designed emerged and created our nation's most severe recession. Several of these new financial instruments, such as synthetic CDOs, were not only very destructive to the industry but provided a platform for substantial abusive practices, which many would say, included fraudulent activities.

The U.S. Senate Permanent Subcommittee on Investigations held hearings on some of the Wall Street firms and their activities and issued subpoenas, conducted more than 150 interviews, received numerous depositions, and reviewed tens of millions of pages of documents, including court pleadings, filings with the SEC, trustee reports, corporate board and committee minutes, mortgage transactions and analysis, documents obtained from securities regulators, including bank examination reports, reviews of securities firms enforcement actions, memoranda, correspondence, and email. In April 2010, the subcommittee held four hearings in which they examined the root causes of the financial crisis, namely, high-risk lending by U.S. financial institutions, regulatory failures, credit rating agencies (CRAs), and Goldman Sachs and Deutsche Bank, two investment firms that were regarded as industry leaders in the design, marketing, and sale of mortgage-related securities.⁵⁰

Investment banks can play an important role in the U.S. economy, helping to channel the nation's wealth into productive activities that create jobs and increase economic growth.

From 2004 to 2008, U.S. financial institutions issued \$2.5 trillion in RMBSs and over \$1.4 trillion in CDO securities. Investment banks typically charge fees of \$1–8 million to act as an underwriter of an RMBS securitization, and \$5–10 million to act as the placement agent for a CDO securitization. The investment banks sold these RMBS and CDO securities to investors around the world and helped develop a secondary market where RMBS and CDO securities could be traded. The investment banks trading desks participated in this secondary market by buying and selling RMBS and CDO securities for their clients, or to keep in their firms own proprietary transaction. These financial products they developed allowed investors to profit not only from the success of RMBS or CDO securitization but also from their default or failures, by permitting investors to purchase securities on the “short” side.

The investment banks went one step further as they established the ABX Index in January 2006, and this index was intended to be similar to the S&P 500, which lists 500 big company stocks, but the ABX Index is for subprime mortgages and it would list specific tranches of mortgage-backed securities. By selecting a specific tranche, such as ABX 04-1 BBB, the investor could decide whether to buy on the “short” side, which would imply the investor

thought this tranche would default or fail. The ABX Index permitted the investment bank to match up parties who wanted to take opposite sides in a transaction, namely, a party and counterparty. The investment bank used these financial instruments to make their own proprietary purchases, again either on the “long” or “short” side. In extreme cases, as occurred with both Deutsche Bank and Goldman Sachs, they created structured finance transactions, which enabled each of them to profit at the expense of their clients.⁵¹

The congressional inquiry into the investment banks and the role they played in the financial crisis focused on two specific firms for their abusive practices, namely, Deutsche Bank and Goldman Sachs. In short, the manner in which both investment banks were creating RMBSs or CDOs with assets that each of their banks' senior employees knew were of poor quality; then participating in the underwriting securitization of these poor quality securities and bonds for lenders knowing full well these bonds were high-risk, poor-quality mortgages or RMBS securities, and selling these RMBS and CDO securities without full disclosure to their clients of the investment banks' own adverse interests, caused investors to whom they sold the securities to incur substantial losses.⁵²

2.7.5.1 Deutsche Bank

The activities of Deutsche Bank, its top executives, and their top CDO trader, Greg Lippmann, revealed a pattern of abusive practices to their clients. For example, Lippmann was one of the first traders of all investment banks to realize how this RMBS and CDO market could not be sustained and that eventually all of the subprime mortgage-backed CDOs were going to collapse. Lippmann repeatedly warned and advised his Deutsche Bank colleagues, as well as some of his clients seeking to buy short positions, about the poor quality of the RMBS securities underlying many of the CDOs, in fact going so far as to describe some of these securities as “crap” and “pigs.” The U.S. Senate's Permanent Subcommittee on Investigations report went on to state the following:

At one point, Mr. Lippmann was asked to buy a specific CDO security and responded that it “rarely trades,” but he “would take it and try to dupe someone” into buying it. He also disparaged RMBS securities that, at the same time, were being included in Gemstone 7, a CDO being assembled by the bank for sale to investors. Gemstone 7 included or referenced 115 RMBS securities, many of which carried BBB, BBB-, or even BB credit ratings, making them among the highest risk RMBS securities sold to the public, yet received AAA ratings for its top three tranches. Deutsche Bank sold \$700 million in Gemstone securities to eight investors who saw their investments rapidly incur delinquencies, rating downgrades, and losses. Mr. Lippmann at times referred to the industry's ongoing CDO marketing efforts as a “CDO machine” or “Ponzi scheme,” and predicted that the U.S. mortgage market

as a whole would eventually plummet in value. Deutsche Bank's senior management disagreed with his negative views, and used the bank's own funds to make large proprietary investments in mortgage related securities that, in 2007, had a notional or face value of \$128 billion and a market value of more than \$25 billion. At the same time, Deutsche Bank allowed Mr. Lippmann to develop for the bank a \$5 billion proprietary short position in the RMBS market, which it later cashed in for a profit of approximately \$1.5 billion. Despite that gain, in 2007, due to its substantial long investments, Deutsche Bank incurred an overall loss of about \$4.5 billion from its mortgage related proprietary investments.⁵³

Lippmann, recognizing the RMBS securities inside Gemstone 7 were high risk and likely to lose value, did not object to their inclusion in Gemstone 7. In fact, nearly a third of Gemstone 7 assets consisted of high-risk subprime loans originated by Fremont, Long Beach, and New Century, three lenders who were known within the industry for their shoddy performance in providing loans to borrowers. Despite the many securities within Gemstone 7 that had BBB, BBB-, and even BB credit ratings, Gemstone's top three tranches were given AAA ratings by the credit rating agencies. These investment-grade ratings enabled investors like pension funds, insurance companies, university endowments, and municipalities to consider buying Gemstone securities. Eight investors actually purchased them, and within eight months, the Gemstone securities began incurring rating downgrades. By July 2008, all seven tranches in the CDO had been downgraded to junk status, and the long investors were almost completely wiped out.⁵⁴

It is instructive to note that Deutsche Bank executives provided special financial incentives to their sales force to seek out buyers in Europe and Asia since the U.S. market had dried up.⁵⁵ So, while trying to sell inferior securities from the Deutsche Bank trading desk, other divisions within Deutsche Bank were still interested in creating additional CDOs as the fees for constructing these financial instruments were so profitable and hard to resist.

Based on the U.S. Senate Permanent Subcommittee on Investigations review of the Deutsche Bank activities, its report issued the following findings of fact:

1. *CDO Machine*. From late 2006 through 2007, despite increasing mortgage delinquencies, RMBS losses, and investor flight from the U.S. mortgage market, U.S. investment banks continued to issue new CDOs, including Deutsche Bank, which issued 15 new CDOs securitizing nearly \$11.5 billion of primarily mortgage-related assets from December 2006 to December 2007.
2. *Fee Incentives*. Because the fees charged to design and market CDOs were in the range of \$5–10 million per CDO, investment banks had strong incentives to continue issuing CDOs despite increasing risks

and waning investor interest since reduced CDO activity meant less revenues for structured finance units and even the disappearance of CDO departments and trading desks, which is eventually what occurred.

3. *Deutsche Bank's \$5 Billion Short.* Although Deutsche Bank as a whole and through an affiliated hedge fund, Winchester Capital, made proprietary investments in long mortgage-related assets, the bank also permitted its head CDO trader to make a \$5 billion short investment that bet against the mortgage market and produced bank profits totaling approximately \$1.5 billion.
4. *Proprietary Loss.* By 2007, Deutsche Bank, through its mortgage department and an affiliated hedge fund, had substantial proprietary holdings in the mortgage market, including more than \$25 billion in long investments and a \$5 billion short position, which together resulted in 2007 losses to the bank of about \$4.5 billion.
5. *Gemstone 7.* In the face of a deteriorating market, Deutsche Bank aggressively sold a \$1.1 billion CDO, Gemstone 7, which included RMBS securities that the bank's top CDO trader had disparaged as "crap" and "pigs," and which produced \$1.1 billion of high-risk, poor-quality securities that are now virtually worthless.⁵⁶

2.7.5.2 Goldman Sachs

The congressional hearings focused on the role of Goldman Sachs and how its securitization practices magnified risk in the market by selling high-risk and poor-quality mortgage products to investors throughout the world. The U.S. Senate Permanent Subcommittee on Investigations focused substantial attention on four of the synthetic CDOs Goldman Sachs constructed as financial instruments to transfer risk associated with its high-risk assets. The four synthetic CDOs in question are known as:

1. Hudson Mezzanine 2006-1
2. Anderson Mezzanine 2007-1
3. Timberwolf I CDO
4. Abacus 2007-AC1

These structured financial instruments were designed to permit Goldman Sachs to profit from the subprime mortgage market collapse, particularly by shorting subprime mortgage assets. Goldman Sachs marketed these CDOs to transfer its risk on to its clients, and in one case, it allowed a client to select the specific tranches known to be high-risk failures so that a client could "short" his position resulting in a \$1 billion gain for a favored client and a corresponding loss for another client.⁵⁷

The congressional subcommittee raised questions as to Goldman Sachs compliance with its obligations to provide suitable investment recommendations to its clients and disclose its material adverse interests to potential investors. The congressional hearing also probed Goldman executives about incomplete disclosures and their deceptive nature, as well as whether some of its activities generated conflicts of interest in which Goldman Sachs placed its own financial interest before those interests of its clients.⁵⁸

The four CDOs that Goldman Sachs designed, marketed, and administered reveal a pattern of conflict of interest, abusive practices, and possible fraudulent activity. We will review each of these four CDOs.

2.7.5.2.1 Hudson Mezzanine 2006-1 This was a \$2 billion synthetic CDO comprised of \$1.2 billion in ABX assets from Goldman's own inventory and \$800 million in single name CDO contracts on subprime RMBS and CDO securities that Goldman wanted to short. This was a Mezzanine CDO because the referenced RMBS securities carried the riskier BBB or BBB- credit rating. Goldman Sachs designed the CDO and administered it, including having the roles of underwriter, senior swap counterparty, credit protection buyer, collateral "put" provider, and liquidation agent. The marketing materials Goldman Sachs provided to their interested clients stated that Goldman Sachs' interests were "aligned" with investors because Goldman Sachs was buying a portion of the Hudson I equity tranche. However, quite deceptively, Goldman Sachs did not mention that it was shorting the entire \$2 billion CDO, an investment for greater than the \$6 million equity share, and this was directly adverse to the interests of prospective investors.⁵⁹

2.7.5.2.2 Anderson Mezzanine 2007-1 This was another synthetic CDO, which included BBB and BBB- rated subprime RMBS securities. Goldman Sachs took a short position on 40% of the \$305 million in assets underlying the Anderson Mezzanine. Almost half of the referenced subprime RMBS securities contained mortgages originated by New Century, a subprime lender with a reputation for poor-quality loans, and it was experiencing financial problems as Goldman Sachs was constructing the Anderson synthetic CDO. Not only was Goldman Sachs aware of the problem loans from New Century, they were also attempting to have New Century repurchase back these loans as Goldman Sachs was constructing the synthetic CDO. Goldman continued to build and then market the Anderson securities to a number of Goldman Sachs clients, including pension fund investors. Seven months after the securities were issued, they were reduced to junk bond status, and the Anderson investors lost virtually their entire investments.⁶⁰

2.7.5.2.3 Timberwolf I CDO This was a \$1 billion hybrid C20-squared transaction that referenced single-A-rated securities from other CDOs. Those CDOs in turn referenced RMBS securities carrying lower credit

ratings, primarily in the BBB category. Goldman Sachs took a short position on 36% of the \$1 billion in assets underlying Timberwolf. Timberwolf's securities began losing value almost as soon as they were purchased. The head of Goldman Sachs Mortgage Department told a senior Goldman Sachs executive that Timberwolf and Abacus 2007 AC-1 were two deals "to worry about," yet Goldman Sachs executives rushed Timberwolf to market and instructed sales staff not to provide written information to investors about how Goldman Sachs was valuing the Timberwolf securities, and its sales force were told not to offer any additional assistance to potential investors trying to evaluate the 4500 underlying assets. Goldman Sachs also began targeting Timberwolf sales to "nontraditional" buyers and those with little CDO familiarity, and to increase its marketing efforts in Europe and Asia.⁶¹

2.7.5.2.4 Abacus 2007-AC1 This was a \$2 billion synthetic CDO that referenced BBB-rated subprime RMBS securities. The Abacus CDOs were known as single tranche CDOs developed by Goldman Sachs to provide customized CDOs for clients interested in assuming a specific type and amount of investment risk. They enabled the client to select the assets, the size of the investment, and the amount of subordination or cushion before the securities would be exposed to loss, and could be issued in a single tranche. The Abacus CDOs also enabled investors to short a selected group of RMBS or CDO securities at the same time. Thus, Abacus 2007-AC1 was the first and only Abacus transaction in which Goldman Sachs allowed a third party client to essentially "rent" its CDO structure and play a direct role in the selection of assets. John Paulson, a favorite client of Goldman Sachs, was permitted to rent this CDO structure for a fee of \$15 million.⁶²

Goldman originated Abacus 2007-AC1 in response to a request by Paulson & Co. Inc. ("Paulson"), a hedge fund that was among Goldman's largest customers for subprime mortgage-related assets. Paulson had a very negative view of the mortgage market, which was publicly known, and wanted Goldman's assistance in structuring a transaction that would allow it to take a short position on a portfolio of subprime mortgage assets that it believed were likely to perform poorly or fail. Goldman allowed Paulson to use the Abacus CDO for that purpose. In entering into that arrangement with Paulson and simultaneously acting as the placement agent responsible for marketing the Abacus securities to long investors, Goldman created a conflict of interest between itself and the investors it would be soliciting to buy the Abacus securities.

Paulson established a set of criteria to select the reference assets for the Abacus CDO to achieve its investment objective. After establishing those parameters, Paulson worked with the actual portfolio section agent to select the assets. Documents show that Paulson

proposed, substituted, rejected, and approved assets for the reference portfolio. Goldman was aware of Paulson's investment objective, the role it played in the selection of the reference assets, and the fact that the selection process yielded a set of poor-quality assets. Of the final set of 90 assets referenced in the Abacus CDO portfolio, 49 had been initially proposed by Paulson. Yet, Goldman did not publicly disclose the central role played by Paulson in the asset selection process or the fact that the economic interest held by an entity actively involved in the asset selection process was adverse to the interest of investors who would be taking the long position.

ACA Management LLC, the company hired by Goldman to serve as the portfolio selection agent, told the subcommittee that, while it knew Paulson was involved, it was unaware of Paulson's true economic interest in the CDO. The ACA managing director who worked on the Abacus transaction stated that ACA believed that Paulson was going to invest in the equity tranche of the CDO, thus aligning its interests with those of ACA and other investors. ACA and its parent company both acquired long positions in the Abacus CDO as did a third investor. The Abacus securities lost value soon after purchase. The three long investors together lost more than \$1 billion, while Paulson, the sole short investor, recorded a corresponding profit of about \$1 billion. Today, the Abacus securities are worthless.

In addition to not disclosing the asset selection role and investment objective of the Paulson hedge fund, Goldman did not disclose to investors how its own economic interest was aligned with Paulson. In addition to accepting a sizable placement fee paid by Paulson for marketing the CDO securities, Goldman had entered into a side arrangement with the hedge fund in which it would receive additional fees from Paulson for arranging credit default swap contracts tied to the Abacus CDO that included low-premium payments falling within a specified range. While those lower premium payments would benefit Paulson by lowering its costs and benefit Goldman by providing it with additional fees, they would also reduce the amount of cash being paid into the CDO, disadvantaging the very investors to whom Goldman was marketing the Abacus securities. Goldman nevertheless entered into the arrangement, contrary to the interests of the long investors in Abacus, and failed to disclose the existence of the fee arrangement in the Abacus marketing materials.⁶³

While officials at Goldman Sachs attempted to portray John Paulson's asset selection as essentially ministerial, it was far from that as Paulson specified the criteria of RMBS securities he would select. Paulson wanted RMBS securities that had ARMs, low borrower FICO scores, and mortgages in states

with slowing home price appreciation, like Arizona, California, Florida, and Nevada. Paulson also required 2006 vintage or 2007 vintage subprime RMBS that were rated BBB by Standard and Poor's or BAA by Moody's. Goldman Sachs sent Paulson a database and spreadsheet listing the securities that met each of the requirements Paulson requested. Paulson in turn used that database to select 123 securities, and Goldman Sachs forwarded that list for a series of negotiations and meetings to finalize selection of the reference assets and the structure of the CDO.⁶⁴

On March 22, 2007, ACA and Paulson agreed on the final \$2 billion reference portfolio for Abacus 2007-AC1. The assets consisted of 90 BAA-rated mid and subprime RMBS securities issued after January 1, 2006. The RMBS securities were "equally sized," each with a \$22.22 million notional value. Each asset in the final reference portfolio was approved by both Paulson and ACA. Of the final 90 RMBS securities, 49 had been initially proposed by Paulson, and 41 had been initially proposed by ACA.

Goldman characterized Paulson's participation in the asset selection process as one in which the hedge fund merely "expressed its views" about the reference portfolio, which often happens in synthetic CDO transactions. The evidence indicates, however, that Paulson did more than express its views; it played an active and determinative role in the asset selection process. Paulson established the criteria used to identify the initial list of RMBS securities, proposed a majority of the reference assets in the final portfolio, and approved 100% of the reference assets. Moreover, the "views" expressed by Paulson directly conflicted with the interests of the investors to whom Goldman was marketing the Abacus 2007-AC1 deal.⁶⁵

On April 16, 2010, the SEC filed a complaint against Goldman Sachs and one of the lead salesmen for the Abacus CDO, Fabrice Tourre, alleging they had failed to disclose material adverse information to potential investors and committed securities fraud in violation of Section (17CA) of the Securities Act of 1933 and Section (10CB) and Rule 106-5 of the Securities Exchange Act of 1934. On July 14, 2010, Goldman Sachs reached a settlement with the SEC, admitting the following:

The marketing materials for the Abacus 2007-AC1 transaction contained incomplete information. In particular, it was a mistake for the Goldman marketing materials to state that the reference portfolio was "selected by" ACA Management LLC without disclosing the role of Paulson & Co. Inc. in the portfolio selection process and that Paulson's economic interests were adverse to CDO investors.⁶⁶

The consequence of this corporate behavior on Goldman Sachs' part was its agreement to pay a fine of \$550 million. Hopefully, future Goldman Sachs clients will be aware of the deception, abusive practices, fraudulent behavior, and most assuredly the practice of placing Goldman Sachs' interests above its customers and clients.

The U.S. Senate Permanent Subcommittee on Investigations summarizing the investigation to date of Wall Street and the financial crisis that impacted our nation identified a number of Goldman Sachs practices that raised conflict of interest concerns, and its report listed these practices as follows:

1. *Shorting Its Own Securities.* In Hudson, Anderson, and Timberwolf, Goldman marketed CDO securities to clients, took a substantial portion of the short side of their CDO, bet the CDO would fall in value, and profited from its short position at the expense of the clients to whom it sold the securities.
2. *Failing to Disclose Key Information to Investors.* In Hudson, Anderson, and Timberwolf, Goldman represented to potential investors that its interests "were aligned" with theirs or advertised its retention of a portion of the CDO's equity tranche, without disclosing that it had an even larger short position in the CDO and held a financial interest directly adverse to the investors to whom it was selling the CDO securities.
3. *Misrepresenting Source of Assets.* In Hudson, Goldman provided 100% of the CDO assets using credit default swap contracts it controlled and priced, transferred \$1.2 billion of risk from its own inventory to the CDO, and told investors the assets had been "sourced from the Street," when they had been supplied solely by Goldman and not priced from transactions with third parties.
4. *Failing to Disclose Client Involvement.* In Abacus, Goldman enabled a client who was shorting the CDO to help select the CDO's assets, solicited investors to buy the Abacus securities without disclosing the short party's asset selection role or investment objective, and helped the client gain a \$1 billion profit at the expense of the investors to whom Goldman sold the securities.
5. *Minimizing Premiums.* In Abacus, Goldman entered into an undisclosed agreement with the sole short party to accept a fee for arranging low-premium payments by the short party to the CDO even though low-premium payments meant less money for the long investors to whom Goldman had sold the Abacus securities.
6. *Selling Securities Designed to Fail.* Goldman sold Hudson and Abacus securities to clients knowing the securities were designed to fall in value and benefit the short party, which was a client in the case of Abacus and itself in the case of Hudson.

7. *Delaying Liquidation.* In Hudson, Goldman was paid a fee to serve as the liquidation agent but delayed liquidating assets that were losing value for 8 months, enhancing its financial gain as the CDO's short party at the expense of the long parties whose losses would have been stanchied if the assets had been liquidated.
8. *Misrepresenting Assets.* In Anderson, when clients asked how Goldman got "comfortable" with poor quality New Century loans in the CDO, Goldman worked to dispel those concerns and failed to disclose its own discomfort with New Century loans and that it held 40% of the short side of the CDO, betting its assets would lose value.
9. *Taking Immediate Postsale Markdowns.* In Timberwolf, Goldman knowingly sold Timberwolf securities to clients at prices above its own book values and then, often within days or weeks of a sale, marked down the value of the sold securities, causing clients to incur quick losses and requiring some to post higher margin or cash collateral.
10. *Evading Put Obligation.* In Timberwolf, Goldman was paid a fee to serve as the collateral put provider, but refused for 2 months to allow the purchase of default swap collateral securities, even though they meant better returns for long investors, because Goldman did not want to assume the risk that the collateral securities might lose value.
11. *Using Poor-Quality Loans in Securitizations.* Goldman provided securitization services and warehouse accounts to lenders with a history of issuing high-risk, poor-quality loans and knowingly included poor-quality loans in Goldman-originated RMBS and CDO securities.
12. *Concealing Its Net Short Position.* From late 2006 through most of 2007, Goldman engaged in a relentless effort to sell the CDO and RMBS securities it underwrote, without disclosing to the clients it solicited that Goldman was simultaneously shorting the subprime market and betting it would lose value.⁶⁷

As a result of the U.S. Senate Permanent Subcommittee on Investigations inquiry and hearing on the role that Goldman Sachs played in our nation's financial crisis, the subcommittee reported the following findings of fact:

1. *Securitizing High-Risk Mortgages.* From 2004 to 2007, in exchange for lucrative fees, Goldman Sachs helped lenders like Long Beach, Fremont, and New Century to securitize high-risk, poor-quality loans, obtain favorable credit ratings for the resulting RMBSs, and sell the RMBS securities to investors, pushing billions of dollars of risky mortgages into the financial system.
2. *Magnifying Risk.* Goldman Sachs magnified the impact of toxic mortgages on financial markets by resecuritizing RMBS securities

in CDOs, referencing them in synthetic CDOs, selling the CDO securities to investors, and using credit default swaps and index trading to profit from the failure of the same RMBS and CDO securities it sold.

3. *Shorting the Mortgage Market.* As high-risk mortgage delinquencies increased, and RMBS and CDO securities began to lose value, Goldman Sachs took a net short position on the mortgage market, remaining net short throughout 2007, and chased in very large short positions, generating billions of dollars in gain.
4. *Conflict between Client Interests and Proprietary Trading.* In 2007, Goldman Sachs went beyond its role as market maker for clients seeking to buy or sell mortgage-related securities, traded billions of dollars in mortgage-related assets for the benefit of the firm without disclosing its proprietary positions to clients, and instructed its sales force to sell mortgage-related assets, including high-risk RMBS and CDO securities that Goldman Sachs wanted to get off its books, and utilizing key roles in CDO transactions to promote its own interests at the expense of investors, creating a conflict between the firm's proprietary interests and the interest of its clients.
5. *Abacus Transaction.* Goldman Sachs structured, underwrote, and sold a synthetic CDO called Abacus 2007-AC1, did not disclose to the Moody's analyst overseeing the rating of the CDO that a hedge fund client taking a short position in the CDO had helped to select the referenced assets, and also did not disclose that fact to other investors.
6. *Using Naked Credit Default Swaps.* Goldman Sachs used credit default swaps on assets it did not own to bet against the mortgage market through single name and index credit default swap transactions, generating substantial revenues in the process.⁶⁸

2.8 The Enablers

Many factors and numerous organizations and entities had to develop both policies and practices for this perfect storm in our housing market to all merge together and create the financial disaster our nation experienced in 2008. Although there was substantial abuse and fraud by loan originators and Wall Street investment firms, this situation could not have occurred without the role that was played by the enablers. The enablers, particularly the CRAs and the GSEs of Fannie Mae and Freddie Mac, played a pivotal role in the entire securitization process and collapse of the residential real estate market. Their participation was a key factor in the financial collapse

and ensuing recession. The group of enablers that unknowingly and in some cases knowingly participated in this financial crisis are:

1. CRAs
2. GSEs
3. Congress
4. White House

Each of these enablers contributed to the financial crisis in many different ways, some because of greed on the part of senior executives; in other cases, the inability and lack of sophistication in understanding the new financial instruments that were created; in several cases, it was the result of lobbyists and the political contributions that with the companion of corporate contributions permitted Congress to develop legislation that in many instances proved most dysfunctional to our nation's financial health. In some instances, policies emerged out of the White House that contributed to our nation's problem; however, it was the unanticipated consequences of housing policies brought forth by four presidents, that while originally designed to increase home ownership in our nation, actually provided the platform for our GSEs to become one of the focal and major problems causing our financial recession and near depression.

Therefore, the policies and role that the group of enablers played was to personify how easy it becomes for policies to spawn unintended consequences and to create dysfunctional programs and agencies.

2.8.1 Credit Rating Agencies

CRAs perform a very useful and important role for our financial system, simply because they evaluate and rate financial instruments such as corporate bonds or mortgage-backed securities and in the process provide a credit rating, which is an assessment that potential investors can weigh before purchase of the bonds or securities. In addition, federal and state regulators that deal with pension funds, insurance companies, and municipalities have rules and regulations that govern the number and amount of investment-grade funds they are required to hold as safe investments. Thus, the CRA provides this evaluative function and in the process becomes an integral part of our nation's economic system.

CRAs are private organizations that are for-profit and have been designated by our SEC as National Recognized Statistical Rating Organizations. Currently, there are ten registered CRAs in the United States, and the market is dominated by three: Moody's Investor Service, Inc.; Standard and Poor's Financial Services, LLC; and Fitch Ratings LTD. These three firms issue approximately 98% of the total credit ratings. The credit ratings each CRA uses are based on a scale of letter grades to indicate the credit risk ranging

from AAA to D. AAA ratings are designated as the safest investments and have historically had low default rates. There are also BBB ratings, and those financial instruments with an AAA through BBB- rating are generally referred to as investment grade. Financial instruments that default receive a rating of D quality.⁶⁹

Credit ratings, which first gained prominence in the late 1800s, are intended to provide independent assessments of the creditworthiness of financial instruments, bonds, and securities. Essentially, the credit rating is assigned after certain statistical and methodological research is completed, and the rating becomes a prediction as to the safety of the instrument and the prospects that the debt will be repaid. There have been two business models on which the CRAs derived their revenue. The first model was termed a “subscriber-pays” model, and it was based on charging subscription fees to investors who were interested in purchasing or investing in the instruments being rated. Following the 1929 stock crash, this model fell out of favor since so many investors lost all their investments. In 1970, the CRAs adopted the scale of letter grades to designate the safest investments to those investments at greater risk or likely to default. In this business model, CRAs moved to an “issuer-pays” model in which the organization seeking to create and issue the bond, security, or financial instrument pays the CRA to analyze the credit risk and assign a credit rating to the financial instrument.⁷⁰

Ironically, it is this “issuer-pays” model instituted in 1970, that has built-in analytical research problems that in large measure were responsible for the credit agencies issuing credit ratings on very complex and opaque structured financial instruments, despite the fact they lacked the methodological skills to see the inherent dangers in the synthetic CDOs for which they were issuing ratings on the various tranches.

In addition to the complexity of instruments that Wall Street investment firms were designing and constructing, they required the CRA to issue a letter credit rating on the instruments, bonds, and securities they wished to sell to potential investors. This “issuer-pays” model created a massive conflict of interest for the CRA since the revenue and income of the CRA is fully dependent on the Wall Street investment firm requesting the rating for which they would in turn pay for the credit rating issued by the CRA. Therefore, if the ratings are not sufficiently high to attract investors, the Wall Street investment firm will select a different CRA, and it was this “shopping around” for the more favorable ratings that diluted the quality of credit ratings by credit agencies fearful of losing business to one of their competitors.⁷¹

2.8.1.1 Credit Rating Process

To fully appreciate the complexity CRAs encountered as they worked with Wall Street investment banks in the evaluation of these new financial instruments, it is instructive to review the full credit rating process.

Prior to the massive rating downgrade in mid-2007, the RMBS and CDO rating process followed a generally well-defined pattern. It began with the firm designing the securitization—the arranger—sending a detailed proposal to the CRA. The proposal contained information on the mortgage pools involved and how the security would be structured. The rating agency examined the proposal and provided comments and suggestions, before ultimately agreeing to run the securitization through one of its models. The results from the model were used by a rating committee within the agency to determine a final rating, which was then published.

Arrangers. For RMBS, the “arranger”—typically an investment bank—initiated the rating process by sending to the CRA information about a prospective RMBS and data about the mortgage loans included in the prospective pool. The data typically identified the characteristics of each mortgage in the pool including: the principal amount, geographic location of the property, FICO score, loan-to-value ratio of the property, and type of loan. In the case of a CDO, the process also included a review of the underlying assets, but was based primarily on the ratings those assets had already received.

In addition to data on the assets, the arranger provided a proposed capital structure for the financial instrument, identifying, for example, how many tranches would be created, how the revenues being paid into the RMBS or CDO would be divided up among those tranches, and how many of the tranches were designed to receive investment-grade ratings. The arranger also identified one or more “credit enhancements” for the pool to create a financial cushion that would protect the designated investment-grade tranches from expected losses.

Credit Enhancements. Arrangers used a variety of credit enhancements. The most common was “subordination” in which the arranger creates a hierarchy of loss absorption among the tranche securities. To create that hierarchy, the arranger placed the pool’s tranches in an order, with the lowest tranche required to absorb any losses first, before the next highest tranche. Losses might occur, for example, if borrowers defaulted on their mortgages and stopped making mortgage payments into the pool. Lower level tranches most at risk of having to absorb losses typically received noninvestment-grade ratings from the CRAs, whereas the higher level tranches that were protected from loss typically received investment-grade ratings. One key task for both the arrangers and the CRAs was to calculate the amount of “subordination” required to ensure that the higher tranches in a pool were protected from loss and could be given AAA or other investment-grade ratings.

Credit Rating Models. After the arranger submitted the pool information, proposed capital structure, and proposed credit enhancements to the CRA, a CRA analyst was assigned to evaluate the proposed financial instrument. The first step that most CRA analysts took was to use a credit rating model to evaluate the rate of probable defaults or expected losses from the asset pool. Credit rating models are mathematical constructs that analyze a large number of data points related to the likelihood of an asset defaulting. RMBS rating models typically use statistical analyses of past mortgage performance data to calculate expected RMBS default rates and losses. In contrast, rather than statistics, CDO models use assumptions to build simulations that can be used to project likely CDO defaults and losses.

To derive the default or loss rate for an RMBS pool of residential mortgages, the CRA analyst typically fed a “loan tape”—most commonly a spreadsheet provided by the arranger with details on each loan—into the credit rating model. The rating model then automatically assessed the expected credit performance of each loan in the pool and aggregated that information. To perform this function, the model selected certain data points from the loan tape, such as borrower credit scores or loan-to-value ratios, and compared that information to past mortgage data using various assumptions, to determine the likely “frequency of foreclosure” and “loss severity” for the particular types of mortgages under consideration. It then projected the level of “credit enhancement,” or cushion needed to protect investment-grade tranches from loss.

Credit Analysis. After obtaining the model’s projections for the cushion or subordination needed to protect the pool’s investment-grade tranches from loss, the CRA analyst compared that projection to the tranches and credit enhancements actually proposed for the particular pool to evaluate their sufficiency.

In addition to evaluating an RMBS pool’s expected default and loss rates, credit enhancements, and capital structure, CRA analysts conducted a cash flow analysis of the interest and principal payments to be made into the proposed pool to determine that the revenue generated would be sufficient to pay the rates of return projected for each proposed tranche. CRA analysts also reviewed the proposed legal structure of the financial instrument to understand how it worked and how revenues and losses would be allocated. Some RMBS and CDO transactions included complex “waterfalls” that allocated projected revenues and expected losses among an array of expenses, tranches, and parties. The CRA analyst was expected to evaluate whether the projected revenues were sufficient for the designated purposes. The CRA review also included a legal analysis ensuring

that there was no structural risk presented due to a failure to fulfill minimally necessary legal requirements... and confirming that the deal documentation accurately and faithfully described the structure modeled by the Quant (quantitative analyst).

The process for assigning credit ratings to cash CDOs followed a similar path. CRA analysts used CDO rating models to predict the CDO's expected defaults and losses. However, unlike RMBS statistical models that used past performance data to predict RMBS default and loss rates, the CDO models relied primarily on the underlying ratings of the assets as well as on a set of assumptions, such as asset correlation, and ran multiple simulations to predict how the CDO pool would perform. After calculating the CDO's default and loss rates and the cushion or subordination needed to protect the pool's investment-grade tranches from loss, the CRA analyst examined the CDOs capital structure, credit enhancements, cash flow, and legal structure, in the same manner as for an RMBS pool.

Rating Recommendations. After completing analysis of a proposed financial instrument, the CRA analyst developed a rating recommendation for each proposed RMBS or CDO tranche that would be used to issue securities, and presented the recommended ratings internally to a rating committee composed of other analysts and managers within the CRA. The rating committee reviewed and then voted on the analyst's recommendations. Once the committee approved the ratings, a rating committee memorandum was prepared memorializing the actions taken, and the ratings were provided to the arranger. If the arranger indicated that the issuer accepted the ratings, the CRA made the ratings available publicly. If dissatisfied, the arranger could appeal a ratings decision. The entire rating process typically took several weeks, sometimes longer for novel or complex transactions.⁷²

The U.S. Senate Subcommittee Report on Investigations indicated that it was common for an analyst from a credit reporting agency to discuss matters with the arranger or the issuer representative of the investment bank and to work with this representative to evaluate cash flows, number and size of the tranches, the size and nature of the credit enhancements, and the rating each tranche would receive.⁷³ It was at this particular point in the interaction that the CRA analyst would become vulnerable to pressures to obtain a "high" rating or be confronted by the reality of the investment bank issuer representative reporting the CRA analyst as "difficult" to work with. Senior executives of Moody's would then place pressure on their analysts to become more "cooperative" with the rating that would be assigned to the investment bank's financial instrument.

A number of analysts who worked for Moody's during the 1990s and into the new decade told the subcommittee that a major cultural shift took place at the company around 2000. They told the subcommittee that prior to 2000 Moody's was academically oriented and conservative in its issuance of ratings. That changed, according to those interviewed, with the rise of Brian Clarkson who worked at Moody's from 1990 to 2008 and rose from group managing director of the Global Asset Backed Finance Group to president and COO of Moody's. These employees indicated that during Mr. Clarkson's tenure Moody's began to focus less on striving for accurate credit ratings and more on increasing market share and "servicing the client," who was identified as the investment banks that brought business to the firm. ...

One former Moody's senior vice president, Mark Froeba, told the subcommittee that Mr. Clarkson used fear and intimidation tactics to make analysts spend less time on the ratings process and work more cooperatively with investment bankers. At the subcommittee hearing, another former Moody's senior analyst, Richard Michalek, described a meeting that he had with Mr. Clarkson shortly after he was promoted to head of the Structure Finance Group. Mr. Michalek stated:

In my "discussion," I was told that he (Mr. Clarkson) had met with the investment banks to learn how our Group was working with the various clients and whether there were any analysts who were either particularly difficult or particularly valuable. I was named ... as two of the more "difficult" analysts who had a reputation for making "too many" comments on the deal documentation.

The conversation was quite uncomfortable, and it didn't improve when he described how he had previously had to fire (another analyst), a former leader of the Asset-Backed group who he otherwise considered a "good guy." He described how, because of the numerous complaints he had received about (that analyst's) extreme conservatism, rigidity and insensitivity to client perspective, he was left with no choice. ... He then asked me to convince him why he shouldn't fire me. ... The primary message of the conversation was plain: further complaints from the "customers" would very likely abruptly end my career at Moody's.

Several former Moody's employees have testified that Moody's employees were fired when they challenged senior management with a more conservative approach to rating RMBS and CDO securities. According to Mr. Froeba:

The fear was real, not rare and not at all healthy. You began to hear of analysts, even whole groups of analysts at Moody's, who had lost their jobs because they were doing their jobs, identifying risks and describing them accurately.

A former managing director, Eric Kolchinsky, one of the senior managers in charge of the business line, which rated subprime-backed CDOs at Moody's, stated:

Managers of rating groups were expected by their supervisors and ultimately the Board of Directors of Moody's to build, or at least maintain, market share. It was an unspoken understanding that loss of market share would cause a manager to lose his or her job.⁷⁴

Further documentation for this cultural change within the Moody's Investment Service business environment can be seen by the dramatic increase in reviews on RMBS and CDO ratings as they tripled in 5 years, from \$61 million in 2002 to more than \$260 million in 2006. Altogether, reviews from the three leading CRAs, Moody's Investor Services, Inc., Standard and Poor's Financial Services, LLC, and Fitch Ratings, LTD, more than doubled in the period from 2002 to 2007, going from \$3 billion to \$6 billion.⁷⁵

2.8.1.2 Historical Performance of CRAs

The bond market has essentially outsourced its risk management responsibilities to the CRAs, and this has resulted in precious little independent research by the fund managers who actually invest or purchase the bonds. There is an assumption that if the CRA has given a bond an AAA rating it must be safe.⁷⁶ Fund managers were able to get away with this approach in the days before structured finance and the new synthetic CDOs, which now had multiple levels of tranches and multiple grades of ratings from investment grade; to below investment grade; and to high-risk financial instrument grade; all issued by the CRAs with a minimum of due diligence by fund managers within the financial services industry.

Historical evidence has also demonstrated additional reasons why fund managers in specific, and our financial system in general should be concerned with our CRAs. For example, the CRAs had missed the near default of New York City; the bankruptcy of Orange County, California; the Penn Central meltdown and the Long Term Capital Management bankruptcy in the 1990s; the Enron collapse; World Com bankruptcy and their failure to notify investors of the impending collapse of the housing market, an area in which their role was at the very heart of the madness.⁷⁷ Indeed, the entire edifice would have collapsed were it not for their participation in the investment-grade rating given to all of the mortgage-backed securities.

Historically, it is rare for the CRAs to downgrade ratings they issue on financial instruments. One of their roles is that of surveillance of the financial instruments, and beginning in July 2007, both Moody's and Standard and Poor's downgraded hundreds and then thousands of RMBS and CDO ratings, causing their previously rated securities to lose value, become difficult,

if not impossible to sell, and inevitably leading to the collapse of the RMBS and CDO secondary markets. A downgrade of this massive size left no doubt that the CRAs' original ratings were deeply flawed.

The first major public evidence of our national mortgage crisis occurred in December 2006 with the collapse and failure of two major subprime lenders, Ownit Mortgage Solutions and SeBaing Capital. The *Wall Street Journal* described the closing of these firms as sending shock waves through the mortgage-backed market. By February 2007, more than 22 subprime lenders were bankrupt, and London's *Daily Telegraph* reported this as the beginning of a major mortgage crisis. Despite this news of failing subprime lenders and increasing subprime mortgage defaults, both Moody's and Standard and Poor's continued to issue AAA credit ratings for a large number of RMBS and CDO securities. In the first week of July 2007, Standard and Poor's issued over 1500 new RMBS ratings, a number equal to the three preceding months, while Moody's issued 675 new RMBS ratings, nearly double its weekly average in the prior month. The timing of this surge of new ratings on the eve of the massive downgrades raises serious questions about whether both Moody's and Standard and Poor's pushed these ratings through quickly to capture the revenue they knew would soon be lost due to the forthcoming massive downgrade of ratings and the collapse of this market.⁷⁸

As a result of their inquiry and hearings the U.S. Senate Permanent Subcommittee on Investigations issued the following findings of fact regarding the role of CRAs and the credit ratings assigned to RMBS and CDO securities by both Moody's Investor Service, Inc., and Standard and Poor's Financial Services, LLC.

1. *Inaccurate Rating Models.* From 2004 to 2007, Moody's and Standard and Poor's used credit rating models with data that was inadequate to predict how high-risk residential mortgages, such as subprime, interest only, and option ARMs, would perform.
2. *Competitive Pressures.* Competitive pressures, including the drive for market share and need to accommodate investment bankers bringing in business, affected the credit ratings issued by Moody's and Standard and Poor's.
3. *Failure to Reevaluate.* By 2006, Moody's and Standard and Poor's knew their ratings of RMBS and CDOs were inaccurate and revised their rating models to produce more accurate ratings, but then failed to use the revised model to reevaluate existing RMBS and CDO securities, delaying thousands of rating downgrades and allowing those securities to carry inflated ratings that could mislead investors.
4. *Failure to Factor in Fraud, Laxity, or Housing Bubble.* From 2004 to 2007, Moody's and Standard and Poor's knew of increased credit risks due to mortgage fraud, lax underwriting standards, and

unsustainable housing price appreciation but failed adequately to incorporate those factors into their credit rating models.

5. *Inadequate Resources.* Despite record profits from 2004 to 2007, Moody's and Standard and Poor's failed to assign sufficient resources to adequately rate new products and test the accuracy of existing ratings.
6. *Mass Downgrades Shocked Market.* Mass downgrades by Moody's and Standard and Poor's, including downgrades of hundreds of sub-prime RMBS over a few days in July 2007, downgrades by Moody's of CDOs in October 2007, and actions taken (including downgrading and placing securities on credit watch with negative implications) by Standard and Poor's on over 6300 RMBS and 1900 CDOs on one day in January 2008, shocked the financial markets, helped cause the collapse of the subprime secondary market, triggered sales of assets that had lost investment-grade status, and damaged holdings of financial firms worldwide, contributing to the financial crisis.
7. *Failed Ratings.* Moody's and S&P each rated more than 10,000 RMBS securities from 2006 to 2007, downgraded a substantial number within a year, and by 2010, had downgraded many AAA ratings to junk status.
8. *Statutory Bar.* The SEC is barred by statute from conducting needed oversight into the substance, procedures, and methodologies of the credit rating models.
9. *Legal Pressure for AAA Ratings.* Legal requirements that some regulated entities, such as banks, broker-dealers, insurance companies, pension funds, and others, hold assets with AAA or investment-grade credit ratings created pressure on CRAs to issue inflated ratings making assets eligible for purchase by those entities.⁷⁹

2.8.2 Government-Sponsored Entities

The two major GSEs that played such a pivotal role in enabling the financial crisis were the Federal National Mortgage Association, commonly called "Fannie Mae," and the Federal Home Loan Mortgage Corporation, referred to as "Freddie Mac." They were both chartered by Congress to encourage home ownership by providing a secondary market for home mortgages that would involve both commercial banks and savings and loan associations, later to emerge as savings and thrift associations. The purpose of the secondary mortgage market was to enable the GSEs to purchase the loans from the banks and savings and loan associations and other lenders, to securitize them and provide a guarantee that the GSEs would protect the investors in the event any securitized mortgage defaulted.

Many investors believed the securities had the backing of the federal government since the GSEs were chartered by the government and investors falsely viewed these securities as very safe investments; thus, investors throughout the world purchased these securities. The federal government's interest in chartering the GSEs was to create the existence of this secondary market allowing lenders to sell their mortgages in this market to other investors, and permitting the lenders to use the proceeds of the sale and profits to issue additional loans, thus increasing lending capabilities to additional prospective homeowners.⁸⁰

Since our government has both valued and encouraged home ownership, Fannie Mae and Freddie Mac became important agents of home ownership as they permitted middle class families the ability to afford monthly mortgage payments and to have a stake in the community. Fannie Mae was created during the Great Depression, and its original role was to buy up mortgages that the Veteran's Administration and Federal Housing Administration were guaranteeing, to free up capital, so additional government insured loans could be made. In 1968, Fannie Mae was split into two companies; one emerged as the Government National Mortgage Association and was commonly known as "Ginnie Mae," and its purpose was to guarantee securitized loans made by the Veteran's Administration and the Federal Housing Administration, known as "FHA" loans.

Meanwhile, Fannie Mae was permitted to handle two very important new functions: (1) to buy conventional mortgages that had not been insured by the government, and (2) it was allowed to issue securities backed by the mortgages it had created. The significance of this event in 1968 was to create a quasi-government/private corporation with a social policy mandate from Congress to make housing more available to low- and middle-income Americans. Concurrent with these actions by Congress was the creation of Freddie Mac with the charge to purchase mortgages from the savings and thrift industry. The purpose was to make more capital available and to permit the savings and loan associations to make additional mortgages for prospective home buyers.⁸¹ In 1989, Fannie Mae and Freddie Mac became publicly traded companies, allowing them the ability to acquire more capital from investors, which in turn set the stage for their emerging role as an enabler in the mortgage industry, and what would eventually result in their ultimate receivership by the federal government in 2008.

Since both Fannie Mae and Freddie Mac were now public companies, by the 1990s their shareholders included some of the largest investors in the financial business world, and accordingly, the shareholders expected they would make money and do more than simply making the government's policy of home ownership occur. Eventually, in the early 1990s, housing advocates criticized both Fannie Mae and Freddie Mac for not doing enough for low-income people by extending loans to riskier borrowers. Both Fannie Mae and Freddie

Mac responded to this criticism by stating their underwriting standards were focused on acquiring mortgages from those that could meet the conforming income standards of conventional 30-year fixed rate loans.⁸² However, an event that would eventually transform the entire mortgage industry from conventional loans to subprime began with a report issued by a Federal Reserve Bank of Boston, and Charles Gasparino recalls these events as follows:

Ramping up the pressure was the 1992 study by the Federal Reserve Bank of Boston that had concluded there was a widespread racial and income discrimination in the mortgage-lending process; in other words, people were being denied mortgages based purely on their race and income level, even if they had the means to repay those mortgages. The study purported to prove statistically that many minorities might have had bad credit scores, but they also held jobs and were being denied mortgages even though they had the ability to repay them.

The study argued that the traditional ways of weighing creditworthiness—credit scores and loan-to-value ratios—were discriminatory, and it became a rallying cry for housing advocates, including some members of Congress, such as Barney Frank, the Chairman of the House Finance Committee; Maxine Waters, the California Congresswoman who made home ownership for minorities one of her key crusades; and a Senator from Connecticut, Christopher Dodd....

The Clinton administration viewed the study and the controversy it sparked as political dynamite and immediately began to address its concerns through an expansive housing policy. The Community Reinvestment Act, which traced bank lending policies in poor and minority neighborhoods, would be enforced to its fullest. The Federal Housing Administration ramped up its insuring of home loans going to the poor, making mortgages more affordable....

Even more, the GSE's, Fannie Mae and Freddie Mac, would be forced to use their massive and growing financial clout to guarantee and buy loans from banks that served minority and other lower-income home owners.

If this move was an important step toward the democratization of the housing market, it was also an important step toward the expansion of risk in the financial markets. For the first time, it opened the GSE's to the part of the housing market that dealt with so-called subprime borrowers.⁸³

By the mid 1990s, the GSEs became massive institutions now issuing billions of dollars of debt each year, backed by an implicit guarantee of repayment by the federal government in case of default. However, they were also large public companies with boards of directors and shareholders who demanded growth and stock appreciation. More than anything else, they were increasingly becoming the tools for policy implementation of the political establishment that believed the GSEs should be expanding home ownership well beyond the middle class and more precisely to those with lower incomes. Thus, subprime lending became a reality for the GSEs, and later the pool of subprime borrowers were to include people with little or no

credit history, and even some who could not document their incomes, and many others who did not even have a regular job.⁸⁴

Once again we can observe what started out as a laudable federal goal of increased home ownership in America, without careful monitoring, over the years unintended consequences began to emerge, and by the 2003–2007 time frame, we would see the full ramifications of these events culminate in the mortgage collapse and eventual federal receivership of both GSEs.

Freddie Mac's accounting firm of Arthur Anderson, Inc., had to be replaced by Pricewaterhouse Coopers, since Arthur Anderson was the accounting firm that served Enron Corporation, and after the Enron scandal, Arthur Anderson, Inc., collapsed and went into bankruptcy. The Office of Federal Housing Enterprise Oversight, known as "OFHEO," was the federal regulator for the GSEs, and they reported the new accounting firm discovered that Freddie Mac had understated its earnings by \$5 billion in January 2003, and this resulted in Freddie Mac's entire senior management team being replaced. Then in the fall of 2004, OFHEO announced that Fannie Mae had willfully broken established accounting rules surrounding the derivatives so as to appear they had smooth earning growth. OFHEO stated Fannie Mae was "cooking its books" so that executives could realize substantial income profits, and this was a case of accounting fraud. OFHEO, as the federal regulator of Fannie Mae, stated that Fannie Mae had overstated its earnings by \$9 billion since 2001 and that Franklin Raines, the CEO, had been paid \$90 million between 1998 and 2003. Raines and his CFO, Tim Howard, were forced to step down. Fannie Mae agreed to pay a \$350 million dollar civil penalty to the SEC and a \$50 million dollar penalty to the U.S. Treasury.⁸⁵

Between 2005 and 2007, Fannie Mae and Freddie Mac had purchased or insured both Alt-A and subprime mortgages, and there was no worse time in the mortgage industry to accumulate the amount of exposure that each GSE had in this area. Alt-A loans were considered more risky than conventional mortgage loans, but not at all as risky as subprime loans, so it was a loan constructed to reach those who could not qualify for conventional mortgage loans but were thought to be more capable of paying off their loans than the subprime borrower. Fannie Mae had \$350 billion in Alt-A exposure and another \$166 billion in exposure to subprime loans by the end of 2007. Freddie Mac, at this same time, had \$205 billion in Alt-A exposure and \$173 billion in exposure to subprime or sub-620 FICO scores.⁸⁶ By 2008, both GSE companies had a combined total of \$5.3 trillion in mortgages they owned or guaranteed, with only \$84 billion in capital.⁸⁷

On July 12, 2008, IndyMac, the spinoff from Countrywide Financial Corporation, was closed by the Federal Deposit Insurance Corporation (FDIC), this government takeover of the IndyMac bank sent shock waves through the investment community since IndyMac specialized in Alt-A loans as opposed to subprime loans, and the institutions that had more

exposure to Alt-A loans than IndyMac were both GSEs, Fannie Mae and Freddie Mac.⁸⁸ The closure of IndyMac not only sent shock waves through the investment community, but the Secretary of Treasury, Henry Paulson, and Ben Bernanke, Chairman of the U.S. Federal Reserve, now understood the vulnerable position the U.S. government was in with the extraordinary exposure both GSEs had in this mortgage market.

On August 19, 2008, auditors from Morgan Stanley had finished their review of the books of both GSEs at the request of Secretary of the Treasury Henry Paulson, and they reported that Fannie Mae and Freddie Mac could lose \$50 billion. Auditors from the Federal Reserve were horrified when they examined the quality of Alt-A loans that both GSEs had made. After these reviews, both Secretary Paulson and Chairman Bernanke began plans and actions that would culminate in the federal government placing both GSEs in receivership in September 2008.⁸⁹ Since this date of September 2008 until April 13, 2011, the U.S. Treasury Department has spent \$150 billion to support the two GSEs, with a total projection that forecasts the amount could rise as high as \$363 billion.⁹⁰

The GSE participation in the mortgage industry enabled some of the loan originators such as Ameriquest and Countrywide to have a market for their subprime loans. The Wall Street investment firms created the synthetic CDOs, and when investors saw that Fannie Mae and Freddie Mac loans were included in the mortgage-backed bonds, they confidently invested in these CDOs because they thought the U.S. Government Treasury backed those GSE loans. The GSEs were an enabler of the financial crisis, which occurred in 2008, and which resulted in our nation's deepest recession and near depression.

2.8.3 Federal Regulators

The primary responsibility of federal bank regulations is to ensure the safety and the financial integrity of the financial institutions they are responsible for regulating. In 2006, the United States had 8800 federally insured banks and thrifts, plus 8700 federally insured credit unions. On the federal level, these institutions were regulated by five agencies:

1. The Federal Reserve, which regulates state-chartered banks that are part of the Federal Reserve System, as well as foreign banks
2. Office of Comptroller of the Currency (OCC), which regulates banks with national charters
3. OTS, which regulates federally chartered thrifts
4. National Credit Union Administration, which regulates federal credit unions
5. FDIC, which regulates financial institutions that have federal deposit insurance⁹¹

If a federal regulator becomes concerned about the safety or the financial soundness of a financial institution, there are a range of both informal and formal enforcement actions that can be implemented to require appropriate operational changes.

Informal actions:

1. Require the financial institution to issue a safety and soundness plan
2. Memorandum of understanding
3. Board resolution
4. Commitment letter pledging to take specific corrective actions by a certain date
5. Issuing a supervisory letter to the financial institution listing specific “matters requiring attention”

It is important to note that any informal action initiated by a federal regulator is generally not made public and is not enforceable in court.

Formal actions:

1. Regulator issuing a public memorandum of understanding
2. Consent order
3. Cease and desist order requiring the financial institution to stop an unsafe practice or take an affirmative action to correct identified problems
4. Imposing a civil monetary penalty
5. Suspending or removing personnel from the financial institution
6. Referring misconduct for criminal prosecution⁹²

Federal regulators had the responsibility for monitoring these banks and thrift associations that were active in the mortgage market. Banks like Citigroup, Bank of America, J.P. Morgan Chase, and Wells Fargo originated, purchased, and securitized billions of dollars in home loans each year. Thrifts whose charters typically required them to hold 65% of their assets in mortgage-related assets also purchased, sold, and securitized billions of dollars in home loans, including such major lenders as Countrywide Financial Corporation, IndyMac Bank, and Washington Mutual Bank. Some of these banks and thrifts also had affiliates, such as Long Beach Mortgage Corporation. There were additional lenders that operated outside of the regulated banking system, and these included New Century Financial Corporation and Freemont Loan and Investment, which used industrial loan companies, real estate investment trusts, or publicly traded corporations to carry out their business. In addition, the mortgage market was populated with tens of thousands of mortgage brokers that were paid fees for their loans, or for bringing qualified borrowers to a lender to execute a home loan.⁹³

The number of organizations and individuals participating in the mortgage industry is overwhelming to the few number of federal regulating agencies and their limited number of federal regulators.

In addition to the banks, thrifts, credit unions, lenders, and mortgage brokers, there was another category of organizations that required oversight and this was the security firms. The investment banks, security firms, broker-dealers, and investment advisors did not originate the home loans, but they helped design, underwrite, market, or trade securities linked to residential mortgages including the RMBS and CDO securities that were at the very heart of the financial crisis. The key firms involved in the above process included firms such as Bear Stearns, Goldman Sachs, Lehman Brothers, Merrill Lynch, Morgan Stanley, and the asset management arms of large banks including Citigroup, Deutsche Bank, and J.P. Morgan Chase. Some of these firms also had affiliates that specialized in securitizing subprime mortgages. It should be noted that the security firms were regulated by the SEC, and not by the previously identified five federal regulatory agencies.⁹⁴

The OTS was created in 1989 in response to the savings and loan crisis, and it was chartered by Congress to regulate the thrift industry. OTS was part of the U.S. Department of Treasury and directed by a presidential appointee. Its operations were funded through semiannual fees assessed on the institutions it regulated, with the fee amount based on the size, condition, and complexity of each institution's portfolio. Washington Mutual was the largest thrift regulated by OTS, and from 2003 to 2008, it paid \$30 million in fees annually to the OTS. While OTS was regulating 765 thrift-chartered institutions, Washington Mutual was the largest one it regulated. Washington Mutual had \$300 billion in assets, \$188 billion in deposits over 2300 branches in 15 states, and 43,000 employees. As stated earlier in this chapter, Washington Mutual engaged in high-risk securities, and over the course of three years from 2005 to 2007, it issued and securitized hundreds of billions of dollars in high-risk loans including \$49 billion in subprime loans. Their loans consisted of option arms, which were negatively amortizing loans, and by the end of 2007, over 70% of their loans were stated income loans in which they never verified the borrower's income.⁹⁵

Washington Mutual collapsed in 2008 as a result of the FDIC, the secondary regulator of Washington Mutual, no longer permitting the OTS to ignore their high-risk lending and unsound banking practices. The OTS's failure to regulate Washington Mutual was in part related to a regulatory culture, which viewed thrifts as "constituents," and it relied on the thrifts to take corrective action on those problems OTS identified to them. OTS demonstrated deference to the management of Washington Mutual, choosing to rely on the bank itself to correct problems that were pointed out to them. Over the 5 year period from 2003 to 2008, OTS federal regulators identified over 500 serious deficiencies in Washington Mutual's operations, and OTS

did not once take public enforcement actions against Washington Mutual, even when they failed to correct major problems.⁹⁶

The OTS not only failed in its regulatory responsibilities of Washington Mutual Bank, but it also failed in its responsibilities with mortgage lenders such as Countrywide Financial Corporation and IndyMac, which became the third largest bank failure in U.S. history (Washington Mutual having been the first largest bank failure in U.S. history). The Inspector General of the U.S. Department of Treasury completed 17 reviews of our federal regulatory agencies actions and concluded that the failure of the OTS and its lax enforcement action was not unique solely to OTS, but also representative of other federal regulatory agencies as well.⁹⁷

Clearly, the complexity of so many of the newly created financial instruments such as mortgage-backed securities, CDOs, and synthetic CDOs was not only difficult for seasoned investors to comprehend, they became a serious problem for the examiners of our federal regulatory agencies. The U.S. Senate, Permanent Subcommittee on Investigation comments on the performance of our federal regulatory agencies inability to prevent financial failures, as follows:

Regulators stood on the sidelines as U.S. mortgage lenders introduced increasingly high risk mortgage products into the U.S. mortgage market. Stated income loans, NINA loans, and so-called “liar loans” were issued without verifying the borrower’s income or assets. Alt A loans also had reduced documentation requirements. Interest-only loans, Option ARMs, and hybrid ARMs involved charging low introductory interest rates on loans that could be refinanced before much higher interest rates took effect. Negative amortization loans—loans that became bigger rather than smaller over time—became commonplace. Home equity loans and lines of credit, piggybacks and silent seconds, 100% financing—all involved loans that required the borrower to make virtually no down payment or equity investment in the property, relying instead on the value of the property to ensure repayment of the loan. All of these loans involved higher risks than the 30-year and 15-year fixed rate mortgages that dominated the U.S. mortgage market prior to 2004. When property values stopped climbing in late 2006, these higher risk loans began incurring delinquencies, losses, and defaults at record rates.⁹⁸

The U.S. Senate’s Permanent Subcommittee on Investigations, after reviewing the work products of several federal regulatory agencies, issued the following findings of fact:

1. *Largest U.S. Bank Failure.* From 2003 to 2008, OTS repeatedly identified significant problems with Washington Mutual’s lending practices, risk management, and asset quality but failed to force adequate corrective action, resulting in the largest bank failure in U.S. history.
2. *Shoddy Lending and Securitization Practices.* OTS allowed Washington Mutual and its affiliate Long Beach to engage year after

- year in shoddy lending and securitization practices, failing to take enforcement action to stop its origination and sale of loans with fraudulent borrower information, appraisal problems, errors, and notoriously high rates of delinquency and loss.
3. *Unsafe Option ARM Loans.* OTS allowed Washington Mutual to originate hundreds of billions of dollars in high-risk option ARMs, knowing that the bank used unsafe and unsound teaser rates, qualified borrowers using unrealistically low loan payments, permitted borrowers to make minimum payments resulting in negatively amortizing loans (i.e., loans with increasing principal), relied on rising house prices and refinancing to avoid payment shock and loan defaults, and had no realistic data to calculate loan losses in markets with flat or declining house prices.
 4. *Short-Term Profits over Long-Term Fundamentals.* OTS abdicated its responsibility to ensure the long-term safety and soundness of Washington Mutual by concluding that short-term profits obtained by the bank precluded enforcement action to stop the bank's use of shoddy lending and securitization practices and unsafe and unsound loans.
 5. *Impeding FDIC Oversight.* OTS impeded FDIC oversight of Washington Mutual by blocking its access to bank data, refusing to allow it to participate in bank examinations, rejecting requests to review bank loan files, and resisting the FDIC recommendations for stronger enforcement action.
 6. *FDIC Shortfalls.* The FDIC, the backup regulator of Washington Mutual, was unable to conduct the analysis it wanted to evaluate the risk posed by the bank to the Deposit Insurance Fund, did not prevail against unreasonable actions taken by OTS to limit its examination authority, and did not initiate its own enforcement action against the bank in light of ongoing opposition by the primary federal bank regulators to FDIC enforcement authority.
 7. *Recommendations over Enforceable Requirements.* Federal bank regulators undermined efforts to end unsafe and unsound mortgage practices at U.S. banks by issuing guidance instead of enforceable regulations limiting those practices, failing to prohibit many high-risk mortgage practices, and failing to set clear deadlines for bank compliance.
 8. *Failure to Recognize Systemic Risk.* OTS and the FDIC allowed Washington Mutual and Long Beach to reduce their own risk by selling hundreds of billions of dollars of high-risk mortgage-backed securities that polluted the financial system with poorly performing loans, undermined investor confidence in the secondary mortgage market, and contributed to massive credit rating downgrades, investor losses, disrupted markets, and the U.S. financial crisis.

9. *Ineffective and Demoralized Regulatory Culture.* The Washington Mutual case history exposes the regulatory culture at OTS in which bank examiners were frustrated and demoralized by their inability to stop unsafe and unsound practices, in which their supervisors were reluctant to use formal enforcement actions even after years of serious bank deficiencies, and in which regulators treated the banks they oversaw as constituents rather than arms-length regulated entities.⁹⁹

The role that the federal regulators played in enabling the financial crisis was not intentional, but mistakes made by the SEC and the Federal Reserve provided Wall Street investment firms and banks the opportunity to operate freely in an environment in which regulation would have addressed the high-risk bonds that were created with CDOs and synthetic CDOs and would have provided greater protection to investors and to the American taxpayers. Perhaps, the biggest failure of the SEC was reviewing Bernard Madoff on nine occasions and not once discovering his \$50 billion dollar Ponzi scheme.

2.8.4 Congress, Lobbyists, and Financial Swaps

There are so many examples and situations in which members of Congress have played a role in the enablement process of this financial crisis. In many cases, it was through the development of policies and legislation that clearly resulted in unintentional consequences. In other situations, it was the result of poorly constructed legislation that was not only dysfunctional but played a major role in the financial crisis. For example, both federal and state financial regulators responsible for the oversight of banks, securities firms, and other financial institutions in the years leading up to our financial crisis operated under a number of statutory and regulatory constraints.

One key constraint was the sweeping statutory prohibition on the federal regulation of any type of swap, including credit default swaps. This prohibition took effect in 2000, with enactment of the Commodity Futures Modernization Act (CFMA). The key statutory section explicitly prohibited federal regulators from requiring the registration of swaps as securities; issuing or enforcing any regulations or orders related to swaps; or imposing any recordkeeping requirements for swaps. In addition, the law explicitly prohibited regulation of any “interest rate swap, including a rate floor, rate cap, rate collar, cross-currency rate swap, basis swap, currency swap, equity index swap, equity swap, debt index swap, debt swap, credit spread, credit default swap, credit swap, weather swap, or commodity swap.” These prohibitions meant that federal regulators could not even ask U.S. financial institutions to report on their swaps trades or holdings, much less regulate swap dealers or examine how swaps were affecting the mortgage market or other U.S. financial markets.

As a result, the multi-trillion-dollar U.S. swaps markets operated with virtually no disclosure requirements, no restriction, and no oversight by any federal

agency, including the market for credit default swaps which played a prominent role in the financial crisis. On September 23, 2008, in a hearing before the Senate Committee on Banking, Housing, and Urban Affairs, the SEC Chairman Christopher Cox testified that, as a result of the statutory prohibition, the credit default swap market “is completely lacking in transparency,” “is regulated by no one,” and “is ripe for fraud and manipulation.” In a September 26, 2008 press release, he discussed regulatory gaps impeding his agency and again raised the issue of swaps: “Unfortunately, as I reported to Congress this week, a massive hole remains: the approximately \$60 trillion credit default swap market, which is regulated by no agency of government. Neither the SEC nor any regulator has authority even to require minimum disclosure.” In 2010, the Dodd-Frank Act removed the CFMA prohibition on regulating swaps.

A second significant obstacle for financial regulators was the patchwork of federal and state laws and regulations applicable to high risk mortgages and mortgage brokers. Federal bank regulators took until October 2006, to provide guidance to federal banks on acceptable lending practices related to high risk home loans. Even then, the regulators issued voluntary guidance whose standards were not enforceable in court and failed to address such key issues as the acceptability of stated income loans. In addition, while Congress had authorized the Federal Reserve, in 1994, to issue regulations to prohibit deceptive or abusive mortgage practices—regulations that could have applied across the board to all types of lenders and mortgage brokers—the Federal Reserve failed to issue any until July 2008, after the financial crisis had already hit.

A third problem, exclusive to state regulators, was a 2005 regulation issued by the OCC to prohibit states from enforcing state consumer protection laws against national banks. After the New York State Attorney General issued subpoenas to several national banks to enforce New York’s fair lending laws, a legal battle ensued. In 2009, the Supreme Court invalidated the OCC regulation, and held that states were allowed to enforce state consumer protection laws against national banks. During the intervening four years, however, state regulators had been effectively unable to enforce state laws prohibiting abusive mortgage practices against federally-chartered banks and thrifts.¹⁰⁰

As previously reported in Section 2.3.1 Congress also played a fundamental role in the creation of the GSEs, and particularly targeting Fannie Mae and Freddie Mac to provide loans, which went beyond the conventional conforming mortgage loans to the riskier Alt-A and eventually subprime loans and became a fundamental building block in the entire collapse of our housing industry. Again, what began as a laudable goal with good intentions became over time an inherently dysfunctional consequence of the role played by Congress.

Another manner in which members of Congress were drawn into the financial crisis caused by the collapse of our housing industry was as a result of their need for campaign reelection contributions. The presence of lobbyists from Wall Street and the financial industry who were always eager to support those members of Congress who in turn sponsored legislation that

was beneficial to the respective interests of Wall Street has become a major structural problem of government operations. An example of these situations can be seen in the excellent article by Victoria McGrane, “Wall Street, Bank’s Press to Shape Dodd-Frank Rules” in the April 22, 2011 edition.

Wall Street and the financial industry spent more to lobby Washington in the first quarter of 2011 than a year ago when Congress was writing sweeping financial-overhaul legislation, according to a *Wall Street Journal* review of lobbying reports.

The law, known as Dodd-Frank, was adopted 9 months ago, but banks, credit unions, investment firms, and their trade groups now are trying to shape how it is put into practice. The documents show financial industry lobbyists are spending time with regulators, who are writing hundreds of rules to carry out the law, while pushing Congress to roll-back certain provisions, especially new limits on debit-card fees.

The industry is working to influence a long list of Dodd-Frank rules, including sweeping ones for the nearly \$583 trillion derivatives market and restrictions on the size and activities of the largest banks. Many are also weighing in on mortgage-finance issues as policy makers address problems with foreclosures and how to revamp mortgage-lending giants Fannie Mae and Freddie Mac, which now are under federal control.

The disclosures show that 26 of the financial firms and trade associations that spent the most in 2010 collectively spent \$27 million in the 3 months ending March 31, a 2.7% increase from the \$26.3 million spent in the comparable period in 2010.

The industry’s first-quarter lobbying tally is its second-highest ever, according to an analysis of data provided by the Center for Responsive Politics. The 26 entities spent slightly more—\$27.3 million—between April and June 2010, when Dodd-Frank activity on Capitol Hill was most intense.¹⁰¹

As a result of the near depression caused by the financial crisis in our housing industry, Congress passed the Dodd-Frank bill to address some of the problems that created difficulties for our federal regulatory agencies. One problem addressed was to change previous congressional interest in the unregulated derivatives market. This is a \$583-trillion market, so Congress has asked the federal regulatory agencies to develop the implementation guidelines to regulate this huge market. Now, Congress for the first time is requiring most derivatives to be traded on exchanges or similar electronic systems and routed through clearinghouses. Derivatives covered in this new set of rules are known as swaps, which are private financial contracts between

two parties to exchange one asset or liability for another in the future. Airlines use swaps to lock in fuel prices against future fuel price increases. Commodity firms also lock in the prices of goods needed for future production, and the usefulness of these derivatives is important to many industries who will in turn lobby Congress for exceptions as their ability to use hedge funds is important to their financial health and future. So Congress gets confronted by many reasonable requests, but the responsibility for weighing the implications and results of their action requires great thought and a perspective as to how their legislation will impact society in future years.

Finally, it is important to note the congressional action taken as a result of the financial crisis and to appreciate the new legislative-effort all designed to prevent future financial catastrophes similar to what our nation experienced in 2008.

Dodd-Frank Act. On July 21, 2010, Congress passed and President Obama signed into law the Dodd-Frank Wall Street Reform and Consumer Protection Act, P. L. 111-203. This law, which passed both Houses with bipartisan majorities, expanded the authority of regulatory agencies to try to prevent future financial crisis. Among other provisions, the law:

- Established a Financial Stability Oversight Council, made up of federal financial regulators and others, to identify and respond to emerging financial risks;
- Established a Consumer Financial Protection Bureau to strengthen protection of American consumers from abusive financial products and practices;
- Restricted proprietary trading and investments in hedge funds by banks and other large financial institutions;
- Prohibited sponsors of asset backed securities from engaging in transactions that would involve or result in a material conflict of interest with investors in those securities;
- Established procedures to require nonbank firms whose failure would threaten U.S. financial stability to divest some holdings or undergo an orderly liquidation;
- Strengthened regulation of credit rating agencies;
- Strengthened mortgage regulation, by clamping down on high cost mortgages, requiring securitizers to retain limited liability for securities reliant on high risk mortgages, banning stated income loans, and restricting negative amortization loans;
- Required better federal regulation of mortgage brokers;
- Directed regulators to require greater capital and liquidity reserves;
- Required regulation of derivatives and derivative dealers;
- Required registration of certain hedge funds and private equity funds;
- Authorized regulators to impose standards of conduct that are the same as those applicable to investment advisers on broker-dealers who provide personalized investment advice to retail customers; and
- Abolished the Office of Thrift Supervision.¹⁰²

2.9 The Costs and Impact on America

As a result of the financial crisis and the deepening recession, both Congress and the White House realized that America was on the precipice of a depression and that executive action was required to initiate programs that would prevent such an economic disaster. President Bush called on the Secretary of the Department of Treasury, Henry Paulson, and Ben Bernanke, Chairman of the Federal Reserve Bank, to begin formulating plans to prevent any further economic erosion to the United States and to prepare programs with the approval of Congress for implementation as soon as possible.

2.9.1 Troubled Asset Relief Program

On October 3, 2008, Congress reacted to the executive-led plans being formulated by Secretary Paulson and Chairman Bernanke by passing into law the Emergency Economic Stabilization Act of 2008, known as Public Law 110-343 or the Troubled Asset Relief Program (TARP). This law authorized the expenditure of up to \$700 billion to stop financial institutions from collapsing and further damaging the U.S. economy. The Department of Treasury administered these funds, with the support of the Federal Reserve, and over \$350 billion in TARP funds were used to inject capital or purchase assets at hundreds of large and small banks. The largest recipients of TARP funds were the following organizations:

- AIG
- Ally Financial (formerly GMAC Financial Services)
- Bank of America
- Citigroup
- Goldman Sachs
- J.P. Morgan Chase
- PNC Financial Services
- U.S. Bancorp
- Wells Fargo
- Chrysler
- General Motors

Since most of these organizations have repaid all or a substantial portion of the TARP funds they received, the Congressional Budget Office estimated in November 2010 that the final cost of the TARP program will be approximately \$25 billion.¹⁰³

2.9.2 Federal Reserve Emergency Support Programs

As information from the numerous banks across the nation and other financial institutions began reporting their concerns to both Secretary Paulson and Chairman of the Federal Reserve, Ben Bernanke, the Federal Reserve took action by creating a new program to help address the nations continuing slide into economic distress. As the financial crisis deepened and caused further concern for the nation, the Federal Reserve aggressively expanded its balance sheet from \$900 billion at the beginning of 2008 to \$2.4 trillion in December 2010 to provide support to our nation's financial system and economy.

The Federal Reserve created 12 new programs and provided trillions of dollars of assistance through 21,000 individual transactions to U.S. and foreign financial institutions in an effort to promote liquidity and prevent a collapse of the world's financial system. In one program alone, the agency mortgage-backed securities program purchased more than \$1.25 trillion in mortgages backed by Fannie Mae, Freddie Mac, and Ginnie Mae, all GSEs that went into receivership and were supervised by the government.¹⁰⁴

The action taken by the Federal Reserve to buy back bad subprime mortgages directly from the banks, along with so many of their risky investments, had the impact of transferring these obligations and financial responsibilities directly from Wall Street to the American taxpayer. In commenting on the Federal Reserve's action and the government's continuing interest in talking with the financial executives who in large measure created this financial crisis, Michael Lewis observes the following:

The world's most powerful and most highly paid financiers had been entirely discredited without government intervention every single one of them would have lost his job; and yet those same financiers were using the government to enrich themselves. "I can understand why Goldman Sachs would want to be included in the conversation about what to do about Wall Street," he said. "What I can't understand is why anyone would listen to them." In Eisman's view, the unwillingness of the U.S. government to allow the bankers to fail was less a solution than a symptom of a still deeply dysfunctional financial system. The problem wasn't that the banks were, in and of themselves, critical to the success of the U.S. economy. The problem, he felt certain, was that some gargantuan, unknown dollar amount of credit default swaps had been bought and sold on every one of them. "There's no limit to the risk in the market," he said. "A bank with a market capitalization of one billion dollars might have one trillion dollars" worth of credit default swaps outstanding. No one knows how many there are! And no one knows where they are! The failure of, say, Citigroup might be economically tolerable. It would trigger losses to Citigroup's shareholders, bondholders, and employees—but the sums involved were known to all. Citigroup's

failure, however, would also trigger the payoff of a massive bet of unknown dimensions: from people who had sold credit default swaps on Citigroup to those who had bought them.¹⁰⁵

2.9.3 Impact on America's Economic Power

The economic consequences of this financial crisis disrupted America's economy by creating our deepest recession, and to this day, we continue to feel the shock waves of the greed and unethical and fraudulent behavior that was created by Wall Street financial executives and their abuse and use of unregulated financial instruments. By 2009, banks were still trying to resolve more than \$7 trillion in problem loans, bonds, and trades. Also, as Charles Gasparino noted in his excellent book, *The Sellout: How Three Decades of Wall Street and Government Mismanagement Destroyed the Global Financial System*:

In fact, even as the stock market rebounded off its March lows, the "Great Recession," as the economic collapse was now known, showed only a few signs of letting up as unemployment hovered around 9.5 percent. The financial crisis may have been abated, and the economy may have hit bottom in the summer of 2009, but most economists predict a feeble recovery because the extent of the economic damage was so extreme. In addition to the implosion of three major investment banks, a number of commercial banks, the automobile industry, and countless other businesses, more than \$13 trillion in household wealth was destroyed by the end of 2008, according to the most recent statistics released by the Fed. Globally, some estimates place the decline at close to \$50 trillion.¹⁰⁶

The vulnerability of the American economy, not to mention the global economy and our world's financial systems, was totally unanticipated and came as a huge shock to all economists, politicians, and business people. The results of this financial crisis undermined the very basis of America's power and spread a new sense of vulnerability to the nation because of the growing federal deficit and unemployment at record levels, all culminating in a sense of discouragement and disillusionment.¹⁰⁷ The United States was concerned not only about its own economy but also how to best provide stability to the global financial system and keep it from collapsing. As the United States continued to increase its federal deficit with the intention of providing financial support to offset and prevent a collapse of its economy, it also became clear the global economy was at risk and needed its economic stability restored. Also complicating this problem was a report from analysts at the Bank of England suggesting that \$14 trillion would be needed to prop up banks around the world alone, not to mention the enormous array of other

institutions and organizations that were being directly and also indirectly impacted as well.¹⁰⁸

When the Great Recession of 2008 hit the United States in September 2008, many in Europe and Asia thought they would be immune to this financial crisis and spared the horrible lending practices of Wall Street investment banks. This would not be the case, for in less than a year the financial crisis became a worldwide problem, and the entire world economy shrank for the first time since World War II, or 1945. It was soon discovered that the financial crisis was more than simply a culture of excessive risk taking by investment banks, or greed and unethical practices including fraud, but it was a problem of the inability of national regulatory firms to monitor and police actions of international conglomerates and financial institutions. International investment banks could easily bypass national regulators by moving offshore to less regulated areas.¹⁰⁹

The financial crash of 2008 was a very daunting experience for those who believed in globalism and free market economies and for whom for the past 30 years promoted and supported the very market ideas former President Ronald Reagan and Prime Minister Margaret Thatcher espoused as they reinvigorated the economic systems of both America and England.¹¹⁰

As the financial crisis was being addressed in 2008, 2009, and 2010 by the U.S. government, the level of government debt that was increased and used to stimulate the American economy became quite alarming to economists. As the United States confronts its debt level of \$14 trillion in 2011, this has now become a major domestic issue and one which will assume major political prominence as the nation moves forward into the 2012 presidential election. So, it is clear that the financial crisis has become a most transformational event for America both in terms of its economic system and also its political system.

When examining how the financial crisis became a major source of government debt, British historian Niall Ferguson observed:

“This is how empires decline. It begins with a debt explosion.” Not only did the bank bailout and Keynesian stimulus package add to debt, but also the costs of entitlement programs for social security and health care and servicing of the debt will claim large shares of future revenue. “Unless entitlements are cut or taxes are raised, there will never be another balanced budget.”

Ferguson goes on to say that “the idea that the U.S. is a ‘safe haven’ is nonsense. Its government debt is a safe haven the way Pearl Harbor was in 1941.”¹¹¹

Not only has the financial crisis created major debt service problems for the United States, but it has also contributed to other government's debt service problems. The concern is to avoid “failed state” problems and for every nation to realistically and comprehensively address these challenges.

2.9.4 Impact on America's National Security and Military Power

Although a global depression has been avoided, the magnitude of the deep recession in the United States has definitely hurt the economic power of the United States and has in turn weakened our national security and military power, which are both dependent on our nation having a strong economy. In fact, our economic crisis has led other nations to question our military's commitment and strength to both Asia and the Pacific. In late 2010, Admiral Michael Mullen, Chairman of the Joint Chiefs of Staff, stated that our national debt was now the single biggest threat to American national security. The simple fact is that our national debt has increased to such a level that the large problem we encounter is the budget being consumed by legally mandated entitlements, leaving less money for discretionary spending. Approximately 50% of the discretionary spending in the U.S. budget goes toward the military.¹¹²

Thus, the chain of events that occurred between 1978 and 2008 culminated in a financial crisis and our deepest recession since the 1929–1930 depression. Concurrent with these events is the realization that America is now in a new relationship with China, and this transformation will require great skill and diplomacy by both nations as our relationship can be characterized by a state of mutual dependency, and hopefully not a zero-sum relationship. The next chapter will explore the China–United States relationship and address the challenges of a zero-sum game, which was created by the transformational changes both nations have experienced.

2.10 Summary

The Great Recession of 2008 was created over a period of 30 years during which the financial process of securitization was established followed by a series of new financial instruments being created by Wall Street investment firms. The creation of mortgage-backed securities offered with tranches of CDO bonds only to be followed by the dangerous synthetic CDO bonds available as “derivatives or swaps” to hedge losses were all traded in an unregulated ABX market. This was nothing less than a disaster waiting to occur. The business model of the Wall Street investment firms changing from a partnership model to an IPO public stock market model, allowed Wall Street investment firms to take greater risk in their financial dealings since they were now spending stock holders money and not using their own financial resources. The emergence of the Alt-A and subprime mortgage markets displaced the conventional mortgage instruments and permitted a new group of mortgage originators, such as Countrywide and Ameriquest and many others both large and small, to commit fraud on a scale never before seen in

the real estate marketplace. The enablers who allowed this entire process to occur were the CRAs such as Standard and Poor's, Moody's, and a few other smaller CRAs.

Clearly, the GSEs, in particular Fannie Mae and Freddie Mac must take major responsibility for playing a critical funding role, which permitted the mortgage originators to create sales and the investment banks to offer the CDO bonds to investors worldwide. The federal regulatory agencies were negligent in their enforcement of federal banking regulations and federal stock exchange requirements, and Congress must assume responsibility for enacting legislation that reduced the ability of the federal regulatory agencies to effectively discharge their duties. It was Congress who enacted legislation that in many instances diluted the regulatory requirements, all in the hopes that by limiting these requirements the business environment would be more likely to enable corporations to become more successful.

In retrospect, greed and avarice were the driving forces that motivated so many of the people involved in this process, ranging from the individual homeowner purchasing a home with the intent to "flip" it or resell it at a profit as opposed to simply purchasing a home to live in. On the other end of this scale of greed were the Wall Street investment firms and banks, and in particular Goldman Sachs and the Deutsche Bank whose behavior has been so outlandish that law suits to recover damages continue against each of these firms today. Goldman Sachs not only has been fined millions of dollars by several federal agencies, but it also knowingly sold high-risk securities to its customers on the long side and then positioned their firm's investment on the short side, not simply to make a market, but to offload their high-risk securities.

This was the process that almost resulted in destroying America's economy and fell short of creating a worldwide depression. America now stands as a weaker nation as measured by both its economic power and its military power. Unfortunately, generations to come will continue to pay for the greed that has occurred as a result of this game-changing process that unfolded over three decades and has compromised America in the eyes of the world community.

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Key Resource Drivers in Transformational Global Events

3

THOMAS A. JOHNSON

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As we examine the global events that will become the most transformational for America, China, and Iran, we shall discuss them in terms of the strengths and weaknesses of each nation. America is focused on managing and regaining its financial stability. At the opposite extreme, we find that China continues its phenomenal economic growth and is on the cusp of attaining superpower status. Iran is striving to emerge as the major regional power in the Middle East. Each nation has distinct strengths, as well as weaknesses, and we will focus on the key resource drivers, which will become critical to how each nation will address their respective challenges.

3.1 America: Regaining Its Financial Stability

The Great Recession of 2008 struck a direct hit at America's greatest strength, its economic and financial system, and has resulted in unemployment at a level of 9% which has discouraged millions of Americans. Even more dreadful has been the enormous financial debt of \$14 trillion. The 2008 Recession has been and continues to remain a major transformational event that without a doubt has weakened every aspect of the nation, and most particularly America's power, influence, and prestige.

3.1.1 Strengths

Three of America's foremost strengths are its military power, technology and innovation, and information systems.

3.1.1.1 Military Power

America's military power is regarded as the strongest and most technologically sophisticated in the world. The Officer Corps, the Weapons Systems, and the Command and Control Systems have no peer anywhere in the world.

The blue-water naval power with its sophisticated aircraft carrier battle group ship deployment can control every ocean on the earth. The Air Force with its state-of-the-art fighter stealth bombers and its aerial jet refueling capabilities provides an unparalleled advantage over any other nation. Over the years, since the end of World War II, America has carefully invested in its military and the results have made it the strongest military ever created by any nation.

The impact of the Great Recession of 2008 on America has been profound, and it has resulted in transforming our Department of Defense budget and long-range plans for new weapons systems while also curtailing further development of some of our most electronically sophisticated F-22 jet fighter aircraft.

Further, our national debt has now become so large and uncontrollable that our Joint Chiefs of Staff, as well as our Secretary of Defense, has informed both Congress and the White House that the greatest threat to our national security is our growing national debt. The dilemma for our nation is to reduce spending to a level where we take control of our national debt while also providing for our nation's defense, as well as the entitlement programs of social security and Medicare that so many of our citizens rely upon.

Thomas Barnett observes in his book, *The Pentagon's New Map*, that if you seek to understand the future of conflict, you focus on the future of weapons technologies and who is likely to develop these future weapons technologies.¹ This suggests that military power will be ultimately defined by those nation/states that possess the scientific community, engineering capabilities, and the economic resources to pursue the next generation of weapons systems planned for at least one decade into the future.

3.1.1.2 Technology and Innovation

America's investment in research and development has enabled it to become the world's leader in new technologies and innovation. America spends more on research and development than the next seven countries combined and as a result America's world leadership in nanotechnology, biotechnology, and information technology will provide the strengths for it to regain its financial and economic stability.²

3.1.1.3 Information Systems

America has invented the field of information technology and has consistently led the world in the development of information systems. In addition, the incorporation of information systems into other industries and fields has had a significant effect on the improved management of those fields and disciplines that have implemented new information systems as a part of their management systems. Therefore, the critical contributions made by the electronics industry into virtually all facets of America's workplace have resulted in substantial progress and profit.

As important as these strengths are to America, there also exist challenges by global events that have created weaknesses that must be addressed.

3.1.2 Weaknesses

Of course every nation confronts a number of challenges that if not properly and timely addressed could transform into structural weaknesses that will eventually have to be addressed. Perhaps America's greatest current weakness is in the size of its national debt.

3.1.2.1 National Debt

Gideon Rachman observed that in President Obama's first year in office the budget deficit of the United States was over 12% of the gross domestic product (GDP), and to continue funding the American government, America was dependent on foreigners to purchase their U.S. Treasury bills, or in its simplest terms, the United States was broke and required other nations to buy its treasury bonds. In 2009, China was purchasing \$20 billion of U.S. Treasury bills on a monthly basis. In fact, if the Chinese had stopped buying U.S. treasuries this could have caused a collapse of the U.S. currency.³

The leadership of successive presidents and the many changes in Congress over the past 30 years has clearly resulted in uncontrolled expenditures, which has created America's national debt of \$14 trillion. Of this \$14 trillion, it has been estimated that the Afghan and Iraq wars have been responsible for over \$2 trillion of debt. With global events throughout the Middle East and other domestic entitlement challenges, America, as a nation, cannot continue on this pathway of national debt.

The European Union has had to bail out Portugal, Spain, Ireland, and Greece from their respective nation's national debt structure. Many now worry that the combination of these enormous national debts within America and the European Union could possibly lead to a total collapse of the world's economic structure.

Following the Great Recession of 2008 and America's reliance on China's purchase of U.S. Treasury bills, many economists and U.S. officials accused China of "manipulating its currency" by deliberately suppressing the value of the Chinese Yuan by keeping it off the world's currency markets and not permitting it to float freely on the currency market for a value to be determined against the American dollar. By withholding the Yuan from the world market, the Chinese then recycled their dollar surpluses into the United States by buying American assets. This in effect, depressed U.S. interest rates and kept Chinese goods at an artificially low price through this currency manipulation.⁴

However, in fairness to the Chinese point of view, they firmly believed that the Japanese economic miracle of the 1980s ended when American

pressure on Japan to let the Japanese Yen rise against the American dollar resulted in permanently damaging the competitiveness of the Japanese industry.⁵

Another point to consider is that American corporations moved so many of their jobs to China in search of cheap labor that it is most disingenuous for American officials to say that Chinese currency manipulation resulted in the loss of American jobs. Those American jobs were forfeited as soon as American corporations made the decision to relocate portions of their respective businesses in China by employing Chinese workers.

The delicate relationship between America's debt and China's acquisition of U.S. Treasury securities can be viewed by the almost mutual dependency that exists between America and China, particularly since China has acquired more than \$2.5 trillion of foreign exchange reserves, most of this in U.S. Treasury securities. China could provide serious economic damage to the United States by threatening to sell its U.S. dollars, but in doing so China would hurt itself by reducing the value of its total holding of U.S. securities if the price of the dollar fell.⁶

Currently, there remains great sensitivity between America and China over these economic issues, and the enormous national debt of America, in effect, has resulted in a loss of American power and transferred power to China.

3.1.2.2 Political Gridlock

Fareed Zakaria best describes America's current challenge by suggesting that America's economic system is its core strength, while its political system is its core weakness.⁷ Clearly, this is the case as America is at a pivotal point of deciding whether to increase its level of national debt over the \$14 trillion limit, or whether it will default on this national debt. Since the debt limit was already reached in April 2011, the U.S. Treasury Department informed Congress that unless Congress increased this debt, the Treasury Department would have no other temporary solutions and would have to declare a default by early August 2011. Congress was at total gridlock, with the Republican Party declaring they would not vote to increase the national debt without substantial accompanying federal spending cuts. The Democratic Party sought to increase the national debt but did not want spending cuts in social programs and in entitlement programs. The Tea Party activists who currently hold congressional positions expressed their view that they would not vote to increase the national debt level under any circumstance.

The level of gridlock and bitterness among politicians is growing at an alarming rate, and until America begins to address its economic problems, this political gridlock will create further havoc in other aspects of American society.

3.2 China: Economic Growth, Superpower Status

China's economic growth began after Mao's death and under the direction of Deng Xiaoping who in 1978 began an economic program modeled on American capitalism. Since this American economic model worked so well for America and for the surrounding Asian nations, Deng Xiaoping resolutely expressed the view that capitalism was not only available for capitalists but it would serve the interests of China as well.⁸ The fact that within the past three decades the economic reforms led by Deng Xiaoping produced the most peaceful and economically successful achievements in the past 170 years of China's history and provided more than 300 million people an avenue out of the poverty they once lived in has demonstrated the importance of this achievement.⁹

The Chinese transition from the old style Communist strategy as practiced by the former Soviet Union to a newer Communist-modified capitalism form of economics modeled on the American view of capitalism has enabled the Chinese economic miracle to take place. In fact, Goldman Sachs predicts the total size of the Chinese economy to surpass America's economy by 2027. Other economists estimate that, by 2040, China will produce 40% of the global GDP.¹⁰ Clearly, China is on a pathway to superpower status.

3.2.1 Strengths

Two of China's greatest strengths are its economic system and its emerging military power as a result of substantial monetary investment in the People's Liberation Army (PLA).

3.2.1.1 *Economic System*

Understanding how China and its Communist Party has created its version of American capitalism is fundamental to appreciating the role China will play in the global economy in the ensuing years. Observers of the past successes of the Chinese economic model must bear in mind that this is not a market-based economy responding to the economic laws of supply and demand, but is in fact a carefully balanced social mechanism built around the interests of the political elite who control the Communist Party. Therefore, China's state-owned economy is based on the need to preserve political power and the requirement to do business to preserve the political power. As a result, the Chinese economic model has created two distinct economies in China, the first being a domestic-oriented state-owned economy that is virtually totally dependent on the second, which is China's export-oriented economy.¹¹ Perhaps economists should recognize that China's economic miracle has been principally funded by America's search for low-priced economic goods imported to satisfy the demands of the American consumer. Since

America has been China's best and in some cases only consumer, China has a distinct need to develop more than an export-oriented private economy.

Henry Kissinger observes that when American officials urge their Chinese counterparts to export less and to have the Chinese consumer purchase more, it puts forward an economic maxim that to China means a shrinking export sector and a significant increase in Chinese unemployment that entails political risks and consequences. The underlying issue then becomes political and not necessarily an economic issue. Thus, the export-oriented economic sector that provides jobs for Chinese workers and keeps them out of poverty becomes an expression of China's need for political stability.¹²

Economists, politicians, and America's corporate elite should recognize that it is the Communist Party and not the economic marketplace that runs China and its version of a capital allocation process. In China, the banks are the financial system with nearly all financial risk concentrated on their balance sheets. It is the Chinese people who save their money and underwrites this risk as they are the only significant source of capital "inside the system." This is the weakest point in China's economic and political system, and why the Communist Party controls the banks to set permissible levels of loaning as the Party wants to limit Chinese consumerism and retain the savings in the banks. In short, with all aspects of banking under the Party's control, risk is thought to be manageable and the Chinese citizen will not become similar to the American citizen who can borrow from the bank and spend with the same enthusiasm as the American consumer.¹³

The biggest beneficiary from America's fiscal and monetary irresponsibility is China, as American politicians, congressmen, and officials at virtually all levels of government have not embraced either fiscal restraint or monetary responsibility. Instead of living within our means, we as a nation have permitted budget deficits to grow so out of control that we are dependent on China's purchase of our treasury securities to continue to finance our nation. The result has been low taxes that have provided American's more "borrowed" money to finance their out-of-control consumerism, which has resulted in the purchase of low-priced Chinese goods and has created Chinese jobs while eliminating American jobs which could not produce the low-cost consumer products.¹⁴

China's economic future is dependent on building relationships with other nations, revising their banking system to become less dependent on Party control, and finally to develop economic sectors that are not so dependent on their export-oriented private system.

3.2.1.2 Emerging Military Power

China has the world's largest military force, more than 200 nuclear weapons, and continues to develop impressive capabilities in information warfare and space-based military programs. Also of importance is China's focus on developing a blue-water navy with aircraft carrier battle groups and submarine

capabilities as well. China has also developed stealth aircraft similar to the F-22 of the United States.

This facet of China's emerging military buildup began in the 1990s after the Chinese realized how far they lagged behind in modern military capabilities. The display of American sophisticated military power in the first Gulf War in 1991 caused the Chinese to double their military expenditures throughout the 1990s. A 2010 Pentagon report estimated the total military spending in China to be \$150 billion or 2% of GDP as compared to \$719 billion or 4% of GDP for the United States.¹⁵ As America confronts its national debt crisis, the defense budget will experience substantial reductions. Ironically, China's new wealth will continue to be invested in its military buildup.

Chinese military strategy is centered on information warfare, disabling the military communication networks and systems of its perceived opponents, and developing space-based military technologies and capabilities. A significant portion of the Chinese military strategy is to perfect "anti-access" area denial capabilities in the South China Sea, and that is why the further development of the PLA Navy is so important to China. This "anti-access" area denial strategy will be the major responsibility of its new blue-water navy. The implication of such an area denial strategy in the South China Sea would have a profound impact on America's naval ability to implement its carrier and battle group precision strike capabilities. In effect, this would force the American military to revise its "forward base naval strategy" and launch military operations from greater distances or land-based facilities.¹⁶

The Chinese will probably focus on developing a global force projection capability, and their current emphasis of investing in both their PLA Navy and PLA Air Force will permit them to achieve this capability in the near term. As a result, their emerging military buildup must be considered a distinct strength of China.

3.2.2 Weaknesses

3.2.2.1 Demographic

China has specific weaknesses in demographic areas such as the delayed effects from its 1980 one-child per couple policy, which has multiple responses ranging from a declining labor force to a population of 30 million more single men than women by 2020, again as a result of its former policy of aborting female babies. As the surplus of unmarried male demographic increases, the possibility for internal instability also increases.¹⁷

Joseph Nye reports that China is aging extraordinarily fast, and by 2030, China will have more elderly dependents than children, and some Chinese demographers worry about "getting old before getting rich." Further complicating China's problem is an almost nonexistent pension system and inadequate social safety net for the elderly population.¹⁸

The 4-2-1 problem is what some demographers refer to as a large number of Chinese children who now have four grandparents, two parents, and themselves. The impact of this on the Chinese cultural norms will occur when China realizes they have fewer children to support their elderly parents.¹⁹ The fact that China does not have a healthcare system that is up to the standards of modern industrialized nations, suggests that this structural weakness will impact both the elderly and the young.²⁰

3.2.2.2 Water Problems

China has a major water problem beginning with the dangerously low water per capita availability of 2000 m³. However, the regional disparities are such that China's best agricultural land is in the North, while most of its water resources are in the South. Water is also scarcest in some of China's most heavily populated and industrialized cities, including both Beijing and Shanghai. In addition to its scarce water resources, there exists an enormous problem of water pollution, as 70% of China's seven major rivers are polluted and 80% of China's rivers fail to meet health standards for fishing. Seven hundred million Chinese have access to drinking water of quality below World Health Organization standards. Almost half of China's total population is exposed to water supplies that are contaminated by animal and human waste.²¹

Predictions are that China's water aquifers below the North China Plain, which has been an agricultural area, may become totally drained in the next decade. Further, some Chinese experts warn that by 2030, the per capita water resources will drop to 1760 m, close to the internationally recognized benchmark of 1700 m³ level, which is designated as a water shortage level criterion.²²

3.2.2.3 Dam and Water Reservoir Problems

China has 22,000 of the world's 45,000 largest dams. China has a total of 85,000 dams and water reservoirs including the Three Gorges Dam, which is the world's largest dam. Chinese experts are now becoming concerned with the Three Gorges Dam, as it is built in an area prone to earthquakes since it is on a major earthquake fault line and also has experienced numerous cracks. A report by the Chinese Water Resource Department finds that 30,000 of China's large and small dams are in critical condition and that they threaten more than 400 cities with 150 million people exposed to this danger. Also reported by authorities is the fact that 3,484 dams collapsed between 1954 and 2003, as many of these dams were built with faulty engineering and cheap materials.²³

Elizabeth Economy has observed that the Chinese dam building strategy is both economically and environmentally unsound and that China would be better off to focus on ensuring that the existing water supply is used more efficiently.²⁴

3.2.2.4 Authoritarianism and Lack of Political Participation

China has made numerous reforms over the past 30 years; however, the Chinese Communist Party's (CCP) enduring grip of power is based on a simple formula directly from Lenin: retain control of the State and the three pillars of its survival strategy, which are control of personnel, control of propaganda, and control of the PLA. The Communist Party has been in control of China since 1949, and to retain this control, the Party and its leaders have placed members in key positions in every arm and at each level of the State. Also, all the Chinese media are under the direct control of the State and its propaganda department. Finally, to prevent any challenge to the Party system, the Communist Party maintains full control of the military (PLA) and the security services. In fact, every level of government in China from the smallest villages to the largest cities has a "domestic security department," which has the mission and responsibility of protecting the Party's rule and stamping out any dissenting political voices before they obtain broader support.²⁵

The Communist Party exercises its powers through the central committee and the politburo. The central committee acts as a type of board of directors for the Communist Party in China with approximately 370 full- and part-time members. The politburo establishes the general policy direction for the economy and assists in securing the Party's grip on the State, in every aspect and component of the State. Hu Jintao is the Party's General Secretary and also carries the title of President. When Hu Jintao visits Washington and other Western capitals, he is always billed as President and Head of State, at the insistence of the Chinese, and not as the General Secretary of the Chinese Communist Party, which is his most important position and official title within China.²⁶

Interestingly, in 1971 when President Richard Nixon moved on his historic trip to China, he had Henry Kissinger expunge the use of the term "communist" when talking about China and simply had Mao Zedong referred to as the Chairman, rather than the Chairman of the Chinese Communist Party, since that would have been a very sensitive issue to Nixon's political base.²⁷ So to this day there seems to be a fiction as to whom and what the Chinese government consists of and current American corporate officials continue this charade as they establish business relationships and contacts throughout China.

As Joseph Nye observes, China's authoritarian political system has demonstrated an impressive power conversion capability, and while much of the ideology of communism has changed, the legitimacy of the ruling party depends on economic growth. Some have argued that the Chinese political system lacks legitimacy, suffers from high-level corruption, and is vulnerable to political unrest should their export-oriented economy begin to falter.

What is certain is that China has yet to discover a way to solve the problem of demands for political participation.²⁸ It is this latter problem that concerns the Chinese leadership's worry regarding the Arab Spring that is occurring in the Middle East. So far, the Chinese response has been to close off the social media and to maintain a censorship of the Internet to prevent any uprisings that may stir trouble for the Chinese Party.

China's many strengths must be balanced with its structural weaknesses, any one of which could easily emerge as an event with potential global ramifications not only for China but for other nations of the world as well.

3.3 Iran: Emerging Regional Power in the Middle East

The relationship between Iran and America has had many positive as well as negative moments; however, the major turning point and the beginning of anti-American sentiment began in 1953 when the Central Intelligence Agency and Britain's MI-6 launched a coup to overthrow Mohammed Mosaddeq and return Mohammed Reza Shah Pahlavi to the throne. Over the years of Shah Pahlavi's rule, the United States enjoyed Iran's assistance in numerous activities and foremost was the Shah's permission for America to establish sophisticated listening posts on the border of Iran and the Soviet Union. The Shah also was a voice of moderation during the OPEC oil crisis, which was beneficial to Western nations. The Shah also developed several modernization programs for Iran, and many Iranian's felt the Shah was developing programs contrary to the fundamental Islamic law. In addition, the Fedayeen who were allied with the Palestine Liberation Organization were calling for revolution activity against the Shah, as were the Mullahs of the Islamic clergy. These calls for revolutionary activity against the Shah finally brought forth Ayatollah Khomeini in 1978 who had been living in exile in Paris and his message to Iranians was to create chaos through strikes, riots, or any activity that would force the Shah to abdicate. As the pressure for revolution continued to build within most segments of Iranian society, it finally culminated in the Iranian students taking control of the U.S. Embassy in Tehran on November 4, 1979 and taking 100 American hostages into their custody. These hostages remained imprisoned until January 20, 1981 when they were released as President Carter was leaving office and was being replaced by President Reagan.²⁹

The 1979 Iranian hostage takeover of the American Embassy and events occurring during the 14½ months of the hostages captivity caused President Carter to sever diplomatic relations with Iran and to implement several economic embargoes. For three decades, the United States has developed policies to contain Iran's activities and to diminish its ability to sponsor

terrorism, obtain weapons, and to prevent Iran from acquiring equipment and materials to build a nuclear bomb.

The sanctions America has imposed on Iran over the past 32 years have in some cases been effective, but for the most part it has been a dismal failure. The sanctions have pushed Iran into major economic and military agreements with both China and Russia. Iran sees an advantage in working with China and Russia as counterweights to the United States. Iran has requested its status as an observer in the Shanghai Cooperation Organization be upgraded to full membership in this six-party security organization that includes China and Russia, and then Iran would receive assistance from other member states if it were attacked by either America or Israel.³⁰

Historically, Iraq and Iran have been enemies and Iran lost over one million people in the Iraq–Iran War. Years following this war, when the United States removed Saddam Hussein as the leader of Iraq, and thoroughly defeated the Iraqi Republican Guard and the Iraqi Army, America in effect handed on a silver platter a gift to Iran that Iran could not achieve for itself, the defeat of its arch enemy Iraq. This fact and the ineffective containment policies America designed to control Iraq has really permitted Iran to emerge as a regional power in the Middle East.³¹

3.3.1 Strengths

Perhaps Iran's greatest strength has been the use of its proxy military power, in which it has utilized Hezbollah and Hamas first as part of a terrorist attack strategy, but then over the years has built these organizations into guerilla fighting groups, which in 2006 had developed such a level of sophistication that with the weapons systems provided to them by Iran they now represent a formidable proxy military power within the Middle East.

3.3.1.1 Proxy Military Power

Iran, of all nation/states, presents more problems to the United States and most of the world community as a result of its active support of terrorist groups, such as Hamas, Palestine Islamic Jihad, Hezbollah, and the Islamic Jihad terrorists. In fact, the 1979 Iranian Revolution was a specific reason that the Middle East experienced a rise in terrorism from various Islamic groups. Another antecedent for the increase in Islamic terrorism was the Mujahidin War against the Soviet Union in Afghanistan. During the 1990s, Iran was the most active state sponsor of terrorism. Of course, terrorism is not the only concern the United States has with Iranian activities, as we are concerned about its nuclear program and acquisition of advanced weapons. Iran has also created tremendous opposition and unrest to the hope for a Middle East peace process. Finally, Iran's president, Mahmoud Ahmadinejad, in repeated

public comments about the destruction of Israel suggests the intolerance and commitment to terrorism that Iran's government holds to this day.

Hezbollah has transformed itself and is more than simply a terrorist group, and now has a strong guerilla and political army. Hezbollah also accepts more casualties than Israel. However, the fact that Hezbollah holds 23 seats in Lebanon's parliament of 128 and also has control of two government ministries, while operating hospitals and schools that are considered more efficient and effective than those operated by the Lebanese government provides Hezbollah with a very strong base of community and regional support. So the benefit for both Iran and Syria in their continuing support of Hezbollah is that they have what amounts to a proxy army that permits a degree of deniability, enabling them to strike at Israel or other targets with minimal risk for a confrontation directly. Syria also supports Hezbollah because as President Bashar al-Assad has stated, Hezbollah is Syria's buffer against Israel.

The transformation of Hezbollah from simply a terrorist organization to a guerilla organization that now supports and engages other terrorist groups is a new model of how terrorist groups are likely to emerge. Its active political wing which engenders support and to a degree some political legitimacy will make it more difficult for successful counterterrorist policies and operations. The proxy status it holds with Iran and Syria will someday have to be addressed by Israel, the United States, or the world community. At some point, Iran and Syria will have to be directly taken to task for their support and proxy use of Hezbollah.³²

The recent events surrounding the Arab Revolution in the Middle East has included Syria, and at the time of this writing President Bashar al-Assad of Syria is confronting a very serious challenge to his ruling party. There have been defections in the Syrian military, and the United States is seeking ways to legally indict Bashar al-Assad for human rights violations due to the torture and atrocities Syria's security forces have committed on both demonstrators and civilians. This situation presents a most formidable challenge to Iran as Syria has always been a central facet of Iran's ruling party's strategy in the Middle East and in its dealing with Israel.

Britain's Foreign Secretary, William Hauge, has called for President Bashar al-Assad to either stop the bloodshed or to step down, as he is responsible for permitting his security forces to imprison more than 10,000 prodemocracy protestors and the killing of an estimated 1,400 protestors. It is interesting to note how rulers respond to demonstrations and unrest, for in the present case of Syria the prodemocracy activity had been underway for more than 2 weeks before President al-Assad addressed this issue. Many have compared President Bashar al-Assad's delayed response to that of his father who when confronting an uprising immediately dispatched the military to surround the town in question and leveled the entire town killing more than 4,000 people. With virtually no international response in the latter case, it does demonstrate

the power of the social media in focusing worldwide attention on the current revolution. This also represents why ruling parties will go to great lengths to censor the Internet and stop social media such as Facebook and Twitter, just as China has done to control its potential Jasmine Revolution.

The unrest that continues in Syria and the international forces, as well as the visibility of the prodemocracy movement has limited Iran's ability to offer support for its Syrian allies, other than the covert activities offered at the start of the Syrian crisis.

Meanwhile, both the United States and Israel have been primarily focused on Iran's development of nuclear weapons. The international community is becoming extremely concerned over this prospect, and despite many meetings with Iranian officials, the nuclear program continues to go forth.

The United Nations International Atomic Energy Agency found evidence that Iran was secretly engaged in a nuclear weapons program. In 2004, the International Atomic Energy Agency reported that Iran was not fully cooperating with inspections, and that Iran was going ahead with plans to produce enriched uranium, despite past assurance to the IAEA that it would freeze such activity. In 2005, our Defense Intelligence Agency declared that Iran was devoting significant resources to its weapons of mass destruction and ballistic missiles programs...

American and European Intelligence Agencies, as well as the International Atomic Energy Agency, all agree that Iran is intent on developing the capability to produce nuclear weapons, despite denials. The only item that the intelligence agencies are not able to agree on is when Iran will have this capability. Israel's government has warned for years that any attempt by Iran to begin enriching uranium will be a point of no return. An official of the War on Terror stated that allowing Iran to have the nuclear bomb is not on the table. We cannot have nuclear weapons sent downstream to a terror network. It is too dangerous and the bottom line is that Iran cannot become a nuclear weapon state... We simply cannot have a nation/state in the 21st century supporting terrorism, operating with a proxy army, and seeking nuclear weapons. The record of Iran and Hezbollah is quite clear, and has been documented for many years. The potential for weapons of mass destruction being provided to various terrorist organizations by Iran should not be tolerated by any civilized nation.³³

On the other hand, Robert Baer's excellent book, *The Devil We Know: Dealing with the New Iranian Superpower*, provides a strong case for why the focus on Iran's development of nuclear weapons is a serious miscalculation of the nature of the Iranian threat. It is Baer's view that if a war were to occur in the Middle East, Iran would not need nuclear weapons as they would use their proxy armies and the asymmetrical tactics they have refined so well. Further, Baer believes our obsession with Iran developing nuclear weapons is that once again we are fighting the last war rather than the current conflict.³⁴

Iran at one time was concerned about Saddam Hussein developing nuclear weapons, and because of the Iraq–Iran Wars, there was an interest in Iran for developing nuclear weapons so that they would be prepared if Iraq attempted to use nuclear weapons against them. As far as Iran’s use of nuclear weapons against either America or Israel, Iran knows full well that such a nuclear war would not be winnable. Further, Iran would in all probability not provide nuclear weapons to either Hezbollah or Hamas, as this would in effect be crossing a red line that either Israel or America would not permit. Even without using nuclear weapons, the United States really has few options in dealing with Iran on a war-footing basis. We have no resources or manpower to begin another war in the Middle East, as our war in both Iraq and Afghanistan has consumed more of our human and financial resources than was anticipated, and another Mideast war would strain our national debt to the point of turning America into a nation with a third world economy. In short, Iran fully realizes the position the United States is in, and they are relatively confident of their strategic success and in their view, they anticipate that some future day this realization will occur to American politicians as well.³⁵

After a lifetime of outstanding intelligence work throughout the Middle East, Robert Baer has concluded, “What America needs to do is ask for a truce with Iran, deal with it as an equal, reach settlement one issue at a time, and continue along the same course until Iran is ready for *détente*.”³⁶ Baer’s observation was followed by the statement of Zbigniew Brzezinski, the former National Security Advisor to President Carter, that “the United States ought to pursue serious negotiations with Iran over its nuclear program, as well as other issues,” and ultimately the larger strategic issue should focus on the eventual evaluation of Iran as a partner with the United States.³⁷

Moshen Milani also feels that war with Iran is not advisable and that both surgical strikes against Iran’s nuclear facilities as well as any plan for an invasion would be countered by a protracted retaliation by Iran and its proxy military. A more useful approach would be to initiate a program of full engagement which begins with cultural and educational exchanges leading to the establishment of governmental conferences with the goal of normalizing American–Iranian relations.³⁸

Perhaps as Robert Baer observes, it is time we recognize Iran for what it is today, rather than what it was in 1979. The policy of sanctions against Iran has not worked, and any containment strategy would not be financially feasible as it would require 500,000 troops on Iran’s border, would cost several trillion dollars, and would culminate at best in a stand-off with no chance of a military victory. In short, it makes no sense at all to spend America’s “wealth in a part of the world we barely understand who we’re fighting, much less why we’re fighting.”³⁹

There is precedent for reaching out to Iran to discuss *détente*, as President Nixon and Secretary of State Henry Kissinger brought China back to the Community of Nations, and the anti-Americanism that existed under

Mao Zedong along with China's nuclear weapons was much more threatening to America than today's situation in Iran. The success that Nixon and Kissinger had with China was based on not punishing China for its past policies, but quite the contrary, giving China a reason to want something better for its future.⁴⁰ Both Iran and America will have to assure their respective allies that they should not fear rapprochement, as the process of establishing peace will provide greater stability in the troubled Middle East.

Clearly Iran has emerged as a regional power in the Middle East, and it simply seeks America's recognition of its achievement of this status. There exist many areas of mutual interest and concern and working to create a strategic partnership would magnify our common interests as both nations prefer to see stability in the Middle East, and both nations can assume joint responsibility for keeping the Strait of Hormuz open and navigable so that commerce may continue. There are other areas that diplomats can begin to explore, and we can use the American–Chinese model to initiate discussions that lead each nation to a path that more effectively and more humanely uses each nation's wealth, resources, and personnel.

3.3.2 Weaknesses

Iran's structural weaknesses seem to revolve around the authoritarianism of government officials, unemployment, and demographic problems as a result of a shortage of rain, a nation with an extraordinary propensity for earthquakes and its inability to establish refining capacity for its oil resources. There continues to be a deep division among the youth of the nation and the leaders of their theocracy.

3.3.2.1 Authoritarianism of Government Officials

Iran has established rules and requirements that government officials impose on the population with little to no room for deviation of the rules. The youth have developed a level of resentment toward many government officials for their unyielding enforcement of rules.

3.3.2.2 Unemployment and Underemployment

Iran has a very educated population, but there is a high unemployment problem throughout Iran. This problem is compounded by the underemployment of many of its skilled and educated workforce.

3.3.2.3 Demographic Problems

Iran currently suffers from both an annual shortage of rain and one of the highest incidents of earthquakes. Also, the aging of Iran's population will substantially increase by 2020, and this will place pressure on families if the unemployment problems are not sufficiently addressed.

3.3.2.4 Energy and Oil-Refining Problems

Iran's main economic product is oil; however, as a nation Iran still lacks appropriate oil-refining capability. As a result, Iran must import some of its gasoline products.

3.3.2.5 Fundamentalism, Religious Theocracy, and the Youth

Despite Iranian's strong religious beliefs, as in many societies, there is a deep division between the youth and some of the fundamentalist beliefs and requirements.

3.4 Future Key Resource Driver's Impact on America, China, and Iran

In terms of preparing for the future, especially in anticipating the impact major transformation global events will have on a society, we have identified seven key resource drivers that will shape the development of America, China, and Iran. These seven key resource drivers are common to each nation's development but will impact each nation in a different fashion. The manner in which America, China, and Iran respond to these key resource drivers will provide insights into how they will manage and confront the challenges they will experience in the next 20–30 years.

3.4.1 Seven Key Resource Drivers

1. Population: Growth rate, aging, and retirement programs
2. Environment: Water, land, and air quality
3. Economy: GDP growth and employment
4. Energy: Dependency, efficiency, oil, and electricity
5. Military
6. Political stability
7. Information systems and technology

3.4.1.1 Population: Growth, Aging, and Retirement Programs

Each nation will be impacted by demographic aspects of their respective populations. America will confront a major challenge in its Social Security System that is being funded by fewer workers each year, concurrent with the increase of retired workers. The ratio of active workers to each social security recipient will drop from three workers per retiree to two workers per retiree by 2015. Also impacting America's Social Security System is its current rate of unemployment, which in 2011 is 9.6%, and this creates additional financial problems for America's Social Security System. The aging population in America will also require additional medical services, and as a result

America will experience substantial increases in the costs of its Medicare and Medicaid services. Combined, these three social service entitlement programs will consume more of America's federal budget and will result in reductions in other federal programs. America is already making reductions in its defense budget and given its \$14 trillion national debt will certainly be required to make additional defense budget reductions.

China, on the other hand, is almost in the reverse position, as during the past decade it has steadily increased the funding of its PLA, particularly with major investments in the PLA Navy and the PLA Air Force. Since China has a budget surplus estimated between \$6 and \$8 trillion and has growth projections for its economy through 2025, it will continue on the pathway of increasing its defense budget and will continue to expand its military programs. China's demographic problem with its enormous population of over 20% of the entire world's population will be experiencing a major problem of workers eligible to retire and in retirement there is virtually no pension system available for them. In fact, a recent Rand research report indicates that China has failed to establish a well-funded Social Security System and over 300 million Chinese agricultural workers have no social security, while workers in the cities have social security accounts underfunded by more than \$1 trillion.⁴¹

Peter Navarro reports that ultimately the pension and social security issue becomes a focus of social instability. It is evident that the Communist Party of China has made a decision to fund their military as opposed to their senior citizens.⁴² When the millions of senior citizen peasants realize that at their most vulnerable time their government has abandoned them to support a military that maintains the power of the CCP and permits their continual Party structure, there could well be major riots and revolution.

Iran's concern with the population demographic is going to be unlike America and China, as Iran will have to fund a growing population similar to the population growth increase in birth rates throughout the Middle East. This means that eventually the increasing birth rate will require jobs as people come of age, and currently this is one of Iran's major problems, as its unemployment is very high.

3.4.1.2 Environment: Water, Land, and Air Quality

Of the three nations, China is clearly the most negligent when it comes to investing its resources into projects that will maintain the environment. In fact, China's rivers and water systems are so polluted that in many cases the water is not even usable. More than 70% of China's seven major rivers are polluted; 80% of China's rivers fail to meet standards for fishing; 90% of China's cities and 75% of its lakes have some degree of water pollution and over 700 million Chinese have access to water rated at a quality below World Health Organization standards.⁴³

However China's most notorious pollution problem is in its air quality, as air pollution in some Chinese cities is the worst in the world, with pollutant levels several times higher than levels considered safe for people's health. Jared Diamond reports that pollutants such as nitrogen oxide, carbon dioxide, and other pollutants are not only poisoning Chinese cities but their effect in producing gaseous ozone depleting chlorofluorocarbons now contributes to the worldwide problem of global warming. If current trends continue, the emissions rising in China, steady in America, and declining elsewhere will mean that China will become the world's leader in producing carbon dioxide emissions accounting for 40% of the world's total by 2050.⁴⁴

China's deforestation of its lands is also a problem requiring its attention. The water supply and the water aquifer are so low and could well be depleted in many areas of northern and central China farm and agricultural lands. In fact more than 25% of China's land is now desert, and the groundwater in some regions of China is expected to be exhausted within 15 years leaving an untold number of residents without usable water.⁴⁵ Perhaps of all nations in the world community, none has a record of environmental degradation as bad as China's record.

America has invested substantial effort and resources in addressing environmental problems; however, as with so many matters it can continue to make improvements.

Iran has environmental problems with reference to a water shortage, and it occupies a geography that is vulnerable to an unusually high incident of earthquakes.

3.4.1.3 Economy: GDP Growth and Employment

America's most severe problem is the \$14 trillion national debt and the inability of its political leaders to fashion a solid economic program and budget to address this very serious and debilitating problem. America runs the risk of losing foreign investments in our treasury securities, which could result in the devaluation of our dollar while increasing inflation that could severely impact our stock markets. Also, the sustained excessive national debt will reduce our nation's ability to make investments in the security and entitlement programs American citizens have expected. Finally, the excessive level of debt is now approaching a level so large that the interest we are required to outlay will soon begin to approach the point where we have minimal dollars left to invest in America's federal and national programs. Economic growth alone will not permit our GDP to resolve our national debt, and it may well have to be accompanied by both increased taxes and reduced spending. Unless taxation reaches levels unprecedented in America with a very substantial accompanying curtailment of federal spending we simply will not be able to sustain past programs and spending.⁴⁶

China's economic situation has been based on an export-only program accompanied by a monetary policy that keeps its Yuan off the world's financial markets, which results in the lower price of the goods it exports. This is an unsustainable economic plan that will run its course within the next few years. China will then have to revamp its banking structure and other opportunities for revenue growth.

Iran's economy is primarily based on its oil and gas production so it enjoys great wealth due to this factor; however, outside of its oil and gas resources there exists few other revenue-generating programs. Iran is currently experiencing a high rate of unemployment, ranging from 11.6% to 20% and to 23% for those in the age cohort of 15–24 years. Iran also is experiencing underemployment as well, which is quite unfortunate as they have a very educated population; many of whom are forced to leave their nation in search of work.⁴⁷

3.4.1.4 Energy: Dependency, Efficiency, Oil, and Electricity

China is transitioning from an exporter of coal to an importer of coal and is also importing oil from Iran, Africa, and the Middle East simply as a result of its growing economy and its large population.

America is also dependent on the importation of its oil; however, more than China and other nations, it is attempting to design more efficient ways of using these limited natural resources. America's reliance on electricity is very high.

Iran is rich in a plentiful supply of both oil and gas but is also stating that it will require nuclear energy for civilian purposes. Of course, many nations suspect that Iran's interest lies more in the development of nuclear weapons than nuclear energy, given its enormous supply of both oil and gas.

China is embarking on developing more than 100 new nuclear energy plants throughout its country. America's interest in restarting a nuclear energy program has been curtailed by the recent experience of Japan's nuclear power plant failure following its catastrophic earthquake and tsunami.

Finally, China's development of dams to generate electricity has been unparalleled. In fact, China has 22,000 of the world's 45,000 large dams and currently China has 85,000 large and small dams and water reservoirs. China's Three Gorges Dam is the largest hydroelectric dam in the world with an installed capacity equal to 15 large nuclear power plants. However, this dam is built on an earthquake fault zone and has already experienced cracks in and around its foundation.⁴⁸ The Three Gorges Dam also uprooted more than a million people during its construction process and the environmental costs associated with the soil erosion and the disruption of the Yangtze River, the world's third longest river, is still a potential problem to China.⁴⁹

3.4.1.5 Military

Nations regard their militaries as key to their survival, and both America and China realize the importance of their respective military. America's

military is regarded as a national asset that requires a steady rate of investment in high technology weapons systems. America has richly funded its military since World War II and now realizes that there will be reductions in support for continuing defense spending at levels provided in the past years.

China on the other hand has only in the last decade begun to invest in its military and has done so with an enormous investment, all designed to modernize the PLA and to begin to equip both a PLA Navy and a PLA Air Force with the equipment, personnel, and weapons systems necessary.

Both nations fully realize that their military systems are totally dependent on a vibrant and productive economic system. Therein resides America's challenge and China's opportunity. The key aspect of each nation's military that must be funded and maintained at the very highest level is their naval forces. Although the United States has a substantial lead in this area, China is proposing to create two carrier battle groups that would cost approximately \$20 billion. The cost of a medium-sized aircraft carrier alone is \$2 billion; however, the cost to outfit the entire carrier battle group, which includes aircraft and escort ships, with early warning airborne radar systems, anti-submarine warfare technology, guided missile destroyers, search and rescue helicopters, and supply ships to maintain the carrier group's presence in an area for up to 6 months duration, will be over \$10 billion. Clearly, an investment in this type of naval presence is indicative of a military strategy that goes well beyond the boundaries of defensive capabilities alone. This naval capability provides a nation a clear pathway toward projecting its capabilities in other parts of the world.

Since China is clearly on a path to building its naval power, the United States will have no other choice but to continue its investment and growth of its Navy. The Pentagon premises this conclusion on the fact that China's naval modernization, which is designed to include two carrier battle groups with its 65 submarines and the new diesel-powered submarines, is designed to attack our naval assets along with its assertiveness in the Yellow Sea, East China Sea, and South China Sea, all requiring America's focused attention.

In terms of China's and America's budget for their respective defense programs, it is difficult to estimate China's defense budget, but the Pentagon believes it was \$78 billion in 2010 and that China's total military spending for 2009 was \$150 billion. The defense budget of America for 2011 was projected at \$740 billion, but there have been sizable reductions in 2011 and a further reduction of \$90 billion for 2012.⁵⁰

Another factor impacting both nations' military budgets pivots around China's development of its new J-20 Stealth Fighter, which has been developed to counter America's F-22 Stealth Fighter. Ironically, the Chinese J-20 Stealth Fighter was not expected until 2018, but their schedule produced it 7 years ahead of U.S. intelligence estimates. Also of interest prior to this knowledge, the United States reduced funding for the F-22 in favor of the

smaller and less expensive F-35 stealth fighter. Interestingly, China's stealth fighter program has implications for Japan, which is interested in acquiring America's F-35, but India is now working with Russia to develop a Joint Stealth Fighter. In fact, throughout Asia there now appears to be an Arms Race as several of the Asian nations have disagreements with China over land and territories or access to sea lanes. Jane's defense forecast for military budgets in Asia suggest the following for 2010:

China—\$81.1 billion
Japan—\$57 billion
India—\$32.3 billion
South Korea—\$26.5 billion
Australia—\$21.3 billion
Singapore—\$9.0 billion
Indonesia—\$5.3 billion
Vietnam—\$2.7 billion⁵¹

The joint military activity of Australia and Russia is surprising, but that pales to insignificance when one considers the Chinese and Pakistan military cooperation. The Chinese are helping Pakistan to develop the FC-1/JF-17 multirole combat fighter aircraft. This of course has a most unsettling impact on India, which clearly distrusts any military activity of Pakistan.⁵² This is also equally disturbing to the United States since we have been fighting in Pakistan for several years only to discover that the Pakistani Prime Minister, Syed Yousuf Raza Gilani, has urged Afghanistan's President Hamid Karzai against building a long-term relationship with America and urging him to look to Pakistan and its Chinese ally for any help in striking a peace deal with the Taliban and rebuilding their economy. Further, in an April 16, 2011 meeting, Pakistan's Prime Minister told Afghanistan's President Karzai to not permit a long-term U.S. military presence in his country.⁵³ China's manipulation of Pakistan is indicative of its long-term goals, and above everything it demonstrates how irresponsible China's program is, as it is a virtual freeloader given its little support in the fight against terrorism and the Taliban and Al Qaida. China is in Pakistan to extract minerals and metals, and while the United States has liberated Iraq, Chinese firms are extracting its oil. If China were a more responsible stake holder in these areas, it would be more understandable; however, this does represent China's military interests and how it is projecting itself throughout many parts of the world.⁵⁴

Iran has relied more on its proxy armies of Hezbollah and Hamas to engage in activities on a regional level. Iran's main challenge to the United States is in its continued pursuit of developing nuclear weapons and also in its efforts to form an alliance with China and Russia.

3.4.1.6 Political Stability

America, China, and Iran each have political systems that are based on democracy in the United States, the Communist Party in China, and theocracy in Iran. Each nation is, of course, concerned about its respective political stability. In the case of China, its Communist Party system has been in place since 1949 or 62 years, while Iran's theocracy has been in place since 1978 or 33 years; and of course, the stability of America's democracy has been in place since 1776 for 235 years. Each nation confronts challenges that require its respective political system to address and resolve. America's biggest challenge is in responsibly addressing the \$14 trillion national debt and providing a program for its reduction while maintaining the peace, support, and confidence of its citizens.

China's challenge is to sustain its economic growth, maintain its military modernization program, and avoid what many foresee as predictable increasing turbulence due to the fact that China has sacrificed its natural resources and the social security of its elderly and rural farmers all to invest its resources in transforming its military. China's polluted water, its untreated sewer system in over 75% of the country, its air pollution approaching worldwide health pollution, and its rapidly aging population without an appropriate retirement system will all confront Party leaders within the next 5 years. These very formidable internal problems, all of China's own making, will provide a major challenge to the CCP's aspiration to maintain its single ruling party.⁵⁵ Realistically, it is the Party leadership that becomes most vulnerable, as few other political parties exist in China.

Iran's challenge continues to be centered on developing a nation in which its youth have greater opportunities for participation in an environment less focused on the authoritarianism of its leaders. Iran also must develop its economy, create more jobs to address both its unemployment and underemployment, and it will have to develop more meaningful political solutions to working with Israel and the many Arab nations in its Middle East region.

3.4.1.7 Information Systems and Technology

The Internet and its global reach to all nations of the world has enabled individuals, businesses, governments, and the fields of science and medicine to make advancements in their respective areas beyond anyone's belief. The harnessing of technology and sophisticated information systems has simply changed the world we live in. The advances in medicine and science would not have been possible without the computer technology and connected Internet system. Also the positive impact on businesses throughout the world has been equally impressive and has resulted in increased revenue streams for those businesses with fully integrated information systems.

Individual citizens have also improved their livelihood through the use of the Internet, and the technology that is provided by the numerous discoveries every day.

Just as a double-edged sword has two sides, there is also another side in which information systems, the Internet, and this digital technology is used and this side entails the opportunity for illegal activity and other forms of exploitative activity that either individuals or governments can participate in. There are so many forms of computer crime and attacks individuals or governments can launch against other citizens or governments. Computer crime by individuals is a problem impacting virtually every nation in the world; on the other hand, activity by governments against other governments and nations is a recent and growing problem.

America, China, and Iran each have capabilities within their respective governments to engage in activities that entail cyber espionage, cyber monitoring, cyber attacks and cyberwarfare.

China has developed a reputation for having launched some of the most sophisticated computer attacks, and an example is the infiltration of the Pentagon, the World Bank, and Lockheed Martin's F-35 Joint Strike Fighter project. China has also been responsible for "Operation Aurora" in which Google and 200 other American corporations had either lost source code or other proprietary information. Another Chinese cyber attack—termed "Night Dragon"—targeted Western energy corporations as a form of economic warfare.⁵⁶

Navarro and Autry suggest that when considering the extent of the Chinese cyberwarfare threat, typically their activity may fall within four objectives. The first objective would simply entail a disruption of the operations of the targeted site. This could involve a "denial of service" attack, which could easily be used to interfere with another country's corporations and have an impact on the economy. A second objective would involve the theft of valuable information such as intellectual property, trade secrets, corporate financial plans, or bidding programs. A third objective would include as a goal of cyberwarfare the corruption of data to cause damage, and this could be targeted at military sites or corporate sites that include the stock market or other financial entities that can easily be closed due to corrupted data. A fourth objective could occur by the actual taking control of a system, and again this could either be a military system or even an electrical grid system, in which case an entire nation's electricity and all operations dependent on such electricity could be shut down via the external control of our systems.⁵⁷

China has been accused of using tactics as described above, and three of the most dangerous tactics have been its "router hijacking," where Chinese hackers took control of a large segment of the Internet and for 18 minutes routed all Internet traffic to their servers, which suggests they were

able to configure their domestic Internet routers to shortcut Internet traffic outside of China directly to China. To do this at the router level is incredibly dangerous. A second approach was the development of the Trojan virus “ghost rat,” as this Trojan permitted those computers attacked to let this virus take full control of the user’s Windows environment, replicate itself to other PCs, and scan the system for documents that it then forwarded to servers in Sichuan Province, China. These attacks were aimed at foreign ministries and embassies in over 100 nations. A third problem involves installing either a “back door” or a “kill switch” into either the computer’s operating system or embedding a computer chip called a “Manchurian chip” into the computers or smart phones. The Chinese are now making computers for Hewlett-Packard, Dell, and Apple, and the Windows and Mac operating systems are loaded on the computers at an assembly factory in Shenzhen, China. This provides access to easily embed Manchurian instructions, and at any time in the future, the Chinese could shut down or take control of equipment run by or with that computer. This could range from the electrical grid system, a subway such as the “Metro” in Washington, DC, or tracking devices associated with a military mission.⁵⁸

Richard Clarke, Former National Security Advisor to President Clinton, noted that in 2009 the electrical power grid system in the United States was hacked and secret openings were created so that the attacker could return at some time in the future with great ease. Since there was no money to steal on the electrical grid, and since the intelligence value was inconsequential, the only point of penetrating this system was to control and be able to shut it down as part of a cyberwarfare strategy. Despite Beijing’s denials, this had all the hallmarks of a Chinese government operation. Clarke further commented that what would we do if we discovered the Chinese laid explosives throughout our electrical grid system, as the difference between a digital bomb and an explosive is meaningless.⁵⁹

In response to these situations, the United States has declared a new policy and it states the following:

U.S. policy reserves the right to defend against logic bombs with the “Right of Self-Defense: Consistent with the United Nations Charter, states have an inherent right to self-defense that may be triggered by certain aggressive acts in cyberspace.”

When warranted, the United States will respond to hostile acts in cyberspace as we would to any other threat to our country. All states possess an inherent right to self-defense, and we recognize that certain hostile acts conducted through cyberspace could compel actions under the commitments we have with our military treaty partners. We reserve the right to use all necessary means—diplomatic, informational, military, and economic—as appropriate and consistent with applicable international law, in order to defend our nation, our allies, our partners, and our interests.⁶⁰

Of course both America and Iran have also been accused by other governments of spying on their information resources, but China has developed some of the most sophisticated and far reaching cyber attack capabilities.

3.5 Summary

The analysis of America, China, and Iran reveals each nation's greatest contemporary challenges and highlights how they might apply their respective strength to achieve their goals, which in America's case is to regain its financial stability, and China's to sustain its economic growth and obtain true superpower status, and Iran desires to really attain regional power status within the Middle East. The respective weaknesses outline the difficulty and barriers each nation might encounter if they do not seriously address and resolve these weaknesses. Finally, the chapter has identified seven key resource drivers that will be useful in gauging the prospect and ability of each nation to meet and fulfill their respective challenges.

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33. Ibid., 198, 199.
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The Arab Revolutions of 2011

4

Promise, Risk, and Uncertainty

ANDREW J. BUDKA

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4.1 The Adumbration: Europe, 1848

In 1948, to mark the 100th anniversary of the revolutions that swept suddenly through almost all of Europe, *Foreign Affairs* magazine published an excellent article that noted that although these revolts began with great intensity and fervor, most ended badly and within a short time. The forces of counter-revolution, by 1850, had regrouped, counter-attacked, restored stability and, to a large degree, the status quo ante.¹ These mid-nineteenth century revolutions, like the current day uprisings in North Africa and the Middle East, began spontaneously and took both the monarchies and the long-established forces-in-opposition of the time by surprise. In Prussia, Wilhelm, the future Kaiser of Germany (yet to be completely united), forever emotionally scarred by this democratic impulse, was unceremoniously smuggled out of the country by his Prussian bodyguard to avoid capture by the insurrectionists.² King Louis Philippe of France was forced to abdicate and spent the rest of his life (d.1850) in a modest home in London. In addition to France and Prussia, Poland, Hungary, Italy, Austria, Sicily, and even Switzerland were all in revolt and foment. For some months it looked like most monarchies would be swept away. In a rush to stem this rebellious tide, many a ruler sacked unpopular ministers, replacing these derided and despised bureaucrats with recognized personalities who advocated more progressive government. The replacements promised change and the implementation of laws and policies more amenable to the popular demands. One of these newly appointed, a quite frustrated minister of a small German Duchy, trying to assuage the many demands of the fervid masses, exclaimed: "Everything is demanded of us, even the establishment of perfect health and the gift of long life."³ Similar expectations have been voiced in the Middle East countries affected by upheaval today.

What confused people of all societal strata was that no two revolutionaries could seem to agree on just what ideals they were fighting for or against. Some advocated universal suffrage, others wanted better economic opportunities, and many just demanded an end to the monarchical or bureaucratic repression they had experienced all their lives. In no one country was there a disciplined, organized cadre that could sustain the early gains the revolutions had garnered. Because of this, the 1848 uprisings, although hugely popular and well supported by the middle and lower classes, were eventually side-tracked and minimized by the reactionary forces that, over time, regained control of the governmental structures. Sure, King Louis Philippe of France had abdicated, but he was soon replaced by a new monarch, Louis Bonaparte, the nephew of Napoleon, who within 3 years suspended the popular Assembly and France reverted to autocracy once again. (Citing the ripple-effect of these events, it was a future empire-expanding adventure of Emperor Napoleon III, as Louis Napoleon came to be titled, that established

his brother-in-law, the ill-fated Maximilian, as the Emperor of Mexico in 1862. The French withdrawal from Mexico on May 5, 1867 and the execution of Maximilian and members of his Court on May 15, 1867 is a part of what the annual “Cinco de Mayo” celebration is all about.) Other monarchies maintained their hold on power after instituting only minimal reforms. The revolutionary momentum eventually stalled and even Karl Marx, who had published *The Communist Manifesto* that year (1848) and expected a continent-wide revolt by the proletariat, despaired and returned to work as a newspaper reporter. By 1853, he was covering the Crimean War for the *New York Daily Tribune*.

The events of 1848 in Europe serve as both a foreshadowing and a caution for those ever hopeful that the upheaval currently sweeping North Africa and the Middle East will inaugurate a new era of democracy and secular values. The 1848 turmoil is an excellent parallel to the upheavals today, because the nature of the current Middle East revolts (spontaneous mass uprisings with some early success) and the government reactions (abdications, replacing ministers, etc.) seem to follow a pattern similar to that in Europe in 1848. The mid-nineteenth century European uprisings also serve as a caution in that they ultimately changed little, except to replace a few government leaders or ministers, and achieved almost nothing. Watching the present unfolding of history, almost before our eyes, has been mesmerizing to say the least, and the drama continues at the time of this writing. As in 1848, these 2011 revolutionary explosions began spontaneously, much to the shock of Middle East and North African despots and their security forces. But they were even more of a surprise to the long-standing opposition elements (mostly Islamist) of the countries involved. Rulers, who had considered their tenures to be lifetime appointments, have been toppled (Tunisia, Egypt, and Libya) or, as in 1848 in Europe, unpopular ministers or entire cabinets have been fired en masse (Jordan and Syria). General demands for more freedom, dignity, economic opportunity, and constitutional reform have been voiced by the revolutionaries, but again, as in 1848, the more specific design of what future democratic governments may entail has yet to be revealed. There is also much confusion among political analysts in the West, even as to the exact composition of the revolutionaries (Libya and Yemen). It is too early to know if the “counter-revolutionaries” of our day will organize successful campaigns to truncate the revolutionary fervor, but as of this writing, President Saleh of Yemen is still hanging on to power; the monarchies of Saudi Arabia, Morocco, Kuwait, and the United Arab Emirates appear solid, and the Sunni Khalifa dynasty of Bahrain, with foreign assistance (Saudi Arabian troops mainly), continues to hold firm. Unrest in Syria has been brutally suppressed but the situation vis-a-vis the regime of Bashar-al-Assad remains unstable and uncertain.

4.2 Revolutionary Dynamics

The lesson here is that revolution, like its violent twin, war, is always a risky, problematic, and often unmanageable undertaking. Those who initiate these precarious activities (usually for the best of reasons) can easily lose control and events can cycle in very different directions, evolving (or devolving) into situations neither intended nor foreseen. As Shakespeare so eloquently stated in *Julius Caesar*, “Cry Havoc, and let slip the dogs of war,” and one could easily substitute “revolution” for “war” and maintain the exact meaning of the quote: that violence, mayhem, and a completely unanticipated course of events may follow once the revolutionary “dogs” are unleashed.

The French Revolution of 1789 vividly validates this assertion. Largely initiated and supported by learned men of the Enlightenment, men generally considered to have been well-meaning and of liberal mind, they called for “Liberte, Fraternite, and Egalite” as well as the establishment of a constitutional monarchy. These were considered reasonable and modest goals that most could agree upon at the time. But what ultimately manifested was something very different and totally unanticipated. By 1793, much of this original design had been forgotten, and the worthy intellectuals had lost control as the well-organized, disciplined, and rather ruthless radicals, the Jacobins, seized the rudder of the French revolutionary ship. “The Terror,” as it was later termed, began that year and upwards of 16,000 men, women, and children, mostly nobility, were initially executed. But soon, clergy and well-to-do bourgeoisie were taken and guillotined as well and then other more common citizens some of whose only crime was not to have shown proper revolutionary fervor at the beginning of the revolt. The guillotine, effective as it was, soon proved too slow for some of the radicals and they sought to expedite matters by stuffing barges full of accused counter-revolutionaries and sinking them in the rivers.⁴ Moreover, many of the original revolutionaries, Robespierre and Danton, among the most notable, were executed as the Jacobin retribution accelerated and consumed many of the Revolution’s architects. Eventually, rival factions wrenched control away from the Jacobins and, as a result, many of the Jacobins who had, with such great alacrity, sent others to the guillotine ended up losing their heads as well.⁵

But the violent momentum in France continued unabated and the worst was yet to come. Despite the deaths of tens of thousands, the dogs of the French Revolution continued to run and the unintended consequences of death and destruction expanded and multiplied. Soon, France and its citizens were engaged in wars initiated by their new, nondemocratic emperor, Napoleon Bonaparte. What had begun as a noble quest for liberty and freedom from oppression ended with the Grand Armee’s (600,000 strong) annihilation in

Russia in 1812. The denouement of the 1789 uprising occurred 25 years later in 1814 with Napoleon's final defeat at Waterloo. Estimates are that at least a million Frenchmen (and probably almost as many other Europeans) died as a direct result, unintended and unanticipated, of the revolution that began with such idealistic notions.⁶

The Russian Revolution followed the same uncertain and uncontrollable path as that in France. The February 1917 revolts that forced the Czar to abdicate were also spontaneous reactions to the great burdens suffered by the Russian masses resulting from the Czar's disastrous foray into World War I. As was the case in 1848 (and the Middle East revolts today), the February 1917 revolution was as much a surprise to long frustrated Czarist opposition groups and parties as it was to the Czarist government itself. In fact, Lenin, the future leader of the Union of Soviet Socialist Republics (USSR) was not even in the country. He was in a self-imposed exile in Zurich, Switzerland, and had reportedly despaired of ever achieving a popular revolt against the Romanovs. Trotsky, the mastermind of the Red Army and the chief architect of the Bolshevik victory in the coming civil war, was not even on the continent, but was living in New York City of all places. The February Revolution's activists, men like Alexander Kerensky, who had assumed the mantle of leadership of the new Provisional Government, as it was called, were unable to sustain the effort of gradual, but positive and democratic, reform. By April 1917, Lenin had returned and used his disciplined, organized, and ruthless cadres of Bolsheviks to successfully mount a second revolution in October 1917 under the banner of "Peace, Land, Bread." The consequence of Lenin's October revolution was civil war, communist state repression, often starvation (no bread), and certainly no peace (although the Bolsheviks did end up with all the land). By January 1918, the new Bolshevik secret police, the CHEKA (an acronym for the unlikely and verbose organizational title: The Extraordinary Commission for the Struggle against Counter-revolution, Speculation, and Sabotage"), were executing more than 500 "counter-revolutionaries" a month.⁷ By 1937, at the height of Stalin's purges, hundreds of thousands were being hung or shot and the toll had exceeded seven million.⁸ Once Stalin took control of the USSR in the late 1920s, he ensured that most, if not all, of the Bolsheviks' original collaborators in the creation of the USSR, the men and women of the Menshevik Party and the Socialist Revolutionary Party, disappeared into the prison camps or the execution cellars as this revolution, like the French more than a century earlier, also consumed its own.⁹ Even this horror was only a prelude as World War II followed and another 20 or 30 million Russians perished. What was so telling about the Bolshevik takeover of the first revolutionary government was that the Bolsheviks never numbered more than a few hundred thousand in a nation of almost 140 million.¹⁰ However, they were the most organized, the

most disciplined and, tragically for Russia and so many who supported the revolution at its genesis, utterly ruthless.

Without a doubt, the monarchies of Louis the XIV, XV, and XVI of eighteenth century France and that of the Romanovs in nineteenth and early twentieth century Russia, represented tyranny, oppression, and a crushing state control of their populations. It is also clear that the vast majority of the people of France and Russia desired freedom and a loosening of this repression. They simply wanted the yoke off their necks. But the masses, in their spontaneous, unorganized, and often leaderless energy, could not maintain the momentum needed to achieve their libertarian goals. As more violence was required to force the desired change (entrenched governments and bureaucracies do resist after all), men of more aggressive temperament and personality took charge. Thus, the better disciplined and more radical elements were able to wrestle control away from those who simply wanted a bit more freedom and self-determination, to the great detriment of both the nations and their populations.

In our own time, the most compelling example of a revolution “gone bad” (at least from the American point-of-view), with tragic and unintended consequences, is clearly seen with the 1979 overthrow of the Shah of Iran. There is no argument that his was a brutal regime. His secret police, the SAVAK (Persian acronym for “The National Intelligence and Security Organization”), were notorious, globally, for their violent interrogations and their enthusiasm for squashing dissent. The Shah’s demise was heralded worldwide as an advancement of freedom, human rights, and social justice in South Asia. Sensing that the winds of major change were now blowing from a different direction, the Carter Administration all but pushed the Shah out at the end, despite the fact that he had been a long and faithful American Cold War ally who had prevented Soviet expansion into South Asia. The United States concluded that a popular, leftist but secular, government would be installed, and this new Iranian regime would remain our ally, but rule in a kinder and gentler way.

The Iranian Revolution was originally spearheaded by leftist-secular organizations such as the Mujahideen al-Khalq and the communist Tudeh party, long opponents of the Shah’s rule. It was also supported by the powerful merchant classes and the conservative religious majority. Like the French and Russian revolutionaries, these initiators envisioned a very different outcome than what ultimately occurred. Although well organized and disciplined, the secularists were no match, in the end, for the heavenly vision (as extracted from the Qur’an) of Ayatollah Khomeini and his steely determination to establish a Shiite Islamic state that had no room for secular values or leftist democratic politics.

Interestingly, as early as 1965, Hossein Mahdavy, writing in *Foreign Affairs* magazine, warned that if the United States pushed Iran to liberalize

too fast, it could create a revolution that would sweep the Shah away.¹¹ It was to prove a very prescient observation. In effect, after years of American pressure to democratize Iran, from the Kennedy Administration onwards, the Shah decided that he needed the SAVAK to keep the religious elements at bay while he “modernized” Iranian society. In the case of Iran, modernizing meant replacing the almost feudal and very conservative Shiite Muslim culture with values imported from the West. This was an endeavor fraught with danger and the Shah knew it. He hoped that his government could keep the lid on things while he forced the mostly unwanted social change from the top down.¹² By 1978, as the mass demonstrations against the Shah and his policies gained momentum, the West only saw in them a new and popular movement that would initiate the break from oppression to democracy and liberalism and rid the United States of the now discredited Shah’s embarrassing rule. Khomeini and his reactionary Shiite activists were seen as marginal players in this revolution, players who would abide the Iranian popular will. Andrew Young, then U.S. Ambassador to the United Nations, echoing the common American misunderstanding of Khomeini and his intentions at that time, even referred to the Ayatollah as “some kind of saint,”¹³ expecting, one infers, that when the religious leader returned to Iran, he would advocate a peaceful transition of power and assume a role similar to that of Mahatma Gandhi in the Indian independence movement of 1947. It was to prove a fatal miscalculation. (It was a pity that almost no one in the West or the United States, myself included, had bothered to read the Ayatollah’s writings regarding the theory and practice of Islamic government, which he published in the 1960s. We would have been forewarned. Khomeini’s writings revealed him to be fervently anti-American and opposed to all secular government.)

Once the Shah had flown off to an uncertain and peripatetic exile (he was unwelcome just about everywhere and had to keep moving), Khomeini, who had been living in France, returned and, using his disciplined masses (in this case, unlike the example of Russia in 1917, the most organized, disciplined, and ruthless organization was also the largest), began purging the new Provisional Government of any of the former Shah’s ministers and bureaucrats who were still in office, as well as the newly installed leftist and secular revolutionaries alike. Within a short time, the executions began, the secular opposition collapsed, and the Islamic Republic was established. This was much to the detriment of America, as Iran became the most adept and energetic practitioner of terrorism against American interests and the West (especially Israel), Al Qaeda notwithstanding. The first shot fired was the seizure of the American Embassy in Tehran and the holding of American diplomatic personnel as hostages, often brutally treated, for 444 days. So what began as a genuine, broad-based, and grassroots revolution against the Shah was soon co-opted by Ayatollah into an “Islamist” (i.e., Muslims seeking to enforce an ideological view of Islam in the political and social life of a nation), tyranny.

4.3 The 2011 Revolutionary Precursors

There is a popular auto bumper-sticker that avers: “War (substitute Revolution) never solved anything.” While this may be true in part, war and revolution can certainly CHANGE everything. Just ask the Kaiser Wilhelm, the Ottoman Sultan Abdulmecid II, the Austro-Hungarian Emperor Franz-Joseph, the Czar Nicholas II, or even the leaders of the Confederate States of America. (In actuality, war did solve problems such as the American quest for independence, slavery, Nazism, and Fascism, just to name a few.)

Political leaders and frustrated citizens who turn to insurrection often forget that generating a war or revolution to accomplish their goals is an action always fraught with danger and uncertainty. When the Kaiser and the German General Staff initiated World War I in August 1914 by invading France through neutral Belgium, leaders on both sides were convinced it would be a war with rapid advances and quick enemy capitulations. Instead, what unexpectedly ensued was the static horror of trench warfare, millions of deaths, poison gas attacks, the collapsing of economies, and the eradication of empires and royal houses. (It would take another 26 years and another German offensive into France to win the quick victory the Kaiser had envisioned. Hitler, using his mechanized “Blitzkrieg [Lightning War] tactics,” achieved an overwhelming victory over a more powerful France in just 28 days in April 1940. If he had stopped and consolidated at this point, he may have held onto Europe for decades, but once he invaded Russia in 1942, he suffered Napoleon’s fate.)

It is worth restating that revolution is war’s twin; it follows the same dynamic and once initiated can easily slip the leash of those who hope to control its path and direction. The popular uprisings throughout the Middle East and North Africa that began in February 2011 were obviously a spontaneous and multi-generational response to long-term repression and tyranny. What is ironic is that in every case the ruling class of the countries involved, that is, Egypt, Syria, Tunisia, Libya, Yemen, and Algeria, had been installed themselves through the mechanism and process of their own revolutions, starting with the Egyptian Free Officer coup that overthrew King Farouk in 1952. Algeria, Syria, Iraq, and Yemen followed in quick succession and finally Libya, in 1969, with the now internationally disdained Qaddafi declaring himself as leader after disposing of the Libyan monarchy.

But these revolutions of the 1950s and 1960s had been installed from the top down, mostly as a result of military officer coup-d’etats. In character, they were not popular uprisings initiated by the man-in-the-street, who in any event had little to say in the matter. Although these revolutions resulted in the establishment of what were termed “republics,” they were, in fact, political facades controlled by tyrants, democratic poseurs, and one-party rule.

These governing cliques survived by abrogating human rights and establishing multilayered and faceted internal security and intelligence organizations. (Iraq, for example, had five different intelligence and secret police organizations, some of which were established for the sole purpose of infiltrating and keeping tabs on the other intelligence units, as these in turn spied on the population).

The mid-twentieth century revolutions of the elite were an Arab response to the decline of imperialism and colonialism, which saw its final collapse after World War II. Italy, which had occupied Libya for decades, had been defeated in World War II and lost control of its North African colony. France and Britain were exhausted both economically and physically by the war and no longer possessed the financial resources or political will to rule colonies. With the Cold War just beginning, the United States had no desire for empire at this point. In the vacuum created, young Arab nationalists judged that overturning the last vestiges of European control (the governmental structures and bureaucracies that France and Britain, primarily, had left in place) would herald a new era of national rejuvenation and prosperity in North Africa and the Middle East. In actuality, strong men, like Gamal Nasser in Egypt, Hafez Assad in Syria, Saddam Hussein in Iraq, Habib Bourguiba and Ben Ali in Tunisia, and Abdullah Saleh in Yemen, installed themselves in power. They initiated ambitious economic and industrial programs based on a centrally planned, socialist economic model that promised wealth and opportunity but, in the end, created only scarcity, want, and crushing unemployment.

Sixty years on, the new, young generations of the Middle East and North Africa, that had been born into these societies and had matured under these tyrants, knew nothing of the past, heady days of anti-colonial upheaval and the casting off of the imperialist bondage. They possessed no nostalgia for the revolution of old. Government propaganda, extolling all that the dictator had achieved for his nation, rang quite hollow. Fervent Arab nationalism, all the rage in the 1950s and 1960s, had now been replaced by cynicism and contempt and a burgeoning Islamist opposition. Lack of opportunity, bureaucratic corruption, and the ubiquitous secret police and security apparatus was now the order of the day. Indignant over their country's debasement, aware through the media, the Internet, the cinema, satellite television, cell phone technology, and the emigration of family members and relatives to Europe, North America, and Asia that life was certainly freer and more prosperous in other parts of the world, these expanding youthful populations simply had enough. Somehow they have, to a great degree, lost the utter fear of their police state oppressors—fear that was once pervasive and prevalent given the very real tortures and brutality these governments practiced against their own citizens.

In February 2011, the self-immolation of the young, unlicensed fruit vendor, Mohamed Bouazizi, to protest his rough and humiliating treatment by the police literally became the spark that ignited the conflagration that swept through North Africa and the Middle East. Ben Ali of Tunisia and Mubarak of Egypt both abdicated, Saleh of Yemen is barely hanging on, and Assad of Syria and King Abdallah II of Jordan must cope with increasing protests and demands for change. Bahrain had to call in Saudi military reinforcements to quell the majority Shia protests against Sunni rule on that tiny, but strategically important, island in the Persian Gulf.

In fact, we do not yet know the final outcome of all these upheavals. In many respects, we do not even know the exact nature of what the collective revolt, in each country, is specifically demanding, besides the obvious goal of ridding themselves of tyrannical rule and oppressive state institutions. No one is sure what comes next. But the initial news, views, and assessments of these revolts, especially by the Western media, tend to be positive and optimistic. The months from February to September 2011 have been breathtakingly dramatic, and many of us stayed riveted to our televisions. On the cable news shows, almost 24 hours a day, we witnessed crowds of young men and women, dressed in mostly Western attire (especially in Tunisia, Egypt, Libya, and Syria, less so in Yemen, and hardly at all in Bahrain), deftly using the latest technology of the cell phone, Twitter, and Facebook, to organize their protest on the fly, so to speak, almost without any seeming prior planning or organization. These initial, indigenous, and impulsive uprisings were certainly not Islamist or even jihadist inspired. In fact, there is good evidence that the Islamist opposition was just as surprised at the popular reactions as was the government apparatus (not to mention Western intelligence organizations).

There is no doubt that, in general, Americans have great sympathy for revolutions. Revolution is a part of our national psyche and cultural heritage after all. Americans have traditionally favored the underdog, and we naturally support any society wanting change and struggling for the prospect of a better future. At the same time, we must understand that a serious power vacuum has been created in key Middle East states, several of which, such as Tunisia, Egypt, and Yemen, have been solid U.S. allies in our war against radical Islam. (Even Libya's Qaddafi, certainly no ally of the United States, was an ardent opponent of Al Qaeda and other Jihadists). Moreover, Egypt, Jordan, and Tunisia had been strong supporters of the U.S.-brokered Israeli-Palestinian peace process, and Egypt has long abided its peace treaty with Israel, a result of the 1973 war, which has allowed Israel to focus its defensive efforts against the more immediate menace of Hamas in the Gaza Strip and Hezbollah in Lebanon. The treaty with Egypt, by removing the danger of military action from Israel's southwestern frontier, has also served to isolate and neutralize the threat from Israel's implacable enemy, Syria, on the

northeast. In light of these facts, the question that must now be answered is whether anyone seriously believes that the masses of young, technologically competent professionals who created the revolutions can actually sustain them. Will they be able to complete the estimable goal of establishing democratic, secular states that guarantee human rights, equal opportunity for all (including women), and ensure that universal suffrage be extended to everyone? Do they have a plan to solve the huge economic problems that confront the entire Islamic world but that are especially dire in Egypt, Tunisia, and Yemen? One senses that the bright future might be clouded and that only defalcation and disappointment lie ahead.

There are sufficient reasons not to be overly sanguine about the ultimate outcomes of these insurrections. The opportunity for serious and dire unintended consequences is real and we do not know which direction the “dogs of war or revolution” will follow. The most organized, disciplined, and ruthless elements in each of these countries have just begun to assert themselves and that, in any case, those elements are not composed of young, well-educated technocrats who seek only to remove the burden of oppression and failed economic policies from their backs. For many in the Middle East and North Africa (not to mention in the West), the deepest notion considered is that a Ben Ali or a Mubarak are bad, and therefore, anyone else would be better. The very difficult challenge, the arduous political heavy lifting, which consists of forming a new government, drafting and ratifying a new constitution, guaranteeing human rights and self-determination and, always dear to American hearts, allowing the pursuit of individual paths to happiness, has yet to begin. Are the new revolutionaries up to the task?

4.4 The Most Organized, Disciplined, and Ruthless Elements in the Middle East and North Africa Today

For decades, it was a stated aim of jihadists and Islamists that the first order of business was not to destroy America or even Israel, but rather to purge the Islamic world of those secular and so-called apostate regimes that refused to establish the Islamist agenda, institute Sharia (Islamic law), and promote universal jihad against Kafirs (unbelievers).

The ironic result, the great unintended consequence of the “Arab Spring” as it is being termed, may be that the technology savvy, pro-democracy, secular-oriented, spontaneously activated revolutionaries, who forced abdications in some countries and ministerial changes in others, have unwittingly cleared the way for the Islamists to seize power, now that the once implacable enemies of political Islam have been toppled. As repressive and brutal as the dictators of Tunisia and Egypt were, they were nevertheless

“equal opportunity” tyrants who suppressed the Islamists and jihadists as well as those of a democratic or liberal orientation. An Al Qaeda adherent, writing in the latest issue of the glossy, jihadist periodical *Inspire* is quoted as saying: “The biggest barrier between the mujahidin and the freeing of Jerusalem were the tyrant rulers. Now that the friends of America and Israel are being mopped out one after the other, our aspirations are great that the path between us and Jerusalem is clearing up.”¹⁴ The Islamist camp, composed of the Muslim Brotherhood in Egypt, Syria, and Jordan, as well as the other more militant jihad organizations always present within all Muslim countries, *are precisely the most organized, disciplined, and potentially ruthless elements, which will, in fact, assert themselves in time and actively promote their agenda of establishing Islamic government, one way or another.* One of the first new political initiatives in both Tunisia and Egypt was freeing from incarceration thousands of Islamist political prisoners.¹⁵ One can rest assured that these activists will not simply return to their homes to look for gainful employment in, say, the food service industry. Rather, they will seek to renew their formerly oppositionist antics and help advance the Islamist agenda. Only the hopelessly optimistic would consider that the twenty- or thirty-something men and women, organizing their activities by “Face-booking and Twittering,” technically astute but politically unsophisticated, can sustain a revolution or even control its momentum for anything but a short time. It is more likely that power will pass—as we have shown from the examples of France, Russia, and Iran—to the better organized. Sure, the recent revolutions were mostly secular in nature, but the form and substance of the new governments are yet to be determined. We are only in the incipient stages of a multi-state unraveling in the Middle East and North Africa. We do not know what outcome will eventually transpire but some trends are already apparent.

First of all, at the time of this writing, 2011 represents the best opportunity the Islamists, particularly the Muslim Brotherhood (Al-Ikwan Al-Muslimun in Arabic), has had since its inception in 1928 of assuming some element of power and participation in the governmental processes of the Middle East and North Africa, most especially in Egypt. This is a development that will have serious consequences for the West and American foreign policy, not to mention the internal order of the individual countries involved. The Brotherhood was founded in 1928, in Egypt, to fill the vacuum that had been created with the collapse of the Caliphate in 1923 (the Caliphate, literally “the successor,” was the one institution that had represented central authority in Islam since the death of the Prophet in 632 CE) and to oppose the occupation of much of the Muslim world by colonial powers (France and Britain, in particular). Over the past decades, the Brotherhood has been continuously organizing and restructuring itself, adapting to changing circumstances and opportunities over time. But this organization has never

deviated from its stated goal of establishing Sharia where possible and has never retracted its official motto: “God is our goal/the Prophet is our Leader/the Qur’an is our constitution/Jihad is our Way/Death in the Service of God is our loftiest wish/God is God, God is Greater.”¹⁶ This is not a creed of the timid and neither does it suggest an organization of limited goals.

As stated in the book, *The Canons of Jihad*, “The Muslim Brotherhood was the first mass-based, overtly political movement to oppose the imposition of Western ideas and culture in the Middle East.”¹⁷ The Muslim Brotherhood saw itself as eventually establishing a new caliphate to restore Islamic glory and control over the lands that had once been Islamic territory. (Besides all the Muslim countries of the Middle East and North Africa, these also include Spain, and probably Sicily and the Balkans).¹⁸ The Muslim Brotherhood’s stated purpose from the beginning was the implementation of Islamic Law or Sharia in all Muslim countries¹⁹ *and then the world*.²⁰ It is still the goal today, although for several decades the Brotherhood has modified its tactics and sworn off violence (violent jihad proved to be self-defeating and only induced greater repression). In Egypt and Tunisia, it has promised to work through the democratic process. But, ultimately, the Brotherhood’s goal is not to promote a society in which all religions or secular creeds are treated equally. Rather they vow to work assiduously to establish as much of the Sharia code as possible. The dilemma and great challenge for secularists and democrats is that, in the end, Sharia and Democracy are wholly incompatible.

Sharia (literally, “the path”) or Islamic Law is derived from the Qur’an and a few other Islamic theological sources.²¹ The Qur’an is considered by ALL Muslims, not just the Islamists, as the authentic and irrecusable Word of God that has been preserved, in an unaltered state, since the Prophet received its revelation, over a period of 22 years, beginning in 610 CE. But it would be a mistake to consider Sharia solely a religious codex. The problem for those promoting Western democratic values in the Muslim world is that the Qur’an is both specifically prescriptive AND proscriptive as to how mankind is supposed to conduct its affairs.²²

Sharia regulates behaviors in all aspects of a believer’s life, not just the religious, but also the economic, the political, and even the military. Basically, the Qur’an states that men and women do not get to choose how to order their lives. God expects human beings to submit to His will and adopt the lifestyle He has outlined in His holy book. Islamists, like the members of the Muslim Brotherhood, fervently believe that it is a religious edict, a moral imperative, and the ultimate obedience to the will of God to establish Sharia as the law of the land.²³ They truly believe they are carrying out God’s design and there can be no compromise on its implementation. They possess an intensely rigid “my way or the highway” psychology. Moreover, because they have aligned themselves with God, they consider that every act they

take that has the intention (*niyya*, in Arabic) to promote the will of God is, by definition, virtuous.²⁴ Even acts we in the West would consider coercive or violent and not in keeping with normally civilized or religious behavior are considered by the Islamists as morally efficacious and good if initiated to bring about the establishment of Sharia.²⁵ In short, they exhibit and practice a degree of self-righteousness that borders on solipsism, in which any action, no matter how heinous, that promotes Sharia is considered good, virtuous, and pleasing to the Deity.

In the Islamist point-of-view, the great error of Western civilization and culture, the great corruption actually, is the temerity the West exhibits in legislating laws and a way-of-life contrary to Qur'anic law. Islamists consider that the West has usurped God's prerogatives, and using the democratic process, established assemblies of men and women that seek to erect a contemporary Tower of Babel.²⁶ Like Babel (which actually means "Gate of God" or "God's Gate" in Semitic languages), they contend that this effort will end in futility and chaos. The Western, and especially our American way of life, is perceived by the Islamists as simply rebellion against the Deity and how He wants us to live. Both the Muslim Brotherhood's founder, Hasan al-Banna, and its most articulate apologist, Sayyed Qutb, abjure the right of any group to legislate any law contrary to those dictated in the Qur'an. (Qutb's works "Milestones" and "In the Shadow of the Quran" are recommended reading. While somewhat prolix, they provide insight into Islamist theory.) Moreover, the Qur'an is not considered a "living document." There can be no editing or revision of the text and the dictates of the Qur'an cannot be modified to adapt to changing cultural or social circumstances. In fact, it is modern life that must be adapted to the Qur'an's timeless and unchanging message. Moreover, in Sharia, there is, in general, no concept of individual liberties as we know or practice them in the West. The right of self-determination can only be exercised within the framework of what is allowed or forbidden by the Qur'an. Everything else is sin, corruption and "Jahiliyyah" (pre-Islamic darkness and ignorance).²⁷ For Islamists, Sharia is compulsory and all Muslims must abide to its dictates. If a Muslim chooses not to follow the entire Qur'anic code of conduct, one hundred percent of the time, that person can be declared an apostate or "kafir" (unbeliever), and Sharia courts can impose appropriate punishments for such transgressions.²⁸

For example, if Sharia were to be instituted in America, the First Amendment would be abrogated since there is no freedom of expression per se, especially if that expression were to criticize Islam, the Qur'an, tenets of the faith, and so on.²⁹ The Second Amendment would also have to be dispensed with, since, under Sharia, only believing Muslims would have the right to bear arms and/or serve in the military. In fact, under its strictest interpretation, those Americans not Muslim would not even be considered citizens, but would be relegated to a class of protected inhabitants known as "Al -Dhimma"

or “dhimmis” (literally, “People of the Pact” in Arabic), who would have to pay a tax to the Islamic authorities in return for their security.³⁰

Likewise, usury, lending at interest, would be outlawed and the economy would change drastically as a result.³¹ Women would be forced to adopt more conservative and much less revealing attire. New laws based on the theological transgressions of blasphemy, heresy, and apostasy would have to be installed and enforced. One could go on but it should be quite clear that our values and those of Sharia diverge widely. For most in the West, words such as apostasy, blasphemy, piety, and so on, represent archaic terms that are taught only in college courses dealing with the Medieval Era or maybe abstruse religious histories. But they are ever present in contemporary Islamic jurisprudence and one only needs to conduct a search on Google, using these terms, to discover that punishments for these crimes are meted out almost daily in some Islamic countries.

We in America hold dear the principle that our government is derived from the consent of the governed. For Islamists, this notion is risible in the extreme. The only governing system in their view is Sharia, and it is derived from the dictates of the Creator, not men. No other laws, legislation or governing entities are necessary or desired. For Islamists, living under Sharia is not only a mandate but is considered actually living in harmony with the nature God endowed each of us. It is the natural order. God first created us and then established a way of life that suits our nature. Following Sharia, therefore, pleases God and, by extension, us.³²

The difficulty for the people of the North African and Middle East countries that have revolted and now have an expectation of a more liberal and freer life is that the Islamists are fervid in their belief that it is a religious duty to promote and even impose Sharia. This must be done to truncate any Western influences in the culture and social fabric of Muslim societies, thus returning the people to the true practices of Islam. In Islamist circles, democracy is literally considered heresy. Man does not establish rules and laws outside the Sharia framework.

Many in the Middle East and North Africa consider that the problems of their nations are the result of too much Islam in the public sector,³³ the practice of which (especially of the more conservative ideologies like Wahabbism) retards the advancements of modernization and technological innovation that could heal the ills of poverty and economic malaise. Conversely, the Islamists believe fervently that the same problems are caused by too little Islam and that a return to first principles will engender a rebirth of the glorious past ages (800 CE to 1100 CE) when Islamic empires were the light of civilization, Europe being mired in the Dark Ages at that time. (For the Islamists, the only true civilization is one based on a strict adherence to Sharia principles. The fact that many of these principles conflict totally with the freedoms of most Western constitutions is the primary challenge we all face.)

There is no doubt, after being excluded for decades from the political process in the Middle East, that the Islamist organizations, such as the Muslim Brotherhood in Egypt and Al Nahda (Awakening) in Tunisia, will be allowed to organize political parties and field candidates. They will garner a significant percentage of the vote. Even if they do not, initially, form a majority, they will represent a formidable voting bloc that will shape legislation and continuously lobby for initiatives that promote Islamic law.

The United States foreign policy in dealing with the Muslim world for the past several decades has depended on the status quo being maintained in the Middle East. That status quo's foundation was political stability in which the various countries allied with the United States would maintain order in their internal affairs while at the same time supporting our foreign policy initiatives. It is unclear at this time if in fact the governments that emerge, especially if they contain a substantial Islamist presence, will retain the same support for U.S. policy as did their predecessors. Most likely they will not. These countries may opt for very radical changes in their foreign policy preferences much to our foreign policy detriment and dismay.

4.5 Trends and Prognostications

The populist sage of our time, Yogi Berra, averred that “It’s tough to make predictions, especially about the future.” This is good advice, and so it is with some trepidation that we examine the prospects for change (or not) in the countries affected by revolution or upheaval to date. As stated earlier, no one really knows the directions these various revolutions will travel. Each country afflicted may see a different outcome, and in truth, it could take years for the revolutionary dynamic to play itself out. In the end, the world will undoubtedly witness some very radical developments as the entire region is transformed. Moreover, as a part of the ripple effect, countries unaffected so far such as Morocco, Turkey, Saudi Arabia, the United Arab Emirates, Oman, and even Iran may experience increasing unrest or revolt over time. Therefore, we will begin with Tunisia, the progenitor of the present upheaval.

4.5.1 Tunisia: Radical Eschew—At Least So Far

Tunisia is a small country, slightly larger than Wisconsin, and occupies the center of North Africa, sandwiched between Algeria and Libya. Site of the famous challenger to Rome, Carthage, it became a Roman possession and a vibrant Roman province after the Third Punic War in 146 BCE. (It was the great Carthaginian general, Hannibal, who in the Second Punic War, 218 BCE, crossed into Spain from Africa and led his army and war elephants over the Alps and into Italy where he campaigned against Rome throughout the

peninsula, undefeated, for 17 years. However, he was unable to conquer the Romans and so returned to Africa.) Blessed with fertile land, despite its proximity to the Sahara, Tunisia was renowned as Rome's "breadbasket" and the abundant harvests provided the grain for the late empire's "Bread and Circuses" domestic policy that doled out food and entertainment to the masses in return for their quiescence. Some amazingly pristine Roman ruins are still extant in Tunisia and attract their share of tourists. (For example, the coliseum in El Djem, where thousands of gladiators fought to death for a hundred years is incredibly well-preserved.) The Arabs conquered this area, then ostensibly Byzantine Roman Christian in 647 CE, and the population was gradually Arabized and converted to Islam.³⁴ Tunisia has been a Muslim country ever since. Tunis was one of the infamous Barbary Pirate states, and as early as 1801, President Thomas Jefferson's newly built Navy was challenging these freebooters on the high seas. (It is estimated that more than one million Europeans and some hundreds of Americans were captured, either at sea or during coastal raids on southern Europe, between the mid-sixteenth and mid-nineteenth century and sold into slavery in the Ottoman Empire by the various Barbary States.)³⁵ The French Army conquered Tunisia in 1883 and held it as a colony until independence in 1957. Unlike the very bloody and violent struggle that the Algerians waged against France for independence from 1956 to 1963, Tunisia, led by the nationalist hero, Habib Bourguiba, opted for civil disobedience and mostly nonviolent methods to achieve its independence goals. France, not needing another theater of battle, happily complied. Bourguiba was elected the first president in 1957, and deciding he liked the job, proclaimed himself "President for Life" in 1974. By 1983, it was obvious to many watching his occasional television appearances that he was sclerotic and suffering from dementia. In 1987, he was declared unfit for office and his vice president, Zine el Abidine Ben Ali, inherited the presidential mantle. Ben Ali held power until January 2011, abdicating in the face of the massive wave of popular protests against his rule.

As mentioned previously, it was young Muhammed Bouazizi's self-immolation that, quite literally, caused the spark that ignited the two continent-wide conflagration of upheaval, protests, and insurrections that have occurred from Morocco all the way east to Saudi Arabia and Bahrain. Mr. Bouazizi's story is now well known: he was a 26-year-old, long unemployed, who decided to set up a fruit-stand to make a little hard cash. Not only did the local authorities shut down his tiny enterprise for lack of the proper paper work, they abused and humiliated him as well. His desperate response catalyzed a long-simmering national anger and resentment against Ben Ali's regime. In truth, Ben Ali's government was not only quite authoritarian in nature, but also had morphed into an egregious "kleptocracy," which unabashedly flaunted its wealth, derived at the expense of the citizenry.³⁶ The vast majority of Tunisia's 12 million citizens made their collective will felt

and Ben Ali fled to Saudi Arabia in mid-January 2011. Elections for a new constituent assembly were set for October 2011.³⁷

Tunisia, which has a long history of eschewing violence and internal mayhem, despite the January 2011 “Jasmine Revolution” as it is now termed, is the one North African country for which we have high hopes. A secular and pluralist new government can rise as a result of Ben Ali’s abdication.³⁸ Aiding this endeavor will be Tunisia’s cohesiveness. Unlike many other Arab states, Tunisia has mostly sloughed off its tribal affiliations and adopted a national identity. Tunisians, in general, think of themselves as Tunisians first. (As we will see, many other Arab nations do not share this national consciousness trait.) Until then, the army will be depended upon to keep order. The first president, Mr. Bourguiba, wisely chose to establish a relatively small military. He correctly understood that his country would never be a military power, due to its small size and lack of resources, and so he purposely did not burden his people or government with the expense of a large army. Only 27,000 personnel strong, the Army is widely respected and has mostly managed to stay out of politics and, hopefully, will continue to do so.

Reportedly, at least 44 political parties intend to participate in the elections.³⁹ Tunisia has a well-entrenched secular culture and is considered one of the most socially liberal in the Muslim world. Polygamy was officially outlawed (the only Arab country to do so) soon after independence. Women are free to wear western attire and, under Ben Ali, the veil and hijab (the cloth that Muslim women wear to cover all or most of their body to indicate modesty) were forbidden in public. (Interestingly, there have been recent reports of public protests in the capital of Tunis in which crowds have demanded the right for women to voluntarily wear the hijab if desired.)⁴⁰ Education is compulsory for men and women until age 16 and women are found in all professions (not the case in most other Arab countries).

There is an Islamist element that has been extant in Tunisia since the early 1980s. It was vigorously repressed both under Bourguiba and Ben Ali, especially after it was discovered that the Islamists were colluding with Libya to overthrow the Tunisia state.⁴¹ In truth, even considering the aforementioned machinations, political Islam has never been a major issue in Tunisian life, at least until this time. The main Islamist party, Al Nahda (The Awakening), is expected to participate in the October elections and may garner as much as 20% of the vote since it attained almost that percentage in the last legal Tunisian national election in 1989. This remains to be seen and the percentage could always be higher. But as one magazine noted, with no opinion polls, there is really no way to know who will win until the counting is finished.⁴² A new government is expected to be a modern democracy with separation of powers, a tenet most Islamist parties reject. But it is thought that the Tunisian-brand of Islamism, at least in the beginning, will adhere to this requirement and freedom of religion will continue to be guaranteed

(even though Tunisia is about 98% Sunni Muslim in composition anyway with a small 1%–2% Christian, mostly Roman Catholic, presence).

Tunisia has a solid agricultural industry and could benefit greatly if the need to feed a rapidly expanding world population is realized, as some economists are projecting. Tourism is also a major source of income as the country is blessed with abundant sunshine and beautiful ocean beaches along its 810 miles of coastline. Other tourists are attracted to the vast sand dunes and associated vehicle tours of the Sahara. Tunisians are well educated in general, and even with all the previous decades of corruption, there is a sizable middle class that can provide leadership and stability.

So let us call Tunisia a win for the secular, democratic ideal. How the Islamists behave and how the new government deals with the Islamists if they do not will be the political challenge. Healing the economy and ridding the nation of the rampant bureaucratic corruption will be the other. The problem of the national police will be an issue as well. Under Bourguiba and Ben Ali, their main role was surveillance of the population, not deterring crime. This security “culture” will have to change for democracy to be successful. On the other hand, if the Islamists do much better than expected, Tunisia may serve as a bellwether of sorts in that, being the least radicalized Arab nation, a strong showing by the Islamists could foretell greater election sweeps in other Arab countries.

4.5.2 Egypt: The Muslim Brotherhood's Best Opportunity Since 1928

Egypt is the Arab world's most populous country with an estimated 85 million people inhabiting, for the most part, a strip of land several miles wide on either side of the mighty Nile River that runs the entire length of the country, from North to South. About 90% of Egyptians are Sunni Muslims with Coptic Christians making up the remainder. The Nile has always served as the lifeblood of Egypt, shaped its culture, irrigated the fertile soil, and has for millennia provided an agricultural livelihood for much of the population. (In spite of this bounty, Egypt today is unable to feed itself and must import food, especially grain. This requirement coupled with the huge spike in food prices that occurred throughout 2010 was a partial cause for the revolution of January 2011.) A majority of the population of modern Egypt was born after 1952,⁴³ the year in which Gamal Abdel Nasser and his ruling clique, the “Free Officer Association” overthrew King Farouk, who had been installed decades earlier by the British. (As a ruler, Farouk was an embarrassment and a flagrant example of incompetence, indolence, and gross profligacy.) But Nasser's secular, Arab nationalist ideology floundered by the late sixties as the unworkable and unsustainable socialist model he had adopted, combined with huge budgetary expenditures on Soviet military equipment, failed to

produce the prosperity or the national prestige it had promised. Humiliated by his stunning and absolutely overwhelming defeat by Israel in the Six Day War of June 1967, the country continued its decline and had to accept foreign aid from the United States and other countries annually just to keep its huge underclass at a subsistence level. The 1967 defeat exposed the fallacy and hollowness of the state-controlled economy and the Arab nationalist ideology. From this date forward, many Egyptians viewed Nasser's secular paradigm as an abject failure and began searching for another ideology to replace it. Over the following decades, a growing Islamist faction, mainly the Muslim Brotherhood, would tout its agenda and vision as the solution of the future, especially after Nasser's death in 1970. Although the Brotherhood had been banned from participating in the political arena by Nasser in 1954, they remained undeterred and sedulously expanded their efforts through civic projects and charitable activities at the local levels, building medical clinics (and even hospitals), schools, food banks, and establishing other social services the government would not or could not provide.

Initially, in 1952, Nasser had solicited the support of the Muslim Brotherhood in his coup against King Farouk. But by 1954, Nasser, not willing to share his authority with anyone, suppressed "the Brothers" (as they are still referred to) and imposed a rather brutal police state on Egypt. (His police state model was so effective and his Arab nationalist ideology so inspiring at the time that they were readily adopted by other would-be tyrants in the Arab world to include the Baathist [literally Resurrection or Renaissance in Arabic] Parties of Iraq and Syria, Ali Saleh of Yemen, and Muammar Qaddafi of Libya.)⁴⁴

After Nasser's death, the mantle of Egyptian leadership passed to Anwar Sadat. Sadat wrenched Egypt's foreign policy toward the United States and away from the Soviet Union. He expelled the Soviet military advisors whom Nasser had so warmly embraced and, in a gesture of good will, released from prison many of the Muslim Brothers and allowed repatriation of those who had chosen exile.⁴⁵ This proved to be a colossal mistake and ultimately sealed Sadat's fate.

Sadat would launch another war against Israel in 1973 and achieve a partial victory that would by 1979 allow him to sign a peace treaty with Israel (The Camp David Accords brokered by President Carter) and receive back the Sinai Peninsula that had been lost in the 1967 war. But the Islamists, especially a more violent offshoot of the Muslim Brotherhood, viewed this peace treaty with the hated "Zionist entity" (as Israel is often termed) as apostasy and betrayal, and in October 1981, while attending a military parade celebrating the 1973 war and its successes, Sadat was assassinated. Standing next to Sadat when he was machine-gunned to death was Hosni Mubarak, a former Air Force General who Sadat had appointed vice president. Fortunately for Mubarak and other ministers, the assassins had determined that the death

of Sadat alone would be sufficient to overthrow the government in favor of the Islamists. It was a strategic error on the assassins' part. Mubarak would assume leadership of Egypt for the next 31 years, institute a permanent emergency decree, and, using his powerful internal security apparatus and military forces, squash this nascent Islamist revolution before it had a chance to grow. (Arrested as a part of the nation-wide dragnet was a young physician, who had only peripherally supported the Islamists, named Ayman Zawahiri. He spent several years in prison, was eventually released and made his way, first, to Saudi Arabia and then to Pakistan and Afghanistan in the early 1980s to join the jihad against the Soviets. In Peshawar, Pakistan, he met a young Saudi "rich-kid" Usama bin Laden, and thus began the long trail to the formation of Al-Qaeda and the 9/11 attack on the Twin Towers in New York.)

Mubarak's long tenure provided some needed political stability for Egypt but little else. Its economy only grew at a snail's pace and could not (and still cannot) provide the needed employment or educational opportunities required to sustain a burgeoning population. Over the decades, corruption became pervasive at all levels of the huge governmental bureaucracy and internal security repression was intensified. Elections were manipulated and the press censored and controlled. Like Ben Ali and his regime in Tunisia, President Mubarak, his family, and his closest ministers became arrogant and over-confident and, in their hubris, grafted billions of dollars and flaunted their wealth and acquisitions. In a nation where the average family had to live on less than 100 dollars a month, the seeds of resentment and revolution were sown.

So, suffering under a similar "kleptocracy" as the Tunisians, experiencing the same oppression and lack of opportunity, Egyptians, following the Tunisian example, spontaneously took to the streets by the hundreds of thousands and using the same technological tools of Facebook, Twitter, and cell phones to organize themselves, and despite suffering hundreds of deaths, overwhelmed the security forces and forced Mubarak to abdicate on February 11, 2011. As in Tunisia, this popular revolt was neither organized nor initiated by Islamists or religious extremists. It was clear from their attire that many of the young and middle-aged revolutionaries were secular-oriented, educated, and technologically astute professionals.⁴⁶

Since Sadat's assassination in 1981, Egypt had been living under martial law, which had subjected citizens to arbitrary detention for prolonged periods without any requirement for due process. Worse, torture and brutality were rampant and routine for those incarcerated. Coupled with corruption, high unemployment, and lack of opportunity, the groundswell of revolt proved irresistible. Egypt's government is now being administered by a council of senior military officers, who held the first of these electoral parliamentary rounds in December 2011. One hopes that the march down the democratic avenue will not be detoured, but the tenuous state of the Egyptian economy,

always one shock away from collapse, could derail the electoral plan. Barring this, it appears the elections will be conducted later this year.

As in Tunisia, there is now a frantic effort on the part of the population to organize political parties and begin the campaign for election. This is no small task, especially in light of the fact that after decades of essentially one party rule, there is an obvious dearth of political experience. But the population is eager and motivated and certainly has the collective energy and will to conduct this great undertaking. The expertise already exhibited by the Egyptians in organizing the revolution will certainly aid this endeavor. But as the new parties attempt to establish their platforms and begin the campaign, there is one bloc that already possesses the organization, the discipline, and the support of at least 30% or 40% of the population: the Muslim Brotherhood. Since its formation in 1928, through the 1945–1949 Jihad against the British and the Egyptian monarchy, and in spite of its repression by Nasser and his successors from 1954 until today, the Brotherhood has persevered and is still a major influence on Egyptian society.

4.5.2.1 The “Ikwan al-Muslimun” (The Muslim Brotherhood)

By the 1970s, a majority of the Brotherhood’s leadership realized that violence was counter-productive and only resulted in increased governmental repression. (A minority disagreed, split from the organization, and carried out the assassination of Sadat and other acts of terrorism during the 1980s and 1990s. Known as the “Gaamat Islamiyya,” the Islamic Group, they never garnered popular support and were finally subdued by the government.) Thus, the Brotherhood publically renounced violence and stated it would work within the political system, but they never dropped their slogan and motto: “Islam is the Answer.” Quietly integrating themselves into all levels of the society and gathering substantial support, the Brotherhood has engendered immense good will among the poor, the unemployed, and the illiterate who compose the majority of Egyptian society. Its medical clinics, schools, civic projects, and charitable activities (as previously mentioned) put a constructive and peaceful face on their activity. But their ultimate goal, never foresworn since 1928, is the establishment of an Islamic, Sharia state in Egypt.

The Brotherhood has learned patience over the last 80 years, and they have publically stated, defusing any worry as to their motives, that although they will energetically participate in the elections in November 2011, they will not submit a candidate for president and will not seek to gain more than about 50% of the seats in the legislature.⁴⁷ This is a wise and sound strategy, which will promote much good will, public approval, and even international acclaim. They have even titled their new political organization “The Party of Freedom and Justice.” What could be more appealing and nonthreatening? (A cynic might consider that the Brotherhood understands that being the first political party or coalition leader to take the reins of government under

such dire economic straits, but with such high expectations among the populace, is a risky course of action. An attitude of “It is very dangerous, you had better go first” is probably very prudent at this time.)

Whatever government is elected and constituted in November 2011, it faces herculean tasks. The citizenry, now that Mubarak is gone, will expect a quick end to corruption and an immediate turnaround of the economy. If the efforts of the first coalition fail, the Brotherhood will not be blamed and they can then emerge as the solution, touting their slogan “Islam is the Answer.” But even as a new government takes hold, the Brotherhood will neither cease their charitable and civic efforts nor their role as the shadow government in many locales. The successes of these initiatives already have, and will continue, to stand in stark contrast to the former, and most likely the new, government’s inability to provide for its citizens. Additionally, given an Egyptian illiteracy rate of an astounding 40%, the Brotherhood, through its private tuition-free schools, has generated huge support among this stratum of society, which will translate in votes now and in the future.⁴⁸ Now that the government’s repression of Islamists has been largely lifted and the Brotherhood has the green light to fully participate in the political process, even they (the Brotherhood) may have a difficult time restraining the energy and enthusiasm of the more militant factions. Several troubling events of the last few months indicate that the Sharia supporters will not be silenced. Certain more radical elements are demanding an immediate abrogation of the peace treaty with Israel.⁴⁹ These same elements also demand that Egypt halt its export of natural gas to Israel and remilitarize the Sinai, which is presently a neutral zone, as dictated by the 1979 treaty. Moreover, there was an incident involving Egypt’s most famous international personality, Muhammed el Baradei, who has long served as the head of the International Atomic Energy Agency (IAEA) and was admired for his opposition to the Mubarak government. A candidate for the new presidency, he is considered a secularist. Yet even he was maltreated and actually pelted with stones by Islamists and forced to withdraw from a political rally in Cairo on March 19, 2011, as he attempted to address the crowd. Calling him a tool of America, the Islamists demanded he leave Egypt.⁵⁰

A second issue concerns the constitutional amendments approved by popular ballot on March 19 and 20, 2011, which greatly assist the Islamist factions and their quest for power.⁵¹ Despite Islamist assertions to the contrary, the abiding concern is that the November 2011 elections could consist of a “one person, one vote, one-time” scenario, which elects a majority of Islamists to the legislature, who in turn vote to dissolve the new secular state and establish a Sharia government.⁵² In this regard, it has been reported that ad hoc Sharia courts have already popped-up in various places in Egypt. Reportedly, these courts have tried those accused of violating Islamic law, rendered verdicts, and then carried out punishments. In one village in south Egypt, a Christian man,

who had rented an apartment to a single woman, taboo under Sharia law, was found guilty and had his ear cut off as punishment and warning to the others.⁵³ Further evidence that a secularist loss of control of the momentum from the January 2011 revolution may be in the offing is the report that not only were Sadat's assassins released from jail, to a huge and very public celebration, but also the new military council, at the urging of the Brotherhood, allowed the repatriation of more than 3000 Muslim Brotherhood activists who had fled to Iran, Afghanistan, Bosnia, and Somalia.⁵⁴ These activists sought exile to avoid prison. Many are from the more radical wing of the Brotherhood's membership and are militant pietists who will be expected to agitate and demand more Sharia and less secular ideology in Egypt as well as push for an end to Egypt's cooperation with the United States and Israel.

Additional information that the Brotherhood's supposedly more lenient and moderate attitude should be taken with the proverbial grain of salt is the old Islamic tactic of deception in war. The Prophet famously stated "All war is deceit."⁵⁵ (The renowned Sun Tzu writing in his classic 400 BCE text "The Art of War" also averred that "All warfare is based on deception.")⁵⁶ Islam has long practiced deception in its many wars and conflicts of the last 1451 years. Most in the West do not understand that the Prophet was not just a religious leader, but also a political leader and military leader of some renown. He personally participated in more than a score of battles with his Arabian enemies and commissioned a score more campaigns that were carried out by his generals. (In fact, at the battle of Uhud in 624 CE, Muhammed was grievously wounded and almost killed.) But he taught that Muslims can, when weak or outnumbered, sue for peace or agree to a truce (*hudra* in Arabic) and comply with that agreement for as long as it takes to reconstitute their strength or achieve superiority. The truce or treaty previously agreed to can then be abrogated without notice at some future date with no shame or loss of honor. Basically, if used to promote the advancement of Islam, Muslims can lie to unbelievers.⁵⁷ Some observers consider that under the specious guise of moderation, the Brotherhood has developed an alternate plan, based on "*hudra*," for seizing power in Egypt. Offered as corroboration is an interview conducted by the Wall Street Journal on April 2, 2011, with the dean of all American Arabists, the eminent Bernard Lewis:

"Hasty elections, which could come as soon as September, might sweep the Muslim Brotherhood into power and that would be a very dangerous situation" he warns. "We should have no illusions about the Muslim Brotherhood, who they are and what they are about."⁵⁸

Who they are is easy to answer: they are Islamists (political and ideological Muslims). What they want, and have always wanted for Egypt and the other Muslim countries, is the establishment of a Sharia or Islamic Law government.

4.5.2.2 The Counterweight to the Brotherhood: The Egyptian Military

The other organized, disciplined power center in Egypt is the military, especially the Army. Despite Mubarak's fall, the military remains in firm control of the government and bureaucracy, and in truth has done so since 1952. Nasser, Sadat, and Mubarak were all military officers and their power base resided in the military services. It is safe to assume that the military establishment will not want to relinquish its control. As Eric Margolis notes, the "Egyptian generals own tourist hotels, apartments, factories, telecommunications, and drug firms," and are joined at the hip, so to speak, with the wealthy business class, who also do not desire radical change.⁵⁹ Additionally, Egypt receives almost two billion dollars a year in military aid from the United States and this will continue as long as Egypt abides by the 1979 peace treaty with Israel. Even more important for the economic health of the country are the foreign subsidies for its grain imports. The military will be resistant to major changes in Egyptian foreign policy that might endanger these military and agricultural grants. So they represent a very real counterweight to the Brotherhood, or at least its more radical elements.⁶⁰ But do not forget that the majority of Egypt's soldiers, and its population for that matter, are conservative Muslims who will sympathize with many of the Brotherhood's goals. So the tug of war that will play out between these contending power centers will determine Egypt's direction. In this regard, as noted by Mr. Lewis in his previous quote, one can envision the military and the Brotherhood cutting a political deal of sorts. It could be that foreign policy remains the responsibility of the military establishment while the Brotherhood is given greater latitude to implement a limited Sharia program internally. (This is the precise deal the Saud family cut with the Wahabbi radicals in Saudi Arabia.)

It is our opinion that the composition of the new Egyptian government will be mostly secular and pluralistic but contain a significant Islamic presence, at least initially. But within a few years, given Egypt's extremely difficult and complex economic and social problems, we believe the population will become disillusioned with democracy and secularism and, given the constant agitation by the Brotherhood to enact more Islamic-oriented legislation, agree that "Islam is the Solution." Already Islamists are campaigning for more conservative dress by women, even Christian women.⁶¹ In April 2011, other Islamists demanded the ouster of a Christian Governor of one of the southern provinces. In Islamist ideology, Christians should not rule over Muslims. This does not bode well for the future of the secular democracy most Egyptians now expect.⁶² Remember that the Coptic Christians compose 10% (or more) of Egypt's population and they will never support Sharia, although in the end they may have no choice. Since Nasser's time, the Egyptian government has kept the lid on Muslim-Coptic violence. The next government, whatever its

form and composition, must do the same. However, it will face increasing pressure from the more militant Islamists to discriminate against the Christians and deny them some of their civil or religious rights. A guess is that one of the first items of legislation that the Islamists will attempt to pass will be a complete ban on alcohol consumption for all citizens, regardless of religion. Other discriminatory laws will also be introduced, laws that favor Sharia and deny other groups' freedom. This will be one of the new government's primary tests: how to balance the Islamist demands with the Egyptians who are Christian as well as those who want the secular model to remain in place.

There is also a distinct possibility that the Islamists will lose patience with the political process and, utilizing their disciplined and cohesive organization, justify ruthless actions based on the self-serving assertion that "God demands it" and simply seize the course of revolution and install Sharia rule immediately. The result of this would be civil war and slaughter, but with the Islamists, the end (Sharia and abiding God's will) always justifies the means, and, of all the Egyptian political factions, they ultimately possess the will and ruthlessness to pursue this course to victory. For Islamists there is no concept of a separation of church and state. When Jesus taught his followers to render unto Caesar the things that are Caesar's, he laid the groundwork for the Western practice of separating these two conflicting power centers, one spiritual and one temporal. But in the Islamist world there is no Caesar, only God. This is of course the worst case scenario, but it is totally plausible.

In this light, there was a troubling event recently witnessed in Egypt. There was the huge and enthusiastic reception on February 18, 2011, in Cairo's Tahrir Square, ground zero of the insurrection, applauding Sheikh Yusuf al Qaradawi as he delivered an Islamist harangue and voiced contumely against Israel and America. Qaradawi is a professional Sunni theologian who is very influential in the Arab world. He has infamously approved the death sentence for apostasy (abandoning the Muslim faith for another), issued a fatwa (religious edict) allowing suicide attacks against civilians in Israel, and has even bragged that Islam will conquer Europe.⁶³ His popular acceptance and support does not auger well for democracy as we expect it, especially when one notes that a popular secular politician was denied the right to address the crowd at the very same rally.

To be or not be (a democracy)? That is truly the question Egypt faces. In the end, it is up to the Muslim Brotherhood and the military services to decide along with the Egyptian people.

4.5.3 Libya: Tripping Over the Tribes

The Libyan nationally advertised and scheduled "Day of Anger" on February 17, 2011, ushered in its turn at revolution.⁶⁴ Initially, it modeled the foment in Tunisia and Egypt, as crowds of educated but unemployed youth

and middle-aged men took to the streets and used Twitter and Facebook to organize the protests and demonstrations. But violence quickly escalated. Within a short time it seemed that armed rebel bands emerged from the eastern area of the country and the fight with the government was on. At first, the rebels gained momentum and swept westward toward Tripoli, the capital, in a rather hurly-burly fashion, driving old pick-up trucks, commandeered buses, and private cars, all the while chanting slogans and shouting threats of death and destruction against the Libyan leader of 41 years, Muammar Qaddafi. For a time, it looked like the end of the road for this infamous dictator. But Libya's tribal fractiousness soon emerged, changed the dynamic of the struggle, and in a classic example of "reversal of fortune" swung the momentum back towards Qaddafi and his military forces. Then just as suddenly, the countries of the North Atlantic Treaty Organization (NATO) intervened militarily in support of the rebels.

Named in Roman times after the Libu tribe that inhabited the area, what is now Libya, and most of North Africa in fact, was settled by Latin and Roman colonizers after the Third Punic War (146 BCE). The fertile North African coastal belts were farmed and cultivated for centuries after that and helped to provide ample food for Rome's burgeoning population. Conquered by Arab Muslim invaders by 647 CE, Libya has remained firmly Islamic in character ever since (even though Italy colonized the country in 1911 and administered its government until the end of World War II). In 1952, the United Nations granted Libya independence and King Idris (Arabic for "Enoch") became its regent and ruler. Idris had been chosen as King, in part, because he had been a long-time and contumacious resistor of Italian colonialism.⁶⁶ He was overthrown in 1969 by a small group of military officers led by Muammar Qaddafi, who remained as the sole national executive until he was captured and killed by rebel forces on October 20, 2011.

Unlike Tunisia and Egypt, many Libyans consider their tribal affiliations more important than their national identity. Basically, they think of themselves as a "Qadaffa" or a "Warfalla" first and as a "Libyan" second. Idris, hailing from the Cyrenaica province in the eastern part of the country, was the champion of the tribes inhabiting that area. Although the Romans and other invaders had resided on the coastal belts, most of the Arab population was migrant and organized into traditional family, tribe, and clan units. What is known as Libya today was historically divided into three provinces along tribal lines, Cyrenaica in the east, Tripolitania in the northwest, and Fezzan to the southwest.⁶⁷ The King had hoped to garner the loyal support of the dominant tribes of the other two areas, Tripolitania and Fezzan in the west and southwest, as well, but had not yet consolidated his rule when he was deposed. There are about 140 different tribes and clans in Libya but only about 30 have "demonstrable influence."⁶⁸ Qaddafi, from the very beginning of his reign, and apparently wisely it seems ensured that his tribe, the

Qaddafi, one of the smaller tribes composing Libya's population, was allied with the larger Warfalla and Margharha tribes of the western regions of Tripolitania and Fezzan. These larger tribes were then the recipients of his economic and oil wealth largesse. (It appears that these tribes at first supported him at the outbreak of the insurrection or at least remained neutral.)⁶⁹ By shifting the locus of national power and economic opportunity to his own native Tripolitania and away from the Cyrenaica area, Qaddafi created long-standing resentments among the eastern tribes that bubbled to the surface during the present upheaval. It is no coincidence that the genesis of the revolt occurred in Benghazi, the main city of the Cyrenaica region.

At first it appeared that the rebels would achieve an easy victory and that the disaffected masses of a third Arab country, in as many months, would oust their longtime oppressor. But though initially caught unprepared and pushed off balance by the rebel offensive, Qaddafi's military forces gradually regrouped, counterattacked, and not only halted the rebels' momentum, but in fact pushed them back into Cyrenaica. Although enthusiastic and full of energy, the ragtag rebels, undisciplined and lacking cohesion (not to mention adequate weapons and munitions), at first proved no match for Qaddafi's small, somewhat marginally trained, but adequately equipped tribal militias and armed forces. As noted by one reporter of *The New Yorker* magazine, dispatching from Libya:

For many of them (the rebels) the fighting consists largely of performance, dancing and singing and firing into the air...until they are sent scurrying by Qaddafi's shells.⁷⁰

The rebels were initially poorly led, virtually untrained, and woefully out-gunned. Only NATO's intervention, with air sorties attacking and destroying some units of Qaddafi's armor and mechanized forces, halted the rapid ebb of rebel fortunes and prevented a complete rout and slaughter of fighters and civilians alike. Thanks to thousands of NATO air strikes, the tide turned once again and it was Qaddafi and his supporters who faced annihilation.

Like many dictators, ever concerned about his survival, Qaddafi purposely kept his military force relatively small and frequently changed unit commanders, while at the same time establishing an effective police state that turned Libya into, as one commentator has expressed it "...a giant prison."⁷¹ Long the international gadfly and provocateur (Libya supported international terrorism from the 1970s through the 1990s, invaded and occupied its southern neighbor Chad, and generally opposed all U.S. foreign policy initiatives in the Middle East), Qaddafi was wise enough to radically change his (and Libya's) behavior when he sensed that America might have had enough of his antics and that he would, in turn, suffer the same fate as Saddam Hussein. In 2003, just after the Iraqi government was taken down by

U.S. military forces, he publically announced that Libya would abandon its pursuit of weapons of mass destruction, cease all terrorist activities against the West and the United States, and in a surprising gesture, even compensated the families of the 243 victims of the Pan American Flight 103 that exploded over Lockerbie, Scotland, in December, 1988 (in which Libya was implicated) to the tune of more than a billion dollars.⁷²

Moreover, knowing that his regime represented the prime example of an apostate Muslim ruler, as identified by the jihadists of Al Qaeda, Qaddafi moved to suppress the Islamist urges of his citizens as well. Libya outlawed all Islamist activity and actively pursued any citizen professing an Islamist creed. Interestingly, it is known that most of the thousands of Libyans who traveled to Iraq and Afghanistan to fight the American and Coalition Forces emanated from Cyrenaica in the east of Libya. The Canadian paper, the *National Post*, cited a Canadian intelligence report in 2009 that identified eastern Libya as the “epicenter of Islamist extremism” in that nation and that the mosques there had long been urging its followers to travel to Iraq to conduct jihad against the Americans.⁷³ There is no doubt that Islamist elements are participating in the fight against Qaddafi, although at this point, no one is sure of their exact numbers or combat effectiveness. If it is true that there are thousands of them, many of whom have seen combat in Iraq and Afghanistan, this element could represent a vanguard for the rebels to rally around. What is even more ironic is that the United States and NATO are now “allied” with normally anti-American Islamist organizations and Al Qaeda elements that are fighting in support of the rebels. At the same time, we are fighting against a national leader who has actively sought to purge his nation of these extremist groups. Politics certainly does make strange bedfellows.

So the assessment for Libya is this: Qaddafi’s rule is over and a new national transitional government will be formed. But given the very real tribal divisions, as well as a sizable jihadist or Islamist participation in the rebel cause, coupled with absolutely no Libyan tradition of democracy, the civil war could continue indefinitely as tribes or the jihadist factions attempt to enforce their will. Libya has a long secular tradition that many Libyans will be loath to abandon. But the jihadists have a unique opportunity to establish an Islamist state in a country previously violently hostile to jihadist aims. The temptation may prove too great and we could see continued fighting between the jihadists and the more secularly inclined Libyans or between the tribes of east and west. At this point, it is doubtful that the jihadists will prevail in this struggle, especially in western Libya, which is dominated by the larger and most powerful tribes. Strong Sharia governments tend to reduce tribal authority, and it is not in the interest of tribal elders, even though many are very pious and conservative Muslims, to erode their own positions. Since we still do not know very much about the make-up of the rebels, the future is clouded. The revolutionary dogs are in for a long run.

4.5.4 Bahrain: Small Island—Big Prize

The island nation of Bahrain is actually a small archipelago in the west central Persian Gulf (or Arabian Gulf, depending on which shore you are standing) composed of about 30 islands, many uninhabited. The largest is Bahrain Island, just 30 miles long and 10 miles wide. The 2010 population estimates are 1,200,000 but more than 200,000 of that total are foreign nationals, who do the day-to-day craft and traditional labor work.⁷⁴ Bahrain, in Arabic, literally means “two seas” and before the discovery of oil, trade, fishing, and pearl diving were its main industries. Bahrain is no longer a significant producer of petroleum, but an oil field shared with the Saudis still provides three-fourths of the national budget. Bahrain has a well diversified economy, and banking and finance are also major industries.⁷⁵ Long ruled by the Persians, who first arrived in 600 BCE, Bahrainis adopted Islam as their religion by 629 CE (it had previously been a center of Nestorian Christianity). This is quite early in Islamic history since the Prophet’s mission only began in 610 CE. The present ruling dynasty is the Al Khalifa family who actually moved to Bahrain in 1797 from Kuwait and by 1820 had entered into a treaty with the British, and using the British navy as a shield, the family took control of the island from the Persian ruler.⁷⁶ In essence, abiding by the rules of international power politics of that era, the Khalifas, with British collusion, stole the island from Iran “fair and square.” But memories, especially insults to national honor, are long in this part of the world and the seeds of today’s problems were sown at that time.

The Khalifas are adherents to Sunni Islam, although a majority (seventy percent) of the Island’s population practices the Shia version. The 70% that is Shia is also racially Persian, not Arab, although Arabic is the language spoken by most. The divide between ruler and ruled runs deep and represents the fundamental issue fueling the present unrest.

But the larger issue that forms the backdrop and overshadows the popular demonstrations and outright revolt we are witnessing in Bahrain today is the very real regional power struggle between Saudi Arabia and Iran. In many ways, little Bahrain is a pawn in a lengthy grudge match for control and domination of the Gulf and its oil wealth and, ultimately, who will control the future of Islam itself. To understand this very raw issue, we must first discuss the genesis of the deep doctrinal and theological contentions that have divided Islam for the past 1400 years.

4.5.4.1 *The Sunni–Shia Split*

When the Prophet died in 632 CE, all Muslims knew that Muhammed was the last Prophet and Messenger of God and that there would be no other. (The Qur’an states that God sent 124,000 prophets and messengers to the earth between the first, Adam, and the last, Muhammed. Although all messengers are prophets, most prophets are not messengers. The distinction is that a

messenger receives a “book.” For example, Musa [Moses] received the Torah; Malik Daoud [King David], the Psalms; Isa [Jesus], the New Testament; and Muhammed, the Qur’an.) Muhammed’s mission was to correct the errors that had accreted onto Judaism and Christianity, rid Arabia of paganism, and establish, once and for all, how mankind was to worship the Creator and live the righteous life on earth the Creator demanded. Once instituted, all future generations would have the divine blueprint for a successful life, which, if followed faithfully, would result in attaining paradise upon the Last Day (of Judgment). But Muhammed died before naming his political heir and the community (Umma, in Arabic) faced a challenging succession problem. After all, Islam in 632 CE was a relatively small, but dynamic and burgeoning, religious movement that had just united all of Arabia under its banner and, filled with the new convert’s zeal, was ready and most willing to carry the good news of God’s updated mandate to the rest of the world. In typical Bedouin Arab fashion, the majority of the Umma decided that the most pious elder of the community, the man who most epitomized Muslim virtue, but who was also wise and respected, should assume leadership and become the Prophet’s successor (Caliph, in Arabic). But a smaller faction vehemently demanded that only a member of the Prophet’s family and his future progeny should inherit this mantle. They desired that the first successor should be Ali, the Prophet’s nephew and son-in-law (he had married the Prophet’s daughter, Fatima). Ali was a popular figure in early days of the religion. He had been the second convert to Islam after Muhammed had proclaimed his mission (the Prophet’s wife Khadija had been the first) and was a renowned warrior and a respected leader. (Ali eventually became the fourth caliph but his reign was a relatively short 5 years and was marked by constant military activity.) The struggle over this issue ensued for decades and finally culminated in 680 CE at Karbala, in what is now Iraq. There, the Prophet’s grandson, Hussein, and his small party, contesting the supremacy of the new caliph, whose new dynasty had been established at Damascus, was massacred by a much larger force of Muslim warriors loyal to the Sunni faction. To make matters worse, this new caliph, Yazid, was from the Umayyad tribe, which had been one of the last Meccan tribes to convert to Islam and had fought against Muhammed for a decade and attempted to kill him and Islam itself in a number of battles. Now these former persecutors were leading Islam! The partisans (Shia or Shiite in Arabic) of Ali and his son, Hussein, were outraged and the cleft was made permanent by this military action as the Shiites refused forever more to accept the Sunni domination and leadership of the religion.

The Shiites have always formed a distinct minority of Islam, never totaling more than 10%–15% of its adherents. But it was not long until the Shiites established themselves in Persia and gave rise to their own dynasty and Islamic empire in Central and South Asia that has rivaled the Sunni

dynasties, first controlled by the Arabs, and then by the Ottoman Turks (beginning in the 1200s CE).

But here is the main issue and how it relates to Bahrain. The ultra-orthodox Sunnis, such as the Wahabbis of Saudi Arabia, the Deobandis of Pakistan and India, the Taliban of Afghanistan, and the Muslim Brotherhood of Egypt, Jordan, and Syria, consider the Shiites to be heretics, apostates, and blasphemers, in the full sense of those words. These are crimes in Islam, some punishable by death. After long study and observation, it can be opined that from the Sunni point-of-view, *the Shiite cannot be in charge of the religion or rule over Sunnis*, period. It would be as if the world woke up one morning and discovered that Arian or Nestorian heretics had taken over the Vatican. It just cannot happen. So the Sunnis have violently opposed Shiite pretensions, and often their very existence, for the past 1400 years.

But Iran is a Shiite nation and has always been a regional power in South Asia. Since 1979, and the Shiite revolution which overthrew the Shah, Iran has emerged as an energized and militant Shiite force that has asserted itself across the Middle East. Ayatollah Khomeini realized that the Shiite represented a distinct majority, not only in Iran, but also in neighboring Azerbaijan, Iraq, Lebanon, and Bahrain, with sizable Shiite minorities in Yemen, Syria, and Afghanistan. He sought to galvanize these co-religionists and urged the Shiites to adopt a militant and martial policy in lieu of the centuries' long pacifism they had practiced while being persecuted by the Sunni majority. Khomeini had plans to dominate the region, the Gulf and even Islam itself. This legacy has been passed to and adopted by the present Iranian leadership.

Enter Bahrain. As mentioned previously, the Shiites represent 70% of the population of this island. The Khalifa, who are Sunni, are but 30%. The island belonged to the Persians until the early nineteenth century. The Iranian irredentists want the island back under their suzerainty. The Sunni populations of Saudi Arabia, Kuwait, Qatar, and the United Arab Emirates (UAE) may total 30 million. The Iranians alone have a population of 80 million, not counting the 20 million Shiites just in Iraq. The Shiites outnumber the Sunnis in this strategic region. (But remember, majority or not, the Shia cannot be in charge because they are heretics, etc. In the conservative Sunni mind, it is a grave sin to allow heretics to rule.) The Sunni faithful in Bahrain believe, rightly or wrongly, that shortly after the Shiites ascension to power, the American 5th Fleet, which took the place of the British after World War II and guarantees Gulf security (i.e., keeps the Iranians from invading Bahrain and ensures safe passage along the shipping lanes carrying all that oil), would be expelled from Manama. Soon after, Iranian ships would replace the departed Americans. This is their great fear and to a certain extent it is valid. (Ayatollah Khomeini, ever the revanchist, in 1971, years before he assumed power, bitterly criticized the Shah for formally renouncing any historical claim to Bahrain by Iran.

The Shah is long gone and the mullahs who lead Iran will not abide by any promises the Shah may have enunciated.)⁷⁷

Bahrain is only 16 miles by causeway from eastern Saudi Arabia. This area also happens to be where the vast majority of Saudi oil is located and, by coincidence, is also inhabited by one to two million Saudi Shiites, who are concentrated in this region. The possible proximity of Shiite Iran and its military to this vital area concerns the Saudis greatly. And well it should. The Saudi Shiites have not been well treated by the Saudis and the Sunni Wahhabi sect that dominates Arabia. Consequently, the Saudi Shiites have a long list of grievances to settle. For the Sunnis, the Shiite assuming control of Bahrain is a slippery slope to disaster. They cannot allow the Khalifa to be overthrown by these heretical usurpers or even suffer a slight diminution of their power. From both the Sunni and American foreign policy perspectives, the American 5th Fleet must remain in Manama at all costs. Sunni domination and Saudi Arabian security depend on it.

So the stakes are high. In early March 2011, the world witnessed the intervention in Bahrain by Saudi and UAE troops to prop up and rescue the Khalifa monarchy. The Saudi simply drove over the 16 mile causeway, which had been erected starting in the 1980s, in part, for this very purpose. The Saudis concluded decades ago that at some future time they might have to secure Bahrain from a Shiite revolt or an Iranian invasion. They were right. It is a well constructed four lane highway and can easily accommodate heavy military traffic. Although the Iranians vehemently deny it, the Sunni Arabs aver as an irrefragable truth that Iranian or Lebanese Shiite (Hezbollah) agitators are stirring up the Shia faithful on Bahrain. After all, for the Iranians this would be a low risk, high reward venture, which, if successful, could change the balance of power in the Persian Gulf in Iran's favor. The Bahraini unrest therefore is quite different from that witnessed in North Africa. The Bahraini insurrection is fundamentally sectarian in character. But the Saudis, by invading Bahrain, have left the door open for Iran to also take military action to protect their co-religionists as well. An Associated Press dispatch of April 23, 2011, accentuates the sectarian nature of this struggle. AP reported that Bahraini authorities have destroyed 16 Shiite mosques as "punishment" for the weeks of anti-government protests.⁷⁸ It is indicative of the lack of respect that Sunnis hold for the Shia and is at the root of the problem and unrest in Bahrain. In the Sunni cosmology, the Shiites are to be ruled with an iron-fist and barely tolerated. (Among the ultra-orthodox Wahhabis, Deobandis, and Taliban they can be massacred as well.) The Sunnis will not hesitate to use violence to prevent the Shiites from toppling the Khalifa family. Their only consideration will be how much violence they can get away with before the Iranians threaten to intervene.

So the Bahrain assessment is a relatively easy call. The Sunnis must hold onto Bahrain at all costs both for strategic political reasons (Iran on

their doorstep) and for fundamental theological dictates, since it would be a major sin to allow heretics to seize power. We think they will succeed and the Bahrain revolt will be put down. (On the other hand, if the Shiites do succeed in overthrowing the Khalifas, it will mark an important turning point and Iran's long sought domination of the Gulf will have begun.) So the Khalifas must and will survive and the status quo will be retained.

4.5.5 Jordan: The Once and Future Palestinian Homeland

Jordan, like Lebanon, Syria, Iraq, and Israel, was created in the aftermath of World War I and the subsequent collapse of the Ottoman Empire and the Islamic Caliphate, which had ruled these areas for hundreds of years. The British and French, by virtue of secret negotiations over many months beginning in 1916, divided the area in two spheres of influence, with Lebanon and Syria assigned to the French and greater Palestine and what is now Iraq ending up in the British sphere. But the British had also made commitments to Theodore Herzl's Zionist movement to establish a Jewish homeland in Palestine and thus, London allowed Jewish migration into the region (which became a flood after World War II and the Holocaust). Two countries eventually emerged from this territory, Israel on the west bank of the Jordan River valley and the Hashemite Kingdom of Jordan to the east.

The "Hashemite" moniker confers legitimacy on the Jordanian Monarchy among most Arabs and Muslims. The Hashemite clan traces its ancestry back to Hashimi ibn Abd al Manaf, who was the great-grandfather of the Prophet Muhammed. By virtue of their bloodline, the Hashemites established an Arab dynasty of sorts in the Hejaz region of eastern Arabia and made themselves the Sherifs (religious leaders) of Mecca and Medina, Islam's two most holy sites. (Being the Sherif of Mecca especially conferred great honor and responsibility on the clan, as this is the city to which millions of Muslims come each year to make the Haj pilgrimage, one of the five pillars of the Muslim faith that every able-bodied Muslim is expected to conduct at least once in their life.)

Long an ostensible vassal of the Turkish Sultan, the British convinced Sherif Hussein, in 1916, to revolt against the Ottomans and side with the Allies during World War I. Dispatching the famous Thomas Edward Lawrence (of Lawrence of Arabia fame) to organize and spur on the Arab revolt, the Arabians were instrumental in conducting a viable guerilla war against the Turks and even seized the important port of Aqaba at the north end of the Red Sea, thus allowing the British to establish a bridgehead that threatened Turkish holdings in eastern Palestine. The British had made many promises to Sherif Hussein to entice him to support their efforts against the Turks and even fulfilled a few of them. The Hashemites were left control of the Hijaz region, although the larger promises of a greater Arab nation (ruled by the

Hashemites, of course), which included Palestine and what is now Syria, were quickly forgotten. To make matters worse, by 1925, the Hashemites had been expelled from the Hijaz, as the other British client in Arabia, the powerful Saudis, swept in from the eastern side of the country and united all of Arabia under their rule.

Ever the practical men of action, the British, still grateful for Hashemite support, decided to install several of Hussein's sons as the monarchs of the newly created kingdoms of Iraq and Transjordan (the western area of Palestine, promised to the Jews, was now a League of Nations territorial mandate). Faisal was enthroned in Iraq and his family's rule lasted until 1958, when the royal family was murdered in a coup d'état led by Army general Abd-al Karim Qasim (who was overthrown a few years later by the Baathists from which Saddam Hussein eventually emerged to run the country). More germane for us, Hussein's son, Abdallah, was crowned King of Transjordan. The British, of course, never really consulted the Palestinian Arabs, who inhabited the region at the time, as to the choice of their leader or government. An underlying tension between the Palestinians and the Hashemites who migrated into Jordan to join their monarch (and the Bedouin Arabs who already lived there) has simmered ever since. Despite the presence of a Hashemite on the throne, the British, for all intents and purposes, ruled Transjordan until 1946, when after World War II, it was granted full independence (and dropped the "trans" from its national title). In 1951, King Abdallah was assassinated by a Palestinian Arab while he was praying inside the Al Aqsa Mosque in Jerusalem. Many Palestinians had considered that Abdallah had not done enough to stop the creation of the state of Israel in 1947, which had resulted in a great Palestinian Diaspora engendering, of course, much anger and resentment. (Abdallah's 15-year-old grandson, Hussein, was praying with his grandfather at the time of the assassination, but survived. He was crowned king in 1953 and ruled until his death in 1999.)

But Israel's creation further defined the boundaries of Jordan, which received the city of Jerusalem and the West bank of Palestine as a part of its administration. Both of these areas were subsequently lost in the 1967 War with Israel, the conflict that was so devastating to Jordan as well as Egypt, which saw the entire Sinai Peninsula captured by the Israeli army, and to Syria, which saw Israeli occupation of the very strategic Golan Heights. Worse for Jordan, the aftermath of the 1967 war generated the rise of numerous militant Palestinian groups, collectively called the Palestine Liberation Organization (PLO), the largest segment of which was FATAH ("conquest" in Arabic) headed by Yasir Arafat. These Palestinian paramilitary organizations soon became a virtual "state within a state," launched deadly raids into Israel from Jordanian territory (to which the Israelis retaliated) and essentially challenged the Hashemite monarchy for the control of the country. For a time, in the late 1960s, it looked as if the question of a Palestinian homeland

would be settled with the Palestinian takeover of Jordan. Surviving at least 12 assassination attempts, King Hussein, after a very close call in 1970, ordered his military to expel the PLO from Jordan. Violent and bloody civil war began in September 1970 and lasted until July 1971, in which thousands died, mostly Palestinian. The PLO was forced to emigrate and decamped to Lebanon. (The presence in Lebanon of the armed and violent PLO eventually resulted in the destabilization of that country. Bloody and horrific sectarian violence ensued in the 1970s and caused the Israeli invasion, to expel the PLO once again, in 1982. An offshoot of the PLO, recalling what they saw as the Jordanian perfidy of the 1970, took the moniker of “Black September” and launched a bloody terrorist campaign that hijacked numerous civilian aircraft, assassinated Jordanian diplomats around the world, and most infamously killed 11 Israeli athletes at the 1972 Munich Olympic games.)

The Palestinians, who compose an estimated 70% of Jordan’s present population of six million, are beginning to make their voices heard once again. Jordan has been politically quiescent, for the most part, since the 1970s as both sides tried to avoid a repeat of the debilitating civil war. (The fact that the fighting killed or expelled the most militant Palestinians helped to calm the situation.) But King Hussein and, now his ruling son, King Abdallah II, have had to consider and support Palestinian political opinion, at times to Jordan’s political detriment. King Hussein unwisely sided with Saddam Hussein after Iraq’s invasion of Kuwait in August 1990, and thus incurred the wrath of the Saudis and the Gulf Arabs, not to mention the displeasure of the United States. Jordan, with its paucity of natural resources, relied extensively on Saudi petro-dollars and United States’ military aid and thus suffered a time in the economic and diplomatic wilderness in the 1990s. But King Hussien considered he had no choice, since it was apparent that the vast majority of his Palestinian subjects enthusiastically supported Saddam’s incursion. (The fact that Saddam had promised to share the seized Kuwaiti oil money with the Palestinians certainly encouraged this enthusiasm.)⁷⁹ Jordan’s support of Saddam did much to shore-up the popularity of the Hashemite monarchy among the majority Palestinian population and helped to keep a lid on tensions during the 1990s and early 2000s.⁸⁰ But the threat of fragmentation due to demographics certainly remains a clear and present danger for the Hashemite kingdom.⁸¹ In late December 2010, preceding the “Arab Spring” protests which began in January 2011, the Jordanian capital of Amman witnessed several large riots between Jordanians of Bedouin descent (who have been staunch supporters of the monarchy) and those Jordanians of Palestinian heritage. These occurred after soccer games and resulted in much criticism of King Abdallah II’s wife, Queen Rifai (who is a Palestinian), by Bedouin tribal leaders, who have the opinion that the Queen is establishing a Palestinian locus of power in Jordan that could compete with the entrenched Bedouin centers.⁸² Like so many other nations, Jordan has seen its share of

protests since January 2011, although they have been much milder and much less violent than in neighboring Syria, for example. As noted in an Al Jazeera report in January 2011, thousands marched to protest unemployment and inflation while demanding that the country's Prime Minister, Samir Rifai, step down.⁸³ Rifai and his entire government were replaced on February 1, 2011, by King Abdallah II, who also promised economic reforms. But scattered protests have continued with calls for greater participation in the government by ordinary citizens. With such a large Palestinian population, King Abdallah II risks his throne and power if he accedes to demands for an authentic constitutional monarchy. Although there have been a few calls by some small Palestinian groups to topple the monarchy, it is the renewed vigor of the Jordanian Muslim Brotherhood that has some most concerned.⁸⁴ The Brotherhood chapter in Jordan is known as the Islamic Action Front (IAF).⁸⁵ Like many of the Palestinians who are Jordanian citizens, the IAF is also demanding changes to the election laws. As in Egypt, the fear in Jordan is that the IAF could garner significant support in the legislature and possibly a majority. The IAF maintains the same motto as their Egyptian counterparts "Islam is the Solution" and, once in power, would demand that more Sharia laws be enacted, that the secular laws already in place be rescinded, and that ties to Israel and the United States diminish.

But being a Hashemite, that is, a direct descendant of the Prophet Muhammad confers great prestige and credibility on King Abdallah II and his family. So it is likely that in spite of a growing opposition, Abdallah II can deflect calls to amend the election process and keep the IAF and more radical elements of the Jordanian Palestinian opposition at bay, at least for the foreseeable future. The mass of the Jordanian citizenry has not been susceptible to radical proposals and Abdallah II will certainly use the Bedouin/Palestinian rift to his advantage. The Hashemite monarchy still maintains the loyalty of the military and most likely a majority of the population. But King Abdallah II must find a way to reform the economy and increase economic opportunity for all Jordan's citizens or the dissatisfaction with his rule could grow.

Jordan is a progressive state in Arab terms and has an excellent educational system whose graduates find work as doctors, business managers, and professionals abroad, especially Saudi Arabia and the Gulf Emirates. This provides a safety valve of sorts, but in the long run domestic opportunity must meet rising expectations, especially among the growing Palestinian population.

So it is safe to postulate that the Hashemite Kingdom of Jordan survives the "Arab Spring" insurrections at least in the short term—three to five years. But King Abdallah II will be greatly challenged and will need to navigate the rocks and shoals of growing Islamist influence in the country and increasing political and economic expectations on the part of the Palestinian majority.

The old Bedouin guard will stand with the King for now as will the military, but the future is clouded.

4.5.6 Syria: Waiting for the Aliwaites (to Leave)

Politically, Syria represents the polar opposite of the situation found in Bahrain, where a Sunni minority is determined to maintain its rule at all costs and prevent the “heretical” Shia majority from seizing power. In Syria, the heretical (and apostate) minority is in power and has been for decades. Actually, for orthodox Sunnis, it is the worst of all worlds, as the ruling Alawis represent a separatist sect of Shia Islam. One could state, from the Sunni perspective (as a matter of fact) that Syria is ruled by a “heresy of a heresy” (the Aliwaites being considered, for hundreds of years, as a heresy of Shia Islam, while the Shiites themselves are considered a heresy of Sunni Islam. Confused yet?) Ultimately, this political arrangement is untenable. To understand how this came about, a quick review of modern Syria history is necessary.

Following World War II, Syria received its independence from the French and immediately fell into a period of political turbulence and upheaval as Syrian governments rose and fell between 1946 and 1971. In that year, Hafez Assad, the commander of the Air Force, in the last of a long series of coup d'états that seemed to replace Syrian governments every few months, took over leadership of the nation and brought a modicum of political stability to the government that existed until this year. Described as “Cold and calculating, a master of conspiracy, untroubled by conscience,”⁸⁶ Assad solidified his hold on power through brutality, mass arrests, and murder. As leader of the Syrian Ba'ath (“Resurrection” in Arabic) party, Assad was an adherent of its ideology of secular Arab nationalism and had as his primary goal the union of all Arabs into one great nation that would extend from Morocco to Iraq. (Egyptian leader, Gamal Nasser, espoused the secular, Arab nationalist ideology as his ultimate goal for uniting the Arab world as well. But he died in 1970, and Assad assumed the Arab nationalist mantle.) But Assad had to overcome a decided disadvantage in Syria before he could begin promoting what he viewed as the greater good of the secular, Arab nationalist ideology. In a nation dominated by Sunni Muslims, the Sunnis represent a 70% majority (with the capital city of Damascus having the legacy of being the seat of the first great Muslim dynasty of the Sunni Umayyads, 661–750 CE), Assad's confessional lineage was a serious handicap. For centuries, the Alawis had been maligned and persecuted as heretics by Sunni and Shia alike and considered a fringe element of Islam that deserved neither respect nor consideration. The sect had fled to the mountains of western Syria adjacent to Lebanon and did their best to remain unnoticed and not antagonize the Sunni majority.

All this changed when Syria became a French mandate after World War I and then procured its independence from France after World War II. Under the

French, the Alawi (and the Syrian Orthodox Christians) were protected minorities that were granted more or less equal rights with the Sunnis. After World War II, most Syrians embraced the secular Arab nationalist ideology then in vogue and the Alawi gravitated towards the military, which the Syrian Sunnis were slow to embrace. Only 12% of the population, the Alawis began to prosper⁸⁷ in the secular Ba'athist republic. By the time of Assad's coup in 1971, the Alawis controlled the military and Assad used this power center to cement his despotism.

4.5.6.1 Hama Rules

But Sunni Islamists, especially the ever present Muslim Brotherhood, could never abide this secular government and its Alawi ruler. As mentioned previously, the overriding unwritten theological principle is that the Shia cannot be in charge. For the very conservative Sunnis of the Muslim Brotherhood or the Saudi Arabian Wahabbis, permitting these heretical and apostate rulers to lead a country is a major sin, which must be expunged by jihad if necessary. So beginning in 1976, the Muslim Brotherhood of Syria initiated a concerted campaign to oust Assad and his Alawi-dominated government. Prominent Alawi ministers were assassinated and in June 1979, 83 Alawi military cadets were machine-gunned to death by a Sunni Syrian Army officer, a major outrage. Numerous car bombings occurred during that time in Damascus and other cities that killed hundreds, if not thousands, of civilians. To combat the growing violence, Assad "...made it a crime punishable by death to be a member of the Muslim Brotherhood, or even associated with it."⁸⁸ But even this draconian legislation did not deter the Sunni's campaign. By 1982, Assad had had enough. The city of Hama in western Syria, representing a major Muslim Brotherhood stronghold, was surrounded by the Syrian tank divisions and over a period of weeks basically leveled. It is estimated that 20,000 to 40,000 died,⁸⁹ but the Muslim Brotherhood and its challenge to the regime had been eliminated. It was a bloody and brutal tactic but most effective, and it bought the Syrian government decades of relative internal tranquility.

Hafez Assad died in 2000 and was succeeded by his son Bashar. The "throne" had originally been intended for the elder son Basil, but he died in a car crash in 1994. Bashar is an ophthalmologist by education and training, spent years living in London, and assumed leadership of Syria somewhat reluctantly. Bashar was originally viewed as a reformer by western pundits. One reporter put it this way: "There was a naïve assumption that Bashar had the makings of a modern leader because he was in part western-educated, spoke relatively good English, and married a professional woman who worked as an investment banker in London."⁹⁰ Bashar has been unable to enact any serious changes (if he ever intended to do so in the first place), for fear that the majority Sunnis will succeed to power in any democratic national election. His focus has been the maintenance of the status quo since his accession to power and it seemed to be working, at least until the winter of 2011.

The Syrian “Arab Spring” protests began in the city of Deraa, a Sunni-dominated city in southwest Syria on the Jordanian border, on March 18, 2011. By March 25, in an effort to quell the dissent, Bashar accepted the resignation of his entire government and promised unspecified reforms.⁹¹ But none of these measures have halted the protests, which noticeably increased during the summer and Bashar has now adopted a tactic out of his father’s playbook and implemented his own version of Hama rules, that is, a military crackdown, which has resulted in more than 1200 deaths so far.⁹² While he has not yet leveled any cities, the casualty rate is rising and, at some point, full scale civil war could break out. Already there have been reports of executions of Syrian soldiers who refused to shoot into the crowds of protesting civilians.⁹³ Additionally, the protests have spread far from Deraa to other large cities like Homs, Aleppo, Latakia, and even parts of Damascus.

So the regime is in trouble. Only one army division is manned entirely by Alawis, and the remainder of the rather large Syrian army is populated by the Sunni. If the revolutionary fervor infects the Sunni portions of the army, the Bashar government could fall.⁹⁴ But Syria has powerful friends, notably the Iranians and the Lebanese Shia Hezbollah militia (an Iranian Revolutionary Guard creation and acolyte). Bashar could request Iranian military assistance to maintain his rule (if he has not done so already). And the Saudis, by sending in troops to aid the minority Sunni government of Bahrain, have provided the Iranians a ready-made precedent and pretext to aid the minority Shia/Alawi government of Syria. Damascus is only a few hours by plane away from Iran. Whether Iran responds to any Syrian request for help remains to be seen, but the use of Hezbollah or Iranian troops to help keep Bashar and the Alawis in power is a distinct possibility. The Revolutionary Guards already have several bases in Syria that are used for training and arming Shia militias.⁹⁵ There have been reports that the Iranian commanders, who brutally put down the Iranian protests over the falsified elections in June 2009, have visited Damascus recently to assess the situation and consider options.⁹⁶ Lastly, and most ominously, it is reported that Iran’s leader Ayatollah Khameni has issued a fatwa that declares the Syrian protesters to be “God’s enemies” and that Iran and Hezbollah should help the Assad regime crush the rebellion.⁹⁷ In addition to the aforementioned Iranian Revolutionary Guard bases, Syria recently announced that it would allow Iran to build a naval facility at the Mediterranean port of Latakia.⁹⁸ The prospect of Iranian warships plying the Mediterranean waters in close proximity to Israel, a nation Iran has stated it will destroy, does not bode well for the future peace of the region. It is clear that Iran has its own strategic reasons for keeping the Alawis in power.

But there is another option the Assad government could initiate if it appears that Alawis will lose control—strategic withdrawal. The Alawis and the other Syrian minorities who would suffer under Sunni/Muslim

Brotherhood rule (the Christians, the Druze, and the Kurds) are concentrated in western Syria, in and around the port city of Latakia. Assad and the Alawis could abandon most of Syria and with Iranian Revolutionary Guard and Hezbollah assistance establish a Shia-dominated area in the west of the country. Therefore, Syria could partition into two segments, at least temporarily.

In our opinion, the regime that for decades has repressed its Sunni majority, while making the claim that it stood for Arab nationalism, Arab unity, and secular freedoms, is now seen for what it is and has been, usurpers practicing a version of Islam deemed heretical and ruling a fractionated nation by brutality and the jack-boot. After 40 years of brutal repression, the Assads and the Alawis know that they cannot simply walk away or surrender power to the Sunnis and, ultimately, the Muslim Brotherhood. The revenge and retribution on the Alawi community, not to mention the other minorities who supported and were protected by the secular Baathist state, would be horrific. This is political reality in this part of the world. So the Syria insurrection will continue on its sanguinary path and the body count will be high.

This is a tough call. The Assad government could hang on for a few more years, but in the end, will most likely be toppled or at least driven from power in Damascus. The Sunnis will not be tyrannized in perpetuity. Expect some level of Iranian military assistance to the Alawi Syrian government, probably covert, but which, in light of the turbulence and new realities of the Arab Spring revolutions, could be massive and overt. In the end, to prevent retribution and massacres, we believe, with Iranian and Lebanese Hezbollah help, the Assad regime will repair to the traditional Alawi area around Latakia and establish an alternate Syrian state. Syria plays a leading role in Iran's plans for regional domination, and the Ayatollahs cannot let this country slide into the Sunni and Muslim Brotherhood's hands.

4.5.7 Yemen: Remote, Obscure, and Al Qaeda's Best Chance to Start Over

The Republic of Yemen occupies the southwest corner of the Arabian Peninsula and is considered an exotic obscurity, even by that minute segment of the American population that may actually be aware of its existence. Poverty-stricken, lawless ("Yemen constitutes the most armed populace in the world, with almost four times as many firearms as people,"⁹⁹), fractious, and somewhat remote, even by air travel, Yemen does not command the tourist trade of Egypt or Morocco or the business allure of Saudi Arabia (its northern neighbor) or the United Arab Emirates. Nonetheless, by virtue of its location, astride the eastern shore of the sea-lane chokepoint at the southern end of the Red Sea known as the Bab al Mandeb Strait ("Gate of Tears" in Arabic, which takes its name, given in ancient times, from the frequent ship wrecks caused by the dangerous currents emanating from the Red Sea

emptying into the Indian Ocean),¹⁰⁰ through which an estimated 3.3 million barrels of oil flow daily, Yemen cannot be ignored by Washington policy makers and defense planners. Noting that the easily blockaded Suez Canal cuts through Egypt at the northern end of the Red Sea, the Bab al Mandeb represents another geographic vulnerability (along with the Strait of Hormuz in the Persian Gulf and the Straits of Molucca in Indonesia) to the free flow of shipping, especially oil. Thus, maintaining good diplomatic relations with whatever government rules Yemen is a necessity. (Even though the Bab al Mandeb is about 20 miles wide, a few well placed surface-to-surface missile batteries could quickly close that bottleneck, at least temporarily.)

Yemen is an ancient land that was the center of the spice and aromatic trade, as well as other highly prized items, which it exported along both land and water routes to the Mediterranean and India. (There is a good chance that Yemen was the source of the frankincense and myrrh the three Wise Men presented to the baby Jesus sometime after his birth.) It was known as Arabia Felix to the Romans who sent fleets and armies to conquer the land, unsuccessfully. Yemen converted to Islam in 628 CE, early in Islam's expansion. The Shiites ruled the country for hundreds of years until the Ottoman Turks occupied the area in 1528 CE. A large Shiite minority still inhabits much of the northern provinces of Yemen, and the tensions between them and Sunnis generate some of the difficulties Yemen is experiencing today.

The British seized the southern Yemeni city of Aden, with its excellent natural harbor, in 1839 and used it as a coaling and refueling station for its ships sailing to and from India. When the Turks departed at the end of World War I, much of Yemen came under the suzerainty of Imam Yahya (John) Muhammed, who also became the country's first king. His son and successor was overthrown in 1962 by military officers allied with Gamal Nasser of Egypt. Civil war ensued as forces loyal to the monarchy retreated to the northern mountains and battled continuously with the new Arab nationalist rulers. In an attempt to solidify the gains of his allies and acolytes, Nasser dispatched 70,000 troops (at great cost to Egypt as 10,000 soldiers were killed in action in a war that lasted from 1962 to 1967) to subdue the loyalists fighting to reinstate the king. Not surprisingly, Saudi Arabia aided the loyalist cause.¹⁰¹ As a sad footnote, the Egyptian occupation of Yemen saw the first use of chemical weapons against enemy (and civilian) combatants since World War I, as the Egyptian Army Chemical Corps tried to perfect the use of mustard gas and nerve agents. Reportedly, 1400 Yemenis died and thousands suffered burns and injury.¹⁰² (It was not until Saddam Hussein used poison chemical weapons against the Kurds of Halabja in March 1988 that the Yemen legacy was eclipsed. It is estimated that between 3500 and 5000 Kurdish civilians were killed in that attack, which included mustard, Sarin, VX, and nerve agents.)¹⁰³ The present besieged ruler is Ali Abdullah Saleh, who acceded to power in 1978 and has reigned over Yemen's turbulent

modern history ever since. Although a secular Arab nationalist by ideology, Saleh was born into a Shia family. He only obtained an elementary education, joined the Army in 1958, attained the rank of corporal, and became a second lieutenant in 1963. He excelled at the political intrigues that were a part of Yemeni military life, gained promotions, and then was appointed as a military governor in 1977. After the assassination of President Al-Ghashmi in June 1978 (President Ghashmi was killed when an envoy from the adjoining nation of South Yemen, carrying a diplomatic briefcase containing a “secret” communication from the South Yemeni president, exploded upon opening, killing the envoy, Ghashmi, and wounding several others),¹⁰⁴ Saleh was named to the four-man provisional presidency council and actually elected president on July 17, 1978. His first official act on August 10, 1978, no longer needing intrigue and subtly to advance his career prospect, was to execute the 30 officers who had opposed his election (proving once again that it is good to be king or at least a president with autocratic powers).¹⁰⁵

Ruling Yemen is, as the saying goes, akin to herding cats. The central government has always had but little control outside the capital or major cities. Recently, it had to all but abandon two Northern provinces to Shia rebels while concurrently battling a growing secession movement in the south. With over 24 million people, the average age is an astoundingly young 18.1 years and fully 75% of the population was born after Saleh was elected to the Presidency in 1978.¹⁰⁶ With a literacy rate of just 50%, an unemployment rate of at least 35% and almost half the population forced to live on just two dollars a day, it is not difficult to fathom the depth of the resentment and anger demonstrated these past few months by the huge youthful population against Saleh, his government, and the incredible lack of opportunity the Yemen economy offers. A recent *Los Angeles Times* article noted that only 5% of college graduates are able to find work.¹⁰⁷ Making matters worse, the tribal heritage, coupled with mountainous and rugged terrain isolates much of the population from each other. Just like in Libya, Yemenis identify with their tribal affiliation first and only secondarily with their Yemeni citizenship, most especially among the poor and illiterate.

The Yemeni uprisings began on January 15, 2011, and demonstrations have continued on an almost daily basis and have often swelled to hundreds of thousands, with Sanaa, the capital, seeing the most turbulence. To date, the often violent government response has inflicted hundreds of deaths on the demonstrators as soldiers and snipers have fired point blank into the crowds. But this has not softened the demonstrators’ resolve and they refuse to be dispersed. Given the very young average age of the population, the Yemeni insurrection can be characterized as a true youth movement spearheaded by students, professionals and teachers, men and women. (In an ironic remark, the secular-oriented President Saleh has stated the intermingling of men and women protestors during the demonstrations violates Islamic law and must cease.)¹⁰⁸

Many foreign observers of the Yemeni uprising are really not certain just what it is the demonstrators want to achieve or establish except the obvious demand for Saleh to step down. As one commentator noted "...while the opposition is significant in size, they do not share a common vision for Yemen ..."¹⁰⁹

The opposition appears to be a loose coalition of secularists of the old Nasserite mold, tribal elements looking for more autonomy, socialists, and Islamists.¹¹⁰ This mix will have a difficult time agreeing on the form of government once Saleh departs. Add to this the effective Shia rebel takeover of the two provinces in the North, the renewed secessionist movement to re-establish an independent South Yemen, and a burgeoning Al Qaeda presence, one can see that Yemen after Saleh could easily devolve into fragmentation, anarchy, and civil strife.

The danger for the United States in the Yemeni turmoil is Al Qaeda of the Arabian Peninsula (AQAP), the most active and dangerous (especially now that Usama Bin Laden is dead) of the several Al Qaeda franchises that have emerged around the world. The prospect of increasing anarchy in Yemen, coupled with the difficult terrain and quasi-independent tribal fiefdoms, yield the proper environment for a secretive organization like AQAP to reconstitute its jihadist credentials and renew its activity against the United States. AQAP is led by two very capable and charismatic men, Anwar al Awlaki and Nasser Al-Wahishi. Al Awlaki was born in Las Cruces, New Mexico (where his Yemeni father was attending New Mexico State University majoring in Agriculture) and knows America, our language, and our culture intimately. Wahishi is also a Yemeni and was formerly a close confidant of Bin Laden. Wahishi has vowed revenge for Usama's death and has been quoted as saying, "What is coming is greater and worse," meaning, one presumes, that future Al-Qaeda actions will make the 9/11 attacks look minor by comparison.¹¹¹ In this regard, the *International Business Times* reported on May 29, 2011, that AQAP had seized the control of the southern coastal city of Zinjibar and declared the city to be the new capital of the "Islamic Emirate" of Yemen.¹¹²

Yemen's prospects are bleak. It is already a failing state by any measure and the ouster of the autocrat Saleh, while worthy and estimable, will not be the adjuvant the country needs to pull itself out of its inevitable descent into chaos and fragmentation. The loose coalition demanding President Saleh's ouster agrees on little else. The Shia rebels in the north and secessionists in the south will not relent from their goals to break away from Sanaa, and AQAP will increase its activity and create even more havoc for Yemen, Saudi Arabia (AQAP's primary target), and the United States. The Saleh government regularly shared intelligence concerning AQAP with the United States and allowed armed, unmanned drone over flights of Yemen that frequently resulted in strikes on AQAP targets. The concern is that any new government will not be as energetically anti-Islamist as is Saleh's regime today and that this source of intelligence will disappear.

On June 3, 2011, President Saleh was seriously injured in a rocket attack on the Presidential Palace in Sanaa and flown to Riyadh, the capital of Saudi Arabia, for treatment and convalescence. He reportedly suffered burns over 40% of his body. Although he has since returned to Yemen, given his age, and the possible seriousness of his injuries, he may not be able to reassume power. If he chooses to abdicate, a power vacuum will be created, the insurrectionists emboldened and all out civil war possible. But any new government that emerges after Saleh will represent a fragile coalition that will most likely have less control of the countryside than does the Saleh government today. (For most of modern Yemen's history, the central government authority stopped a few miles outside the capital of Sanaa and the other major cities. Tribal authority took over from there.)

Given the country's abject poverty and dire economic straits, the youthful population that despairs of any opportunity for self-fulfillment, the 50% illiteracy rate, and the bureaucratic corruption and government torpor, one fears that AQAP's jihadist message will strike a resonant chord with many of the disaffected youth, who will flock to its banner and gladly agree to labor in an "occupation" (jihad) that confers self-worth, dignity (and even a salary) to those who have little today. Moreover, the attraction of jihad allows the frustrated youth to participate in a cosmic endeavor, deemed much greater than oneself, which brings with it not only some temporal benefit but the possibility of martyrdom and rich heavenly rewards. Throughout Islam's history, some percentage of its adherents has always been attracted to this creed.

So, in the end, President Saleh, who has already agreed to step down once but reneged on the deal, will be toppled and a new, weaker government constituted. But the fragility of this new government will engender further rebellion and fragmentation along tribal, sectarian, and regional fault-lines. This will, in turn, boost the fortunes and recruitment ability of AQAP, providing the sanctuary the group needs to reconstitute and plan new strikes at United States and apostate regimes like Saudi Arabia.

4.5.8 Israel: The Intractable and Insuperable Problem

It was axiomatic among many of the Arabs, especially in Saudi Arabia and the Persian Gulf states, that the "Zionist Entity" (the word "Israel" is rarely uttered) would suffer the same fate as the primary Crusader state: the Kingdom of Jerusalem. Conquered by the Franks (mostly) in 1099 CE, Jerusalem (Al Quds in Arabic) was retaken by the great Muslim leader Saladin in 1187, giving it a life span of just 88 years. Israel declared its independence in 1948. So by this Arab line of reasoning, Israel must succumb to some fate, disappearing by 2036 CE. There is no doubt that many jihadists and Islamists are working assiduously towards this goal.

Upon declaring independence, the fledgling Israeli state was attacked by several Arab armies emanating from Egypt, Lebanon, Jordan, Syria, and even Iraq.¹¹³ Despite being greatly outnumbered, the Israelis not only repulsed the Arab armies, but secured more land than originally identified by the United Nations Mandate in Palestine. It was at this time that more than 700,000 Palestinians fled their homes to become the huge refugee problem that still exists today.¹¹⁴

The Israelis and Arabs would go on to fight more wars in 1956, 1967, 1973, 1982, and 2006, all resulting in victories for the Israelis, with the exception of the 2006 operation against Hezbollah in southern Lebanon, which ended as a stalemate. In addition to these conventional conflicts, from 1967 on, the Palestinians, under the leadership of the PLO and other guerrilla groups, would pursue a long and bloody campaign of raids and terrorism inside Israel itself.

Starting in the 1970s in the midst of all this turmoil between Israel, its Arab neighbors, and the Palestinians, there has been a consistent effort, led mostly by the United States, to find a just and lasting political solution to which the various sides could agree in hopes that a permanent peace could be restored to the region once and for all. Commonly referred to as the "Peace Process,"¹¹⁵ it has involved endless rounds of diplomacy, meetings, conferences, United Nations resolutions, secret negotiations, and intrigue for decades. Some notable achievements have been garnered, namely the 1979 Israeli–Egyptian peace treaty that restored to Egypt the Sinai Peninsula (which had been lost in the 1967 war) in exchange for the demilitarization of the Israeli–Egyptian border, but mostly the only tangible rewards have been agreements to continue talking, punctuated by moments of hostilities, attacks, and reprisals by both sides.

The biggest stumbling block is the Palestinian demand for the right of return. The 700,000 Palestinians who fled in 1948 amidst the hostilities are now several million. If they all were allowed to return and become citizens, Israel would cease to exist as a Jewish state. For Israelis, this is a condition that cannot be met. Add to this the inevitable legal claims for the return of land, homes, and property to the former Palestinian owners, you have an impossible agenda that would lead to legal wrangling in international courts for decades, making what is now Israel ungovernable. In addition to the main issue of the Palestinian right of return, some other issues keeping any agreement in limbo are the Palestinian challenge to the extensive Jewish settlements on the West Bank of the Jordan River, the status of Jerusalem (should it be a Jewish, Arab, or an international city), and the status and control of several hundred Israeli nuclear warheads should Israel cease to be a Jewish state.

Worse for the region and the world, the leadership of the anti-Israeli bloc has passed, in the last 10 years or so, from the more secular governments of Egypt, Syria, and the PLO to Islamist Iran, Hezbollah (Lebanese Shiite

acolytes of Iran), and Hamas (Sunni offshoot of the Muslim Brotherhood, which governs the Gaza Strip adjoining the southwestern Israeli border). Now that the Egyptian and Syrian governments are in the throes of revolution, Iran's ascendancy as the primary Islamic challenger to Israel's right to exist is accentuated. It was one of Iran's most influential ruling clerics, Hasmemi-Rafsanjani, the fourth president of Iran from 1989 to 1997, who in 2003 stated unequivocally that Muslims should use nuclear weapons against Israel.¹¹⁶ This statement was not made recklessly, ignorantly, or in haste. He acknowledged in his lengthy speech that Israel would retaliate, but offered the opinion that it would not matter, since geographically Israel was small and Iran quite large. He further justified his logic by asserting that, though Iran would be harmed, Israel would be destroyed and thus a "favorable" outcome would be concluded and, presumably, worth the sacrifice. (Since this tactic would be done to settle the Israeli-Palestinian issue, one wonders if Mr. Rafsanjani really understood that nuclear bombs are not precision strike ordnance and that the collateral damage to Palestine, Syria, Jordan, and Egypt would be massive.)¹¹⁷ In this light, Iran's long pursuit of nuclear weapons and corresponding delivery systems is fraught with danger indeed. It appears that the powers that control and rule Iran have pondered the use of the nuclear option to achieve their goals and agenda. In 2010, CIA Director Leon Panetta stated that it was the opinion of U.S. intelligence that Iran could have a few nuclear weapons in 2-3 years.¹¹⁸ Other analysts have noted that Iran really needs only three atomic bombs to carry out their annihilation of the Israel plan, one each to hit Haifa, Tel Aviv, and Jerusalem, Israel's three largest cities.¹¹⁹

Moreover, a recent fatwa (religious edict) issued by the spiritual mentor of current Iranian President Mahmoud Ahmadinejad announced that killing Israeli children is acceptable, since the Israeli government uses civilians and children as "human shields."¹²⁰ President Ahmadinejad himself stated on Iranian television on November 3, 2010, that "Hated Israel will be annihilated." In the same broadcast he also referred to the Israelis as "the most criminal people in the world."¹²¹ Previously, in 2005, he had caused an international outrage by asserting that if God willed, Iran would be the instrument to bring about the late Ayatollah Khomeini's firm commitment that "...Israel must be wiped off the map."¹²² A peace process is not built or sustained upon belligerent rhetoric such as this.

It was recently reported that Iran is arming Hezbollah with Scud missiles which, because of the 700-km range, can reach almost all of Israeli cities from southern Lebanon.¹²³ This is a provocative and dangerous action for the region especially since the Scud missile can deliver chemical and biological warheads as well as a conventional thousand-pound bomb. Additionally, Iran's ally Syria is also transferring upgraded air defense weapons and surface-to-surface rockets to Hezbollah.¹²⁴ So, even without a nuclear arsenal, Iran, Hezbollah, and Hamas can make life untenable for Israelis, as a Scud or

rocket campaign of some days or weeks could inflict massive casualties and seriously disrupt the economy and life in general. (It would also engender a huge Israeli response and possibly full-scale regional war, with Iran and Israel battling it out as the primary antagonists.)

In this regard, President Obama, seeking to energize the stalled Peace Process, recently announced support for the Palestinian demand of an Israeli return to the 1967 borders, that is, the Israeli boundary *before* the 1967 war, and the establishment of a Palestinian state in what is now the West Bank of Israel, Jerusalem, and the Gaza strip. From the Administration's point of view, there can be no lasting peace as long as Israel occupies the West Bank area.¹²⁵ Additionally, the president demanded that the Palestinians positively assert and agree to Israel's right to exist and give up any plots, plans, and preparations to the contrary.¹²⁶ The Administration hopes that by each side agreeing to key demands of the other, trust in the process can be revived and a solid peace agreement installed.

This is a worthy goal, but in reality, as long as the Islamist opposition to Israel's existence is ascendant, it does not really matter what the PLO and Israel agree to if Iran, Hezbollah, and Hamas oppose it. In the ideology of the Islamists, the world is divided between Muslim territory (Dar al Islam) and non-Muslim territory (Dar al Harb, which translates as "house of war").¹²⁷ Israel represents an intrusion into traditional "Dar al Islam" that must be expunged. It is as simple as that.

So returning to the 1967 borders creates a huge bulge in the central part of Israel and reduces its width to just 9 miles at its narrowest. The fact that this ceded territory could be inhabited by a potentially hostile enemy complicates defense planning to an extreme degree.¹²⁸ It renders much of Israel indefensible for all practical purposes. This is not an option most Israelis will agree to, especially given the lethal range of the new weapons Iran and Syria are providing to the opposition. Very few Israelis will trust the Palestinian authorities to enforce any demilitarization agreement. Their skepticism is valid. Hamas co-founder, Mahmoud Zahar, who is both an acknowledged jihadist and Islamist, stated in an interview in May 2011 that while "...Hamas would accept a Palestinian Authority state based on the 1967 borders, [he] made it clear a peace accord would only serve as a prelude to Israel's destruction."¹²⁹ He furthered averred "we will never accept peace, only a hudna" (temporary truce).¹³⁰ He also mentioned that "If the Palestinian state does not encompass all of Israel the next generation will liberate the land."¹³¹ These are rather unambiguous statements that assert the Islamists contention that, sooner or later, treaties or not, Israel must cease to exist.

So the Israeli-Arab/Muslim problem is a true Gordian knot. Israel can neither meet Palestinian demands for a right of return nor American demands for a pull back to 1967 borders without jeopardizing its security and the very nature of the Jewish state. The Palestinians really want the entire

land back and for the situation to return to pre-1948 political condition. The Islamists, led by Iran, Hamas, and Hezbollah simply want Israel to disappear and all the Jews now inhabiting the area to go elsewhere; they will stop at nothing, it appears, to make this a reality. The looming shadow of the Iranian nuclear weapons program will only make the matter more complex and dangerous over time. So there you have it—intractable and insuperable—maybe forever.

4.6 Failed Economies, Rampant Corruption, Pervasive Illiteracy

In a larger sense, it does not matter which faction emerges victorious in the Middle East and North Africa over the next few years. Whoever it is, Islamist, secular democrat, free market advocate, socialist, or some hybrid of the these, the dire economic and social straits of all Arab societies must be solved or there will certainly be another round of revolution a generation or two in the future. As one cogent observer of the Middle East noted some years ago, Islam fundamentally missed the Industrial Revolution and has been playing catch-up ever since.¹³² (The rude fact of Europe's sudden preeminence was dramatically demonstrated in 1798 when Napoleon's army landed in Egypt and, using the newest artillery of the day, crushed the much larger Egyptian force sent to repel it, a force regarded as the best army any Muslim country could field at that time. It was a shock to the entire Islamic system and evoked much introspection and soul-searching on the part of Islam's elites as to how the infidel powers could have possibly eclipsed the soldiers of the true faith of the prophet.)¹³³

The sad state of the Middle East and North African economies is dramatically highlighted when one realizes that the gross domestic product (GDP) of Italy (60 million people) is higher than all Arab states combined (including Saudi Arabia and Kuwait) with a total population of 350 million.¹³⁴ This is an astounding statistic.

Much of the problem is the pervasive corruption at all levels of society. While the Mubarak's and the Ben Ali's and their governmental elites diverted billions, the corruption cycle extends down to the most junior bureaucrat who, wanting to supplement his meager salary, will demand a small bribe to perform his function. (Try obtaining a driver's license in a timely fashion without paying the required baksheesh. You will wait a very long time.)¹³⁵ This endemic, petty corruption acts as a regressive tax and stymies initiative, creativity, and innovation. Only 77 international patents were filed in Egypt between 1980 and 1999, the most of any Arab country, while South Korea alone filed more than 16,000.¹³⁶ You see the problem. Couple this with a huge youth population bulge in which as many as half the people of a given Arab

country are under 30 years of age, double digit unemployment rates, and massive illiteracy and one has the recipe for continued frustration, rage, and upheaval if there are not drastic reforms implemented soon. For example, Egypt alone must generate 700,000 jobs a year just to provide employment for its annual high school graduates.¹³⁷

Making things more difficult is the illiteracy problem in some of the Arab countries. A 2006 United Nations Educational, Scientific and Cultural Organization (UNESCO) report notes that a few countries like Bahrain, Jordan, Kuwait, Syria, Lebanon, and Libya have literacy rates of 80% or more while Egypt, Yemen, Morocco, and Mauritania barely make a 50% adult literacy grade.¹³⁸ In this highly technical world, lacking such basic skills as the ability to read and write can only doom a person and a society to a marginal, subsistence existence. What corporation or company would be attracted to Yemen or Egypt if half of the employees cannot read or write? Moreover, what company or individual would want to fight the bureaucratic corruption at every level to obtain the necessary permits to begin operation? At this point, the Arab world lacks a manufacturing base and, except for a few countries like Egypt or Tunisia, really has no agricultural base as well. Everything of a technical nature and most foodstuffs must be imported. Locally produced capital goods are almost nonexistent.¹³⁹

So the victors, whoever they will be, must commit to jump-start the Arab economies. In the past, the new national leadership would inaugurate plans and designs, promise prosperity and plenty, and then resort to brutality and repression when they failed to deliver. Every tyrant now disgraced or removed in 2010 and 2011 started this way. The new generation that has challenged them and swept some away must walk a different path. If not, they too will be swept from office a few years hence.

4.7 A New Era Dawns

We live history in slow motion. Events, sometimes quite dramatic, occur on a daily basis worldwide. We may note them and acknowledge their importance for a moment as we go about our busy lives, but rarely do we have the interest or discernment to recognize the greater trend and progression of what we have witnessed. It is only retrospectively, after some months or years and a final startling or troubling denouement, that we can look back, connect the dots, and truly understand what transpired. As the passage of time melts away the fog of war and revolution, seemingly random events can now be viewed in an orderly and almost logical progression. Suddenly all is clear and we might say to ourselves: "I should have known." Moreover, the march of history, incident by incident, seems to occur mostly hidden from our view, much like the termites, which busily burrow away behind the walls of our

homes, until one day, as if by some legerdemain, their work and destruction magically appears, much to our dismay.

The events unfolding in the Middle East and North Africa since December 2010 represent a seminal period in modern history. Make no mistake, the old order, established in Egypt, Tunisia, Yemen, Syria, Libya, and Palestine in the 1950s and 1960s is passing. (It has already occurred in Iraq and Lebanon and, at some point, the monarchs and leaders of Jordan, Algeria, Morocco, and Saudi Arabia will feel the earth quake under their feet as well.) The last act of the secular Arab nationalist ideology is playing out, never to return. The curtain comes down on the counterfeit republics led by strong men and tyrants. We in the West hope, especially after witnessing the spontaneous uprisings of what appeared to be the educated and technologically savvy segment of the masses demanding more freedom and economic opportunity, that these nations will adopt our model of representative democracy and settle all problems with the ballot and spirited debate. This could happen in Tunisia and maybe, for a time, in Egypt. The final outcomes have not yet transpired and will take years to unravel. But in the end, there is serious doubt that the momentum for a western style democratic government to replace the passing old order of the Middle East can be sustained. This faction of the revolution will be ultimately eclipsed by the most organized and most disciplined, and if needs be, the most ruthless segment of these national populations, the Islamists who, seeking to inculcate their version of Islam, will establish Sharia (government by theologians and Islamic law) in any nation they can. The winds of change are blowing and in the end, these political winds will emanate from a theological, conservative Islamist direction. What started as a small cloud on the historical horizon, in 1928, with the formation of the Islamist Muslim Brotherhood in Egypt, morphed into a huge Shia Islamist storm that in 1979 toppled the Shah. For decades thereafter, the Arab monarchs and secular tyrants batted down the hatches and successfully rode out the Islamist tempest. But their tactics of total societal repression and brutality alienated the very segment of the population that were their natural allies in keeping the Islamists at bay, that is, the western educated youth. Now the wrath of these younger generations is sweeping the tyrants away. But the would-be democrats and young secularists lack cohesion and, in any case, the numbers and ruthlessness, to prevent their being waylaid in turn by the burgeoning Islamist momentum. It is all the more troubling and depressing when one notes that even at this late date some U.S. policy makers still refer to the Muslim Brotherhood as “a loose network of secular groups”¹⁴⁰ (as if they were an affiliate of the Rotary or Kiwanis), completely mischaracterizing who they are and what they represent.

In 1921, the poet William Butler Yeats, observing the rise of Bolshevism in Russia, with its fanatical adherents, as well as the aftermath of the carnage of World War I, wrote these words, which so readily apply to today's Middle

East and North African insurrections and, furthermore, identify the exact character of the radical Islamist movement:

Things fall apart; the center cannot hold;
 Mere anarchy is loosed upon the world,
 the blood-dimmed tide is loosed, and everywhere
 the ceremony of innocence is drowned;
 the best lack all conviction, while the worst
 are full of passionate intensity.¹⁴¹

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Rapprochement with Iran

5

MARSH E. BURFEINDT

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5.1 Introduction

The religious and political threads running through the Middle East can be compared to an elaborate and complex spider web—a slight disturbance on one strand can send shockwaves throughout the whole structure. Minor disturbances, whether planned or not, in one Middle Eastern country can ripple out, creating upheaval across the region. Who could have imagined that the self-immolation of a despondent fruit seller in Tunisia could result in the fall of decadal-entrenched dictators and calls for reform across the whole of the Middle East? Such is the intricacy of this web, and like it or not, Iran is the spider at its center.

The United States and other Western nations, as well as Iran's Middle Eastern neighbors, are struggling to cope with Iran's quest for power and influence, including its quest to obtain nuclear weapons. Many theories and philosophies have been proposed as to how to deal with the growing Iranian threat, and these theories can generally be sorted into three options: direct confrontation (a decisive nuclear war); a prolonged Cold War; or a policy of rapprochement. Each option has its own strengths and contraindicators, which will be examined in some detail. Ironically enough, the Arab Spring uprisings of 2011 may have presented a fourth option, which will also be explored.

This is not the format for a detailed exploration of Iranian and Persian history, or that of its neighboring states, but a general understanding of the area's more modern history, and the religious ties that simultaneously bind and divide, is necessary to comprehend the stresses, strains, and motivations facing Iran's current religious regime. An understanding of the historic and religious driving forces in the region may illuminate the rationale behind the various regional players and their often contradictory relationships with one another and the rest of the world. This understanding will hopefully accommodate a more nuanced viewpoint of American foreign policy not only with Iran, but also with other nations in the region.

5.2 Islamic Divide

It is critical for a comprehensive understanding of the Middle Eastern states' foreign and domestic policies to understand that Islam is the State.^{2,3} The Islamic religion believes that Man should only follow Allah's laws (Shariah law—derived from the Koran and the Hadith, the teachings of Mohammed), which makes secular laws meaningless and precludes the Western concepts of democratic rule of law and the separation of "Church and State." Further, Islamic states' behaviors, and most Muslim individuals, are motivated by the Sunni-Shia religious schism. At the risk of oversimplification, this schism

is based on the question of succession: should the leadership of the Islamic religion have been passed through the Prophet Mohammed's family and/or their chosen representatives or through the most learned and respected Muslim clerics?²⁻⁵ In essence, at its simplest, it is the political constructs of monarchy (bloodline) versus meritocracy. The Sunni ("one who follows the traditions of the Prophet") believe that the person most capable to hold the position should lead the Muslim religion, and the Shia ("Shia-t-Ali" or "the Party of Ali") believe that Ali, Mohammed's cousin and son-in-law, should have been named Mohammed's successor, not Abu Bakr, the Prophet Mohammed's close friend and advisor.²⁻⁵ While the Christians settled their religious differences during the often bloody Reformation in the sixteenth century,⁷ Islam's comparable reformation has yet to occur. Until this Islamic reformation transpires, this religious divide will drive Middle Eastern politics and global events.

Of the 1.5 billion Muslims, there are approximately 200 million Shia, mostly centered in Afghanistan, Iran, and Iraq (with ~70% of the total Shia population).^{4,5,6,8} It is important to understand that the Sunnis regard the Shia as heretics and blasphemers and view it as their religious duty to rid the world of the Shia.^{5,6,8} In the eyes of Sunni, the Shia have read the Qur'an, heard the teachings of the Prophet Mohammed, and still they go against Allah's will. This intolerable "blasphemy" is the source of the Sunni belief that the Shia can *never* be the leaders of Islam and can *never* govern the Sunni. For their part, the Shia believe that "although Allah, the Exalted, has not created a creature worse than a dog, the *Nasbi* (Sunni) are worse than even a dog."⁹ The Shia are free to take the property and everything that belongs to the Sunni. These opposing beliefs are the basis for the savage internecine warfare in the Gulf and elsewhere in the world. In Iraq, Afghanistan, Algeria, Pakistan, Iran, Sudan, and India, there have been more Muslim lives lost at the hands of other Muslims for this one reason alone in the past 100 years than from all the Western nations combined throughout history.¹⁰

Although there have been a few secular-leaning governments in the Middle East, almost all current governments are Islamic, and this divide between the Sunni and Shia lies at the heart of their behaviors toward their own people and neighboring states. Save for Iran, Iraq, and Syria all current Gulf States' governments are Sunni-dominated, with several having large Shia populations.^{11,12} Many of these Sunni governments (most of which are long-term allies of the United States), under almost any definition of

* When Britain and France began dividing the Ottoman Empire in 1916, they gave no consideration to tribal or religious boundaries; the Middle East was divided to accommodate Europe's foreign policy strategies and its growing thirst for oil. These forced national boundaries laid the foundation for many of the current conflicts in the region. It was only happenstance that the Shia were concentrated in the region that would become Iran and Iraq.

the term, are repressive dictatorships and kleptocracies that have severely marginalized their Shia populations both politically and economically, while systematically and brutally silencing any voices of opposition. The preferential treatment given to Sunnis by these regimes in regards to education, employment, business, and political power has created a region of “have and have-nots” that is a tinder-box awaiting a match.

5.3 Iran’s Paradigm for Expansion

As noted above, as one of the few Shia-dominated governments in the Middle East, Iran serves as a beacon to the Shia in the region and elsewhere. But the pull Iran has over the world’s Shia population also lies in the fact that the northern Iranian city of Qom is the religious epicenter of the Shia religion. Shia clerics have lived and studied in Qom^{5,13} for centuries, eventually returning to their own countries, yet retaining their close ties to Iran. It is through these ties that Iran has extended its threads of influence and has been able to exert its power throughout the region.

Just as France seeks to regain the status as a world power it held during the Middle Ages¹⁴ after the Black Plague, so too does Iran seek to reclaim the Persian Empire it once held, albeit an Islamist-dominated version of its former self. Most Americans have bought into the media portrayal of Iran as a nation of bearded and turbaned religious fanatics driven by religious frenzy to kill all Americans. The pictures of the Iranian student takeover of the American Embassy in Tehran in 1973 are still seared into the American psyche. Seemingly, these preconceived ideas have driven American foreign policy in the region, making it oblivious to or incapable of recognizing the skills necessary to deal with the contradictory behaviors of Iran and other Middle Eastern countries. Make no mistake—Iran has a long-term strategic plan to achieve dominance in the region, as well as becoming a world superpower; irrational comments to the contrary.

5.3.1 The Khomeini Influence

Modern Iranian history did not begin on February 1, 1979 when Ayatollah Khomeini triumphantly returned to Tehran from his 15-year-long forced exile in Iraq and France.¹⁵ The Iranian people had suffered for decades under the brutally, repressive monarchy of the Pahlavi’s, both Reza Shah I and his son Mohammed Rez, and had long been eager to assume the mantle of a free and independent republic. In many ways, the blame for the Iranian Revolution can be laid at the feet of the United States. The United States had propped up the collapsing Pahlavi dynasty during World War II and supported it financially and militarily throughout the decades due

to Iran's strategic geographical location.^{15,16} The *realpolitik*¹⁷ worldview of the Nixon Administration, in particular Henry Kissinger, viewed Iran as a stabilizing force between the Soviet Union and the oil-rich Gulf States and supported the Shah's regime by lending U.S. intelligence and military teams to assist in training and guiding an Iranian intelligence organization that became the National Intelligence and Security Organization (SAVAK).¹⁵ The Pahlavi government used the SAVAK not against foreign governments, but against its own people, assuring that all dissension toward the monarchical dictatorship was immediately quelled. American oil investments in the 1960s and 1970s had increased Iranian oil revenues fivefold,¹⁸ adding to the Shah's financial resources and power, and this wealth was only shared among his extended family and the elite who supported him. It was this disparate sharing of wealth among the Iranian people and the brutality of the Shah's draconian responses to political dissent that led to his ultimate ouster by the Iranian people. In 1977, with the newly elected U.S. President, Jimmy Carter,^{15,19} insisting that Iran move away from its repressive methods against opposition groups, deep fissures began to appear in the monolithic Pahlavi regime, and the opposition groups began to find their voices.

Among the many opposition members that had been persecuted and exiled by the Pahlavi government was a cleric and scholar, Ruhollah Khomeini. Khomeini had become a student of Islamic mysticism during his early studies and came to believe he had a special relationship with Allah.^{15,16} As a long-time, outspoken opponent of the Pahlavi regime, and as a learned Imam, he was believed by many Iranians to be the most effective voice for the opposition. From exile in France, Ayatollah Khomeini promised the Iranian people freedom from repression and that the entire nation would share in the vast oil wealth, not just the monarchist elite. His return to Iran as leader of the revolution was enthusiastically supported by the country's intelligentsia, as well as the illiterate rural population, who all envisioned the formation of an Iranian constitutional democracy.

Unbeknownst to the Iranian people, and even his most ardent supporters, Ayatollah Khomeini had a far different political agenda in mind than replacing the corrupt monarchy with a liberal form of democracy. Since his days as a student and teacher at the Shia holy cities of Qom and An-Najaf, he had dreamed of a radical, austere Islamic Shia state governed by Shariah law, with supreme authority held by the ruling clergy^{15,16}—one in which the state was completely subservient to the clergy. In his years in exile, Khomeini had become an Islamist fanatic who believed that even the most violent of acts were justified^{15,16} if it meant the success of creating an Islamic state. Ayatollah Khomeini portrayed himself as a devout religious scholar, yet he had no compunction in embracing radical Islamic groups that believed that terrorism was a legitimate means of achieving religious and political goals, and as his

religious and political power grew, so did his violent fanaticism.* The Iranian people were so enthralled and excited about a government that was not controlled by the Pahlavi family that they did not consider what a government under Khomeini would look like until it was too late.

As usually happens, the removal of a strong dictator leaves a power vacuum that many competing ideological factions attempt to fill, and post-Shah Iran was no different. Ayatollah Khomeini realized that he needed to move quickly if his dream of an uncompromising Islamic religious state was to succeed—he knew that secularists and the liberal intelligentsia, as well as the ardent student Communists and left-wing activists, would not allow one dictatorship to be replaced with a theocracy that embraced radical Islam.^{15,20} While in exile, Khomeini had appointed several of his followers, including Ali Akbar Hashemi Rafsanjani, the future Iranian president, and Ali Khamenei, Khomeini's eventual successor as Iran's spiritual leader, to form a Revolutionary Council^{15,20} that would become the basis of Khomeini's new government. Ayatollah Khomeini often spoke of the need for an "Islamic Army," which ultimately became the Iranian Revolutionary Guard Corps (IRGC). The Revolutionary Council would be the political support for Ayatollah Khomeini's Islamic Republic, and the IRGC would be its brutal enforcers.²¹

The unleashing of the IRGC led to arguably the bloodiest and most violent period in Middle Eastern history, as Khomeini set out to protect the nascent revolution from any internal dissension. The resulting purge led to the firing squad deaths of tens of thousands^{20,21} of middle-class professionals and secularists, often within hours of being taken into custody.† The Revolutionary Guard was created to protect and enforce the constitution²² of the new Khomeini government, but it was also given a constitutional mandate to export the Islamic revolution^{21,22} in a bid to reunite the Islamic world and was charged with supporting any foreign groups striving to create Islamist states around the world. Ayatollah Khomeini's dream of an Islamic state did not end at Iran's borders, but envisioned the Islamist revolution as a global ideal.²¹ Such, it is interpreted by the Iranian government that this Islamic world, with Iran as its center, has no boundaries. Iran's 1979 Islamic Revolution is viewed by many as the beginning of today's epochal struggle between radical Islam, moderate Muslims, and the liberal values of the secular West.

* Khomeini is credited with creating two of the most brutal and deadly Islamic terrorists groups in history: Hezbollah came from the armed wing of the Coalition of Islamic Societies that Khomeini had created while in exile in the 1960s and the IRGC in the 1970s.

† President Mahmoud Ahmadinejad claims that the imperial-minded nations of the West have conspired for "... 100 years to keep our nations underdeveloped and backwards to continue their domination, so they don't want us to progress." This despite the fact that Iran and other regional states have systematically destroyed the literati and academic strata of their countries in an attempt to hold sway over their illiterate and trusting populations.

5.3.2 Post-Khomeini Iran

Ayatollah Khomeini was 76 years old and in failing health¹⁵ when he assumed the leadership of Iran in 1979 and recognized that he would not see his vision of a radical Islamist world come to fruition. He had spent his life planning and dreaming of this Islamist ideal and was determined to protect his vision after his death. To this end, the new Iranian constitution²² was carefully crafted to protect the future of the fledgling government, containing many of the principles that Khomeini had first presented in his 1970 book *Islamic Government: Governance of the Jurist*.²³ As Supreme Leader, Khomeini's powers included: commander-in-chief of the armed forces and police; leader of the Supreme National Security Council (including all nuclear decisions); the naming and dismissals of presidents, as well as the approval of all political candidates; leadership of Iran's judiciary; and head of the state-controlled television and radio, the Islamic Republic of Iran Broadcasting.¹⁵ Not only did the constitution give Khomeini unprecedented powers for life that equaled those of Fascist dictators (and far beyond any powers dreamed of by the shahs) it also allowed him to claim the Iranian people's heart and soul by recognizing him as "Imam of the Muslim Umma"^{15,22,23}—the prophet of the entire Muslim world. As Imam of the Umma, a title never before bestowed upon a living person in the Islamic religion, Khomeini assumed a mantle of religious infallibility, which could not be questioned. The constitution²³ further confers this sacred title and these political powers to all subsequent Supreme Leaders and to remain in effect until the return of the Mahdi, which to the faithful will herald the end of the world.*

Iran has continued to be governed by the Shiite clerics since the death of Ayatollah Khomeini in 1989 and they retain all the constitutional and religious powers that Khomeini assumed and have maintained his pursuit of a radical, global Islamic state. Ironically, it was the United States and Great Britain that enabled Iran to begin its ascent as a superpower in the Middle East—by removing the secularist Saddam Hussein as leader of Iraq, they removed the buffer to Iranian power and in essence, gave Iraq's Shia population a new "leader," Grand Ayatollah Khamenei,²⁴ Iran's current Supreme Leader. Cultural, tribal, and religious similarities have historically bound the two countries' populations together. Iran and Iraq were never destined to be

* Belief in the Mahdi is central to both Sunni and Shia eschatology. The Mahdi will return to earth for a period of years (that varies with interpretations) prior to the end of the world. The Mahdi will be accompanied by Jesus, and together they will rid the world of tyranny, wrong-doing, and injustice. Shia Islam believes that the Mahdi is actually the twelfth Imam, Muhammad al-Mahdi, who was hidden by God at age five in 874 CE. Both the Sunni and Shia believe that the conquest of the Jews (Israel) will be a sign of the End Times that will result in paradise on earth. The Islamic sect that conquers the Jews will have been "chosen" by Allah, and thus proven its superiority to the other.

enemies—that was a false construct created by Saddam Hussein and supported by arms from the Western nations.

In its drive to spread Khomeini's Islamist state, Iran has been deemed the world's "most active state sponsor of terrorism"²⁵ and in 2006 Condoleezza Rice was quoted as saying Iran was a "central banker"²⁶ for terrorists in Lebanon, the Palestinian Territories, in southern Iraq, and throughout the Middle East through its proxy Hezbollah. Iran has repeatedly denied these allegations, but the evidence seems overwhelmingly to the contrary. Iran's economic and military support has been traced to several Islamist groups, including the Lebanese Shiite militants of Hezbollah, Hamas, and the Palestinian Islamic Jihad,²⁵ and it is believed that Iran has encouraged these and other groups to act as its proxies throughout the region. Through these groups, Iran has been connected to the bombings of the Jewish cultural centers in Argentina²⁷ in 1994, the Khobar Tower²⁵ bombings in 1996, and numerous attacks on Israel. Iran is also suspected of being behind the Lockerbie plane bombing²⁸ in 1988, and not Libya.* It is also believed that Iran supplied funds and safe transport for insurgents such as Muqtada al-Sadr²⁹ and others in Iraq, in an attempt to further destabilize Iraq and fuel its civil war in a proxy war with the United States. There is strong evidence that Iran is currently supplying military equipment and advisors to Hezbollah, the Taliban,³⁰ Iraqi insurgents,²⁹ and that the IRGC is supporting the dictator Bashar al-Assad³¹ in squashing current opposition demonstrations in Syria.

Supreme Leader Ayatollah Ali Khamenei, personally chosen by Ayatollah Khomeini^{21,24} to succeed him, holds the real power in Iran, not the highly visible Iranian presidents that have come and gone. Although Mahmoud Ahmadinejad currently holds the office of President of Iran, and is the public "spokesman" for the regime, the president holds little power and what power he does wield is only by permission of the clerics and is severely checked by the powers of the Supreme Leader.²¹⁻²³ The outrageous pronouncements of Ahmadinejad, particularly in relation to the Palestinian issue (and by proxy, Israel) are part of a very shrewd characterization of Iran's national interest. By appropriating the Palestinian issue from Egypt and Saudi Arabia, who have been Iran's key rivals for dominance in the Middle East, Iran's international importance increases. Ahmadinejad is playing a deft game of not only building the significance of Iran's regional leadership but also his own through manipulation of the media. By taking up the "Great Arab Cause,"³² Arabs throughout the region view Iran as a great friend to the Palestinians, making it difficult for leaders of moderate Arab countries to speak out against Iran (as well as making them look "weak" compared to the "bold" Iranians). When pressed regarding his continual outspokenness against

* Iran believes strongly in an-eye-for-an-eye justice; some analysts believe that Lockerbie was in retaliation for the accidental downing of an Iranian passenger jet the year before.

the Palestinian–Israeli peace talks, Ahmadinejad deflects the questions—“solving” the Palestinian issue does not serve Iranian purposes, or his own. Being obstructionist, without appearing to be so, is a tight wire that Iran is walking.

Where does this Iranian confidence come from? How can a Shia country believe it has the strength and influence to politically and economically dominate the overwhelmingly Sunni-governed region? It is an interesting, if somewhat bewildering tale, with many players with multiple agendas.

5.3.3 Bahrain

The tiny island of Bahrain (actually a small archipelago) sits in the Persian Gulf, snuggled close to its protector, Saudi Arabia. Iran looms across the Gulf, periodically claiming historic sovereignty over the island nation. Iran and Bahrain, as neighboring states, have had a long and complicated (if not schizophrenic) relationship³³—it has ranged from expansionist threats to bilateral trade agreements and elemental regional cooperation. Bahrain recognizes that it cannot face Iran as an equal, so it does what it can to appease its larger, more powerful neighbor while pursuing other international options aimed at reining in Iran’s expansionist policies. As an example, Bahrain’s Sheikh Salman bin Hamad al-Khalifa supports diplomacy, rather than sanctions, to deal with the conflict over Iran’s nuclear enrichment program.³³ Bahraini officials have attended high-level nuclear talks in Tehran and support Iran’s right to possess peaceful nuclear technology; yet, at the same time, attending UN meetings with the five permanent members of the UN Security Council and other Arab states³⁴ in an effort to determine how to pressure Iran to end its nuclear enrichment program altogether.

Even though Bahrain was the first country in the Middle East to discover oil, its fields are limited and expected to be depleted in 10–15 years.³⁵ To fuel its future growth and development, it must negotiate with its oil-rich neighbors. Thus, Bahrain’s economic cooperation with Iran^{36,37} is focused around the energy industry, and the two countries are currently in ongoing negotiations for the construction of a natural gas pipeline that will carry 1 billion cubic feet of natural gas from Iran to Bahrain and Oman for the next 25 years.^{37,38} To say that these negotiations are fragile is an understatement—the negotiations broke down in 2009 when an Iranian official, Ali Akbar Nateq-Nouri, in another of Iran’s periodic announcements of ownership of the island, claimed Iranian sovereignty over Bahrain. The talks recently resumed only after the Iranian Foreign Minister Manouchehr Mottaki traveled to Bahrain and issued an apology.³⁶ This uneasy relationship has recently become even more strained due to the Arab Spring opposition demonstrations in the region, the ongoing U.S. condemnation of the Iranian nuclear enrichment program and UN sanctions, as well as internal political disagreement³⁹ in

Bahrain over hosting the U.S. 5th Fleet.* Despite these issues, or possibly because of them, Bahrain, Qatar, and Iran held a trilateral negotiation in January 2010 to lay the foundation for an agreement on maritime borders.⁴⁰

As in a number of other Gulf Arab states, the majority Shiite population in Bahrain is dominated and ruled by the minority Sunni in a divisive political conflict. Sunni-ruled Saudi Arabia backs the Bahraini monarchy while Iran considers itself the patron of Bahrain's repressed Shiite population, and each exerts their influence at every opportunity. This is the key reason why these Gulf Arab states are fearful of Iran's influence over their populations; through its proxies and religious influence, Iran could incite members of the Shiite community in their own states to commit espionage or sabotage and possibly result in the overthrow of the Sunni governments.

Even before the recent unrest in the region, there have been security sweeps and arrests in Bahrain⁴¹ of alleged members of "terrorist networks" (i.e., Shiite opposition members), seeking to "overthrow the Sunni monarchy." These sweeps are not unusual and always occur prior to the decisive parliamentary elections. The Shiites currently hold 18 of 40 parliamentary seats in Bahrain, and the Sunnis fear that the Shia may gain a majority in the next parliamentary elections.⁴¹ The other Sunni-governed Gulf Arab countries, concerned with Iranian influence over their populations, openly support Bahrain's intent to make an example of the Shi'a opposition—a not too subtle message to other Shia in the region that they will be found out and their plans thwarted.

Bahrain, somewhat myopically, blames the current unrest of its Shia population wholly on outside instigation by Iran and its Lebanese Hezbollah proxy.⁴² Isolated protests continue despite over 2000 Saudi and Emirati troops[†] still in place^{43,44} on the tiny island. Citing illegal and unauthorized construction, the Bahraini government has demolished over 43 Shia mosques and the Sunni-dominated media has begun labeling Shia protestors as traitors.^{42,45}

* Bahrain is a close ally of the United States and hosts the U.S. 5th Fleet at its port of Manama. The 5th Fleet is responsible for naval operations in the Middle East, with operations that span over 6.5 million square kilometers of water and the coastlines of 27 countries, including the critically strategic chokepoints of the Strait of Hormuz, the Suez Canal, and the Bab al Mandeb Strait off the South of Yemen. Bahrain is critical for the U.S. military operations in the region since the closest suitable site for the fleet would be Diego Garcia, 3300 km from the African coast—too far for immediate tactical responses. In May 2010, Bahrain signed a long-term agreement with the United States for a \$580 million upgrade to the naval base that will double its size; currently 300 ships visit the port annually, and this is expected to increase to over 400 ships. The Manama base is equally important for Bahrain—it contributes over \$150 million dollars to the Bahraini economy annually, as well as offering protection from Iran's expansionism.

† The Saudis ignored the requests for restraint by the United States and sent more than 2000 troops over the King Fahd Causeway into Bahrain to quell the March demonstrations. Riyadh sees these Shiite-dominated demonstrations in Bahrain as direct threats from Iran to their power and existence, and financially and militarily supports suppression of the opposition throughout the Gulf.

Bahrain's total population is approximately 800,000—and more than 8,000⁴² have been arrested, including doctors and medical staff that have been put on trial for treason^{46,47} for treating injured demonstrators. Unfortunately, the Bahraini monarchy, due to its aggressive crackdown on demonstrators, has played directly into the hands of Iran by accusing the demonstrators of being agents of Iran⁴⁸ and denying them a legitimate forum for national dialogue.

Bahrain has recently lifted the state of emergency that was imposed in Spring 2011 in an attempt to reestablish its banking hub and tourism destination reputation and to ease tensions within the country.⁴² But the sectarian divide is deepening. What started out as peaceful demonstrations for more basic opportunities in employment, housing, and education has now become a call for the removal of the once respected monarch, King Hamad al-Khalifa. Recent life sentences handed down to prominent Shia political leaders⁴⁶ for leading generally peaceful demonstrations calling for political reforms has added stress to a volatile situation. Hundreds of others, including some Sunni leaders have also been jailed, awaiting trials as “terrorists.” The Bahraini government has started a sectarian fire that may be difficult, if not impossible to extinguish. Meanwhile, Iran sits on the other side of the narrow Persian Gulf, awaiting an opportune moment to capitalize on the chaos.

5.3.4 Iraq

Saddam Hussein took power in Iraq just months before Ayatollah Khomeini returned to Iran^{15,21} in 1979. Although a Ba'athist and ostensibly pan-Arab, Hussein filled top-level government positions with Sunnis in an attempt to prevent any internal challenge to his new government⁴⁸ by the overwhelmingly Shia populace. He was extremely wary of the new Islamist government on his Eastern border and feared that Iran would exploit the delicate Sunni-Shia balance in Iraq, and in a miscalculation of his opponents' weakness,* declared war on Iran in 1980. Although the Iran–Iraq War was ostensibly based on religious and ethnic schisms, ongoing political differences and border disputes, and the intensifying personal animosity between Hussein and Khomeini, Saddam Hussein intentionally initiated the war in hopes of replacing the regional dominance of Iran and consolidating Iraq's power in the region. Ayatollah Khomeini, for his part, was still bitter over his expulsion in 1977 from the Iraqi holy city of An-Najaf,^{15,21} where he had taken refuge after being expelled from Iran by the Shah and had a deep hatred of Hussein and his secular pan-Arabism. The war with Iraq actually came at

* Saddam Hussein believed Iran to be a weakened state when Khomeini began executing the highest ranking government officials and military officers, and the Iraqi intelligence agency had been able to incite labor riots across Iran. Iraq had expected that the Iranian populace would rise up against Khomeini after early Iraqi victories, but the Iranians remained united behind their new government.

a very opportune time for Khomeini—there was growing internal dissent regarding the brutality of his new government, and this external threat to the Iranian nation proved an effective rallying point for the populace.¹⁵

By 1984, the Iran–Iraq War had become a war of attrition—with neither side effectively using their weapons^{15,21,49,50} and equipment. Over half a million troops had been killed or wounded, with even more loss of life occurring when Iran began their human wave attacks and Iraq began using chemical weapons.⁵⁰ The war dragged out beyond its natural conclusion when Iraq was supplied with weapons by France, the Soviet Union, and the United States. In an attempt to retain some influence and assurance of supporting the “winning” side, the Soviet Union also supplied some military support, but mostly diplomatic and economic support, to Iran.⁵¹ The war decimated the economies of both Iran and Iraq and resulted in roughly a million people dead, over a million wounded and several million displaced. None of the issues cited as reasons for the war had been resolved and even though Iraq had won the war militarily, it was left on par with Iran in economic and political conditions similar to those in 1980. Iraq did emerge as the premier armed force in the Gulf region, having one of the world’s largest and best-equipped armies⁴⁹ by the end of the war.

Iran and Iraq were never destined to be rivals—it is a modern geopolitical animosity based on land issues, political agendas, and survival, not on an ancient religious division. Sharing the two holiest Shia religious sites binds Iraq and Iran⁵² in ways that will ultimately surmount political constructs. Point of fact, when Saddam Hussein’s secular government put pressure on the Shia, the Iraqi Shia leadership fled to Iran’s holy city Qom⁵² for protection. It would seem unlikely that Iran and Iraq would be able to cooperate with one another after the devastating Iran–Iraq War, but that is not the case. Again, Iran views itself as the patron of the “repressed” Shia majority in Iraq and seizes every opportunity to make its presence felt. Brigadier General Qassem Suleimani,⁵³ who commands the Iranian Revolutionary Guards’ clandestine al-Quds Force, was instrumental in brokering a truce in 2008 during a battle in the southern Iraq city of Basra between the militia of Muqtada al-Sadr, the Mahdi Army, and the Shiite-dominated government of Prime Minister Nouri al-Maliki; a battle that could have resulted in a full-scale uprising of al-Sadr’s followers.⁵⁴ Suleimani was able to broker the cease-fire in Basra because it was his al-Quds Force⁵⁵ that had secretly trained Iraqi groups during the late 1980s and 1990s in hopes of furthering Tehran’s domination of Iraq after the fall of Saddam Hussein.*

The Western nations believe that the Iranian influence in Iraq can only be “nefarious” when in actuality it is more of a geographic destiny. Iran’s

* Brigadier General Suleimani is extremely capable of meshing covert operations with strategic diplomacy; he is Iran’s top strategist on foreign policy, with the ability to turn up the pressure seemingly anywhere in the Middle East when it suits Iran’s interests.

influence in Iraq and the rest of the region is/was inevitable, and the invasion of Saddam Hussein's Iraq by coalition forces in 2003 only expedited the process.⁵⁵ Removing the tyrant Hussein led to a civil war for which the U.S. military was totally unprepared and the fall of the secular state of Iraq has also led to sweeping changes in the political and strategic landscape of the Middle East, radically shifting the balance of power in the region. Security and political paradigms have been destroyed and regional actors are reexamining and renegotiating their relationships with one another and outside powers, particularly the United States and its allies. Iraq's collapse has emboldened Iran's ambitions for preeminence and expanded its influence among the Shia throughout the region. The other great power in the region, Saudi Arabia, presents the only viable counterbalance to Iran's expansion, along with the other Sunni-dominated Arab countries. This religious and political power struggle between Iran and the Gulf Arabs will have long-term implications for the stability of Iraq and U.S. interests in the region.

Today, relations between Iran and Iraq are improving to the point that a recent Iranian delegation, led by First Vice President Mohammad-Reza Rahimi, signed six agreements of cooperation⁵⁶ with Iraq that addressed cultural issues, the avoidance of double taxation on trade, science, technology and communications, and medical treatment and pharmaceutical cooperation. Discussions were also held on the topics of electricity, transportation, construction, oil and gas, and other ways that Iran might help Iraq rebuild its infrastructure after the 2003 Iraq War. This new cooperation between the two Shia nations^{57,58} has the other Sunni-led Gulf States on edge; they fear the formation of a Shia juggernaut⁴⁸ that could result in unrest in their own oppressed Shia populations. In an attempt to curtail Iran's growing influence in Iraq, many of the Gulf States are offering billions of dollars in funding and expertise to rebuild Iraq; knowing full well that Iran's current economic problems preclude it from such generosity.

5.3.5 Palestine

Despite the fact that there are no Palestinian Shia, Iran has supported Palestine since the 1979 Iranian Revolution, even turning over the Israeli embassy in Tehran²¹ to the Palestinian Liberation Organization (PLO). In an attempt to export the Islamist Revolution, Iran began aiding several Palestinian Islamist groups, including Hamas and Islamic Jihad, providing most of the weaponry used against Israel.⁵⁹ For a country with a dearth of Sunni allies, the Palestinian partnership has been a major success for Iran. The "Great Arab Issue" (Palestine) in many ways has become a convenient issue to further the political machinations of the Gulf States, including Iran. There have been innumerable talks focused on "solving" the Palestinian problem and many groups in the region use the issue as a justification for

terrorist acts, but no one seemingly wants to make the hard decisions²¹ that would bring the issue to an end. In the case of Iran, there is actual obstructionist behavior in regards to peace talks between the Palestinians and Israel.

Palestinian President Mahmoud Abbas, for his part, has been a weak leader,⁶⁰ unwilling to make a decision regarding having direct talks versus endless “proximity” talks with Israel, for fear of making the wrong decision. Yasser Arafat fought for years to escape the control of the Arab League;⁶¹ the less wily Abbas basically has agreed to do whatever they say. The Arab League is endorsing direct talks, but with the caveat that the timing is left to the Palestinians; meaning that Abbas will get the blame⁶² if having direct talks is the wrong decision. The Palestinians are seen as a constant drain, both politically and financially, on Arab countries, and the interminable Israeli–Palestinian problem is one that the Arab states want an eventual solution to, but seemingly do not want to make the difficult political decisions to get there. In essence, the Arab League is for peace and discussions with Israel, and they will accept help from the United States to achieve a solution while backing the struggles of their Arab brothers against Israel, but only if nothing goes wrong.

Once again the WikiLeak documents have revealed the two-sided nature of statesmanship in the region; it was disclosed that despite Iran’s long-time support of Palestinian causes, President Mahmoud Abbas had tried to undermine Iran’s influence in the region after the disputed 2009 Iranian elections by attempting to raise millions of dollars for a radio station for the Iranian opposition.⁶³ President Abbas’ wariness of Iran was well-founded—Iran had long been funding and arming Hamas,^{15,21,25,26} a militant and political organization engaged at the time in a divisive power struggle with the Palestinian National Authority. In the 1980s, approximately 10% of Hamas’ funding was supplied by Iran, increasing to \$30 million annually in the 1990s.^{64,65} Until the UN sanctions in 2009, Iran’s financial support for Hamas had grown to hundreds of millions of euros per year. As an example of the duplicitous nature of the regional players, in the early 2000s, Saudi Arabia supplied over half of Hamas’ \$50 million⁶⁶ annual budget through Islamic charity organizations, with the funds channeled through the notorious Saudi al-Taqwa Bank^{67,68} that has also laundered money for al-Qaida and other terrorist organizations.*

Recent unification of Hamas and Fatah^{69,70} after years of bitter infighting is necessitating a paradigm shift, alarming not only the United States and Israel but also the regional Arab actors, especially Iran.† The unification

* Due to pressure from the United States, funding for Hamas from Saudi Arabia and other regional states has been radically reduced since 2004. Hamas now relies on investment in Gaza business ventures for its financial support.

† Egypt’s recent shedding of its slavish devotion to the United States and readiness to defy Israeli demands by opening the Gaza border has contributed to the uncertainty and shift in regional allegiances.

of the two Palestinian forces can be attributed in part to Hamas' insecurity that its Iranian-backed Syrian base is stable, as well as Mahmoud Abbas' realization that the Palestinian National Authority's limited resources and political legitimacy are being wasted on debilitating infighting.⁷⁰ Both sides have recognized that a united Palestine will have more credibility in its push for Statehood before the UN General Assembly⁷¹ in the fall of 2011. Unfortunately, the concerns for Palestine and its goal of statehood will take a backseat to the more pressing regional problem of a nuclear Iran.

5.3.6 Lebanon

Iranian history is an intricate web woven with political and religious threads stretching back through the centuries and throughout the Middle East, and its historic and religious ties to Lebanon may be the strongest of all. Shah Ismail I in the early 1500s, to consolidate his control over Iran, declared that Iran would become a Shia state.^{15,72} Since Iran had been a Sunni state up until that time, he recruited Shia Ulema (Islamic scholars) from Lebanon⁷³ and sent many Iranians to Lebanon to study. This movement of scholars between the two countries over the centuries led to close familial ties between Lebanon and Iran that persist to this day.

It is often said that Lebanon is a beautiful country living in a very bad neighborhood. Once considered the Paris (or Switzerland) of the Middle East, Lebanon's troubles began after the 1967 War when displaced Palestinians settled in Southern Lebanon and King Hussein expelled the PLO from Jordan in 1970.⁷⁴ By forming their own police force and economic structure, the PLO eventually ruled wide areas of Lebanon—a state within a state. Lebanon's fractious political construct⁷⁴ presaged its inability to repel the destabilizing influence of the PLO and other outside entities. The outbreak of the Lebanese civil war (1975–1990),^{74,75} principally instigated by these external forces, literally tore the country apart. One might ask how these rogue elements can gain such power within a country, but as elsewhere throughout the world, when a weak government is unable to supply security, education, medical care, and even basic necessities such as clean water and food to its people, then the group, or groups, that can provide these basics gain popular support.

Iran sent its first small contingent of Revolutionary Guards into Lebanon in 1982.^{74,75} These young men comprised the newly created Lebanese arm of the Hezbollah¹⁵ militia, ostensibly to protect and defend the Lebanese Shia population, but brought with them religious intimidation and brutality unseen in Lebanon, even in the depths of its devastating civil war. The Iranian Islamists, in an attempt to drive Western influence out of Lebanon, harassed women in Western dress, restaurants and stores that persisted in selling alcohol were attacked and burned, and the systematic and lucrative kidnapping of Westerners began.

By the early 2000s, after considerable efforts, Lebanon had become stabilized and began to enjoy some of its former reputation as a tourist and banking center. Then in 2005, the well-respected President Rafik Hariri was assassinated^{76,77}—it is assumed by Syrian operatives—once again destabilizing the country. But by 2006, the country had regained its footing and had almost completely rebuilt itself—until the Israel–Lebanon War⁷⁸ in 2006, a war instigated by Hezbollah repeatedly launching missile attacks against Israeli cities from southern Lebanon strongholds. Unfortunately for Lebanon, it is often used as a forward base for Iranian and Syrian proxies to attack Israel and for Israel to mount counterattacks. Lebanon was left in ruins once again.

Syria is again attempting to exert its power in Lebanon, indicated by the recent visit to Beirut in 2010⁷⁹ by President Bashar al-Assad. The Golan Heights, bordering Lebanon, Israel, and Jordan, will be a strategic part of any peace process between Israel and Palestine, and Syria intends to determine the direction of that dialogue. Due to Syria's close alignment with Iran and Hezbollah,^{15,21,76,79} no serious decision regarding the Golan Heights will occur until the Iran issue is settled since Syria would have to break with Iran in order for any deal to occur. It is unlikely that another war will break out between Israel and Hezbollah at the Lebanese border (recent border skirmishes notwithstanding) since Iran needs Hezbollah to remain a strong military force in Lebanon so if Israel does bomb the Iranian nuclear sites (as Iran expects) Hezbollah can be used to “retaliate” against Israel.

The Lebanese populace has been galvanized⁸⁰ by the Arab Spring to throw off the mantle of being an “Iranian protectorate” through its proxy Hezbollah. In Prime Minister Saad al-Hariri's outgoing speech* in February 2011⁸¹ he focused on the threat that Hezbollah posed to Lebanon when he stated, “The problem is not about resistance against a foreign enemy, who is non-Lebanese and non-Arab ... the problem is the domination of arms over your Lebanese Arab brothers and over life in Lebanon (by Hezbollah). The problem is when you say the arms will not be used internally, yet we find that your arms do nothing but be used internally. Lebanon first, the state first, not arms first ... for the sake of our Arabism, freedom, sovereignty and independence.” Bold words indeed, but the question remains whether Lebanon has the strength and cohesiveness to counter the insidious power of Iran within its own borders.

* Hariri's speech was deemed political theater and “childish” by the Hezbollah leadership, in no small part since a huge banner depicting the Saudi King Abdullah was hung behind Hariri shortly before his outgoing speech began. The not so subtle message being that everything Hariri said was approved by the Saudi government.

5.3.7 Syria

In a region known for its short-lived alliances, Iran and Syria form an odd couple in more ways than one. They have been staunch allies for over 30 years, with Syria giving Iran unwavering support^{82,83} since the Iranian Revolution in 1979, even shutting down the main oil pipeline used by Iraq to transport its oil during the Iran–Iraq War. Iran, despite Syria’s Baathist secular socialist government, has never tried to export its Islamist Revolution to Syria, even when the government of Hafez al-Assad massacred the Shia Islamist opposition in Hama⁸⁴ in 1982. Iran’s clerical leaders have even gone so far as to overlook the fact that the Syrian rulers belong to a heretical Shia sect, the Alawis.⁸⁵ This alliance can be explained by looking at the Shi’ite Crescent⁸⁶—an unintended consequence of U.S. occupations and interventions in the region. The Crescent stretches from Yemen, through the Shi’ite populations in the Gulf countries, Bahrain, Kuwait, up through Iraq, Syria and into Lebanon and encompasses 70% of the world’s oil reserves and approximately 40%⁸⁷ of the world’s natural gas reserves. Iran will never allow this vast strategic Shi’ite region to be disrupted and continues to develop its sphere of influence at every opportunity even if it means embracing the heretical Alawis.

For Iran, Syria serves as a critical military supply conduit to Hezbollah in Lebanon and Hamas in Gaza and as a political and commercial conduit to other Middle Eastern states, as well as a steady ally in confrontations with the United States and Israel. Syria is one of the few Arab countries ruled by a Shia minority (albeit the Alawi sect) with a majority Sunni population. This is the primary reason why the al-Assad family and cronies* currently are fighting so strenuously to hang onto power in Syria—they know that if they fail, it will be death for all of them^{88,89} due to their decades of brutality to both Sunni and Shia. For its part, Iran recognizes that if the Alawis are toppled then the new Syrian regime will most likely be Sunni-dominated, and thus hostile to Iran. One can be assured that Iran is doing whatever it can to assist the al-Assad government to remain in power. Rumors abound that Bashar al-Assad is prone to negotiate and loosen his hold on power in favor of reform, but the Alawis surrounding him (particularly his brother Maher al-Assad,⁹⁰ Commander of the Republican Guard) and the Iranian government are preventing him from pursuing any option but brutal crackdowns. To that end, there have been recent reports of a dramatic upsurge in Iranian arms and IRGC members⁸³ throughout Syria, particularly in and around Damascus.

In general, Syria has pursued a policy of straddling the fence on key Mideast issues and its bilateral relationships, choosing ambiguity over clarity.

* The Syrian Christian minority (which is approximately equal in population to the Alawis) has enjoyed protection by the al-Assad for more than 40 years and is currently supporting the government crackdown on dissidents. The Christians fear that a change in leadership may result in a tyrannical Islamist Sunni government that will turn on them.

While allied with Iran and financially supporting and arming Hezbollah in Lebanon and supporting Hamas in Damascus, Syria also declared its willingness to resume peace talks with Israel.⁹¹ It is believed that part of Syria's ambiguity is the possibility of a nuclear program; the United States is concerned that Syria might have a clandestine nuclear program supplied by Iran, and Syria has blocked all International Atomic Energy Agency (IAEA) inspections, further fueling speculation. Israel was so convinced there was a maturing nuclear program that it took the action of bombing a suspected nuclear reactor in northeast Syria⁹² 3 years ago. The United Nations had taken the matter up and was considering sanctions⁹³ similar to those applied to Iran over the nuclear issue. By extending an offer of peace talks with Israel, Syria may have been attempting to divert focus away from this nuclear issue.

Until the recent opposition uprisings, Syria had been attempting to recover from its isolation caused by the assassination of the Prime Minister of Lebanon, Rafik Hariri.^{76,77} Syria has denied involvement in the assassination of the staunchly pro-Saudi Hariri, yet most observers believe that Damascus directed the murder through its proxy, Hamas.^{76,77} President Bashar al-Assad has met with leaders from Saudi Arabia, Egypt, and Lebanon⁸⁰ in an attempt to improve relations, and these meetings have led to gradual renewed contacts with the United States and Europeans. The Saudis for their part realize that it will be very difficult to sever the ties between Iran and Syria, but by meeting with the Syrians and making offers of economic development, they are showing the Syrians what they can achieve by weakening their alliance with Iran and returning to the Arab fold. Syria's contradictory regional policies have divided political analysts: some think Syria wants to be the regional spoiler while avoiding hard decisions that might weaken the regime; others believe Syria is the key to Middle East stability.

After years of neglect during the Bush administration, the Obama administration has made repeated overtures to Damascus earlier this year, including naming the first U.S. ambassador to Syria since 2005.⁹⁴ The United States seeks to reverse George W. Bush's policy of isolating Syria by having U.S. Middle East Envoy George Mitchell⁹⁵ meet with President al-Assad to garner his support for the renewed Israeli-Palestinian peace talks. Despite these meetings, the uptick in rocket attacks from the Hamas-controlled Gaza prior to the talks has had a destabilizing effect. The leaders of Hamas, based in Syria, lead the opposition to the peace process and were until recently bitter rivals of the U.S.-backed Palestinian Authority President Mahmoud Abbas. The United States is also hoping to have parallel Israeli-Syrian talks; it remains to be seen what effect the Arab Spring and the unification of Hamas and the Palestinian authority will have on these talks.

To counter these U.S. overtures, Iranian President Mahmoud Ahmadinejad, on his way to the United Nations, made a brief stop in Damascus to meet with al-Assad 2 days after George Mitchell's visit to the Syrian leader.⁹⁶

Ahmadinejad told Iranian television prior to his visit that he would be discussing with al-Assad “the Westerners’ moves in the region,” as well as Iraq, Lebanon, and the Palestinian territories.⁹⁶ As tensions have grown between Syria and Iraq over Iraq’s accusations that Syria is sheltering Iraqi suicide bombers,⁹⁷ Iran has stepped in to play the mediator role, further insinuating itself in regional political issues, particularly in Shia-dominated Iraq.

The current unrest and government crackdown in Syria has negatively impacted foreign investment,* and domestic business, especially tourism† and manufacturing, have ground to a halt; hotels are empty, and industrial plants are closing or forced to cutting shifts and working reduced hours.⁹⁸ The uncertainty has resulted in heavy withdrawals from the banking system,⁹⁹ further weakening Syria’s fragile economy. Al-Assad’s government has gone on a spending spree⁹⁹ to shore up internal loyalties by increasing government and military salaries and restoring public subsidies on gas and oil. The government has been unable to form a coherent economic strategy to deal with opposition crisis—the current crisis management mode only allows them to try to survive until the next Friday¹⁰⁰ (when demonstrations usually occur), which means that subsidies and salaries cannot be cut for fear of alienating the few allies they have maintained. Financial reserves, officially pegged at \$18 billion, are being depleted at a rate of \$70–\$80 million per week,⁹⁹ and the currency pressures are causing the Syrian pound to slide, further undermining the possibility that President Bashar al-Assad will survive this crisis. Iran will try to financially prop up Syria, but they have their own financial crisis to deal with, so Iranian support may not be enough to save the Alawi government.

5.3.8 Saudi Arabia

From the outside, Saudi Arabia appears to be an insuperable juggernaut, with limitless power and wealth. But on closer inspection, in many ways, it is a hollow straw man. From the fifteenth until the eighteenth century, the al-Saud family was a tribe of pirates, plying their “trade”—first robbing camel caravans and then the Arabian Gulf shipping lanes.¹⁰¹ In an attempt to garner legitimacy, they assumed the mantle of religiosity through the eighteenth century cleric Muhammad Ibn Abd-al-Wahhab. Abd-al-Wahhab^{101–103} advocated a radically strict form of Islam, and although he was shunned by his own family (who were respected clerics in their own right) for misinterpreting the Qur’an, he was embraced by the al-Saud family. Wahhabism is an ultraconservative sect of Sunni Salafism^{101–103} and is considered by many to be heretical, yet it has become a major force in Sunni Islam^{4,5} due to the al-Saud’s funding the construction of mosques and madrasahs¹⁰³ on a global scale.

* Syria had recently been trying to break out of its Soviet-style control of industries and was seeking outside investors. Gulf investors have recently put several projects on hold.

† Tourism had grown to 25% of foreign currency earnings in late 2010.

The export of Wahhabism underscores the major weakness within the kingdom—a tacit agreement was made between the al-Saud's and the clerics^{101,103}—so long as the Wahhabi radicalism was directed outward, away from the kingdom, then funding and support would be forthcoming from the government. Not surprisingly, wherever Sunni Islamic fundamentalists strike, one sees the fingerprints of Saudi money.* This results in a contradictory national policy: billions of petrodollars are spent to fund Wahhabi religious centers throughout the world that have become epicenters for jihadist recruitment that focus on the United States as their main target—yet the Saudis look to the United States for protection both from Iran and from their own public, many of whom are products of these same centers. It has often been remarked that the Saudis are riding on the back of a ferocious tiger that will eventually consume them. Recent attacks by Wahhabi radicals within the kingdom against Riyadh's embrace of decadent Western lifestyles and the bivouac of U.S. military forces is a clear indication that the al-Saud's are losing control of the tiger.†

The limitless oil wealth has proven to be another weakness for the kingdom. The national treasury, as everything else within the kingdom, is treated as the personal property of the al-Saud family,^{104–106} and the exchequer is their personal purse. This intermingling of personal and national wealth has resulted in members of the family acquiring unauditible wealth, which is estimated to be fully 40% of the kingdom's annual income. Not only is there a caste system within the country between members of the al-Saud family and the non-al-Saud's, there is also a three-level caste system within the al-Saud family (dependent upon one's direct ancestor)^{104–106} and hence the distributable wealth. Consequently, with countless senior princes and princesses being paid nearly \$1 trillion annually, who in turn garner political clout by supporting innumerable other princes and princesses, it is a system rife with intrigue and shifting allegiances.^{101,104,106} This wealth has also created a society wherein no one does any substantive work—almost all work, save for the most prestigious,¹⁰⁵ is done by immigrant workers. This includes everything from maids and construction workers to medical workers and other professionals—all work is performed by immigrants; or in the case of the military, through U.S. support and training.

Iran, as the center of Shiism and one of the world's largest oil producers, sees itself equally powerful as Saudi Arabia and the legitimate voice of Islam.^{4,5} With its history stretching back to 2800 BCE, Iran views the al-Saud family as poseurs in the extreme. Saudi Arabia, in turn, claims that its Islamic authority is based on custodianship of the two holiest sites in Islam,

* As often noted, it is no accident that 15 of the 19 terrorists on the planes that flew into the World Trade Center on September 11, 2001 were Saudi Arabian citizens.

† Saudi Arabia has made major efforts in the last decade to cut back on funding of religious extremism, such as the Wahhabi madrassas around the world, but it may be a case of too little too late.

Mecca and Medina. But this authority is of recent vintage; the al-Saud monarchy and possession of the holy sites only dates back to the 1930s.¹⁰¹ Not only are Iran and Saudi Arabia divided by cultural and religious differences, Iran is vehemently opposed to the Saudi monarchy which they see as being heretical lackeys of the U.S. government and views Medina as one of Iran's lost territories. The irony is that the two most powerful states in the Middle East are driven by radical Islamists, one Sunni and the other Shia.

That being said, Saudi Arabia remains the one country in the Middle East that is powerful and wealthy enough to challenge the Iranian hegemony. Having the world's largest proven oil reserves gives Saudi Arabia the luxury of taking the long view in regards to both the oil market and the future.¹⁰⁷ Iran, with a much larger population and smaller oil reserves, has to focus on more immediate needs and quicker results. The dubious economic policies of the Iranian clerical government have resulted in a weak and struggling economy that has exacerbated the need for quick financial results. These tensions, along with sectarian and ethnic schisms, result in ongoing concerns for regional instability due to proxy conflicts between Tehran and Riyadh. Security analysts and observers have interpreted some regional conflicts in Iraq, Lebanon, and Gaza as having been incited by the maneuvering of these two powers.¹⁰⁶

The U.S.–Saudi alliance is based on a simple premise: cheap oil in exchange for military protection and the United States will ignore human rights abuses.¹⁰⁸ Riyadh has historically increased its oil production in response to rising gas pump prices in the United States, and in return, the United States has sold billions of dollars of state-of-the-art military arms, hardware, and training¹⁰⁸ back to Riyadh. To wit, the Obama administration has recently announced plans to authorize the Saudis to purchase the new F-15 fighter—a deal worth \$60 billion (though to appease the Israelis, the F-15 fighters will not be equipped with the long-range weapon standoff systems for use in offensive operations).^{109,110} The Saudi wish list is even longer, and high-level talks are proceeding regarding naval and missile-defense upgrades worth tens of billions more. The United States views these sales as strategic—a means to shore up its Arab allies against Iran, as well as assure stability in the world oil market.¹¹⁰

But this paradigm is shifting—Riyadh is starting to see that holding down oil prices will impact its ability to increase foreign aid to its Sunni neighbors, as well as fund the planned \$130 billion domestic subsidy program intended to prevent unrest in the kingdom.¹¹¹ Lately Riyadh has been practicing “pocket-book” foreign policy,¹¹² having recently given billions of dollars to neighboring states in an attempt to buttress their governments against regime change and Iranian influence, often in direct conflict with American foreign policy. Iraq has received several billion dollars in investments and lucrative trade agreements from Riyadh, in an effort to challenge Iran's growing influence in Iraq. The Saudis have recently spent over \$2.5 billion to counter Syrian

and Shia Hezbollah movements in Lebanon, and the Palestinian National Authority has been given approximately \$4 billion to rebuild its crumbling infrastructure and jump-start economic development. Riyadh has also given the current military-led Egyptian government \$4 billion¹¹² to encourage it to keep the status quo, rather than implementing true democratic reforms. The Saudis are particularly concerned in regards to reemergence of the Sunni Islamist Muslim Brotherhood in Egypt, fearing they could challenge the Wahhabi religious doctrine that legitimizes the Saudi monarchy. Since the beginning of the Arab Spring, senior U.S. diplomats and officials have visited King Abdullah of Jordan, hoping to convince him that by implementing democratic reforms, sooner rather than later, his rule will be strengthened, rather than overthrown. At the same time, Saudi Arabia has sent over \$400 million in aid to the impoverished kingdom,¹¹³ as well as dangling the possibility of Jordanian membership to the Gulf Cooperation Council (GCC)¹¹⁴—a membership that could mean new jobs, investment, and security ties to the wealthier Gulf States. The Saudis see critical challenges in preserving stability and security within the kingdom when decadal-long autocracies are falling due to the chaotic Arab Spring, while simultaneously trying to assure that Iran does not emerge strengthened. By inviting poorer Sunni monarchies like Morocco and Jordan to join the elite GCC (Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates), Saudi Arabia hopes to strengthen its ties¹¹⁴ to fellow Sunni monarchies and governments and prevent political reform from coming, while counteracting the growing influence of Iran on their restive Shia populations.

The resilient 70-year alliance between Saudi Arabia and the United States is starting to show some rifts,^{103,113} intensified by the recent opposition movements in the region. Riyadh had strongly counseled the United States against the 2003 invasion of Iraq and was alarmed when the United States supported the Shiite-dominated government of Nouri al-Maliki.¹¹³ The Obama Administration's general support of the recent protests, particularly in Tunisia and Egypt, and demands for reform from other repressive Arab regimes, is viewed by the Saudis as the United States turning its back on old allies. Saudi King Abdullah reportedly was furious when President Obama called for Hosni Mubarak to step down after 18 days of protest—this was seen as a turning point between the two longtime allies.¹¹³

The Saudis are also becoming disillusioned with the U.S. capacity, or desire, to continue providing protection for the kingdom and the region as a whole from the Iranian hegemony. Riyadh is beginning to look toward Pakistan as a supplier of nuclear technology,¹¹⁵ in return for financing the impoverished nation for the foreseeable future. The WikiLeaks documents revealed several U.S. State Department cables from the Saudi Ambassador in 2008 recalling Saudi King Abdullah's "frequent and strenuous exhortations to the U.S. to attack Iran and so put an end to its nuclear weapons program ... to cut off the head of the

snake.”¹¹⁶ If Iran acquires nuclear weapons then Saudi Arabia will be “forced” to follow suit, as will all other Gulf States with the petrodollars to purchase the technology outright. Allegiances and alliances will shift as the poorer nations seek a nuclear protector, and non-proliferation in the region will be dead.

5.3.9 The Middle East and the Gulf

Iran’s relationships with the other Middle Eastern and Gulf States are as tortuous and perplexing as those noted above—from religious schisms to disputed lands. Further fueling the animosities is Iran’s simmering anger over the Gulf States’ generous funding of Iraq during the Iran–Iraq War in the 1980s.¹¹⁷ Yet, Iran exploits every opportunity presented to strengthen its ties, both politically and economically, with the other regional states, hoping to eventually use those ties to further its domination.

Currently few of the Gulf States face immediate opposition pressure for reforms, but geopolitical pressures in the whole region are mounting. The most notable pressure is the Iranian push for nuclear weapons and the fear that Iran will incite the region’s restive Shia populations. Iran has over twice the population of the GCC¹¹⁴ states, yet only a fraction of their wealth; the GCC accounts for over \$2 trillion in regional publicly funded projects alone, despite a decrease of approximately 50% of its overall gross domestic product for the first half of 2011¹¹⁷ due to falling oil prices. But Iran flexes its power at every opportunity, believing that the GCC is inherently weak and not a unified entity. Even though Gulf States have purchased the most modern military weapons from the United States, and far outgun Iran, they seemingly prefer to look to the West for protection. But even this dependence is not the whole story—the deteriorating relationships and trust in the United States due to Washington’s support of prodemocratic protests in the region has caused several of the Gulf States to start building their own mercenary armies through the use of private American security companies.*

But the relationship between the Gulf neighbors and Iran remains extremely complicated. While privately encouraging military action against Iran’s nuclear program, the Gulf States retain lucrative business deals with Iran. Dubai handles approximately 60% of Iran’s merchandising trade, which hosts 10,000 Iranian-owned companies and maintains over 30 daily flights between the two countries.¹¹⁷ Qatar shares a giant natural gas field with Iran and maintains friendly business ties. The United Arab Emirates (UAE) is

* Richard A. Clarke, former counterterrorism advisor to President Clinton, has won several lucrative contracts to advise Gulf States on how to protect their infrastructure. Erik Prince, CEO of Xe (formerly Blackwater Worldwide) reportedly has been recruiting mercenary armies drawn from around the world to protect the UAE, having convinced Sheik Mohamed bin Zayed al-Nahyan, crown prince of Abu Dhabi (and de facto ruler of the UAE), that in times of crisis or war, Muslims may be hesitant to kill fellow Muslims.

the largest foreign investor in Iranian power projects (approximately \$720 million in 2010)¹¹⁷ while the UAE government is simultaneously increasing its air force's defensive capabilities and is standing up a private army of mercenaries¹¹⁸ to combat threats posed by Tehran. Kuwait is developing increases to its missile capabilities, yet has entered into several large trade agreements with Iran.¹¹⁷ Even Iraq, who probably has the warmest relationship with Iran of all the Middle East states, has held emergency meetings to deal with Iranian incursion into disputed border areas. The smaller Gulf States are almost as wary of their dominant partner, Saudi Arabia, as they are of Iran—the extremist Wahhabi culture of Sunni Saudi Arabia is not much more appealing to them than the radical Islamist culture of Shia Iran.

Discomfort with the United States has also played into the Gulf States' willingness to do business with Iran, or at a minimum, their passivity to Iran's growing influence and nuclear aspirations.¹¹⁷ Their populations are unhappy with the U.S. military presence in the region, though the American troops are seen as a somewhat necessary evil, but there are hard feelings remaining regarding the way they were treated by the Bush Administration—believing that their objections were dismissed out of hand and ignored completely regarding the 2003 invasion of Iraq, Washington's unconditional support of Israel's 2006 war with Hezbollah and other U.S. actions in the region.^{111,113,117}

As Iraq begins to stabilize, the Gulf States are beginning to see Iraq as a better partner¹¹⁷ than Iran and believe that support for rebuilding Iraq's shattered infrastructure might result in rebuilding Iraq's position as a buffer to Iran's influence. This shift toward Iraq has resulted in Tehran's realization that it is becoming harder to do business via Dubai as in the past—the regional banks are unwilling to open accounts for them and after initial economic meetings Iranian leaders have not been invited back for higher level meetings. Iran has recently signed several agreements of cooperation^{56,57} with Iraq, which further fuels the Sunni-led countries' desire to become involved with Iraq. The Gulf States are realizing that it is to their advantage to align with the Iraqi political and business forces not already aligned with Iran and have started to open embassies and fund public work projects across Iraq.

The Sunni Arab states are in a precarious position: they want the United States, or Israel, to do something about Iran's spreading influence and nuclear program, but they are fearful that they would be the targets of retaliation from their larger neighbor. They are also fearful that Iran will bide its time until the United States and the Europeans inevitably leave the region and then retaliate against them for aligning themselves with the West.¹¹⁹ The Gulf Arabs seemingly want the impossible: they want the United States to solve the Iranian problem without a war and without a U.S.–Iranian agreement, for a U.S.–Iranian agreement would subjugate their importance and possibly ignore their interests.

Despite a general wariness, there is no unified, cohesive position of the Arab Gulf governments toward Iran. Most of the Gulf States, being limited by territory and population, are concerned about the rising power and influence of Iran, but the degree of concern, and the sources of concern, varies from state to state. These states are largely Sunni-governed and authoritarian and will go against public opinion on critical issues if it serves their purposes. Their publics may see the United States as a bigger threat than Iran, but the governments themselves see the United States as their protector; even Qatar that has historically maintained good relations with Iran hosts an American military base. There is a price to be paid for dismissing the public opinion of their mainly Shia populations, and the Gulf governments are cognizant and fearful of that cost, but they still pursue their political agendas and allegiances to the United States.

Regional leaders have been distressed and frightened by the fate of Egypt's former President Hosni Mubarak—who was a long-time staunch ally of the United States and is now facing a possible death sentence on charges of corruption and torture. These leaders, who have pursued very similar political and domestic paths in their own countries, see no peaceful retirement in the south of France in their futures, only imprisonment and/or an eventual death sentence. The Arab states currently are more concerned with the immediate threat posed by Iran's ability to foment sectarian tensions and their personal survival, rather than if Iran becomes a nuclear state, though the nuclear threat is never too far from their minds.

5.4 Options in Addressing Iran's Future Plans

Iran's support of violent Islamist organizations around the world has exported terror throughout the world, and its unrelenting drive for international status and power has caused instability in the already politically fragile Middle East. There is a growing international belief that Iran's negative influence must be limited, particularly its quest for nuclear weapons. As the military monosuperpower, the United States is the only nation that can directly address the issue, and it is limited to three traditional options: a decisive (nuclear) war, a prolonged Cold War, or rapprochement. Each option carries risks to the United States, its Arab allies, and to Iran; some untenable, others that may be acceptable costs for a lasting peace in the region.

5.4.1 Military: Nuclear War

By all estimates, a war with Iran would look very similar to the current Iraq War and would overburden the already faltering U.S. economy. The United States has spent approximately \$4 trillion¹²⁰ on its "War on Terror" since

September 11, 2001, and the Congressional Budget Office estimates that by 2017 the cost of the Iraq War, including long-term veteran medical care, will be approximately \$1.9 trillion or \$6,300 per each U.S. citizen.¹²¹ The U.S. economy is already teetering with a \$14 trillion deficit and can ill-afford the cost of another Iraq War, let alone an even more expensive war with a better-armed, more determined fighting force such as Iran. After 10 years of fighting two major wars, the U.S. Defense Department is at the breaking point due to decreasing funding and the inability to recruit the troops¹²² necessary to open a third theater of military operations. The war-weary American public would never support such an action, unless Iran directly attacked the United States, which Tehran is loath to do, preferring proxy skirmishes and “untraceable” suicide attacks.

The perspective of Tehran is that regional neighbors are attempting to acquire nuclear weapons, an unstable and radicalized Pakistan on their Eastern border has nuclear weapons, and Iran’s inability to effectively rearm itself due to sanctions and a weak economy makes nuclear weapons an attractive and affordable security alternative. It is assumed that Iran already has 2.8 metric tons of low-enriched uranium and 22 kg of 20% enriched uranium, which is enough to produce a nuclear weapon.¹²³ It is no longer a matter of *if* Iran will produce a nuclear weapon, but *when*. Sunni Arab leaders see a nuclear Iran as an immediate, serious threat to their survival, and Israeli Air Force jets as possibly their best shield. They feel *someone* should stop Iran from developing nuclear weapons. The UAE ambassador to the United States, Youssef Al Otaiba, publicly described a “cost-benefit analysis” of an attack on Iran (disruption of trade, riots due to an *outside force* attacking an Arab country, etc.) versus a nuclear Iran. He stated clearly that, “We cannot live with a nuclear Iran. I am willing to absorb what takes place.”¹²⁴ The *outside force* was not named, but left open for volunteers—the United States? Israel?

Although a military action against Iran would momentarily please our Sunni allies in the region, it would result in greater instability and fuel insurgencies throughout the Gulf. It is the current U.S. foreign policy and large military footprint in the Gulf that attracts Jihadist recruits—a war with Iran would be a recruitment boon and unifying foundation for the various terrorist organizations that would normally be quarreling among themselves. Another U.S. military action in the Middle East would further alienate the moderate Muslims in the region and globally. A war against the “Great Satan” (the United States) would also give the Iranian government united support from its people, support it does not currently enjoy.

Some pundits have proposed attacking Iran with small nuclear weapons aimed at its nuclear enrichment program that would disable its military capabilities while mitigating the damage to its population and infrastructure. The argument for a “limited” nuclear attack is based on a belief that a nuclear-armed Iran will destabilize the fractious Gulf region even further,

with other Arab states either developing their own programs or in the case of wealthier states who are purchasing nuclear weapons outright. Although this nuclear arms race will be driven by security issues, it also strikes at the heart of the Sunni–Shia schism: the Sunni cannot allow the heretical Shia (Iran) to be superior to them in any manner, particularly in the matter of something as powerful as nuclear weapons.

5.4.2 Military: Cold War

The current war in Afghanistan, half the size of Iran and with less than half the population, costs the United States nearly \$100 billion^{120,121} per year, extrapolating that cost out over even half of the duration of the U.S.–U.S.S.R Cold War, and one sees what a crippling debt the United States would face in a Cold War with Iran. A Cold War, lasting 10–20 years, would mean dedicating more than 500,000 troops and the expenditure of \$5–\$25 trillion,¹²⁵ not including the cost of the loss of lives and injuries. One forgets that maintaining the economic health of the United States is just as important for its national security as protecting it from attack. Not only would a Cold War be economically damaging, but as with a direct military action, maintaining a large footprint in the Middle East fosters resentment from even our strongest Muslim allies and aids recruitment for terrorists groups while creating and strengthening bonds between disparate extremist groups.

In the current “nuclear standoff” with Iran, the unprecedented UN sanctions have been slow in having an effect and attempts at diplomatic negotiations have failed. Despite the clerical government’s mismanagement of its domestic economic policy, Iran’s economy has been boosted by the rising global oil prices, as well as by its growing economic ties with China, Brazil, and Turkey. The Arab Spring has weakened pro-Western governments in the region, which has altered the narrative that Iran (including its nuclear program) is the single greatest threat to the stability of the Middle East. In February 2011, the U.S. Senate Intelligence Committee was presented an intelligence assessment by Director of National Intelligence Admiral James Clapper who stated, “Iran is keeping the option open to develop nuclear weapons should it choose to do so. We do not know, however, if Iran will eventually decide to build nuclear weapons.”¹²⁶ Iran is undeniably improving its missile systems, and it is assumed they are designed to carry nuclear warheads. But as Admiral Clapper’s comments show, Iran’s ultimate intents are currently unknown.

An attritional “Cold War” between Iran and the United States and its allies is already a *fait accompli*—from unleashing the Stuxnet worm on the Iranian nuclear program to the assassinations of its top nuclear scientists.¹²⁷ Now there is the prospect of launching an “economic war” against Iran. Saudi Prince Turki al-Faisal, son of the late King Faisal and former head of

the Saudi Arabian Intelligence Agency, has stated unequivocally that if Iran obtains a nuclear weapon “it would compel Saudi Arabia” to follow suit.^{111,116} The outspoken Prince Turki, who is often used by the Saudi government to publicly test foreign policy ideas on the United States, has also suggested that the Saudi government could cripple the weakened Iranian economy by lowering the price of oil by ramping up production, an act that would also slow the Iranian nuclear and missile programs. The Saudis claim to have spare oil production capacity of approximately 4 million barrels per day, which almost equals Iran’s total oil output.¹²⁸

Though there are skeptics regarding an economic war with Iran, it may not be so implausible. Iran’s inflation rate is running about 30%, and the population is very sensitive to any increase in taxes or cessation of price supports. After 3 years of President Ahmadinejad’s prolific spending and its costly nuclear program, Iran has very little cash and relies on oil staying above \$75 a barrel to maintain its current economic state. Iran, the second largest oil producer in OPEC,¹²⁸ relies on oil sales for over half of its revenues and consistently votes for policies to increase the price of oil to counteract the growing impact of the 2010 UN sanctions, but it also sees these increases as a further opportunity to attack the U.S. economy through higher oil prices and drive a wedge between Washington and Riyadh.

An attack on the Iranian economy does not come without great risk to the global economy. Tehran’s response to an oil war would be to obstruct the oil exports moving through the Strait of Hormuz, which would result in spiking oil prices around the world and causing some weaker economies to collapse, with the predictable humanitarian crises to follow (population displacements, food shortages, border disputes, etc.). The Iranians could then incite trouble among the Saudi Shia who comprise 15% of the country’s population and are centered in the oil-rich Eastern Saudi province.¹¹¹

A Cold War means containment, and the containment of Islamist beliefs would entail a heavy price and necessitate a counter-religious philosophy that the United States does not possess. Although it is in the economic and political interests of the United States to encourage democratic rule in other countries, the ability of the United States to mold other cultures and societies in our likeness is limited and its premise is shortsighted. Not only is democracy a political construct that is often not transferable but also the costs associated with nation building can be better used in countering terrorist threats directly (as opposed to a “War on Terror”), reducing the national debt, and repairing America’s aging infrastructure and other critical national security weaknesses. The war-weary American public sees no value in sacrificing its young men and women in regional problems that are ancient and seemingly unsolvable.

5.4.3 Rapprochement

All truth passes through three stages. First, it is ridiculed. Second, it is violently opposed. Third, it is accepted as being self-evident.

Arthur Schopenhauer¹

At first blush, rapprochement with the Iranian Islamist regime seems completely illogical and its realization faces seemingly insurmountable obstacles. Rapprochement between the United States and Iran could only be obtained through a negotiated agreement—a *détente* that would necessitate a confluence of mutual interests and objectives. This strategy would be premised on Tehran being willing to engage in negotiations (agreeing to disagree, as it were) on fundamental issues, but still arriving at a mutually beneficial understanding. Iran seems incapable of agreeing to such talks—it may be due to core anti-Americanism complicated by religious beliefs at play or due to competing political agendas among the clerical factions within the government. Whatever the reason, the United States is forced to try and figure out the best path forward. By pushing sanctions* that exacerbate Iran’s internal problems, the United States hopes to “force” Iran into negotiations regarding its nuclear program, as well as other critical issues.†

Despite the growing influence and power of Iran, time is not on Iran’s side—the UN sanctions are finally starting to have some effect on the already faltering Iranian economy,¹²⁹ and there is a growing political opposition—partially due to the questionable reelection of President Mahmoud Ahmadinejad in 2009 and the resultant Green Revolt¹³⁰ and partially due to the normally fractious nature of Iran’s political and religious sectors. Iran also has an overwhelmingly young population¹³⁰ (over 70% are under the age of 25 years), many who have glimpsed a seemingly more agreeable democratic life through social media and technological communications.

5.4.4 A Fourth Option: Patience

A fourth option for dealing with Iran might be emerging—a policy of patience to await the passage of time. Iran’s burgeoning youth population is already restive due to the “stolen” 2009 presidential election, as well as the smothering theocratic rule.¹³⁰ Despite Tehran’s efforts to limit and control outside news sources, stories of the struggles of other countries against their repressive governments have filtered into the Iranian society and have

* Sanctions can backfire—when the United States implemented sanctions against Saddam Hussein’s regime, it resulted in more than 500,000 children dying—a fact that is not lost on the Arab world.

† When the United States pushed for UN sanctions against North Korea, Kim Jong Il maintained his elite power base by selling nuclear technology to the highest bidders.

resulted in several demonstrations that have resulted in harsh crackdowns by the IGRC (Iranian Revolutionary Guard Corps). Iran has been using the Arab Spring uprisings for its own political spin¹³¹ with Supreme Leader Ayatollah Al Khamenei declaring that the other Arab countries are going through an “Islamic awakening,” and are seeking “Islamic objectives and orientation.” The current uprisings are described by the Iranian leadership as inspired by Iran’s own defiance in the face of Western powers—the overthrow of the Shah of Iran in 1979—despite the fact that the revolt in 1979 had nothing to do with Islamic awakening, but a deep-seated hatred of the Pahlavi monarchy. A subtle under text to the Iranian people is that you already had your revolt—now it is time for others, but not for you.*

There is a saying that every problem contains the seeds of its own solution and Iran’s religious/political construct may prove to be the seeds of its undoing. The complex political environment in Tehran comprised rival factions with political agendas that range from moderates to hard-line Islamists, so it is rife with political intrigue and shifting allegiances.^{15,21,129} The dual authorities of senior Imams and a “popularly” elected president is embedded within the constitution⁵ of the Islamic Republic and was arguably an effective political model when the brutal Ayatollah Khomeini held sway as unchallenged Supreme Leader. But his successor, the weaker Ayatollah Khamenei, has had to resort to subterfuge and the weakening of various political institutions to prevent a united faction from forming to challenge him. Since there is no strong religious leader groomed to replace Khamenei, this portends a future, more vulnerable Supreme Leader who must continue weakening political institutions to maintain control and power. This gradual degradation and fractionalization of power could eventually result in the collapse of the current political construct, leaving a power vacuum.

An example of the fracturing government is the current political battle of wills between President Ahmadinejad and Ayatollah Khamenei.^{132–134} As previous presidents before him, Ahmadinejad has succumbed to what is known as the “president’s symptom”—forgetting that divine authority *always* trumps political authority in Iran—and has forgotten his place in the Iranian political hierarchy, believing that as the “popularly” elected leader his power should not be constrained by the Supreme Leader or any other religious authority. The disputed 2009 election belies Ahmadinejad’s self-imagined popularity, and Khamenei has been repeatedly forced to use his authority, and deplete his power, to counter the opposition movement that has grown up in response to the reelection of Ahmadinejad.¹³³

* Iran was glad to see its old enemy Egyptian President Hosni Mubarak removed from power, but seeing its old ally Bashar al-Assad threatened brings the revolts too close to home, and fear is becoming palpable within the government.

In misconstruing Khamenei's actions in support of the 2009 election as "support" for his attempts to strengthen the Presidency and perceiving Khamenei as weak and passive, Ahmadinejad has dismissed several ministers associated with Khamenei. This miscalculation on the president's part has led to him and his supporters being accused by the clerics of witchcraft, superstition, and most damning of all, of not being supporters of the principle of the guardianship of the Shia jurist, the underlying tenet of the Iranian Islamic Republic.¹³² Many of Ahmadinejad's supporters have been jailed, his vice president, Mohammad Reza Rahimi, has publicly been accused of running an economic mafia,¹³⁵ and support for Ahmadinejad is quickly evaporating. Since government is as much personality driven as it is policy driven, as the Iranian Islamic Republic gets further away from the shadow of Ayatollah Khomeini, the more it will morph and change into something different than Khomeini envisioned. Hence, a U.S. policy of patience could be the long-term solution to the "Iranian problem."

5.5 Iran's Expectations

It should be remembered that Iran is a country desperate to modernize, but not one that has modernized. Americans imagine that Iranians hate them, but in truth, a large segment of the youthful Iranian population loves much of the Western culture—movies, music, fashion, and even Oprah; it is our foreign policy that has led to the occupation of wide areas of the Middle East that they find intolerable. The United States should examine ways in which it can encourage modernization but without attempting regime change or demanding substantial cultural or religious changes. By recognizing the needs of Iran and ways to satisfy those needs, Washington can begin to facilitate constructive dialogue between the two nations.

5.5.1 Economic Security

The Iranian economy is struggling, so much so that economic protests are increasing, including strikes in the bazaars and industrial workers who have not been paid for months.¹²⁹ These protests are not related to the round of sanctions implemented by the United Nations, the United States, and European countries, but they do contribute to the overall climate of economic uncertainty, though it is possible that the new round of UN sanctions being considered could be the proverbial straw that breaks Iran economically. Iran is dependent on petrodollars and requires a stable global oil market to support its growing population and its future plans. They know their limited oil supply will eventually run out and they want alternative energy sources, including nuclear power.

Due to sanctions, Iran is having trouble selling its crude oil and is resorting to shady deals with foreign middlemen.¹³⁶ Iran has few refineries and is forced to import approximately 30% of its gasoline needs, and the sanctions on the Iranian banks have caused the cost of imports to rise 20%, impacting Iran's ability to import cheap gasoline. In 2007, when the government was forced to implement gas rationing and higher prices, gas riots and protests broke out across the country. Officially, unemployment is 14%, but actually closer to 30% for the young.¹²⁹ Compounding the economic situation is the fact that the IRGC has insinuated itself into all aspects of the economy, controlling the majority of larger businesses within Iran. This has been a power and economic boon for the IRGC but has done little to stabilize the country and its economy.

5.5.2 Internal Security

Internal security and protection of the clerical government is of utmost importance to Tehran. The Iranians want the United States to cease its intelligence agencies' contact and support for three Iranian terrorist groups: the Jundallah, a group with close affiliations with al-Qaida, the Kurdish separatist group, Party for the Free Life of Kurdistan, and the Mujahidin-e Khalq group, based in Iraq. Iran has been experiencing its own internal terrorist attacks attributed to these groups: a pipeline to Turkey was recently blown up, most likely by Kurdish oppositionists. Soon after, a natural gas pipeline near Tabriz exploded. These were followed by a spectacular explosion at a petrochemical plant that was central to Iran's efforts to cope with the U.S. and European sanctions against the sale of refined petrochemical products.¹²⁹

The Green Revolution that evolved after the reelection of President Ahmadinejad exposed cracks in the invincible facade that Iran shows to the world. Its clerical leaders have lost legitimacy with the people and are facing open opposition; they are ill-equipped and unable to manage Iran's economy and other critical problems, and are openly fighting among themselves.^{129,133} As in other regional states, chronic unemployment, the lack of opportunities in deteriorating economies, and an ever-increasing youth bulge with a seemingly hopeless future are straining Iranian society. In Tehran's world view, there are interlocking circles of threats and interests, and the United States is an important threat, but not of paramount interest. The paramount circle of attention is the constantly shifting balance of power within Iranian society and survival of the regime itself.

As examples of the governmental disarray, the Iranian Air Force shot down a drone outside of Bushehr, near the Russian-supplied nuclear reactor, thinking it was Israeli or American. They had to report to Grand Ayatollah

Khamenei that it was one of their own—the Iranian military had stood up a special unit to deploy drones, but no one had informed the Iranian Air Force.¹²⁹ The IRGC is beginning to reveal itself as a fractious institution whose members range from having absolute loyalty to the regime to those who side with the many opposition parties. Mohammad Ali Jafari, commander of the IRGC, admitted publicly that many of his officers were supporters of the opposition Green Movement, causing several hundred to suddenly resign and defect to France and the United States.¹²⁹

Internally, Iranian society is fraying: unemployment in Iran has reached 45% in some areas, mothers and children have been warned not to drink the polluted water in Tehran, and electrical failures are widespread.¹²⁹ There have been strikes across the country due to shortages. As pressures mount and dissatisfaction spreads, including Iranians chanting “Death to the Dictator” (i.e., Ayatollah Khamenei)¹²⁹ at public gatherings, Supreme Leader Khamenei felt compelled to issue a fatwa in December declaring that all his opinions have the status equal to those of the Prophet Mohammed.

5.5.3 Recognition as More Than a Regional Power

President Mahmoud Ahmadinejad has stated publicly that “the future belongs to Iran” and challenged the United States to recognize Iran as a major world power.¹³⁷ Iran has been a thriving civilization for thousands of years, the well-spring of culture and society, and they crave recognition of their contributions to the world. Beyond the desire for the return of the caliphate, Iran wants to influence both regional and international policy and its nascent space program can be viewed as one attempt to prove its modern relevance.

When Iranian and American officials met in May 2007 in Baghdad (after a 20-year disengagement), the Iranian demands were rational and straightforward.¹³⁸ They only requested assurances that the United States would not meddle in Iranian politics nor attempt a regime change such as occurred in Iraq. They also requested recognition of Iran’s historic ties to Iraq, and Iran’s vital interest in a stabilized Iraq to prevent the sectarian chaos spilling over its borders. Unlike the Sunni Islamists, there were no demands that the United States convert to Islam or that the Israelis be driven into the sea. Although the 2007 meetings did not result in any agreements, future negotiations between the two countries need to be based on the actions of Iran, not its rhetoric. If Washington and Tehran could negotiate as equals and arrive at settlements one issue at a time, then the goal of détente could be obtainable.

5.5.4 Partitioning of Iraq

Publicly, Iran decries the partitioning of Iraq as a “diabolical plot” and a “colonial scheme,” but behind the scenes it has quietly concluded that

a tripartition of Iraq would be in Iran's interests. The Islamic Supreme Council of Iraq (ISCI) is Iran's closest ally in Iraq (not surprising since the Revolutionary Guards formed the ISCI in the 1980s), and the ISCI controls seven of the nine Shia provinces in southern Iraq. With Iran's proxy controlling the south, Iran would also wield some control over most of Iraq's oil production.¹³⁹ It is obvious that the Kurds, being semiautonomous since the first Iraq War, will always fight to maintain their independence in the north of Iraq.¹³⁹ The most worrisome aspect of a tripartition of Iraq would be the Sunni-dominated central provinces. Al-Qaida and other extremist groups are gaining support in this area, and a partitioned Iraq would leave them isolated with few resources. The political and economic realities of this central province would further inflame unrest and radicalize the population.

5.6 American Expectations

5.6.1 Stability in the Middle East and Gulf

Despite its foreign policies and "War on Terror" that have exacerbated instability, the United States is desperate for stability in the Middle East and Gulf region. Decades of turmoil, clashes, and military actions in the region have resulted in the United States expending billions of dollars and the loss of thousands of American lives. Regional instability threatens the flow of energy exports, trade, and investments, and the ongoing turbulence has caused the price of oil to continually climb, negatively impacting the U.S. and global economies.

The United States recognizes that Iran wields great influence over the Shia in the region, as well as many armed factions (including its own proxies) and any détente will necessitate Iran exerting its influence toward a more stable Middle East. Although it is anybody's guess how the Arab Spring opposition demonstrations will play out, and what political paradigms will be replaced or remain, any lessening of destabilizing actions and inflammatory rhetoric by Iran will assist in a gradual resolution to current problems.

5.6.2 Hezbollah and Hamas Cease Attack Operations

An integral aspect to stability in the region is cessation of military and terrorist actions on the part of Hezbollah and Hamas. As Iranian proxies, the United States will demand that Tehran cease their proxies' attacks on Israel and other states in the region. It is believed that Tehran keeps Hezbollah armed and ready in Southern Lebanon to be used as a fifth column in case the United States or Israel attacks Iran, so Tehran will be slow to agree to the removal of what it perceives as a critical national defensive force.

Washington policymakers should recognize that the belligerence exhibited by Iran is due to its sense of vulnerability. Reliance on proxies, such as Hezbollah and Hamas, to foment unrest in the region is a result of increased isolation since the 1979 Revolution and the Shia-dominated theocracy attempting to safeguard itself. Iranian history is full of expansionist wars, resulting in its fixation on external threats. Disregarding its security concerns will only push Tehran to ever more belligerent behavior. The recent reunification of Hamas and the Palestinian Authority may bode well for the lessening of tensions and attacks, at least for the near-term. It remains to be seen if the reunification remains intact, and how the Palestinian Statehood petition is received at the United Nations in the fall of 2011.

5.6.3 Gulf Shipping Lanes Remain Safe

Since the global economy relies on stable oil prices, the free flow of oil out of the Middle East is critical. Iran borders the Eastern Persian Gulf and controls the strategic Strait of Hormuz, which gives Tehran the ability to shut down the Gulf shipping lanes and impact the flow of oil out of the region. At a minimum, the United States would want assurances from Tehran that gulf shipping lanes would remain open and no actions, including by its proxies, would be taken to disrupt the free flow of oil out of the region. Although interruption of the flow of oil through the Persian Gulf would also impact Iran's economy, Iran could conceivably use such a shutdown to its advantage or use a variety of other means to drive oil prices higher. Since the global economic downturn in 2008 resulted in falling oil prices (the major factor in Iran's current economic struggle), it would be in Iran's best interest to raise oil prices. Is it too far-fetched to imagine Iran starting a conflict in the region to increase the price of oil? It would be easy for Tehran to use Muqtada al-Sadr's Iranian-paid Mahdi Army to disrupt Iraqi oil flowing from Basra. Iran could also use its many proxies in southern Iraq to sabotage the pipeline carrying oil to the Um-Qasr port, or to engage one of the U.S. ships patrolling Iraq's platforms, or even sink an oil tanker that would obstruct traffic through the Strait of Hormuz. Another option Iran might pursue would be to start a conflict between Israel and Hezbollah in Lebanon; Middle Eastern conflicts always quickly turn into higher oil prices.

5.6.4 Recognition of Israel by Iran

The United States has been working toward a comprehensive peace between Israel and its Arab neighbors for decades. A successful peace agreement that includes all regional stakeholders would enable the United States to focus

on other critical domestic and security issues. A lasting peace in the region hinges on a final settlement to the Israeli–Palestinian issue, but there are numerous issues to address. One of the main U.S. requirements for rapprochement with Iran will be Iran’s recognition of Israel’s right to exist, as well as cessation of Hezbollah- and Hamas-led attacks, particularly along the Israeli–Lebanese border. Ayatollah Khomeini was vehemently against Israel’s right to exist, but the recent clerical regimes have shown signs of softening that stance.

While the United States, for the foreseeable future, will continue its unflinching support for the state of Israel (including recent Congressional assurances that the U.S. debt problems “... will not have any adverse effect on America’s determination to meet its promise to Israel”),¹⁴⁰ there are signs that the United States is losing patience with its long-time ally and would like to see a permanent solution to the issue. There is a growing recognition that American bias toward Israel has impacted its ability to improve relations with other Middle Eastern states and has resulted in increased instability in the region and elsewhere. Not only is the global economy continually impacted by this interminable unrest, the American economy is affected as well. Fully one-third of the American foreign aid budget goes to Israel, and the United States has given Israel over \$134 billion in aid, despite the fact that Israel has a per capital income greater than Saudi Arabia.¹⁴¹ The U.S. Congress may be desirous of continued support of Israel, but when Medicare entitlements and other social services in the United States are facing funding cuts, the American public may not be so inclined.

For their part, the Iranians do not understand why Washington does not recognize that the rhetoric against the Arab–Israeli peace process is just that—rhetoric. Their critical statements have everything to do with not appearing “un-Islamic” to Sunni Islamist groups, and little to do with Iranian foreign policy. After decades of stalled and ineffectual talks between Israel and the Palestinians, Washington is finally realizing that the solution to this problem cannot come from Washington, but from the regional players themselves. Tehran has already signaled its willingness to accept any agreement with the Israelis that the Palestinians freely accept, and this Iranian acceptance of a mutually agreed upon settlement will do more to further peace in the region than interminable and impotent Camp David meetings.

5.6.5 Regional Security

Similar in its actions toward Cuba, the United States has spent decades in an intimidating posture toward Iran with little to show for it, except for worsening conditions between the two countries. Instead of continuing with policies that are ineffective and may actually be undermining stability in the

region, it is in the best interests of both countries for closer relations that should result in mutual strategic advantages. There have been subtle declines in acrimonious exchanges over the years between Tehran and Washington, with ebbs and flows depending on the leadership. During the Clinton Administration, Iranian President Mohammad Khatami advocated for a “dialogue of civilizations,”^{142,143} while Secretary of State Madeline Albright and President Clinton made several speeches giving generalized recognition to Iran’s importance and the strategic efficacy of improved relations between the two countries.¹⁴⁴ Despite these overtures, no movement toward détente occurred and Khatami’s overtures resulted in his being vilified by anti-Western hardliners within the regime and his being replaced by the vociferous demagogue Mahmoud Ahmadinejad. Iranians generally viewed the George W. Bush Administration with admiration for defeating the Taliban to their East, deposing the brutal Saddam Hussein and giving the oppressed Shia majority in Iraq a voice in their government. Yet that opportunity for détente was lost when Iran was included in Bush’s “axis of evil”¹⁴² along with Iraq and North Korea.¹⁴⁵

Most recently, President Obama gave an unprecedented speech on the occasion of the Iranian New Year (Nowruz) in March 2011, expressing hope for a new beginning for relations between the two countries.¹⁴² Supreme Leader Ayatollah Khamenei responded that only concrete changes in the U.S. policy toward Iran would result in improved relations, not mere speeches. But Khamenei’s response was a signal, however abstruse, that the regime was open to talks between the two nations.

5.7 Rapprochement: Next Steps

An enemy to whom you show kindness will become your friend.

Sa’adi

Thirteenth-century poet

Rapprochement will not come easily to either the United States or Iran, and there will be many impediments to overcome and varying levels of détente to achieve before true rapprochement occurs. Both countries will need to develop ways to maintain their core principles, yet be able to accept the other’s differences. Iran will retain its commitment to the concept of an expansionist Islamic Republic and its distrust of American actions and motives. This distrust is so deep that any diplomatic overtures made by the United States are seen by the Iranians as attempts to eventually overthrow their government.¹⁴⁴ For its part, the United States will cling to its democratic principles and will stand firm in its commitment to Israel. Decades of belligerent rhetoric from Tehran toward the United States and its allies will be difficult to

overcome. This mutual distrust can only be mitigated by recognizing issues that Washington and Tehran have in common, rather than focusing on dissimilar goals.^{142,144,145}

But most importantly, the United States must realize that engagement is not endorsement—it must engage in discussions with our “enemies” so that areas of understanding and commonality will be discovered. The most obvious commonalities include: the future of the post-Saddam Hussein Iraq, Sunni-Islamist terror attacks, the resurgence of the Taliban, and Afghanistan having become a narco-state.* Even though many Iranians view the United States as exporting a brand of democratic revolution to other nations/states, they believe that the United States will eventually realize the hazards and difficulties of such actions and will cease its attempts at democratic nation building.

Tehran is looking for an American leader (such as Richard Nixon who opened the door to dramatically improved Chinese–American relations with a state visit to Beijing) who will do the same for Iranian–American relations. But Iranian egos and historic sensibilities (particularly in regard to what they view as past U.S. interventions in their country) demand that they be courted by America. Small gestures by Washington could ultimately result in huge payoffs in the eventual stabilization in the region. President Obama is reportedly considering a Nixon-type visit to Tehran, which is causing an intense debate within his administration.¹⁴⁶ Opponents to the initiative include senior officials within the National Security Council and in the Departments of State and Defense, citing Iran’s obstinacy regarding its nuclear program as proof of its inability to be trusted. Proponents view this initiative as the only hope the Obama Administration has for a breakthrough in its foreign policy prior to the 2012 elections, and view it as a long overdue follow-up to the collaboration between Tehran and Washington in the aftermath of 9/11 to displace the Taliban from Afghanistan.¹⁴⁷

Rapprochement impediments exist for Iran, too. There is a deep and abiding distrust of the United States and its motives due to a *mélange* of historical acts attributed to Washington: the overthrow of Mossadeqh in 1953; military and financial support for the hated Pahlavi’s and for Iraq during the Iran–Iraq War; and Washington’s unwavering support of Sunni monarchies and Israel. This distrust is pervasive and prevents many Iranians from recognizing any good done by the United States, and they view the United States as having a contradictory foreign policy, further confusing attempts at dialogue between the two countries. Iranians also harbor bitterness regarding what they perceive as American disrespect toward their clerics.¹⁴⁵ Why does

* Iran has a growing generational drug problem due to its close proximity to Afghanistan and has an estimated 2–4 million drug addicts. The regime spends approximately \$1 billion a year on its own internal “war on drugs.”

the United States treat Iraqi Shia clerics with deference, yet vilify Iranian Shia clerics? They see Sunni Islamists' fundamentalism a common concern for the two countries and do not understand why the United States financially and militarily supports Sunni dictatorships that are exporting terrorists, who in turn are attacking U.S. citizens and actively working against American interests.¹⁴⁵ As Robert Baer states in *The Devil We Know*, "Iran is confident that America will have to accept the inevitable, that we've been wasting our time with the Gulf Arabs, and that we have to come to terms with Iran."²¹

The nuclear issue is arguably the most divisive issue impeding rapprochement. Tehran views the nuclear issue quite differently than Washington—the United States sees the building of nuclear reactors as a precursor to the development of nuclear weapons that will be disseminated to terrorists groups such as Hezbollah and Hamas, whereas Iran sees nuclear energy as societal need and possession of nuclear weapons as a deterrent from attack.¹⁴² Iran perceives the American stance on their acquiring nuclear technology as duplicitous since the United States quietly acquiesced when Pakistan acquired nuclear weapons; an unstable government the Iranians view as on the verge of being overthrown by Sunni-Islamists.¹⁴⁵

It was assumed that Iran would benefit the most from the collapse of the old Arab regimes, but the maelstrom is revealing Iran's vulnerability. Unleashed repressed hostility across the region has exposed the fallacy of harmonious relations between Iran and the Arab world and has exposed Iran's isolation. U.S. policymakers should recognize that the "belligerence" exhibited by Iran is due to this sense of vulnerability and the clerical regime's paranoia in regards to external threats. Reliance on proxies, such as Hezbollah, to foment unrest in the region is a result of increased isolation since the 1979 Revolution and the Shia theocracy's attempt to safeguard itself. Disregarding its legitimate security concerns will only push Tehran to ever more belligerent behavior.

To move forward, Washington and Tehran must abandon harsh rhetoric and communicate a desire for open relations based on mutual respect, affording one another equal status whenever possible. Hostility only plays into the hands of Tehran hardliners and reinforces the image of the United States being inflexible and a bully. Any military threat toward the Iranian regime only strengthens Tehran's belief in the strategic advantage of acquiring nuclear weapons. As stated by Mohamed el-Baradei, former Director General of the IAEA, "If you bomb (Iranian nuclear sites), you will turn the region into a ball of fire and put Iran on a crash course for nuclear weapons with the support of the whole Muslim world."¹⁴⁸ Suspicion remains entrenched on both sides and the utmost patience and commitment to the process will be a necessity.

Without modernization and the reintegration of Iran into the global economy, any hopes for détente will be doomed. The economic sanctions led by United Nations and United States have cost the Iranian economy billions of dollars over the years and only serve to punish the Iranian people, further driving a wedge between the United States and popular support. The United States cannot continue punishing Iran and expecting better behavior. In return for the removal of sanctions, the United States could request moderation of Tehran's policy toward Israel and/or improved internal human rights. If Iran needs to sell its oil on the global market, then offering energy technology to achieve that goal could be used as a bartering tool for a moratorium on other military initiatives, including nuclear enrichment.

The United States must be vigilant not to miss diplomatic opportunities when they present themselves. Washington has repeatedly missed opportunities for engagement with Tehran, to its detriment, and that of the Gulf region. After 9/11, Iran gave unconditional cooperation^{142,145} to the United States, supplying Taliban and al-Qaida positions in Afghanistan, as well as critical intelligence that resulted in removing Saddam Hussein from Baghdad. The Khatami government even presented a "Grand Bargain,"^{142,144,145} promising that it would tame Hezbollah and support a two-state solution to the Israeli-Palestinian issue in return for U.S. promises that it would abandon its push for regime change in Iran and the lifting of all sanctions, but this offer was immediately dismissed by the U.S. State Department. It also spelled the end of the reformist movement in Iran, and the entrance of the more hard-line government of President Ahmadinejad.

It is critical for the United States to reduce its footprint in the Middle East. Since this presence is largely due to the military operations in the region, the United States must leave the region and allow the Gulf States to come to their own agreements on how to govern themselves and their relationships with their neighboring states. The American presence in the region, rightly or wrongly, is seen as a grab for resources by even its staunchest supporters. The numerous military bases, particularly those in Saudi Arabia, are seen as an affront to Islam and are used as an effective recruitment tool by Islamist groups throughout the region. The United States needs to stop taking American military "targets" to the jihadists. Although the United States can provide a stabilizing presence for the near-term until effective political institutions or professionally trained armed forces are in place, a long-term presence will only serve to destabilize the region and massive military bases with tens of thousands of American troops must be closed. Since civil conflicts such as the one in Iraq often recur when the parties have a "commitment problem,"¹⁴⁹ it would be imperative to have assurances from Iran that it would not support insurgency factions once the United States leaves.

The Gulf Arab states are already in negotiations with Iran covering a wide variety of regional economic and political issues, and Washington should

facilitate these negotiations whenever possible. The United States should recognize that it no longer determines the dialogue in the Middle East, as it has for the past 60 years, and should not expect, nor attempt, to solve the region's ancient conflicts, but only act as a mediator when requested. Many European countries have historic ties to the Middle East and Gulf States—these relationships should be exploited whenever beneficial in establishing bridges between the regional actors.

5.8 Summary

Despite its desire to be a world power, Iran has slowly been losing its relevancy over the past decades. It is a country with extreme political, social, and economic internal stresses that have been compounded by its ill-conceived foreign policies. The United States and its European allies tend to see the Iranian government as a resolute entity, when in fact it is a fractious theological construct, with a growing influential technocracy that is countering the Islamist ideology with *realpolitik*. More than 40 years of isolation from a rapidly modernizing and technologically advanced world has left Iran struggling to maintain relevance both to its own youthful population and the rest of the world.

The Iranian economy is on its knees, with little hope of recovering without modernization. As other Muslim nations have realized, a prosperous global economy demands a stable democratic construct—one that coexists with the Islamic religion. While the religious desire may be to turn back the clock to the fifteenth century, the realities of a modern global economy precludes that option as a viable alternative. The faltering Iranian economy has resulted in intense dissatisfaction among its citizens, especially among the young who see no hope in the future for jobs, homes, and families and who desire the same prosperity and optimism that they see blossoming around the region.

The regional unrest created by the Arab Spring has turned the Islamist revolution paradigm on its head. Days, weeks, and months of peaceful demonstrations and the focused desire of oppressed populations has resulted in the overthrow of despised dictatorships where years of ever-increasingly brutal terrorist attacks have been impotent, if not detrimental to the Islamists' cause, be they Shia or Sunni. Iran has slowly come to the realization that its attempt to export Ayatollah Khomeini's Islamist revolution through its violent proxies has been ineffective and has only resulted in Iran being included in the list of the most disreputable governments in the world.

Political stability in the Middle East is a global security concern due to its oil resources being a critical linchpin in the global economy. The Islamic religious divide, hegemonic policies of regional states, and misguided foreign policies of Western nations have resulted in chronic instability in the region. Although the United States and its allies will probably never completely

agree with Iran on several key political issues, it would serve both sides well to proceed as Iran's regional neighbors have done: accept the limitations and agree on issues where possible. Instead of insisting on democratization and nation building, the United States should devote the billions of dollars spent on military costs to economic development throughout the region, including Iran. Coupled with the cessation of arms sales that have totaled over \$9 billion in the past 10 years, the resulting "peace bonus" can be turned toward developing parity in the region, lessening the attractiveness of both Shia and Sunni Islamist revolution. The current "extreme wealth versus extreme poverty" paradigm in the region is viewed by many as even more disruptive for long-term stability than the religious divide or the American military presence. Just as a strong economy is a vital part of American national security, a stable regional economy is necessary for long-term regional stability.

Neither Tehran nor Washington has any assurance as to who their future partners in the region will be—current alliances may become moot as Arab states reexamine relationships and coalitions in light of the Arab Spring. Regime changes will most likely continue as the Middle East grapples with modernization as the smaller Gulf nations find their voices and become more assertive, and Sunni–Shia tensions will most likely become more pronounced in the near future as Islam works toward its reformation. One thing is clear, the influence that the United States and Iran once held in the region is diminishing, although this will not prevent either country from competing for alliances with the newly emerging governments in the region.

The United States has a tendency to underestimate the evil intentions of our enemies while overestimating their capabilities (i.e., al-Qaida), and it is seemingly prone to allowing dogmatic petulance taking precedence over thoughtful policy (e.g., Cuba). The United States needs to closely examine the actual risk that Iran poses, including its limitations, so that we can better combat the threats we face. Tehran may be a theocracy, but it is also guided by national interests. The Iranians should be considered rational actors whose actions, when viewed closely, are pragmatic and driven by a need to gain strategic allies, enhance its military capacity, and mitigate its risk. When the United States and Iran begin to focus on their similarities rather than their dissimilarities, rapprochement will assume its logical preeminence.

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China

Economic Intimidation and Runaway Corruption

6

JULIE LOWRIE

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China faces significant internal challenges, each of which can independently derail and unravel the perceived successes achieved as a result of China's rapid economic growth. Any of these challenges occurring simultaneously or contemporaneously can have a powerful impact on China's internal political and financial operations, and its global diplomatic relations. The Communist Party of China (CPC) is battling against the looming economic results generated from embracing and adopting an export economic model, which includes rising inflation, low domestic consumption rates, and increasing unequal distribution of the wealth within the populace, presenting China with its greatest economic challenges yet. However, the blatant corruption existent within the central, regional, and local governments, within the evolving and fledgling legal system, and within State and provincially owned entities, threatens to destroy the already crumbling state control over regional

and local agencies. Corruption runs unimpeded throughout China, despite the increased threats of anticorruption action from the central government.

As if corruption and economic by-products were not enough to control or overcome, China's economic drive has caused and continues to cause significant overall environmental degradation to China's natural resources. The consequential toxic waste spewed into China's air, water, and soil from being the world's "factory floor"¹ is taking its toll on the health and welfare of its citizenry, its remaining wildlife population, and the land itself.² China's push to migrate its rural populace from agricultural villages to new urban areas has taxed already scarce local water resources. The engineered river diversions from rural to urban China exacerbates the water scarcity problem even more, displacing more agricultural citizens, increasing intrastate conflicts over water, and generating more expenses.³

All these major challenges contribute to the rising discontent among the displaced, rural population, and cause significant concern to the CPC. Visible and pronounced public corruption coupled with huge income and wealth disparity with shrinking monetary value from increasing inflation is a recipe for explosive social unrest, possibly leading to full-scale revolution and overthrow of the current regime. Throughout urban China, where villagers demand clean drinking water for their children from their local official discover that those who are responsible for the public's health and safety took bribes from offending factory owners. Affected villagers protest publicly and take actions into their own hands to protect their children from being poisoned.⁴ In light of the growing public volatility, it is no wonder then that the CPC has changed its top goal from increased economic development to the establishment of a "harmonious society" and a sustainable economy upon which a "harmonious society" can develop and flourish.⁵ Xiao Zhuoji, a professor at the School of Economics at Peking University and vice chairman of the Social and Legal Affairs Committee of the Chinese People's Political Consultative Conference, acknowledged the following side effects of China's developing economy and their contradictions to the obvious disparities found within China:

Our society has many contradictions and uncertain factors in it, such as huge gaps in income, increasingly serious problems facing rural areas, farmers and agriculture, the drainage of farmland, heavy pressure in the workplace and an incomplete social security system.⁶

In 2007, while President Hu Jintao directed party leaders to focus on building a "harmonious society," and Zhuoji advocated that the primary tenet of a "harmonious society" is to place people and their subsistence needs first, CPC regional and local leaders have not deviated from their drive to achieve or exceed the former national gross domestic product (GDP) rates nor have they curbed their voracious appetites for corrupt activities. National

CPC leaders are all too aware that Mao Zedong rose to overtake the existing Nationalist regime based on the revolutionary power of the rural masses, and should the CPC fail to properly address and resolve these challenges effectively, they know a similar fate awaits them. In fact, Jintao has continued to acutely emphasize this very point in his keynote speech presented at a July 1, 2011 meeting celebrating the ninetieth anniversary of the CPC.⁷

6.1 Fallout from China's Economic Development Model

The challenge to rebalance and redistribute income and wealth between those who have and those who have not has seemingly been discussed as a high priority matter on the CPC agenda for years. CPC members have apparently paid a significant amount of lip service to this issue over the years, but have neither reduced the spreading income gap in any meaningful way nor created any incentive to do so.⁸ Historically, as China began moving forward with its economic reforms, it changed from a country with income equality based on an agrarian economy to an industrialized one with a widening, substantial income gap some 30 years later. Through economic reform, the CPC caused a massive rapid urbanization of rural workers to manufacturing factories in cities, wiping out a significant amount of poverty within China in one fell swoop, but not without consequential damages. According to a 2007 World Bank Report on China's labor market, the authors attributed some of the resulting increase in China's income and wage disparities "from being a mainly agrarian economy to an industrialized society with a more skilled workforce. The rural-urban income gap has now widened to historic levels, while inequalities within rural and urban areas have increased, as well."⁹

To understand the level of income disparity which exists, there were reportedly 875,000 millionaires in China (including Hong Kong residents) as of 2009 in an overall population of approximately 1.3 billion, meaning that the majority of income is vested in only about 0.4% of the population.^{8,10} Meanwhile, according to the 2011 *Society Blue Book*, about 70% of Chinese workers earned approximately \$4700 with \$4200 as the average yearly salary in contrast to the approximate \$7500 average salary cited by the Beijing Bureau of Statistics in 2010.¹¹ The small number of rich Chinese consumers has raised China to the second largest purchaser of luxury goods in 2010, surpassing Japan, and is expected to become the largest purchaser of luxury goods in 2011.¹²

Wang Xiaolu of the National Economic Research Institute, China Reform Foundation, concluded in his 2006 empirical study that income inequality could be reduced through:

1. The creation of employment opportunities in rural areas
2. Increased levels of mandatory basic education

3. Elimination of corruption and negligence in government infrastructure
4. Implementation of an equally distributed social security system for urban and rural citizens
5. Investment in and development of highway and rail infrastructure to rural areas¹³

The May 2011 Societe Generale investment analysis reports that China would need to create 11 million jobs a year to reallocate all its agricultural workers to urban areas.¹⁴

In March 2011, Premier Wen Jiabao, announced that the government would implement three major measures to combat rising income and wage disparities in China:

1. Increasing the basic incomes of low-income people in both urban and rural areas
2. Putting more effort into adjusting income distribution
3. Vigorously overhauling and standardizing income distribution¹⁵

Jiabao asserted that the government would implement better controls on industries with excessive salaries; reduce tax liability to lower income individuals; create an income distribution monitoring system; and prohibit illicit income, meaning illegal proceeds from corruption. The CPC has increased minimum wages in Shanghai and Beijing in 2011 to attract and poach rural workers from other provinces in an effort to address current labor shortages in both cities. As will be discussed further in this chapter, the People's Republic of China (PRC) has been unable to stop the flow of illicit income received by its most wealthy citizenry and to enforce resulting tax liability owed on this income, which are well-known facts to Chinese citizens.

There may be other inherent problems with Jiabao's three-pronged approach, which partially adopts some of the suggested solutions proposed in Prof. Wang's research. Raising worker wages can ultimately impact China's cost of labor globally and increase operational labor costs, reducing profitability and competitiveness of state-owned entities (SOEs) and other entities controlled or owned by regional or local authorities (also SOEs). Although increasing minimum wages may overtake labor productivity, potentially making China less attractive as a manufacturing base, the current minimum wage in China is still much lower than the effective wage rate paid, thereby maintaining wage efficiency at the present moment.

Erosion in the equal distribution of income and wealth can lead to internal social unrest and conflict. Since 2005, the CPC has experienced increased outbursts and protests based on social injustice concerns arising from income disparities and environmental hazards.¹⁶ Income disparities are transparent at

Chinese universities where rich and poor students study side-by-side, creating tension and psychological harm to poorer students.¹⁷ Lack of affordable housing and high housing costs are additional contributing factors to public dissatisfaction, discontent, and social unrest. For those workers who do not live in factory dormitories, they spend up to 40% of their wages on rent or mortgage payments.¹¹ Many Chinese first-time buyers and couples have discovered that there is no affordable housing available for them. Due to increased investment speculation and limited availability of urban real estate, real estate prices escalated, putting affordable housing out of reach for many Chinese citizens.¹⁸

China's income disparity is exacerbated by continual rising inflation. Not only does the increasing cost of housing and daily commodities from uncontrolled inflation erode the buying power of earned wages for the average urban Chinese worker, causing frustration, discontent, and social unrest but also China's inability to control its rising inflation threatens to impact its global trading partners, in particular, those with the closest trading ties. Inflation is structurally tied to a fast growth economy, such as the Chinese export-driven economic model. If the 2011 domino theory as proposed in the Societe Generale investment analysis is accurate and China is unable to effectively control its inflation, close trading partners will pay higher costs for the same exported products, with those higher costs acting to shift the trade balance of that trading partner. If China is unable to control its upward trending inflation, then China will essentially export its inflation to the rest of world beginning with its trading partners.

Monetary policies at the People's Bank of China (PBC), the central bank of China, such as quantified tightening, price restrictions, and regulatory oversight, have not curtailed China's growing inflation. Furthermore, the PBC cannot exercise independent fiscal decisions to control and implement monetary policies, as is the case with other central banks, like the U.S. Federal Reserve.¹⁹ Presently, the PBC and the CPC are using an incremental approach to allow the Renminbi to appreciate slowly to maintain control over the current inflation and China's large foreign exchange reserves.²⁰ However, the PBC's current slow acceleration of the value of the Renminbi to offset rising inflation may not be sufficient to keep rising inflation at bay.

In order for China to rebalance its export economic model to a more sustainable, elastic model, the CPC must transition its economy to one that is more reliant on domestic consumer consumption and diversified with a growing services sector.²¹ CPC leaders and officials at the March 5, 2011 annual parliamentary session presented their 12th Five-Year Plan for 2011–2015. For the first time, it did not focus on economic growth but instead it focused on sustainable economic development, including increased development of domestic consumption within China, controlling prices of commodities, a trade plan to increase ecommerce and services sector, and emphasis on biosciences technology.²² Whether the central CPC will be able to reign in

and refocus the regional and local CPC officials to achieve the stated goals to rebalance and create sustainable economic development is a significant and persistent obstacle facing the CPC.²³

There is a clear relationship between China's economic growth, which has generated a high trade surplus and investment rate, and a low domestic consumption rate. China's domestic consumption has been historically low during the economic reform growth period, and in the last several years, the domestic consumption rate has dropped even lower to approximately 35.1% of GDP as of 2009, meaning that those with disposable income are saving their disposable income instead of purchasing goods. Since the wealth is primarily vested in the top 10% or less of the Chinese population, that 10% represents a small number of individuals who are savers and do not necessarily spend all their disposable income on goods. Therefore, they would not generate enough domestic consumption to support a rebalance from an export to consumption-driven economy.²⁴ Further, when those individuals spend disposable income to purchase goods, they purchase limited goods (such as luxury goods mentioned in Section 6.1) as opposed to a broad range of goods.

China has been able to grow exponentially over the last 30 years by transferring value from household wealth to fund investment and manufacturing, derived from undervalued currency, low interest rates on consumer deposits, and the growing disparity between productivity and wage growth. The CPC has made increased domestic consumption and reduction of wage disparities between urban and rural workers as priorities in its 12th Five-Year Plan. However, it will be hard pressed to increase domestic consumption of manufactured goods when the bulk of wealth is vested in a small percentage of the populace, and the remaining balance of the population lacks sufficient disposable income to spend on consumer goods.

Critical to China's ability to transition from an export economic model to a more stable model based on increasing domestic consumption rests on the central CPC's ability to exert its will over its regional and local politburo to implement its economic policies. However, those regions that helped stimulate China's economic growth as governmentally designated economic trade zones in the past are more likely to pay lip service to the central government while continuing to take advantage of global economic opportunities through China's foreign aid policies.

6.2 China's Foreign Aid Policy: "No Strings Attached" to Emerging Nations

In general, China's internal economic concerns drive and shape its external relationships with other nations/states, particularly those in Africa and Latin America. To manage its unemployed and poor rural population, whose

education, health care, and job security have been institutionalized and protected in the pre-economic reform communist system,²⁵ China must continue to stoke the embers of its manufacturing economy to a raging fire. One that has returned an average GDP rate of 10% from 2000 through 2009,²⁶ putting China as the world's premier "factory floor"²⁷ in direct economic conflict with, and to the detriment of, emerging Latin American and African market competitors.²⁸⁻³¹ As a result, China "has become a major consumer of natural resources and commodities, many of which originate from other developing countries," such as Latin America and Africa.³²

China invests its foreign aid in African and Latin American nation/states based on a "no strings attached" prevailing attitude, meaning that China will invest billions of Yuan in those African or Latin American nation/states who are willing to sell, lease, or otherwise part with natural resources and to provide a more favorable emerging market position for China. According to the Vice Minister of Commerce Fu Ziyang, "China does not attach any political strings to its aid. Our foreign aid programs are based on the principles of equality, mutual benefit and mutual development.... Many developing countries lack hospitals and roads. Our aid is concentrated on sectors where they need it most."³³ China terms its brand of foreign aid policy to developing nations as "South-South cooperation"^{34,35} based on these "principles of equality, mutual benefit and mutual development."³⁶ Critical infrastructure development funded by Chinese foreign aid and foreign direct investment (FDI) can provide needed benefits to many developing nation/states in Africa and Latin America. These projects tend to be primarily designed to benefit Chinese enterprises in the identification, extraction, and export of natural resources from their native origins to mainland China for consumption in the manufacture of Chinese finished products, which are then exported to the target nation/state. In fact, this was one of the major findings of a 2007-2008 study by the New York University Robert F. Wagner Graduate School of Public Service, which, as reported in a 2009 Congressional Research Study on China's foreign aid, found that

China's foreign aid is driven primarily by the need for natural resources and secondarily by diplomatic objectives, such as the objectives of isolating Taiwan and garnering support in international organizations such as the United Nations. Beijing also aims to open up foreign markets for Chinese goods and help the People's Republic of China (PRC) companies invest, set up manufacturing plants, and develop markets overseas.³⁷

Whether FDI actually benefits the emerging economies of developing countries was, in fact, analyzed by the World Bank, where 13 South African Developing Countries (SADC) were studied as to the amount of FDI attracted and how FDI benefited the emerging markets of those identified SADC.³⁸

In 2009, the World Bank report determined that while FDI facilitated positive South African local development and spillover benefits to domestic corporations, it was the foreign corporations that reaped greater benefits from FDI to SADC. It is significant to note that the World Bank study did not address the impact and effect of social unrest, which has been a pervasive and continuing factor in a majority of 13 nation/states studied.³⁹

Identifying the nature and extent of China's "no strings attached" foreign aid policy has been difficult to ascertain based on China's lack of transparency in reporting about its funded projects.⁴⁰ According to a report presented by the U.S. Agency for International Development to the U.S. Congress in 2009:

The Chinese government does not release official data about its foreign assistance, and limited information about its foreign assistance activities is available via press releases and news reports. Information that is released is often difficult to interpret. For example, the PRC does not use the internationally accepted definition of "official development assistance" (ODA) as defined by the Organization for Economic Cooperation and Development (OECD), which most donors interpret as development grants, humanitarian assistance, social welfare programs, and food aid. China's Ministry of Commerce (MOFCOM), which operates foreign assistance programs overseas, also oversees trade and investment projects. Given the export-promotion nature of its work, MOFCOM includes many trade and investment provisions, in addition to foreign assistance, when negotiating bilateral foreign assistance agreements. As a result, it is difficult to determine precisely which portion of a foreign assistance agreement is truly foreign assistance and which portion is intended for trade and investment promotion.⁴¹

At their national conference celebrating 60 years of foreign aid to developing countries on August 13, 2010, Chinese officials called for "greater efforts to aid foreign countries"⁴² and touted numerous infrastructure, medical, and business projects funded in whole or part by Chinese foreign aid.⁴³⁻⁴⁵ Although the reason for its issuance was not explained in its April 21, 2011 release, the CPC released its first ever white paper outlining the nature and extent of its foreign aid to nation-state recipients, describing one primary feature of its foreign aid policy as

Imposing no political conditions. China upholds the Five Principles of Peaceful Coexistence, respects recipient countries' right to independently select their own path and model of development, and believes that every country should explore a development path suitable to its actual conditions. China never uses foreign aid as a means to interfere in recipient countries' internal affairs or seek political privileges for itself.⁴⁶

There are conflicting views concerning the true nature of, and the motivations underlying China's foreign aid policy, which China's past lack

of transparency with its notorious reporting inaccuracies did not dispel. “Although China has become increasingly transparent about many aspects of its governance and policymaking, foreign aid figures remain state secrets, the Chinese government releases only the barest of information about the quantities of aid it gives.”⁴⁷ Even with the CPC’s effort to be more transparent by releasing its first foreign aid white paper, there are figures inconsistent with those previously reported,⁴⁸ which has overshadowed the CPC’s efforts to comport with foreign aid definitions established by the International Development Assistance Committee of the Organisation for Economic Co-operation and Development,⁴⁹ which will allow others to identify with greater precision and accuracy “which portion of a foreign assistance agreement is truly foreign assistance and which portion is intended for trade and investment promotion.”⁵⁰

In contrast to the more cooperative, “harmonious,” and benign picture presented by the CPC in its white paper, author Peter Navarro describes China’s foreign aid policy in Africa as “the colonial dragon’s bait and switch,” where Chinese officials visit poor, developing nation/states promising “lavish, low interest loans to build up the country’s civilian or military infrastructure” in exchange for complete Chinese dominion and control over existing natural resources, as well as permitting China to sell its finished products to the target consumer market.⁵¹ Navarro’s text paints a convincing picture that the Chinese foreign aid model is simply a mercantilist economy run amok, while another Oxford University scholar notes that “Chinese leaders saw how aid could be mixed with other forms of economic engagement,” learning from wealthy countries, such as the United States, among others, “how wealthy countries ensured that aid would benefit both the donor and the recipient.”⁵²

The impact and success of China’s foreign aid in Latin America and Africa is more dependent on the individual nation/state itself, its internal democratic processes, lack or presence of civil unrest, existence or lack of corruption, and nature of governance in place, than the actual receipt of Chinese foreign aid itself.⁵³ The U.S. AID Report to Congress in 2009 reported that in 2007, the PRC “signed foreign assistance agreements with 102 countries worldwide, started 54 assistance projects, and completed 35 projects.”⁵⁴ Within 2 years, China increased its foreign aid to another 21 developing countries. According to the PRC 2011 white paper, “China had aided 161 countries and more than 30 international and regional organizations, including 123 developing countries that receive aid from China regularly. Of them, 30 are in Asia, 51 in Africa, 18 in Latin America and the Caribbean, 12 in Oceania and 12 in Eastern Europe. Asia and Africa, home to the largest poor population, received about 80% of China’s foreign aid” by the end of 2009.⁵⁵

Going hand-in-hand with its increasing level of cash reserves from 2004 through 2011, the CPC has the ready cash to significantly increase its FDI and foreign aid programs in Latin American and African developing nations.

China has increased its foreign aid resources continuously from 2004 through 2009, averaging 29.4% in the growth of aid resources. According to the results of the New York University Robert F. Wagner School of Public Studies, China has increased the funding of foreign aid to Africa, Latin America, and Southeast Asia from \$1 billion in 2002 to “\$27.5 billion in 2006 and \$25 billion in 2007.”⁵⁶ The most current foreign aid amounts, which are for calendar year 2009 have just been reported and are already stale by the 2011 reporting date, reflect that “by the end of 2009, China had provided a total of 256.29 billion Yuan in aid to foreign countries, including 106.2 billion Yuan in grants, 76.54 billion Yuan in interest-free loans, and 73.55 billion Yuan in concessional loans.”⁵⁷

China’s foreign aid exists in three forms: interest-free loans, concessional loans, and grants. The PRC state resources fund the interest-free loans and grants, while Chinese financial enterprises, such as the China Development Bank and the Export Import Bank of China fund concessional loans “as designated” by the CPC.⁵⁸ The CPC reports that the purpose of awarding foreign aid grants to developing countries is to support small and medium social welfare projects, such as building schools, hospitals, affordable housing, public water delivery to communities, and other “emergency humanitarian aid.”⁵⁹ Furthermore, the PRC indicates that the purpose of concessional and interest-free loans to selected developing countries is to provide assistance with public projects and infrastructure development.⁶⁰

China operates and funds its completed aid projects in foreign target nations through the primary conduits of Chinese SOEs. As of 2011, there were approximately 120 SOEs listed on the website of the State-owned Assets Supervision and Administration Commission of the State Council, People’s Republic of China;⁶¹ however, there are many more SOEs than those listed on this website. SOEs may also be owned by various other SOEs within Mainland China, separate and apart from the central PRC itself. As an example, 32.45% of ZTE Corporation, a leading manufacturer of telecommunications equipment and systems, with its shares traded on the Shenzhen and Hong Kong Stock Exchanges, is owned by Zhongxingxin Telecom Equipment Company, Ltd.,⁶² which, in turn, has 51% of its “shares held by state-owned No. 691 plant under China’s Ministry of Space and Shenzhen Aerospace Guangyu Industry Group.”⁶³ The Chinese government controls the terms of concessional loans offered through Exim Bank to African and Latin American nations, leaving China, not Exim Bank on the hook for those risks associated with concessional loans. Unlike the International Monetary Fund and the World Bank, China disburses its foreign aid funds directly to the SOE or to the SOE joint partnership to develop the approved project, meaning that the requesting government agency never sees the monies. Instead, the monies are disbursed to the SOE or SOE joint partnership as progress reports of completion are presented to and through the requesting government agency to Exim Bank and the Chinese government.

Since SOEs are not public-traded companies, they are not subject to the same level of corporate and financial governance requirements, regulatory scrutiny, and shareholder responsibilities as U.S. corporations. SOEs are generally well funded, lack transparency and accountability, and are primarily owned and operated by a totalitarian regime. As a report to the U.S. Senate Committee on Foreign Relations stated,

These state corporations lack transparency, have deep pockets backed by Government assets, and operate without the constraints that come with having to issue a corporate annual report. Unlike U.S. corporations investing overseas, who lack this close government patronage and in addition must answer to their shareholders, PRC state-owned companies have the luxury of being able to take a longer-term, strategic view—one more closely integrated with national priorities—without having to demonstrate immediate profits.⁶⁴

In bidding competitively for major infrastructure projects in Africa and Latin America, SOEs are clearly at a significant advantage over their global competitors by the available cash reserves of the CPC, financing capabilities of the CPC and its SOE banks, and their close relationships to the CPC and SOE banks, lulling target nations into forgetting “that assets acquired in business transactions are ultimately controlled by a foreign government.”⁶⁵ Chinese SOEs and CPC loan financing in exchange for trades of natural resources are more attractive to a developing nation and is effectuated more quickly and efficiently than seeking a loan from the World Bank or the International Monetary Fund, both of which require that certain criteria, such as environmental protections, be satisfied before awarding a development loan. By locking in their ability to control the availability and receipt of raw materials needed for manufacturing processes, Chinese SOEs and private corporations are able to maintain a strong relationship with their financiers. For example, the United Nations Economic Commission for Latin America and the Caribbean noted the following:

For the most part, Chinese companies have invested in Latin America to reduce their exposure to raw material price rises. This business rationale was combined with pressure from the Government of China to secure sufficient supplies of energy and raw materials, which accounts for the considerable support provided by public banks for these operations. Accordingly, over 90% of confirmed investments by Chinese companies in Latin America have gone to natural resource extraction.⁶⁶

As part of its foreign aid policy to African and Latin American developing nations, China requires that recipient nations follow the “one-China” policy, meaning that those recipient nations must not recognize Taiwan as an independent, separate nation from the CPC-controlled mainland China, and

must acknowledge that there is only one China, that being mainland China. As of February 2008, approximately 12 Latin American and Caribbean nations maintained diplomatic relations with Taiwan: Belize, Dominican Republic, El Salvador, Guatemala, Haiti, Honduras, Nicaragua, Panama, Paraguay, St. Kitts and Nevis, St. Lucia, and St. Vincent and the Grenadines.⁶⁷ As of February 2008, approximately four African nations maintained diplomatic relations with Taiwan: Burkina Faso, Gambia, Sao Tome and Principe, and Swaziland.⁶⁸ By insisting that its Latin American foreign aid recipients renounce their diplomatic relations with Taiwan, the PRC uses its foreign aid funds to isolate Taiwan and to obtain greater diplomatic support for its agenda or positions in larger international venues, such as in the United Nations Security Council and World Bank, among others.

6.3 Chinese FDI Outflow to Latin America

Unlike Africa, China provides limited foreign aid through concessional or interest-free loans and grants to only Cuba, including biogas technology and training, and debt cancellation to two unidentified Latin American nations.⁶⁹ The CPC has instead focused on “dollar diplomacy” with most of the Latin American and Caribbean nations, seeking strategic or cooperative partnerships with those targeted Latin American nations who are then promised greater Chinese FDI to their nation as well as greater access to the Chinese consumer market through favored trading positions,⁷⁰ such as those strategic partnerships with Argentina and Brazil. China has established a cooperation partnership with Chile and Peru.

By 2010, China remained the third largest investor of FDI in Latin America, following the United States and the Netherlands.⁷¹ Latin America, like Africa, is rich in natural resources, many of which China needs to feed its manufacturing economy, allowing China to selectively offer preferential bilateral trade or cooperation agreements and strategic partnerships in the past with Argentina, Brazil, Colombia, Costa Rica, Ecuador, Guyana, Mexico, Peru, and Venezuela. China has signed strategic partnership agreements with Argentina (2004), Brazil (1993), Mexico (2003), and Venezuela (2001).⁷²

Chinese direct investment in Latin America gained significant momentum in 2010, when Chinese trans-nationals invested over US\$ 15 billion in the region, the vast majority in natural resource extraction.... China’s impact on trade in Latin America covers three areas: as an exporter of manufactured goods to almost every country in the region; as a buyer of raw materials, principally from South American countries; and as a strong competitor in the region’s export markets, in particular for Mexico and Central America.⁷³

According to the Economic Commission for Latin America and the Caribbean (ECLAC), FDI rose dramatically to four nations in Latin America during 2010: Argentina (54%), Brazil (87%), Chile (17%), and Peru (31%).⁷⁴ For 2011 and forward, China announced FDI in projects in Argentina, Brazil, Costa Rica, and Peru, primarily involving the extraction of natural resources, such as hydrocarbons, copper, and iron ore from those countries.⁷⁵ Even if a specific Latin American nation does not possess some type of bilateral agreement with China, Chinese SOEs and private companies have competitively bid and won on new, large, energy infrastructure projects proposed by various Latin American nations.

6.3.1 Argentina

While Argentina had established its first contact with China as early as 1980, Argentina has continued to build upon and strengthen its trade relationship with China, even establishing an Agricultural Attaché's office in Beijing in November 2003.⁷⁶ During June and July 2004, Argentinean officials visited China and met with Jintao and other Chinese officials.

As a result of those meetings, a series of agreements were signed, with the purpose of increasing investments and encouraging the creation of Sino-Argentine companies. The main areas of interest were mining, biotechnology, bio-safety, food and agriculture, energy, chemistry, medicines, forestation, tourism, port equipment and services.⁷⁷

The summer 2004 meetings were followed by Jintao's visit to Argentina in November 2004, where the Argentinean government executed a strategic partnership with China in which it acknowledged China's 'market economy' status as defined by the World Trade Organization (WTO),⁷⁸ precluding Argentina's ability to apply WTO antidumping actions against cheap Chinese manufactured imports.⁷⁹ In the November 17, 2004 bilateral strategic partnership agreement between Argentina and China, both China and Argentina "agreed to promote active cooperation in fields like infrastructure, housing, energy, agriculture, basic industries, education, and science and technology. They also decided to continue to make joint efforts so as to expand bilateral investment and trade volume rapidly."⁸⁰

As a result of their 2004 cooperation agreements, the promised increased access to Chinese markets and FDI did not immediately materialize until much later. During the period 1990–2009, Chinese FDI outflows to Argentina totaled \$143 million.⁸¹ Although there were increased exports of Argentinean products to China, those exports were primarily agricultural, soybeans and soy products, as opposed to a diversified portfolio of products. By July 2010, China executed 12 agreements with Argentina, which

Jintao had presented conceptually in the bilateral strategic partnership with Argentina during his November 2004 trip to select Latin American countries.⁸² The agreements covered “areas like transportation infrastructure, fisheries, energy, plant quarantine, and rail transport.”⁸³ As part of their agreements with Argentina, China recognized Argentina’s sovereignty over the Malvinas Islands, while Argentina recognized and acknowledged the “one-China” policy.⁸⁴

Several agreements relate to the modernization of two decaying freight rail lines running through the central and northern regions of Argentina, both of which are instrumental to the efficient transportation of agriculture and mineral extraction. The agreements provide Argentina with \$2.5 billion in cash over 4 years to renovate the lines and grant a buyer’s credit to purchase Chinese-made locomotives.⁸⁵ Another \$1.85 billion is earmarked to renovate the Belgrano line, which travels from Buenos Aires to the Bolivian border and is a major line for producers.⁸⁶ An additional \$1.8 billion will be used to develop four commuter subway lines in Cordoba, a major agricultural city.⁸⁷ Two Chinese financial SOEs, China Exim Bank and CITIC Group, respectively, are lending the cash to fund Argentina’s purchase of engines, passenger cars, and new subway cars.⁸⁸ As a result, Chinese FDI outflows to Argentina jumped to a staggering \$5.55 billion in 2010 alone, and approximately \$3.530 billion in FDI outflows was promised for 2011 onwards.⁸⁹ Infusion of FDI has helped fuel Argentina’s developing economy to grow steady in the last 5 years:

Five consecutive years of real GDP growth over 8.5 percent between 2003 and 2007 attracted considerable U.S. and other international investor interest in exploring opportunities in the Argentine market. Even in the wake of the international economic crisis, growth in 2008 remained high at 6.8% and, according to official estimates, 2009 GDP grew slightly at 0.9%, although most private analysts assert that Argentina suffered a mild recession. With strong economic growth reported in 2010, Argentine Government estimates put it close to 9% for the year. The Government of Argentina has signaled its desire to see continued foreign direct investment (FDI) flows to enhance the nation’s productive capacity and GDP growth potential.⁹⁰

Chinese SOE offshore oil developer, China National Offshore Oil Company, purchased 50% share of Bidas Corporation, a privately-held Argentinean oil company, in March 2010 for reportedly \$3.1 billion, giving China its first stepping stone entry into the control of, and offshore development of Latin American oil.⁹¹ Shortly following the acquisition, Bidas bought out BP’s stake in Pan American, LLC, for approximately \$7.06 billion.⁹² By March 2011, through its continuing acquisitions of hydrocarbon entities and developments, including the most recent purchase of Esso, Bidas has now become

“vertically integrated, incorporating the downstream business and adding a new activity to the exploration and production of hydrocarbons.”⁹³ The July 2010 trade talks between Argentina and China also yielded cooperation agreements between Chinese SOEs, Sinopec and Sinohydro, and Argentinean utility company, Enarsa, for undisclosed energy projects.⁹⁴

During this same time period, Argentina has maintained a close trading relationship with China, making China its second largest trading partner⁹⁵ for “agriculture and livestock products” and “crude oil, petroleum products, and natural gas.”⁹⁶ China is the world’s largest purchaser of soy oil, buying or trading almost 44% of Argentina’s total soy oil exports,⁹⁷ and is a major purchaser of Argentinean crude oil and hydrocarbon products.⁹⁸ Although Argentina’s \$700 million in trade deficits with China increased to \$1.2 billion by 2010,⁹⁹ Argentina has maintained a positive trade surplus for the last 6 years on an overall trade basis.¹⁰⁰

Interestingly, the July 2010 agreements took place prior to resolving a trade dispute with Argentina in which China held up its imports of Argentinean soy oil for 6 months, essentially holding Argentina as a trade hostage. Argentina had imposed quantitative restrictions on Chinese manufactured imports, and in response, China held up its Argentinean soy oil imports, claiming quality issues.¹⁰¹

6.3.2 Brazil

Similar to Argentina, China has historically maintained a long-term relationship with Brazil, engaging in a strategic partnership with China, recognizing China as a market economy, in 1993¹⁰² and continuing to increase the number of its agreements with China since 2003.¹⁰³ As a result of its strategic partnership with China, Brazil and China collaborated in the development of remote sensing satellites, two of which were launched from China.¹⁰⁴

Although Brazil has actively pursued increased trade and strategic partnership opportunities with China beyond natural resource extraction and development, such as heavy industries like steel, oil, ethanol, and aeronautics, and knowledge-intensive industries, like biotechnology, medicine, pharmacology, and space satellites,¹⁰⁵ Brazil’s primary exports to China remain tied to the extraction of natural resources, such as iron ore and its derivatives, commodities such as soybeans and seeds, and crude petroleum.¹⁰⁶ As a result, China has surpassed the United States as Brazil’s primary trading partner in 2009, giving Brazil the opportunity to diversify its global trading partners and reduce its dependence on the U.S. market.¹⁰⁷

Chinese President Jintao recognized and acknowledged the long history and relationship between Brazil and China by making Brazil his first stop on his November 2004 trip to Latin America.¹⁰⁸ During his 5-day visit to Brazil,

Jintao outlined his three-pronged approaches for continuing South–South cooperation between Brazil and China as follows:

- Support each other in creating a New World Order for developing countries in global and political platforms.
- Create and foster a win-win, mutually beneficial economic relationship designed to increase bilateral trade to \$100 billion by 2010 and doubling the total investment in each other’s enterprises.
- Enhance and encourage diversified cultural exchanges between the countries.¹⁰⁹

Based on Jintao’s representations, China’s strategic partnership with Brazil was not just based on mutual financial benefits, but clearly anticipated and expected Brazil’s cooperation and support of China’s political and diplomatic goals in global venues such as the WTO, United Nations Security Council, and G20, as part of its South–South cooperation strategy. As an emerging nation, Brazil has risen successfully to meet China’s expectations, despite their differences, and will continue to do so in its efforts to create opportunities and a place for itself in the international system.¹¹⁰ However, by and large, Brazil’s recognition of China as a market economy and its increased trade with China apparently have not impacted Brazil’s voting behavior.¹¹¹

Following Jintao’s visit, Brazil’s trade exports to China jumped from \$5.4 billion in 2004 to \$6.8 billion.¹¹² The overall trade amounts reported by the Brazilian Federation of Industries of the State of Sao Paulo, as reflected in Table 6.1 show that Brazil’s trade with China has increased exponentially since Jintao’s 2004 visit. By 2010, exports to China comprised approximately 15.2% of Brazil’s commercial exports, while imports from China comprised 14.1% of Brazil’s commercial imports, making China Brazil’s primary trading partner.

As of 2010, raw materials made up the bulk of Brazil’s exports to China, while Brazil’s exports to the United States and the European Community were more balanced between manufactured goods and raw materials.¹¹³ In 2007, Brazil experienced its first negative trade deficit with China. Although

Table 6.1 Snapshot of Brazil–China Trade 2010 (US\$ billion)

	2003	2004	2005	2006	2007	2008	2009	2010
Exports	4.5	5.4	6.8	8.4	10.7	16.5	21	30.8
Imports	2.1	3.7	5.4	8	12.6	20	15.9	25.6
Balance	2.4	1.7	1.5	0.4	−1.9	−3.5	5.1	5.2

Source: Adapted from “Snapshot of Brazil–China Trade December 2010 and Evolution of the Brazil–China Trade Balance [USD billion]” retrieved from the website of the Federation of Industries of the State of Sao Paulo, <http://www.fiesp.com.br/agencianoticias/2011/01/18/raio%20x%20brasil-china.pdf>.

the large amount of raw material exports to China masks Brazil's huge trade deficit with China in manufactured imports, those exports are spurring Brazil's economic growth and ability to provide necessary social programs to its citizens.¹¹⁴ Brazil's imports of Chinese goods increased from "a few hundred million in 2000 to \$20 billion in 2008"¹¹⁵ with the bulk of those imports being manufactured goods.

As part of its strategic partnership with China, Brazil has acknowledged China's "market economy" status as defined by the WTO; Brazil is precluded from applying WTO antidumping actions against cheap Chinese manufactured imports. Brazil has important interests in maintaining and protecting its manufacturing and value-added products industries from an influx of cheap Chinese imports.

While Brazil has unsuccessfully attempted to diversify the nature of its exports to China from raw materials to manufactured goods in an effort to enhance and grow Brazil's internal economy, Brazil has continued to pressure China to keep its promises of increased purchases of manufactured goods, as was the case with Embraer. On Brazilian President Dilma Rouseff's return from Beijing in early 2011, she had landed a \$1.4 billion contract from Beijing to purchase 20 jets from Brazilian aircraft manufacturer, Embraer.¹¹⁶ Embraer has supplied aircraft to China for years and has been making inroads into the Chinese domestic aircraft market. Once obtaining the contract, China delayed its purchase of the Brazilian aircraft because China was developing its own regional aircraft to compete with Embraer's model and China's tight controls over its domestic market.¹¹⁷

As the rates of global investment returns diminished since the economic crisis of 2008, international investors have looked to Latin America, in particular, Brazil's emerging market as an attractive and popular recipient for FDI funds. According to the ECLAC 2010 FDI report, Brazil FDI has increased to \$48 billion, with China contributing 15%, Switzerland 13%, and the United States 11% of the total FDI for 2010.¹¹⁸

6.3.3 Ecuador

In 2010 Chinese SOEs and consortiums received winning bids from the Ecuadorian government to build two large hydroelectric-generating dams, one on the Coca River worth an estimated \$1.98 billion¹¹⁹ and the other on the Paute River estimated at \$672 million.¹²⁰ China's Exim Bank agreed to finance 85% of the Coca River dam project at \$1.68 billion with a negotiated interest rate of 6.9%, requiring Ecuador to raise and fund the 15% balance.¹²¹ Upon completion of these two massive projects, Chinese state-run companies will have supplied approximately 65% of Ecuador's electrical energy needs.¹²²

China's admission to the WTO in 2001 expanded China's global market for textile and apparel manufacturing. In 2000, China only exported 7%

of the world's manufactured textile goods, growing to 20% by early 2011, impacting the once-flourishing Colombian textile and apparel manufacturing industry,¹²³ as well as those of Mexico and the Dominican Republic.

With its membership in the WTO and its growing presence in Latin America and Africa through its obfuscated foreign aid programs and financial arrangements aimed at the extraction and exportation of natural resources, China appears to be positioning itself as the most predominant global economic powerhouse. It is true that the Chinese economy has changed from a sleeping to fire dragon, a creature, if not restrained, that is more than capable of usurping and devouring what is left of the world's natural resources remaining in endangered and protected global environments.

As China takes its place as a powerful economic competitor to Western developed nations, China really must seek to develop itself into a nation that the world will trust and respect for its great accomplishments. To reach such lofty heights, China must perform a serious assessment of itself to change its tarnished image from a corrupt nation to one with integrity and transparency. China faces tremendous obstacles to eradicate corruption within its corporate and governmental operations. But, only by truly removing pervasive corruption in all its forms, can China develop and nurture the growth of trustworthy Chinese corporations, creating significant investor confidence in their integrity and operation. Demanding and ensuring that Chinese corporations abide by the same global corporate standards of good governance and transparency, China will demonstrate developmental maturity as a country with integrity and its commitment to create investor trust and confidence in its markets.

6.4 Corruption Makes China Go 'Round

Corruption is perceived by Chinese citizens to be the most pervasive and powerful issue facing China today,¹²⁴ which Jintao recently reinforced as a national priority in his speech at the 90th year anniversary of the CPC held on July 1, 2011.¹²⁵ Jintao aptly noted that failure to root out corruption within the organization will “cost the party the trust and support of the people.”¹²⁶ Far more significant is that corruption within China's government and SOEs creates perceived social injustices for which no transparent or democratic process exists to effectively bring the offending conduct to light so it can be prosecuted and eradicated. Without such transparency, the CPC fails to reassure its populace that the government has zero tolerance for corruption at any level and will mete out justice equally and fairly to eliminate such conduct. Instead, discipline and punishment is reactive and selective, reinforcing the public perception of corrupt offenders corrupting the legal and judicial system for their own personal gain.

Although there is no dearth of anticorruption regulations and statutes on its books,¹²⁷ the CPC has yet to establish the minimal requirements of an anticorruption program within its own ranks, such as public and organizational transparency; fair and equitable application of available anticorruption regulations through an effective legal and judicial system; and the development and implementation of standardized effective corporate governance and ethics processes for SOEs. Although the Central Commission for Discipline Inspection (CCDI) of the Communist Party of China established an Internet website, <http://www.12388.gov.cn>, to encourage whistleblower's to report the misconduct of CPC officials in 2009, it is unclear from information released by CCDI the number, if any, of prosecuted cases actually resulting from Internet whistleblower reporting, or if the CCDI measures the efficacy of their whistleblower program in general, despite the self-professed claims of success reported in the press.¹²⁸ When a similar whistleblowing blog site created by a private citizen, www.ibrbery.com, began operating in 2011, the CPC quickly shut it down, apparently indicating that "involving the public risks letting popular anger boil over,"¹²⁹ reflecting how well the CPC understands the power and sophistication of "netizens" to quickly link into Internet social networking sites to encourage and convert virtual social unrest into an immediate and effective reaction in the real world.¹³⁰

The visibility of the CPC's anticorruption efforts is ill served when there is little or no reporting in the media or ambiguous reporting about actual successful results. In one such example, the media reported that the CCDI convicted approximately 106,000 individuals in 2009,¹³¹ yet in 2010, only 5,373 actual cases were referred to prosecuting agencies.¹³² Even when the CPC reports actual figures officially at the National People's Conference, only summary statistics were provided for a 5-year period as opposed to an annual basis.¹³³

CPC's continuing inability to immediately react and root out corruption within its own central, provincial, and local officials has eroded and weakened the CPC's central authority over its provincial and local operations, and its ability to operationalize its strategic economic plans for the future.¹³⁴ A recent example demonstrating the major havoc which China's corruption problem can wreak on both its economic goals and the global trading market occurred in June 2011 when a high level official of the Chinese National Bureau of Statistics was reportedly one of five officials under investigation for the illegal leaking of economic data for personal gain.¹³⁵ Investor confidence in global trading markets is based on the integrity of the market itself. Corruptly trading insider economic data prior to its release lowers investors' confidence about the market and can have a huge impact in the global trading markets, especially since China now is a major market, second only to the United States.

In the long run, “runaway corruption undermines critical governing institutions, fuels public resentment, exacerbates socioeconomic inequality, creates massive economic distortions, and magnifies the risks of full-blown crises,”¹³⁶ which is the exact nature of the social unrest feared most by the CPC and fuels the basis for the CPC’s emphasis on the theme of “harmonious society” within its last series of Five-Year Plans.¹³⁷ It may prove more difficult than anticipated to eradicate, or even control, the current pervasive level of corruption because it exists at every level of the affected CPC organization and operational government system.

6.4.1 How Should Corruption Be Defined in China?

As of 2010, China continued to rank at 78 of 178 countries on the Corruption Perceptions Index, an index which measures perceived corruption in the public sector conducted by Transparency International (TI), the leading global anticorruption entity.¹³⁸ Based on the TI criteria, any index score below 5 indicates serious corruption problems, and China was scored at an index of 3.5.¹³⁹ TI adopts an inclusive and simple definition of corruption “the abuse of entrusted power for private gain.”¹⁴⁰

Using another independent rating index, China falls on the low end of the spectrum.¹⁴¹ The Worldwide Governance Indicators (WGI), another survey index created by the World Bank based on identifiable indicators of governance, reported low scores for China’s ability to control corruption, among other indicators.¹⁴² The WGI measures the following governance dimensions: voice and accountability, political stability, government effectiveness, regulatory quality, rule of law, and control of corruption.¹⁴³ The WGI compiles data from governmental and nongovernmental organizations to develop the measurements for each dimension for each country. According to the WGI, the “control of corruption captures perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as ‘capture’ of the state by elite’s and private interests.”¹⁴⁴

The West has typically described corruption in the context of occupational fraud, which occurs when “the employee’s use of his or her influence in business transactions in a way that violates his or her duty to the employer for the purpose of obtaining a benefit for him or herself or someone else.”¹⁴⁵ While this definition is useful in the context of Western private or publicly traded corporations, its application in the context of Chinese SOEs may exclude conduct, which should, in truth and fact, be considered as corruption. Corruption in China is not simply a two-way transaction as in the case of a quid pro quo conflict of interest or bribery case. Corruption can exist in one-way transactions, such as smuggling and tax evasion schemes, and therefore should be defined more broadly.

Some academics have argued that even a broad definition of corruption employing the word, “abuse,” is not broad enough to properly discuss the nature and type of corruption found in China.¹⁴⁶ Because China’s neauthoritarian regime¹⁴⁷ exercises complete state control over its assets and economy, corruption in China must be defined broadly as the “use of public authority and public resources for private interests.”¹⁴⁸ Such a definition would necessarily include activities, which range from negligent to intentional misconduct involving embezzlement, misappropriation, accounting violations, tax evasion, squandering, and negligence.

Although other scholars suggest a leveling out or potential reduction in China’s corruption in recent years,¹⁴⁹ the actual conviction statistics reported by the CPC reflect those cases where corruption was actually detected and prosecuted, but the reliability of those figures may be questionable because the CPC is notorious for its lack of transparency and statistical underreporting.¹⁵⁰ Since approximately 5% of an organization’s gross revenues is lost to occupational fraud, including corruption,¹⁵¹ which has been identified and detected in global non-SOE corporations, the percentage of corruption in a Chinese SOE most likely would be considerably greater than in a non-SOE corporation based on the “dynamics of decentralized predation” of the Chinese state, where the Chinese state exercises greater economic influence and provides those SOE executives with greater access to state assets and opportunities to corruptly use those assets for personal gain.¹⁵² The CPC has lost control over its regional and local agencies because of its decentralization of property rights, local economies, personnel, and factors of production creating a decentralized predation state.

As a result, corruption within China is decentralized and growing, showing increases in major corruption cases for the period 1990 through 2002, along with increases in high-ranking officials engaging in such major corruption schemes. Regional and local governments now exercise control rights over SOEs in major industrial cities, while the central government retained control rights over SOEs in “critical sectors, such as power generation, telecom, petrochemical industries, machine tools, and coal production.”¹⁵³

Although the central government retains control rights over a limited number of SOEs, ceding the others to regional and local authorities, these critical sector SOEs produce significant revenues for the Chinese state and provide enormous opportunities for high-level SOE officials to corruptly enrich themselves from the SOE coffers, presumably state assets which belong to the Chinese people. With the fiscal revenue functions decentralized to the regional and local agencies, lower level party officials have the means, motives, and opportunities to corruptly divert tax revenue; to intentionally forbear on the proper performance of their duties to enforce Chinese laws and regulations against those SOEs who curry favor with them; and to give away farmers’ land to the highest bidder, all with impunity and without any

accountability for their actions. Minxin Pei succinctly posits that in a predatory state, “local ruling elite’s acquire unprecedented discretionary powers over the use and disposal of state properties and resources, especially tax revenue, land, and bank credit.”¹⁵⁴ The lack of accountability and inconsistent application of punishment, coupled with unfettered discretionary control and authority, empowers “local ruling elites” tremendously, reinforcing that they are “untouchable” and immune to prosecution, to the extent, that some “local ruling elites” have actually collaborated and conspired with, and protected organized crime rings.¹⁵⁵

News stories about political corruption within local, regional, and central CPC leadership ranging from blatant embezzlement to maintaining a harem of mistresses abound.¹⁵⁶ However, corruption is no stranger within critical sector SOEs. Corrupt senior-ranking CPC members holding high-level positions in government controlled SOEs, such as Bank of China, Rio Tinto, Sino-Forest, Sinopec, Sino steel, among others, have been the focus of extensive press coverage in recent years.¹⁵⁷ Corruption within Chinese SOEs seems to be the order of the day. The disclosure of their corrupt corporate foibles will continue to make global news as China increases its financial clout through corporate mergers and acquisitions in a weakening Western market.¹⁵⁸

Financial transparency and market integrity form the cornerstones of a nation’s economy, while corporate transparency and proper accounting assures investors that their investments will produce the rate of return expected. As smaller Chinese corporations have entered the Western stock markets,¹⁵⁹ securities regulatory agencies are seeing increasing securities violations based on corruption, the lack of corporate transparency and governance, and fraudulent accounting practices.¹⁶⁰ The U.S. Securities and Exchange Commission has reportedly sanctioned U.S. accounting firms, which helped Chinese corporations to engage in accounting tricks to deceive investors into purchasing Chinese corporate securities, as was the case with overstated revenues of China Energy Savings Technology.¹⁶¹

The role that Chinese culture plays in internalizing corruption and obstructing anticorruption efforts will be explored in the next section.

6.4.2 Good or Bad Guanxi, That Is the Question

The concept of Guanxi has existed in Chinese culture historically, with its disputed origins putatively attributed to Confucianism, reigning political powers, and rural populations.¹⁶² Guanxi and its use is embedded and endemic within Chinese culture, despite attempts by the PRC to prohibit its use in business as enforced by a regional legal and judicial system. Some even consider the concept so pervasive in Chinese society as to “be the fundamental organizational principle of Chinese society, irrespective of social status”¹⁶³ and a “ubiquitous theme in Chinese society.”¹⁶⁴

The Chinese words themselves, “guan” and “xi,” conjure up a symbolic image of a barrier protecting those residing within from those residing beyond it, with the protective gate controlled by a trusted party.¹⁶⁵ Although Guanxi possesses no uniform definition, Guanxi can simplistically be described as a social network of associations and relationships based on different bases, which is available to an individual who can call on that network for favors or benefits as needed. Guanxi is a social network, which requires mutual reciprocity to maintain balance. As a result, use of the network obligates the user to return the favor or benefit when asked, operating as a dyadic relationship between the parties. Favors or benefits may include gifts, cash, “personal interests advanced, problems solved ... and resources obtained.”¹⁶⁶ Guanxi can also include the giving or receiving of information as a favor or benefit to a recipient.

Guanxi can exist through personal connectedness where individuals share the same language dialects, or who have an actual or “fictive kinship” with one another,¹⁶⁷ both of which create family Guanxi, the strongest network connection because it has the highest trust level.¹⁶⁸ The level of trust generated with Guanxi connections is strictly a Chinese socio-cultural phenomenon.¹⁶⁹ According to Fan, “business Guanxi is a unique Chinese phenomenon and a product of China’s contemporary political and socio-economic systems.”¹⁷⁰

Guanxi is considered a property asset that is owned by the individual; therefore, when a specific employee moves their employment to a different corporation, that individual takes their Guanxi connections with them, making them unavailable to their former employer, creating potential problems for those businesses relying on the former employee’s Guanxi connections. Guanxi helps individuals illegally prosper by providing an effective distribution network to transfer counterfeit goods to other partners in China and abroad, as well as effectively marketing and establishing numerous fake Apple stores throughout various regions of China.¹⁷¹

While Guanxi can legitimately smooth the regulatory road and create useful vertical supply chain networks, the monetary value and benefit of Guanxi acts as an incentive and encourages Guanxi users to cross the line of appropriate and acceptable business conduct, acting as a facilitator of corporate corruption and bribery. Local officials have used Guanxi to favorable economic zones to benefit the area.¹⁷² Even in China’s fledgling justice system, Guanxi still plays a role by influencing a litigator’s choice of an arbitrator in an effort to determine which arbitrator has the best Guanxi.

Because of its ubiquitous nature, Guanxi has become another method of monetary exchange in China, creating increased, unreported “gray income” wealth opportunities for those with “good” Guanxi. According to Prof. Wang

of the China Reform Foundation in his second study of China's gray income and income distribution:

Prof. Wang estimates that the per-capita disposable income of urban Chinese households in 2008 should be Rmb32,154, 90% above the official data. Total hidden income could total Rmb9.3 TN, 30% of GDP, with about 63% of hidden income in the hands of the top 10% of urban households.¹⁷³

Prof. Wang's study design is based on the fact that China's gray income originates from illegal sources, such as bribes and gifts; and his results reflect that the amount of gray income continues to grow for those already possessing the greatest wealth in China.¹⁷⁴ Based on Guanxi concepts and the fact that Prof. Wang has determined that the majority of gray income is in the hands of the wealthiest Chinese infers that those individuals are likely high-ranking CPC members, senior executive staff of SOEs, and private entrepreneurs. The study results essentially substantiate and evidence the increasing growth of corruption within China from an economic standpoint.

6.5 Summary

From its perspective, China promotes itself as a successful emerging nation to African and Latin American countries, claiming to establish camaraderie and friendship between the nations, hence China's purported "no strings attached" and the "one-China" foreign aid policies. While China has maintained a historic presence in some African and Latin American countries, China continues to expand its global reach through foreign investments and leveraging its significant surplus trade reserves with its global trading partners, giving China a predominant leading edge over its nearest competitor, the United States.

How China decides to use the "no strings attached" and the "one-China" policies in its future foreign diplomatic relations will underscore China's actual intentions concerning its fellow emerging countries. Is China capable of becoming, in essence, the good global corporate citizen attempting to make the world a better place in all respects; or, will China use its growing formidable and strategic economic position to manipulate trading partners and FDI recipients to exercise undue influence over world markets?

Whether China will become the global "white knight" to financially rescue the failing European Union market under conventional terms is unlikely at best for a number of reasons. First and foremost, China is a totalitarian regime, which has ubiquitously inserted itself in its "socialist-based" economy. Any Chinese corporation involved with natural resources or protected assets is owned and controlled by the CPC. The nature and

extent of the CPC's dominion over such corporations is not transparent and purposely obfuscated. The CPC focuses much of its FDI into public infrastructure projects involving electricity, hydrocarbons, transportation, and communication, which makes a prospective opportunity to purchase Italian public utilities from debt-ridden Italy an offer too good to be refused.¹⁷⁵ In addition to socialist ownership and control, Chinese corporate officers do not employ transparent governance and accounting practices, making SOE's a dangerously risky and potentially terrifying investment or lending partner.¹⁷⁶

Second, the CPC is desperate to appropriate as much new foreign technology as possible, astutely pinning its star of continuing economic success to the effective assimilation and adaptation of foreign intellectual property acquired. The CPC's strong desire to acquire foreign intellectual property for China can offer foreign investors seeking to enter the Chinese consumer market a more secure negotiating position. But, through its dynamic regulatory maze, the CPC shrewdly controls the scope and nature of foreign corporate access to the Chinese consumer market, dangling a mouth-watering carrot before greedy Western corporations haplessly swapping technological innovation for the illusory prospect of cash.

Despite CPC restrictions, China is a hotbed for corporate mergers and acquisitions, loosening its corporate capital to gain entry in bio, information, medical, and other science technologies from foreign partners. By avoiding natural resource corporations domiciled in nations hostile to the CPC's overtures, SOE's have acquired significant ownership interests in corporations domiciled in friendlier climates, such as Argentina, among others. So, while China continues gaining access to innovative intellectual property and natural resource assets globally through its foreign strategic partnerships, Western nations continue to lose ground economically and find their domination of the financial markets to be a thing of the past and a fait accompli.

In spite of China's economic successes, runaway corruption in China is endemic in the fabric of the CPC. Because corruption flows from the very lowest levels of the CPC through its highest echelons, it is unlikely that CPC action will ever result in eradicating corruption within the CPC. CPC members benefit the most from their position, which provides the power, authority, and influence forming the historical basis for Guanxi. Those local, regional, and central CPC members fortunate to possess such influence are experiencing wealth far beyond their expectations, and it is highly unlikely that those corrupt officials will take any sanctions against themselves or other co-conspirators, a fact that is clearly evident even from the cloudy governmental reporting. Despite its use of the death penalty to deter corruption, governmental corruption has grown hand-in-hand with China's flourishing economy; and poses a fatal threat to the continuing stability of the CPC

within China. How long the Chinese populace can tolerate the huge gaps in income and quality living before making other choices to level the playing field is unknown; but, whatever those choices, they will be of paramount importance to the world at large.

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The Information Revolution

The Emergence of Cyber Power

7

CHARLES M. PRESTON

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The Information Revolution is an example of human society exploring and using new technologies. While it may be an exaggeration to claim that all major shifts in human society have technological advances as the proximate cause, there is no denying that the Information Revolution is technology driven.

These technologies exploit the properties of electricity and electronic components to provide the digital logic functions at the heart of the primary devices of cyberspace.

These include:

- Mainframes—physically large general purpose computers
- Laptops—physically small general purpose computers
- Smartphones—very small general purpose computers, plus two or more radios
- Routers (to direct digital information flow on local and worldwide networks)—very small general purpose computers with a special operating system
- Programmable logic controllers—special purpose digital logic circuits used in industrial control systems (ICSs) to turn things on and off or speed them up or slow them down

A general purpose computer is a set of logic circuits designed to be good at many of the tasks we have used computers for in the 1950–2010 timeframe. These include adding and subtracting numbers, sorting numbers or letters or words represented as numbers, storing and retrieving data at speeds never seen before 1960.

Computer processors do these basic operations with stored computer instructions collectively called software, which enables the use of computer power by humans who are not computer programmers. Theoretical and practical limitations on the quality of the software are a major cause of historical and continuing security breaches. A contributing factor is that a general purpose computer is designed to run programs to accomplish an almost infinite assortment of useful or recreational tasks, without computer owners having to buy computer hardware designed for each separate task.

Even military systems for waging war switched in the last decade to commercial off-the-shelf (COTS) components due to very substantial cost and time-to-develop savings. Many highly secret systems use either common off-the-shelf hardware, or software, or both and some automated teller machines use Microsoft Windows. There are very substantial security implications of these industry and government choices discussed in Section 7.8 of this chapter.

The essence of cyber power lies in who can use, or deny others the use of, the very expensive computer and communications technology that is pervasive in almost all of the military, business, and industrial organizations on the planet. Unauthorized use is nearly impossible to prevent, as discussed in more detail in Section 7.8. Possibly as disruptive is the ability to deny authorized users the functionality of systems used to control large amounts of money, control communications, or conduct commerce.

7.1 Access, Power, and Control of Information

“Access to information” could be used to describe the goal of espionage, which is an important part of the mission of spy agencies, regardless of which country is funding them. “Power” often depends on the ability either to get access to information, or to deny access to all unwanted parties, as well as the traditional meaning of “information is power.” “Control of Information,” if it is perfect or absolute, means that information intended for certain parties is always available to them at the right time, and never reaches anyone else.

Imperfect control of information results in the collection, storage, and transmission of hundreds of thousands of separate messages regarding U.S. diplomacy and military operations and allowing them to be downloaded in large numbers and stored by a single trusted military network user. The Secret Internet Protocol Router Network (SIPRNET) is a U.S. Department of Defense (DOD) network that carries information classified at the SECRET level and is not part of the publicly accessible Internet.¹

Linking a computer with access to the SIPRNET to the Internet or to any other computer or media storage device that has not been approved for use with SECRET information is a serious security violation. Once any media storage device such as a CD, floppy disk, or memory stick has been

connected to a computer with access to the SIPRNET, it becomes classified at the SECRET level. It must be protected accordingly and shall not be used on any unclassified computer.²

Clearly, information on SIPRNET was not perfectly controlled, since large amounts of sensitive or classified information became available to news agencies and the public through the WikiLeaks organization.³ Due to the nature of digital information and the ease and speed of encryption and transmission, possibly no cyber attack team or cyberwarfare operation could have been certain of completely stopping the release of the SIPRNET information once a copy was outside the possession of the person who downloaded it.

The difficulty in controlling the transmission, possession, or viewing of sensitive digital information means that technical and human controls have to operate in a preventive way, rather than as a crisis response. The degree of access for some U.S. military personnel, including the person who allegedly downloaded the WikiLeaks material, was not separated from the allowed amount of access in a given period of time. The trust placed in individual military SIPRNET users appears to have been greater than that required for job duties.

Judging the trustworthiness, and continued trustworthiness, of individual humans who require trust to do their jobs is very difficult and is the subject of U.S. Defense Advanced Projects Agency research announcements, one of which is the Cyber Insider Threat (CINDER) program.⁴ Much of today's cyber security is oriented toward keeping outsiders out, with fewer effective controls for insider access. There is often a careful balance needed between the efficiency of the users and their ability to do harm.

Many high-ranking personnel in many organizations are trustworthy in the usual sense, but lack of effective training and their ignorance of cyber security cause them to be weak targets. Their access to information is high—their approach to security is casual. Attackers acquire access to, power over, and control of their information and detection of successful attacks is often greatly delayed or never happens.

When there are hundreds or thousands of skilled cyber attackers, if “information is power” in the traditional sense, there may be an appreciable transfer of power along with the transfer of the gigabytes or terabytes of information listed in cyber espionage and cyber attack examples later in this chapter.

7.2 Loss of State and Government Monopoly on Control of Information

Some nation/states have historically tried to control access to information, creating one information environment inside their geographic borders, and another outside. Information restrictions have been imposed in the name of morality, social stability, religion, copyright protection, and national security.

7.2.1 Radio Broadcasting

Beginning with the advent of short-wave and medium-wave radio broadcasting in the 1920s, other regimes or groups have used the nature of radio to cross national boundaries and reach the population inside. Countermeasures to the reception of this broadcasting have included frequency-jamming signals. It is possible to use signals generated by the receivers themselves to track down units while they are turned on, and to tell which station (frequency) they are tuned to, so even use of receivers is difficult to completely conceal. During the August 1991 attempted coup in Russia, and while being held incommunicado in the Crimea, Mikhail Gorbachev used foreign radio broadcasts as his only source of information.⁵

Chinese language radio broadcasts are still being jammed in China, and Persian language broadcasts are still being jammed as they are received in locations just outside the border of Iran.⁶

7.2.2 TV Broadcasting

The later advent of satellite TV from geosynchronous satellites meant that people in many parts of the world could directly receive transmissions if they could afford an antenna and receiver. These TV broadcasts were completely independent of any state-controlled media within each country and became a major news source for the Middle East shortly after the beginning of Al Jazeera operations in 1996 from Qatar. Although Al Jazeera was not the first Middle East satellite TV broadcaster, it was considered more independent in its programming.

On February 2, 2011, the BBC stated that their Persian Television service was being jammed from within Iran after the BBC covered political unrest in Egypt. There has been similar intermittent jamming since the BBC Persian Television began in 2009.⁷

7.2.3 Cold War Information Operations

Floating weather balloons with leaflets over Iron Curtain countries was one way censorship was bypassed during the Cold War.⁸

Prohibited printed material published or duplicated from within the Soviet bloc countries was referred to as “samizdat.” Unapproved use of technology (portable typewriters) was involved since publishing and duplicating technology was strictly controlled. Samizdat allowed a much wider audience to have access to uncensored material.⁹

The U.S. Secretary of State has recently compared the effects of samizdat circulation to blogs and videos and stated that the United States endorses the idea that Internet users should have certain basic freedoms, including freedom of expression. She commented on a recent increase in Internet censorship in several countries, including China and Vietnam, and on governments that are targeting “independent thinkers” using new technology and information walls, in the form of Internet censorship and blocking.¹⁰

7.2.4 Internet Access

Citizens of many countries have had access to the Internet for more than 10 years. With the proliferation of high-bandwidth fiber-optic cables linking most of the world came email, multimedia email, audio streaming for music, recorded radio broadcasts, podcasts, and video streaming, including live TV.

Access to regional and worldwide news, entertainment, digitized books like those available through Google books had the potential to educate, alter viewpoints, and create debate within previously closed societies.

Since 2006, there has been rapid growth in services known as social media. These include Facebook, MySpace, and Twitter. Primary communication to and through these websites was previously from desktop or laptop computers but is increasingly from mobile smartphones. Easy video sharing began with YouTube and is now possible on Facebook as well. A primary reason for the use of these services, besides being offered without direct monetary cost to the users, is that they are very quick and easy to set up and to use.

In the world press, there were a number of comments to the effect that Iranian election protests in 2009 were a revolution brought about by Twitter, that Twitter was a revolutionary samizdat, and that it had turned a protest into a movement. While there was intense worldwide interest in these protests, regime change in Iran was not the result.^{11,12}

7.2.5 Social Media: Iran, 2009 Election Protests

Something like the following may have occurred concerning the influence of the Internet, Twitter, and other social media and their ability to change the power structure within sovereign states.

In Iran, in 2009, access to the Internet and Twitter was generally allowed, although the available evidence suggests that there were not very many Twitter users in Tehran, possibly not more than 60, according to fact-checking of location timelines.¹³ An unknown number of users outside Iran changed their Twitter profile location to Tehran or their timezone to imply that they were in Tehran or Iran.¹⁴ Authorities in Iran prior to the protests did not consider Twitter to be a danger to their political control. There was some Twitter use by people in Iran protesting the presidential election. There was a great deal of attention, along with Twitter messages, from other areas of the world, including Iranians living elsewhere. The world's media, including Internet blogs, started to credit Twitter with greatly facilitating protests and unrest within Iran and showing Twitter messages as up to the minute news updates. Adding to the perception that Twitter was very important was a request made by a U.S. State Department employee that Twitter postpone scheduled maintenance so as not to disrupt this communication channel within Iran during a critical period. The authorities in Iran, possibly believing that where

there was smoke there could be fire, restricted the use of Twitter. The world's media, noting that the government in Iran had restricted the use of Twitter and the Internet, used this action as confirming evidence that Twitter was a powerful tool since it has now been restricted by the government. This possible self-reinforcing chain of events is based on an interpretation of Internet use and its consequences by Evgeny Morozov.¹⁵

The above scenario is not meant to suggest that access to the Internet, blogs, and social networking played no part in the 2009 election protests, but that cause and effect may be difficult to determine. The influence of Twitter was probably greatly exaggerated at the time of the most attention from world media. Apparently Twitter users dropped to six after presumed government controls were put in place, and while Twitter news from Iran helped to bring awareness, there is little evidence that Twitter was used to organize protests, or to publicize them, within Iran.

Alec Ross, an advisor to the U.S. Secretary of State, said that he has yet to see any data or a study showing a strong influence on intercultural or inter-ethnic conflict outcomes with social media.¹⁶ He stated that later evaluation of continued use of Internet technologies may support a different historic perspective, but the technology is neutral and can support good or ill. Better neutral analysis is needed of both the power and limitations.

While there is little doubt that some Iranian government censoring and blocking was bypassed, based on reports, the ability to do this is not unlimited. There is a more technical discussion of countermeasures and counter countermeasures in Section 7.3. The ability of governments to intercept and track communication, and to use the information on social networking sites to suppress dissent, means that government controls cannot be bypassed with impunity, if at all, by ordinary Internet users.

Although there is reason to believe the Iranian case exposes the potential benefits of new media, other evidence—such as the Iranian regime's use of the same social network tools to harass, identify, and imprison protesters—suggests that, like any media, the Internet is not a “magic bullet.” At best, it may be a “rusty” bullet. Indeed, it is possible that traditional media sources were equally if not more important.¹⁷

7.2.6 Internet Service Disruption

The Egyptian government was able to almost completely isolate that country from the international Internet for a period of days from January 27, 2011 to February 2, 2011. By February 2, traffic from four major national providers was back to previous, normal levels.¹⁸

The decision to allow Internet access and other telecommunications may have been partly economic—the Organisation for Economic Co-operation and Development (OECD) estimated that the outage cost Egypt at least

\$90 million, which would amount to 3%–4% of Egypt's GDP.¹⁹ A staff estimate by *Forbes* was for \$110 million for the five day outage.²⁰

From the examples so far provided by protesters in Iran, Egypt, Libya, and Syria, a government can often control the use of the complex services available on the Internet in part or altogether. Whether these services, and the economic and social pressures applied to keep them available, will prove of more use to one side or the other is not a foregone conclusion. The outcome will depend as much on the nature of the culture and current balance of political power as on the old and new computing and communications methods.

Showing that the U.S. Secretary of State's comments about Internet access (mentioned in Section 7.2.5) were not just hollow musing, the U.S. government is underwriting development of communications systems that can be used to bypass government Internet censorship and telecommunications disruptions. One part of this effort is funded by a U.S. State Department grant.²¹

7.2.7 Access to Information via Internet Worldwide

An argument against access to everything everywhere is that borders delineate language, culture, and currency, so there is nonpolitical incentive to create net islands. Most Internet users probably prefer having pages of search results in their chosen language. Geographical shaping of web search results and some types of content at its network source makes sense for user efficiency. There will be differences in bandwidth availability due to the physical limitations of network infrastructure. Due partly to the informal way the Internet has developed, and the ability or willingness of government and private Internet service providers (ISPs) to pay for infrastructure or bandwidth, different parts of the world do not have equal amounts of bandwidth available. And within a smaller physical area, traffic shaping can prevent having a few users watching online movies from slowing down all other access for thousands of other users. Major content providers, with existing legal rights, try to control use of copyrighted materials on a geographical basis.

There is a good argument for an average Chinese user in China not seeing the same screens by default as an English-only user in New York City. It is harder to make the argument that heavy censorship and blocking of content is in the interest of Internet users themselves, at least from the U.S. viewpoint of democracy and free agents.

As a very broad assertion however, much customization for language and location can be accomplished either by the websites holding the information being accessed, or voluntary preferences set within individual Internet device operating systems and web browsers, without government intervention.

Regardless of philosophical arguments, experiments relating to access to content or particular network destinations show that many countries are filtering or blocking access selectively, and on a nationwide basis. In 2002,

only a couple of the countries surveyed appeared to be filtering sites or content. By 2007, state-mandated net filtering was taking place in 25 of the 41 countries surveyed.²² A map of social network filtering shows that Facebook either is being censored or has been censored in China, North Africa, Saudi Arabia, Iran, and a few other countries. Twitter has been censored or blocked in China and Iran, and several other countries. YouTube has been filtered in China, Iran, Turkey, Mexico, and elsewhere.²³

There is a trend for filtering to become more covert, and to be used at specific times to deny access to information, such as during an election, but with plausible deniability. There is much greater use of surveillance and data mining, along with additional laws and pressure to induce self-censorship, or cooperation from private ISPs.²⁴

China and Iran are both using heavy filtering of web content and/or reachable sites in 2011. For more details, see the country profiles at the OpenNet Initiative collaborative effort.^{25,26}

In addition to legal or extra-legal government action to control information crossing national borders, there is movement toward government/corporate partnerships in the control of the Internet and information flow. At least since the 2001 surrender of Yahoo! to the threat of French sanctions against the sale of any Nazi materials through Yahoo! auctions, some commercial interests have been compliant to some government demands. Yahoo!'s argument that it could not be held responsible for French citizen's access to websites outside France was abandoned. In the summer of 2002, Yahoo! signed an agreement with the Chinese government to inspect and monitor information from anywhere that would be found objectionable.²⁷

As early as 2002, google.fr and google.de were not displaying search results in France and Germany that would be displayed elsewhere because they contained illegal or sensitive information, including sites and information lawful in the United States. Excluded search links included air photo-maps of Auschwitz and other World War II camps, and many sites dealing with Islam.^{28,29}

7.3 Individual Access to Information and Cyber Power

In 2011, access to information has increased so dramatically for most of the world's population that the last two decades could reasonably be called an Information Revolution. This was made possible by the advances in computing and digital communications, with tremendous reductions in technology cost. Much of the advance in digital communications has come from the increasing application of computer power to the transmission of data, and the availability of faster and better communications has pushed the development of computers to more fully take advantage of the communications.

From the shared YouTube videos of parrots dancing to music to the increasing use of open source intelligence, access to information at this speed, and on this scale, has never been possible for any individual before.

“The Internet” of the past 20 years, that some people believed would mean permanently easy access to unfiltered information, is already ending. The technical capability to track individuals, to accumulate data on their choices, and to tailor their search responses for any purpose, including marketing, is already in widespread use. Search engines like Google are very commonly used as the primary gateway to the Internet.

In 2011, two people searching for the same information, with the same terms, may see quite different results.³⁰ Some of these results are intended to be helpful to the searcher. While others allow a specific ad, or any other targeted information, to be shown over and over, and inserted as the content of a wide range of completely dissimilar web pages on dissimilar websites over a period of weeks for a person using the same computer.

The concept of filtering data and composing quite different pages for different viewers is a triumph for marketing down to the level of each specific person. It removes any claim to “objective” search results based on links to the most authoritative information, or the most popular information, or the most useful information. This is akin to each copy of a printed book having a unique index, with the contents of the book (Internet) being accessible only through the index. Each person will find only a unique subset of the book’s contents, and those subsets will be different even on the same subject.

This filtering is counter-intuitive for people who have been using search engines for research since the first engine was available in 1994 that collected, indexed, and searched web pages. While it was understood that no index was complete, so results were not complete, these search engines provided equal opportunity searching according to their algorithms. And within some time constraints, and subject to the underlying data changing, the same search terms would provide the same search results twice in a row. Now, each search, and selection of items, may cause all subsequent searches to provide different results. There is constant tuning using factors and algorithms that are proprietary and complex, and that will never be known to, or understood or anticipated by, any of the people using these gateways to Internet data.

While the filtering may be only for product and service marketing today, although this is not certain, there is no apparent reason why search engine companies may not apply politically-based or religion-based filters on behalf of a client who wants to pay for that. Search results provided to users already depend on the geographical location of the computer or Internet connection, with a total of 57 factors that may be specific to the individual searching.³¹

A quick review of the state of information delivery/communications for the past 30 years emphasizes the rate of change (see Table 7.1).

Table 7.1 Thirty Years of Information Delivery/Communications

Media	Time to Create	Time to Deliver, 1980	Time to Deliver, 2010	Media
Book	Weeks to months	Days to weeks	Ebook, minutes	Worldwide
Magazine	Days to weeks	Days to weeks	Emagazine, seconds to minutes	Worldwide
Postal mail	Hours to days	Hours to weeks	Hours to days	Worldwide
FAX	Hours to minutes	Minutes	Minutes	Worldwide
Email	Seconds to minutes	Minutes to hours	0.3 seconds to minutes	Worldwide
SMS text messaging	Seconds to minutes	Telegrams—hours	Seconds to minutes	Worldwide
Television terrestrial	Weeks to real time	Real time	Real time	100 km
Television satellite	Weeks to real time	Real time	Real time	sub-continent footprint
Smartphone store and forward video	Seconds to minutes	TV recorded video—hours to days	Minutes	Worldwide
Handheld radio	Real time	Real time	Real time	5 km (50 km with repeater infrastructure)
Handheld radio with Internet link	Real time, voice communication	Did not exist	Real time	Worldwide

7.3.1 Thirty Years of Information Delivery/Communications

7.3.1.1 1980

In 1980, information was being delivered by newspaper, television, radio (local and short wave), books, telephone, FAX, mail, and personal computers with modems.

7.3.1.2 1990

By 1990, computer bulletin boards were in use, as well as email across company boundaries.

7.3.1.3 Email

Although early computer mail messaging was used within some computer linked systems, and within some companies as early as the 1970s and early 1980s, the first Request for Comment document describing a standard format for Internet email was issued in 1982. What we know as the Internet today was built by an open source set of documents held by the Internet Engineering Task Force (IETF).³² These were not mandatory standards, which are at the

heart of many other large technical projects and systems, but, in essence, a set of suggestions that were followed in order to make diverse systems, software, and equipment interoperate for everyone's benefit.

7.3.1.4 Documents Publicly Available

Information was available to individuals on the Internet from some educational institutions and companies, primarily by using the File Transfer Protocol to upload and retrieve documents or computer program code. Numerous file directories on servers could be read by using a text-only terminal program called Telnet, as long as file permissions allowed public access.

A University of Minnesota project called Gopher created an index of its campus-wide file collection, and their system was then used for many other collections, which displayed a hierarchy of nested menu style selection. Gopher facilitated distribution, searching, and file retrieval prior to any of today's search engines. One search engine system for Gopher server collections was named Veronica, and these early tools were a major advance over trying to locate files on a particular subject, or specific files, by referring to print media and then using computer and network retrieval.

Hypertext is a concept in which embedded links to other relevant documents can be easily selected and followed, encouraging reading of the text in a nonlinear way, which can be more efficient. The hypertext concept is similar to footnotes in printed text, but implemented electronically. Ted Nelson wrote about the concept of hypertext beginning in 1965 and ways in which it might be implemented.³³ His structures included links back to the rights-holders of the referenced documents and envisioned a system of small payments to compensate the rightsholders when the referenced document was first read. This was an inducement to make many more documents widely available. Hypertext and the larger system of making more documents available followed the ideas of Vannevar Bush, published in 1945, who explained that many of the benefits of scientific research would never materialize if people could not index and access a very large number of documents quickly and easily.³⁴

The beginning of today's World Wide Web was in 1989, when Tim Berners-Lee proposed a global hypertext project. He wrote a client hypertext browser/editor and hypertext server in 1990 and created specifications for the Universal Resource Identifier (URI), Hypertext Transport Protocol (HTTP), and Hypertext Markup Language (HTML), which are the basis for today's World Wide Web.³⁵

7.3.1.5 2000

Cellular phones were widespread in many countries, with short message service (SMS) text messaging, sent primarily over cell phones, in widespread use. These were 140 character messages.

7.3.1.6 2010 and 2011

Multimedia messaging was a mature market, allowing photos and sound files, primarily over mobile smartphones. Social media services, including Facebook, Twitter, and YouTube, had tens of millions of subscribers. There was now a degree of access to information unprecedented in human history.

7.3.1.6.1 Examples from 2010 and 2011 By 2010, it had become possible to access most of the world's electrical/electronics engineering literature for \$35/month. The full text of conference proceedings and journal articles could be searched and downloaded from the IEEE website.³⁶ Broadly searching this body of literature was free by using Google. Locating much of the published literature of medicine, physics, and most other science and technologies was also free and could be done in seconds from a smartphone from almost any urban area in the world where this information was not censored.

7.3.1.6.2 2011 In 2011, U.S. military thinking on the use of cyber power and cyberspace can be found in documents such as "Deciphering Cyberpower: Strategic Purpose in Peace and War."³⁷ The document can be retrieved from the Air University website at Maxwell Air Force Base.

For a customer in the United States, a Kindle ebook reader version of *The U.S. Army/Marine Corps Counterinsurgency Field Manual*, with a foreword by General David Petraeus, can be looked up, purchased, and downloaded within 2 minutes.³⁸ Another book, *Cyberpower and National Security* from the National Defense University, is available just as quickly.³⁹ These transactions and subsequent document storage can be on a Kindle reader, a smartphone, or a laptop computer as long as an Internet connection is available. Amazon claims over 950,000 books for purchase, and additional periodicals, are available in their format. Around 3500 books can be stored in a \$200 ereader device that weighs about 9 oz (0.25 kg).

Hundreds of newspapers have an online version, with the full text searchable through their own search engines, or in some cases, through Google and other general search engines.

Sandia National Laboratories, a U.S. government national laboratory, has a series of videos available on YouTube. These include an Energy Surety Microgrid presentation,⁴⁰ and in August 2011, the use of a supercomputer model to study cyber threats for ICS-dependent infrastructures. For more information on ICS, see Section 7.8 of this chapter.

The National Vulnerability Database (NVD) is an online list of computer software and configuration vulnerabilities of the type used by attackers of all types to compromise computer systems.⁴¹ Anyone wanting to attack computers can gather some information about the software used by the target(s) through normal or cyber intelligence means. Assuming the targets use Adobe Reader, for example, the NVD can be used to display 15 vulnerabilities

published in the last 3 months alone (as of August 2011) in different versions of that application software, with 12 having a high-severity rating. The effect of exploiting several of these vulnerabilities is to “allow attackers to execute arbitrary code,” which is geek speak for “take over your computer.”

7.3.1.6.2.1 One notable result of very high information availability The extremely high and almost instant availability 365/24/7 of such a large body of information available through the Internet has led to disintermediation. In 2009, a survey disclosed that 61% of American adults seek health information online.⁴² A moderately experienced person can find a level of high-quality medical information, even including the full text of some peer reviewed papers that would have had to come from a medical doctor at considerable expense 30 years ago. This is true for many other fields. In many cases, the information is explained in common language and can help with the decision of whether a medical professional should be contacted. In medicine as well as other fields, there is also a large body of misleading and inaccurate information, and the source is important. Medical doctors have to try to “un-inform” people who consulted only an Internet source that was incorrect, incomplete, or misunderstood. Medical advice and comments provided on Twitter demonstrated that hundreds of unique users either had or provided misinformation or misunderstanding regarding the proper use of antibiotics.⁴³

7.3.2 Internet Growth and Open Source Intelligence

Disintermediation is occurring in open source intelligence (OSI, also OSINT), as well. One of the earliest and most persistent proponents of OSI wrote in 2006 that “In our new era, everyone, including any terrorist, has the option of using open sources of information that are equal or superior to secret sources.”⁴⁴

Sources including newspapers, books, and the broadcast media were traditionally used by intelligence services, of course. The amount; the quality, speed, and ease of access; and the cost make the last 15 years of open source collection quite different from what was available before.

In 2005, a report to the President of the United States included recommendations to systematize and make better use of OSI, with the following notable quotes:⁴⁵

We are convinced that analysts who use open source information can be more effective than those who don't.⁴⁶

Open source information has long been viewed by many outside the intelligence community as essential to understanding foreign political, economic, social, and even military developments.⁴⁷

And for these new challenges, many open source materials may provide the critical and perhaps only window into activities that threaten the United States.⁴⁸

This report also recommended the creation of an open source directorate within the CIA, based on the belief that OSI would not be used to the extent needed without the creation of a separate directorate.

A recent nongovernmental investigation of OSI and its use within the United States intelligence community details and attempts to explain the institutionalization of OSI.⁴⁹ One finding is that the agencies using open source remain overwhelmingly separate despite two major public conferences and that public discourse on OSI has not created substantive opportunities for citizen participation. According to the author, “there is a persistent legacy of the ‘elite, expert, insider’/‘citizen, layperson, outsider’ dichotomy endemic to national security discourse,” and that changing this situation will be difficult.

Open source intelligence, then, means that information considered critical to national security is available to individuals and small nongovernmental organizations. While some types of information require payment for access, many more do not. The main limit to use of this information is the ability to process it, which is also a problem for large intelligence agencies.

If information and communication have value for one group, an opposing group may see value in reducing access and speed and ease of communication. There are measures that can be taken to limit access to some services: from the “Great Firewall of China”⁵⁰ to Iranian blocking of Facebook and opposition websites during the election in 2009.⁵¹ Additionally, the State of Pennsylvania blocked access to more than one million websites,⁵² and there was nearly total Internet isolation in Egypt in January, 2011.⁵³ There is also a range of countermeasures to bypass these controls and workarounds for some commonly used Internet censorship or blocking techniques.

This is not intended to be a comprehensive list but is intended to provide examples of technical measures for disruption and workarounds for some of them.

7.3.3 Countermeasures to Some Internet Blocking Techniques

Some methods of setting up and using a distant web proxy server or the Tor service still send Domain Name System (DNS) (e.g., www.bbc.com) requests to the DNS servers configured at the time the computer requested and received an Internet Protocol (IP) address to be able to carry on two-way Internet communications. For a computer using a cable modem, dial-up modem, or DSL, the public IP address and DNS server addresses will normally be issued by the ISP that is being used at that time.

Without additional technical configuration, although there is an encrypted communications channel from the client computer to the last Tor relay server, or even to the endpoint content server, most of the DNS-requested addresses will go to the local ISP. This means that while the retrieved web content or sent search terms will not be seen and logged by the

local ISP or monitoring points, a list of the web domains requested/visited (e.g., www.bbc.com) can be intercepted and logged in clear text.

If someone is monitoring Internet communications, and assuming Tor or proxy servers are not blocked, there will be a correlation in time for each web session and the DNS requests made from that same IP address. For people in some political regimes, even the use of proxy servers or Tor may be illegal, but if not, unintentional and unknown disclosure of sites visited may be a matter of life or liberty.^{54,55}

Organizations have placed information online with the intention of supporting connectivity in spite of disruption. These efforts include providing rapidly changing proxy relay addresses that are not yet blocked from a geographical area (see Table 7.2).⁵⁶

Table 7.2 Countermeasures to Some Internet Blocking Techniques

Type of Service	Disruption Type	Countermeasures
Twitter, Facebook, YouTube, other	Specific Internet addresses or DNS lookup blocked (i.e., twitter.com) prior to or at Internet service provider (ISP) with other web connections still allowed	<ol style="list-style-type: none"> 1. Use distant web proxy server to bypass blocking by relaying web requests.^a 2. Use Virtual Private Network encrypted tunnel to third party VPN host, then proxy web traffic from there to twitter.com. 3. Use Tor or similar anonymizing service that is not currently blocked.^a 4. Use another data communication device with different Internet connection such as mobile data 3G, telephone modem to distant ISP or portable satellite data terminal.^a
Twitter, Facebook, YouTube	Cutoff of wireless data service at local cell nodes for mobile users or others with 3G modems, and assuming no jamming of WiFi frequencies	Portable satellite data terminal or other broadband Internet connection extended using ad-hoc mesh network WiFi nodes to 50–300 m for multiple users. This arrangement may have severe bandwidth capacity restrictions.
Web page censorship/ filtering, as reported in China, Iran, and numerous other countries	Specific Internet addresses or DNS lookup blocked (i.e., twitter.com) prior to or at Internet service provider with other web connections still allowed	<ol style="list-style-type: none"> 1. Search engines often supply links with a stored (cached) version of web pages. Since this is sent from the search engine and not the original site, it may not be blocked. 2. Use 1 or 2 or 3 above.

(Continued)

Table 7.2 Countermeasures to Some Internet Blocking Techniques (Continued)

Type of Service	Disruption Type	Countermeasures
Peer-to-peer (P2P), such as BitTorrent traffic	Blocking of peer-to-peer coordination Internet sites	<ol style="list-style-type: none"> 1. P2P relay service, which separately downloads the file via P2P for later HTTP retrieval from the relay web server. 2. Use Virtual Private Network (VPN) encrypted tunnel to distant third party VPN host, then proxy web traffic from there. 3. Use Tor.^a

^a Accessing some Internet sites or downloading some content is illegal in many different legal jurisdictions. Merely attempting to bypass official controls may be illegal. These countermeasures, counter-countermeasures are provided to show the nature of cyberspace controls and rapid adaptation, and are similar to electronic warfare. This table and related discussions are not intended to be used to facilitate any illegal activity anywhere.

7.3.4 Internet Connection Alternatives

7.3.4.1 Telephone Modem

Current instructions on Internet websites suggest the use of a telephone modem if regular Internet service is cut off, as happened in Egypt in 2011 during the January protests. Since faster Internet access can be cut off at Egypt's borders, the use of a telephone modem for an Internet connection assumes that in-country telephone service is still available and that long-distance telephone communications have not been restricted. The instructions are to dial an ISP in another country that is not under the political or technical control of the government that the person is physically in.

While speeds on telephone modem connections will often be very slow compared with broadband Internet access, email, texting, and some web pages will work adequately.

7.3.4.2 Portable Satellite Data Terminal

There are portable satellite data terminals that are approximately the size and weight of netbook computers—around 3 pounds. The Inmarsat satellite network provides an Internet connection from most locations on the planet. From locations near the edge of coverage for each satellite, the line of sight to the satellite may be only a few degrees above the horizon. In that circumstance, the terminal will need to be high enough in a building or on elevated terrain to avoid being blocked by buildings, heavy foliage, or nearby hills or mountains. Closer to the center of the “footprint” on the earth's surface for each satellite, the line of sight will be at a much greater angle to the surface of the earth and the location of the terminal does not need to be carefully selected.



Figure 7.1 Battery operated Inmarsat satellite data terminal.

These portable satellite data terminals are in use worldwide, by surveying crews, or other fieldwork in rural or remote areas (Figure 7.1).

7.3.4.3 Satellite Telephone

Satellite phones are intended primarily for voice communications and offer only very slow data connections to the Internet, which are slower than most telephone modems. Connections through the phones are suitable for email and other text-based Internet communications. Satellite phones are smaller than even portable data terminals, and one of the services (Iridium)⁵⁷ works worldwide (Figure 7.2).

7.3.4.4 Satellite Communications Countermeasures

There are at least three types of countermeasures for these satellite Internet connections. While satellite communications are completely independent of the communications infrastructure of most of the countries in which they are used, a government intent on isolating its population from the Internet can take additional measures to make the isolation more complete. No Internet means no smartphone photos, videos, Facebook posts, Twitter posts, or email to or from the rest of the world.

1. A government that wants to deny Internet access may have the ability to exert political or financial pressure on the company furnishing satellite service that would have the effect of denying service to any



Figure 7.2 Internet connection for (slow) data through iridium satellite phone.

devices within that government's border. In a more serious or protracted conflict, physical damage to the system ground stations or their communications could disable satellite connections.

2. Satellite communications devices use a transmitter frequency that is in a relatively unused section of the radio spectrum. There will not be a lot of radio transmitters in the same physical area, such as taxicabs, mobile cellular phones, or wireless networking access points that use the same frequencies. Therefore, these devices are easily detected and located from their radio frequency emissions.

Military forces have been practicing electronic warfare for decades, and detection and direction finding for transmitted signals is part of this. In addition, common test equipment used for cellular wireless service can be used to locate these transmitters. As an example, a small spectrum analyzer designed and used for radio servicing was used to detect transmissions from a portable satellite data terminal and a satellite phone. A general-purpose omnidirectional antenna was used, and detection of these devices was very easy from a distance of 40 meters. With a directional antenna, and based on the measured signal strength, detection would have been relatively easy within 1 km (Figure 7.3).

3. Radio frequency jamming can be used to create a denial of service for satellite communication devices. Most jamming depends on creating interference that is almost, or greater than, the signal strength of the desired signal. Since the satellite communications device is

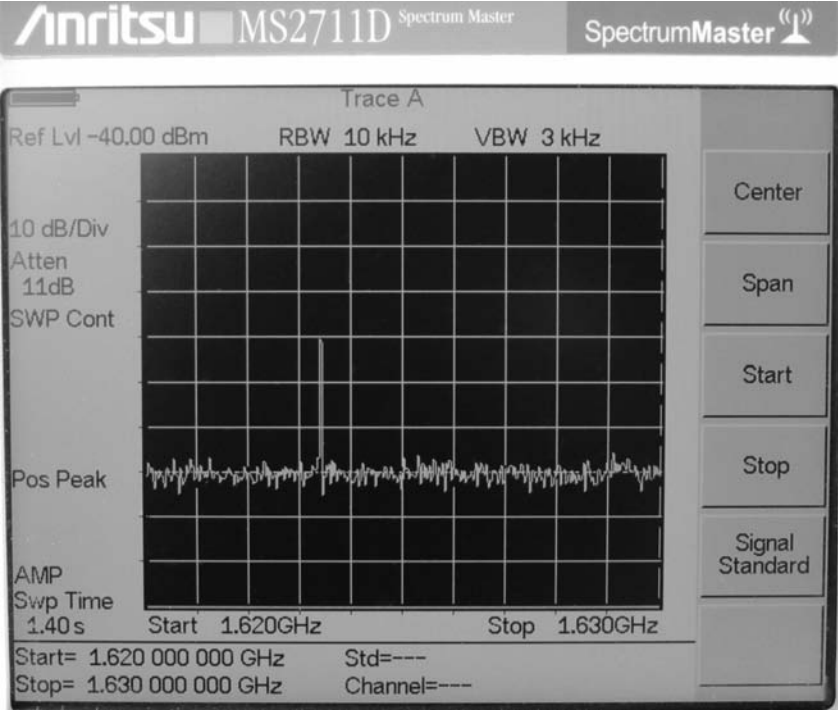


Figure 7.3 Satellite phone as detected with radio test equipment from 40 meters.

receiving a signal transmitted from a satellite that is either 700 km or 35,000 km away in geosynchronous orbit, a jamming transmitter that is physically much closer can jam the signals effectively.

7.3.4.5 Mobile Phone Jamming

Local law enforcement, government, and individuals can all jam mobile phones for voice and data connections within a small radius. All three-user groups depend on mobile phones for communication, including Internet connections. Inexpensive jamming devices small enough to carry on a person or in a briefcase can be used to deny use of mobile phones within a few yards, and further in weak signal wireless coverage areas.⁵⁸ Having a number of these scattered throughout an open public area would seriously disrupt everyone’s use of the Internet with smartphones. Attaching common directional antennas and amplifiers would allow a single jamming transmitter in a building or vehicle to disrupt a larger area, such as 100 meters or more.

7.3.4.6 Mobile Phone Denial of Service

The San Francisco Bay Area Rapid Transport (BART) system cut off all mobile phone use in some stations for a period of several hours in anticipation of a protest that might have been facilitated by the use of mobile devices.⁵⁹ BART

was able to do this without damaging the wireless phone infrastructure by switching off the intercommunication routing for the wireless network, since it privately owns and operates it.

Ron Deibert, a political science professor at the University of Toronto, who studies the use of technology in global affairs, said that type of mobile service disruption is unprecedented in the United States. He said via email, “I have not heard of this happening in the United States, although it happens frequently in zones of conflict and in authoritarian contexts—places like Belarus, Tunisia, Iran, Burma, Egypt, Libya, and Cambodia.”⁶⁰

7.4 Information Instruments of Communication and Attack

Social networking, facilitated by services that use the Internet to make it quick and easy to communicate, provides an unprecedented level of communications for people who are physically distant. Previously, in order to have either one-way or two-way communications on a continuing minute by minute basis, people had to be living or working within a single room or within about 20 meters of each other. This level of communication is a disruptive technology/social change and is a social experiment being lived by tens of millions in many countries every day.

It is too soon to know whether this degree of communication, which facilitates flash mobs, political protest, physical search coordination, and coordination of public cleanup after destructive riots, will offer more advantage to social order or disorder.

Flash Mob—In August 2011, the City of Philadelphia imposed a nighttime curfew after larger groups of people suddenly converged on a location and assaulted people who happened to be there on several occasions. Police are said to be monitoring Facebook and Twitter as a prevention strategy.⁶¹

Political Protest—Facebook and Twitter were widely used during the largely peaceful protests that forced a change in the government of Egypt in 2011.⁶² Initially, Facebook was the best social media suited to organizing, with instant dissemination and a level of trust of the source. Twitter was used later for coordination and real-time reporting from many people acting as citizen journalists.⁶³

Physical Search Coordination—The U.S. Defense Advanced Research Projects Agency (DARPA) sponsored an experiment in 2009 in which weather balloons in 10 random locations across the United States were located and reported within less than 9 hours by using crowdsourcing with incentives for time-critical social mobilization.⁶⁴

Coordination of Public Cleanup—After destructive riots in London in August 2011, Twitter was instrumental in coordinating cleanup operations.⁶⁵

There are reports that another one-to-many service, BlackBerry Messenger (BBM), also called a private social network, and offered on Blackberry mobile devices, was used to facilitate early August 2011 riots in London.⁶⁶ The governments of India and Saudi Arabia have previously attempted to gain better access to BlackBerry encrypted communications in their countries.^{67,68}

The cost of computing and communications is now low enough for over half the population in many countries to afford either a smartphone or a cell phone capable of SMS texting. It may be that over 90% of the population in urban areas either has a mobile communicating device or is within speaking distance of someone who has. SMS texting is often used with Twitter, either to send or receive tweets, so becomes more than the one-to-one communication of its original design. This communication is supported in over 100 countries.⁶⁹

SMS texting is also in use with Facebook and should be considered part of the social networking communications structure.⁷⁰

In the United States, the number of cell phone and smartphone wireless subscriptions was as high as 96% of the total population in December, 2010.⁷¹ In the People's Republic of China, there were 906 million subscribers in July 2011, about 67% of the population.⁷² In Iran, the September 2010 figure is 67 million mobile subscribers with a population of about 77 million, over 80%.⁷³

7.4.1 Facebook

As of 2011, Facebook had 750 million active users, with approximately 50% of those logging on each day. Thirty percent of users are in the United States.⁷⁴ Growth has been extremely rapid, with only 12 million active Facebook users in 2006.

Facebook has a policy of requiring a one-to-one Facebook identity with a single person, along with the user's actual date of birth when creating an account. Media supported includes photos and video, and Facebook encourages users to post photographs of themselves and others. Publishing of video is almost instantaneous although Facebook processes each uploaded video. These photos and videos can be shared publicly or restricted to other Facebook users who have been designated as friends. Using a Facebook app on a smartphone, with only a few taps on the screen, a 10-second video can be taken and uploaded in less than a minute using a cellular 3G data connection. It becomes available to other people using other mobile devices or web browsers right away.

7.4.2 Twitter

Twitter is a one-to-many communication tool that operates differently from social networking services like Facebook and LinkedIn. Twitter's primary mode of operation is for a registered twitter user to send 140 character messages to a group of other registered twitter users who have agreed to

receive them by registering as a follower of the sending user. So, one sender–multiple receivers. Many of these short messages are marked with a #word search term so that they can be found and read by any Internet user, and not just those with a Twitter account. For example:

“#riotcleanup” marked messages in August 2011 that were concerned with private citizens volunteering their time to clean up damage that occurred during London riots.

“#Manchester riots” on August 10, 2011, displayed messages from numerous Twitter users expressing opinions highly negative toward police, or negative toward rioters, or urging people to check on their elderly neighbors in the morning asking whether they were going to be safe tomorrow in Manchester.

7.4.2.1 Published Collection of Twitter Messages from a Major Event

The book *Tweets from Tahrir*⁷⁵ gathered a broad selection of Twitter messages about the January 25, 2011, political demonstrations in Egypt, which the authors call the Egyptian Revolution. The authors comment on the hash tag #jan25 being used for planning discussions, on activists using two-way communication with the @reply function, protesters announcing initiatives like marching on the parliament building and on-the-spot reporting by many citizen reporters. Egypt had a state controlled media, whose credibility was damaged by this real-time reporting.

The authors credit social media with changing the speed and manner that Arab uprisings, including in Egypt, proceeded, while discrediting the idea that social media was required or was the main cause of the demonstrations and change in government.⁷⁶

7.4.3 Social Networking Sites and Privacy

Facebook and Google’s new social networking service require users to furnish their real names and at least one other piece of identifying information. In Facebook’s case, the date of birth is required. For Google+, the gender of the user is required. Facebook, in particular, strongly encourages the posting of additional personal information including the user’s photograph, a list of friends and their photographs, and additional information that may help other Facebook users find a prior relationship of some sort, such as attending the same high school or college.

Since Facebook, Google, and other social networking sites are private companies, there are few regulations that govern their use of this information that was provided in return for a free service. Privacy settings, such as what groups of people are supposed to be able to see the types of information posted, are often opt-in. Settings were reported as having been changed

without permission, by Facebook, according to a complaint filed with the U.S. Federal Trade Commission (FTC) by the Electronic Privacy Information Center (EPIC).⁷⁷ EPIC filed another complaint against Facebook on June 10, 2011, regarding facial recognition data gathered without user knowledge or consent.⁷⁸ Google settled with the FTC over privacy violation claims in 2011.⁷⁹ To the extent that these services are governed by their announced privacy policies, users' data may have some legal protection until those rules are changed unilaterally by the service involved.

Regardless of announced privacy policies, companies that go bankrupt or are sold may make user data available in ways that the user had not agreed to.

South Korea is reported to have rescinded its requirement that users provide their real names and residents' registration numbers when making online postings to large websites. This change was precipitated by the compromise of personal information of about 35 million users of social media sites in July 2011. Information included user ids, passwords, mobile phone numbers, and email addresses.⁸⁰

The issue of attribution for communications on the Internet is complicated. Many people would agree that criminal and terrorist activities facilitated by the Internet and services that depend on the Internet should be trackable to specific persons and groups. Because this same information can be used to stalk and attack people, or commit frauds against people, and for relentless targeted marketing, and for retaliation for political speech, the debate about online identification continues on a country-by-country and company-by-company basis.

Social protest in some political regimes can be followed by imprisonment or worse, but in those countries like the United Kingdom and the United States, the need for online anonymity is seen as less important because of a tradition or constitutional guarantee of free speech.

As a technical matter, attribution and tracking of all Internet email and other activity is very difficult under some circumstances because the design of the Internet infrastructure and most supporting equipment does not have that feature. Tracing back to an originating IP address is often easier than finding evidence of a particular person involved, and tracing to an originating address is by no means guaranteed. The increasingly widespread capture and tracking of geolocation information by web services can help frustrate intended anonymity, regardless of the good or bad intentions of the person using them.^{81,82} And software installed in advance of antigovernment activities on individual computers, often called "spyware," can allow access to all communications, passwords, entered keystrokes, and received data screens, despite precautions in Internet use. There is evidence that Egyptian dissidents were being monitored in this way while using encrypted Skype communications.⁸³

7.4.4 Social Networking and Social Psychology Experiments

Prior to social networking services such as Facebook, or easily trackable and widely used communications services like Twitter, it had been difficult to produce good experimental evidence for some social psychology hypotheses. The addition of social networking to other communications methods like instant messaging and email means that some experiments can be less costly and potentially produce better information about human interaction.

In the past few years, interesting results about social influence and characteristics of human networks have been published. For example, the idea of a maximum of six degrees of social separation between any two individuals appeared not to be universally true.⁸⁴ Another result, from over 500,000 Yahoo! IM users, is that influence from peer-to-peer interaction in product adoption decisions is much less than previously estimated.⁸⁵

7.5 Cyber Espionage

Cyber espionage can be described as the use of computers and digital networks to access strategic information stored in digital form on any type of computer storage, without the permission of the owner, and usually without the knowledge of the owner. While the value of much of the strategic information gained is higher if the owner remains unaware of compromise for an extended period, there may be cases when knowledge of the disclosure could force major changes or require major additional expenditures to recover. In addition, the disclosure of the capability to penetrate systems that are considered by the owners to be well protected serves as a demonstration of strength and a warning against attack by the compromised party.

Any separation of cyber espionage from cyber war or cyber crime must be artificial since those distinctions must be made based on the identity of the attacker and the use or the intended use of the information gained. In addition, cyber espionage may be used to gain an economic advantage, such as knowledge of an adversary's position in trade talks or to save large sums of money and time in research and development of consumer goods, industrial equipment, or weapons systems.

Cyber espionage could easily be extended to the interception and tracking of communications in cyberspace, which can provide evidence of an adversary's intent as well as other intelligence.

Even a somewhat accurate estimate of the amount of cyber espionage may be impossible from open source information. National security incidents would typically be kept secret, private sector incidents are often kept secret, both to avoid appearing to be an easy target for additional attackers, or to avoid charges of mismanagement or losses to shareholders from public disclosure. Another important factor in estimating is that discovery may

take weeks to years, and undoubtedly some system owners never become aware of compromise before decommissioning the systems, with the concurrent loss of any forensic evidence useful to investigators.

The DOD “Strategy for Operating in Cyberspace, July 2011” states that cyber espionage is pervasive and a threat to U.S. military effectiveness and national economic competitiveness.

Every year, an amount of intellectual property larger than that contained in the Library of Congress is stolen from networks maintained by U.S. businesses, universities, and government departments and agencies.⁸⁶

Compared with earlier forms of espionage where physical access had to be gained to the materials, and a slow copying method, such as photographing each page was a limiting factor, the equivalent of thousands of pages can be transferred over a period of a few minutes to a few days, or longer if transfers must be more covert due to safeguards by the system owner.

Reports of the extent of cyber espionage, and the seriousness of incidents, must be carefully considered because of the motivations of the people releasing the reports. Consultants and firms supplying security services, or software and hardware products, clearly gain from a public or government perception that attacks and espionage are numerous, dangerous, and must be guarded against by infusions of money for consulting, products, or research.

7.5.1 Reported Cyber Espionage Incidents Not Included in Cyber Attacks Table

Sufficient evidence for sound attack attribution is very difficult for most of the reported cyber espionage and cyber attacks. While network addresses for the direct connection (last link) to target machines can normally be determined, the network addresses, physical locations, and affiliations of attackers can normally not be determined by network forensic investigation. Although numerous news articles about cyber espionage name certain nation/states as the perpetrators, the named state either is an assumption or is obtained from undisclosed evidence. Because of this lack of evidence, no attribution for these espionage attacks is shown in Table 7.3.

Despite defensive precautions, further detailed in the cyber security section of this chapter, some degree of espionage was successfully carried out against organizations of all types in many countries. Many, if not most of these organizations, could be expected to have dedicated significant expenditure and effort to defending their systems and data, rather than the casual efforts of small businesses and individual computer users. The incidence in this table and others reported in this chapter should indicate that most computer systems can be penetrated, to at least some extent, by determined, funded, and skillful attackers.

Table 7.3 Sampling of Cyber Espionage Incidents

Discovery Date	Duration	Apparent Target	Publicly Known Data Accessed
September 2002 for initial phase	At least 6 years	More than 1200 computers in government and private networks in 103 countries, information with a Tibetan Freedom association	Unknown
Summer 2008	Unknown	McCain and Obama campaign computer systems were compromised	Files were downloaded from at least the Obama campaign system
2008	More than 1 year	Proprietary information from energy companies	Proprietary data on oil discoveries accessed
April 2009	2 years	U.S. defense contractor, F-35 next generation aircraft	Terabytes downloaded
April 2009	Unknown	U.S. defense contractor, live data from USAF air traffic control, including locations of U.S. military aircraft in flight	Air traffic control data
January 2010	At least 6 months	Google and more than 30 other U.S. companies	Unknown
January 2011	Unknown	Canadian Defence Research and Development, Finance Department, Treasury Board	Reportedly provided access to classified documents
April 2011	Unknown	U.S. Oak Ridge and other National Laboratories	Possibly less than 1 GB of data
May 2011	Since 2006, with different durations from 1 to 27 months	More than 70 organizations, most in the U.S., including 13 defense contractors, 5 U.S. Federal Government locations, 3 electronics industry locations, U.S. satellite communications company	Not provided in McAfee Operation Shady Rat report.

Intellectual property, in the form of designs and research, has been a frequent target. Other types of content targeted include information on political dissenters, financial information, military weapons systems, and presidential election campaign data, as well as proprietary data from the energy sector about worldwide supplies of oil and gas.

7.6 Cyber Attack

Cyber attack and defense, also called cyber security or computer security, are complicated and difficult issues that have become very important as computers have become important tools in daily activity. From waging war, to

checking a bank balance, to sending email, computers either facilitate our activities or change what used to be possible into an almost unrecognizable newer version that is often faster and more efficient.

Understanding how cyber attacks are performed, prevented, or recognized will help clarify issues that must be decided on a regular basis by managers and individuals. This section and the section on cyber security will make it clear that there is no overall solution that does not involve additional cost or inconvenience and makes it imperative that we develop and use better tools to estimate risk and concurrent benefit.

Attack methods and steps as described in Sections 7.6.1 through 7.6.6 are used in all sorts of attacks, from computer hacking for fun, to computer crimes with a serious profit motive, to cyber warfare such as it exists. Since a cyber war, the way most knowledgeable people would describe it, has not taken place, an actual description is impossible to supply at this time. Software tools suited for attacks, and the instructions in how to use them, are freely available to the public in many countries, and attacks are increasing according to publicly available accounts. The tools and methods themselves are necessary for adequate security assessments. While the use of attacks alone (often-called penetration testing or red teaming) is a very poor way to assess security, simulated attacks are an important component of complete security strategy.

7.6.1 Phases of a Cyber Attack from Outside the Physical or Network Boundary

There are five common phases of a computer network attack by an outsider. These are reconnaissance, exploration, compromise, increasing privilege level to accomplish a purpose, and covering the tracks of the attacker.

Reconnaissance is collecting information, usually from open public sources, that allows an attacker to determine specific network addresses or physical locations that will be targeted. Social engineering, which often includes reception, can be used person to person to get people to divulge information that they would not if they knew the actual identity of the attacker or the intended use of the information. Search engines, including Google, and tools that check social networking sites, such as Facebook, are used, as well as information found on the target's website, organization internal newsletters, and public press releases.

Exploration, sometimes called enumeration, is used to determine which computers or other devices are reachable, and any details such as the operating system version, software patches that have been applied, and any configuration details that may point to specific exploitable known vulnerabilities that can be used to gain some measure of control over a particular device. Devices that still have the manufacturer's default passwords, which can often be looked up by anyone, once the device model or version is known, make things easier for an attacker.

Compromise of a computer or other network device, such as a router, means that a significant degree of control can be exercised by an unauthorized agent. Either some or all of the possible functions can be turned against the owner or used surreptitiously by a third party. It is generally the case that once any amount of control can be exercised by an unauthorized user, full control can also be attained. In personal computers, initial unauthorized control is usually by means of having or guessing a password or by exploiting a software defect in the operating system or in one of the installed applications, such as a document reader.

Because of improved network defenses in large organizations, recent compromises of personal computers have often been accomplished by taking advantage of a user's willingness to visit a suggested website or view a file attached to an email message. Personal information gained during the reconnaissance phase increases the chance of a compromise by tailoring a message to the user and making an offer more attractive.

Increasing privilege level means gaining more control over the initial compromise device and can include the ability to explore the network from inside, finding additional devices to compromise or valuable data to copy and send outside the network. The term advanced persistent threat is now being applied to attacks that may involve considerable time and expense to collect information about individual users and may involve sophisticated computer exploits that are designed to stay hidden for hours to months while the attacker pursues a specific goal.

An example of this, according to a company official, is the 2011 discovery that secret information about RSA SecurID tokens had been disclosed to an attacker. This may result in the replacement of millions of SecurID tokens for the RSA customer base, which includes numerous business enterprises and defense contractors. The amount of potential damage from this one attack or disclosure of information is a result of risk aggregation, explained at more length elsewhere in this chapter.

Covering the tracks of the attacker can mean carefully altering specific logs, wiping out logs, erasing hard drives, planting misleading information, or in other ways frustrating a forensic examination of a particular computer, server, or network traffic. There may be several reasons why this is done, including the hope of using the same attack later without encountering specific defenses made possible by a forensic examination, or making damage control more difficult by concealing the specific information accessed or devices compromised. Concealing this information also makes it more difficult to attribute the attack to a specific party.

The primary goals of a defender are, in priority order:

- To prevent or thwart an attack before any compromise occurs, or if that is not possible
- To detect an attack immediately, or if that is not possible

- To detect an attack eventually, and if an attack is detected
- To be able to determine the extent of a breach of confidentiality or integrity, and to be able to determine the attacker's identity for better damage assessment

Unless the attacker's goal is a simple denial of service, the attacker wants to use methods that defeat all of these defender goals.

A sophisticated attack can often achieve complete success against an unsophisticated defender, which includes most small businesses and individual computer users. Even if evidence of an attack is seen at some time in the future, it may be far too late to prevent the consequences intended by the attacker.

Because physical security is an important component of overall system and network security, being inside the physical boundary of the target organization often implies a degree of network access as well. A virtual private network connection, which is often considered to be an important security provision, frequently acts to remove physical barriers and to become part of a computer network from thousands of miles away. If a virtual private network connection is not properly segregated and monitored on the network, it can provide an excellent attack path for someone who steals a laptop computer or finds a lost smartphone.

Many times, business partners are given access to all or a part of other organizations' networks. Computer security managers often have the problem of integrating merged or purchased organizations, sometimes with numerous physical points of presence, often on tight schedules, into a network that once had carefully designed boundaries. If sufficient network interchange cannot take place, efficiency, mission goals, or financial goals may be impacted. Some of these organizations are defense contractors, and some of them make systems or parts of systems that are used in defense programs and by the military, or as part of the control of critical infrastructure, such as power generation and distribution.

7.6.2 Phases of a Cyber Attack from Inside the Physical or Network Boundary

An insider can often omit the reconnaissance and enumeration phases that an outside attacker needs, and instead of having to compromise a system to gain a foothold, the insider can move directly toward expanding his or her privilege level until it is sufficient to reach the goal. An insider normally is given authorized access to one or many computer devices, depending on job title, and over a period of time develops knowledge of the systems in use, and sometimes-weak points are discovered by accident.

A list of 80 attacks from 2006 to July 2011, as of the date of access, is available at the Center for Strategic and International Studies website.⁸⁷

7.6.3 Examples of Successful or Partially Successful Cyber Attacks

Refer to Table 7.4 for examples of successful or partially successful cyber attacks.

7.6.4 Attack versus Defense

The Government Communications Headquarters (GCHQ) is a U.K. intelligence agency influential in security matters. The director of GCHQ, Iain Lobban, made a cyber security speech to the International Institute for

Table 7.4 Examples of Successful or Partially Successful Cyber Attacks

Date	Apparent Target	Attack Duration	Apparent Goal	Apparent Attacker	Publicly Known Consequences
2011	International Monetary Fund	Months	Sensitive information access	Not available	Not known
2011	RSA Security	Months	Sensitive information access at RSA to facilitate attacks to access U.S. defense secrets and intellectual property	Not available	Potential re-issue of millions of SecureID tokens.
2011	Lockheed Martin	Days to weeks	Unknown	Unknown, but apparently related to RSA attack	All remote access disabled, passwords changed, SecureID tokens replaced
2011	Sony Corporation	Months	Access to over 90 million user accounts	Unknown	\$171 Million and damage to brand
2010	Iranian nuclear concentration centrifuges	Months	Damage or destroy centrifuges	Unknown but sophisticated	Apparent damage to over 900 centrifuges
2010	Google email accounts for U.S. Government senior officials and others	Months	Access to email	Originating from China, according to Google	Withdrawal of Google operations from China
2008	Via U.S. Dept. Homeland Security site	Days	Redirect web users to infected websites	Unknown	Unknown

Strategic Studies (IISS) in October 2010, which concerned recent increased government targeting by attackers and increased activity by nations trying to exert influence on other nations through cyber means.

Our professional rule of thumb is that good Information Assurance practice will solve 80% of Government's Cyber Security vulnerabilities. By this we mean observing basic network security disciplines like keeping patches up to date. That, combined with the necessary attention to personnel security and the "insider" threat, will offer substantial protection for each individual network. But the scale of the challenge is changing; and the remaining 20% of the threat is complex and not easily addressed by just building the security walls higher and higher... The 20% which is made up of that complex threat needs to be defended against in Cyberspace itself.⁸⁸

This implies that attackers are achieving some measure of success even against government agencies that are often more secure than business enterprises and that even good defensive practices, where they exist, are not, and will not be, enough to defeat all attackers.

7.6.5 Attack Tree Description and Use

An attack tree can be used to good effect by an attacker who draws or lists the steps necessary to create a path from the desired goal, such as finding and copying specific information, to an achievable starting point. By listing the necessary and sufficient conditions to accomplish the next step toward the goal, the attacker can pick one or more paths to minimize the total time involved in reaching the goal or to choose the least expensive path in terms of either money or the amount of work necessary to reach the goal.

The reason that sophisticated attackers may use an attack tree is that there is almost always a path for a successful attack even on systems that are thought to be very secure by their owners or designers.

Use of the attack tree method of analyzing attacks or defending against attacks has advanced well beyond a simple ad hoc drawing of a possible attack path. Excellent sophisticated attack tree software is available that allows optimizing and pruning of many possible paths based on threats (motivation and capability of different categories of possible attackers) and their chances of success against different countermeasures (Figure 7.4).⁸⁹

One reason that there is almost always a path for successful attack is that there are vulnerabilities in the design and implementation of almost any physical or computer software system. An attacker will take advantage of multiple vulnerabilities in advancing toward the end goal.

An example of a physical vulnerability is the area covered by a security video camera that leaves the physical path for an attacker to approach a door unmonitored and unrecorded by the video system.

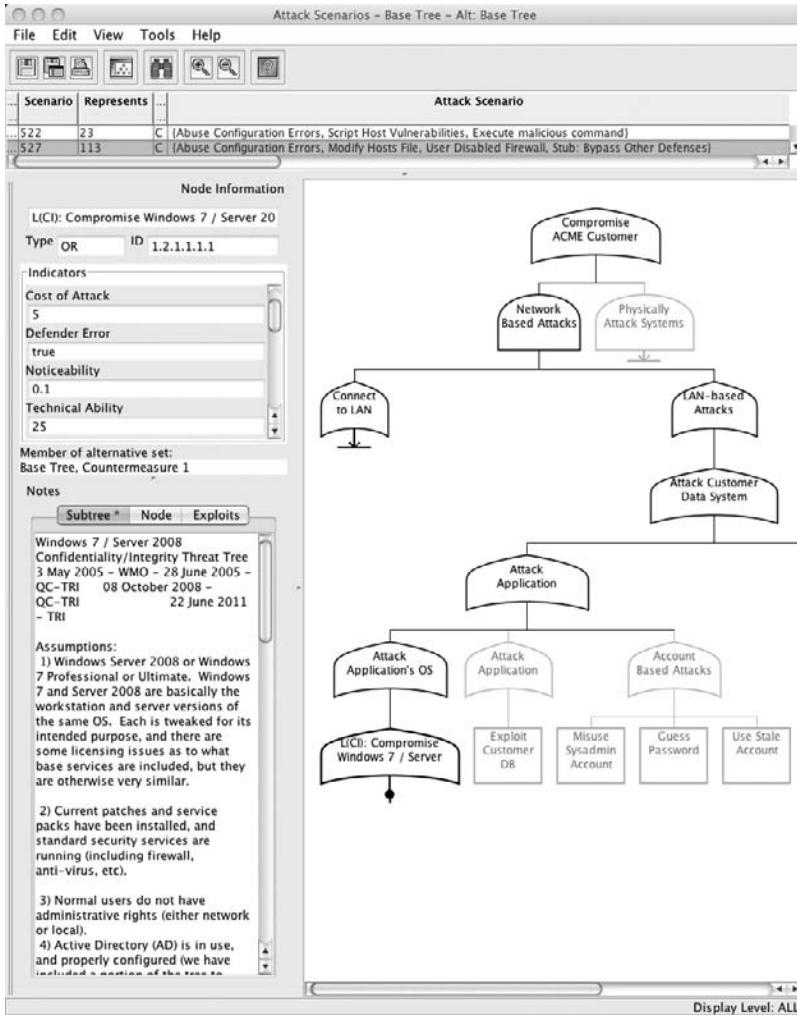


Figure 7.4 Small section of an attack tree from the security application.

An example of software vulnerability is an application that crashes when asked to open a file that has a deliberate defect in the file structure (the application receives input not anticipated by the programmer). When an application crashes, there are often opportunities to execute the attacker's software in place of the original application, using the privileges of the logged in user. This attack software will commonly do one or more of the following:

- Open a communication path to a location outside the local network, which is an allowed task for many organization's firewalls
- Download additional software to better hide the attack software or adapt to changing conditions

- Monitor user activity including keystrokes for passwords, or screen displays
- Search a computer hard drive or connected network drive for specific information
- Monitor data being sent to and from the compromised computer

7.6.6 Risk Aggregation

The robber of a small retail store can expect to get only receipts from a single day unless the storeowner takes the receipts to the bank only once every week. In that case, the storeowner has aggregated the risk of losing \$1000 in one robbery to the risk of losing \$6000 in one robbery. The difficulty for the robber is the same unless the storeowner has extra protection for the aggregated risk, but the prize is six times greater. Because the reward is greater, it will tempt more robbers. At some point in risk aggregation, the very best robbers will be interested, and they have a better chance of succeeding.

There are many examples of risk aggregation in information systems, which include multiple virtual servers on a single physical hardware server; having every employee in an international firm given equal access to many servers with documents detailing potential business deals of over \$100 million; the compromise of information about SecurID tokens from a single organization (RSA) causing a reduction in security for 30,000 organizations using SecurID tokens.^{90,91} There are many examples where protection was not increased appropriately for the risk aggregation.

7.7 Cyber Warfare

Cyber warfare, under several different names, has been studied extensively by planners and researchers in the last two decades. Some of the terms used are information warfare and computer network operations (CNOs).

A generally accepted definition and criteria will have to await future actions by the many nation/states and other groups studying and preparing for their anticipated versions of cyber war. Except for popular press references to cyber war, with various actions lumped under the term, a cyber war has yet to occur.

While most discussion of cyber war concerns conflicts between nation/states, it is worth remembering that many of the tools and techniques are openly available, low cost, and even the intelligence used to evaluate targets and construct attack trees is increasingly available from open source intelligence. Whether low intensity cyber war should more properly be called cyber terrorism or cyber crime, it is well within the capabilities of well funded non-state actors to disrupt the financial industry, transportation, communications, manufacturing, and energy production and distribution, and to cause significant, if not overwhelming, economic damage.

In addition to attacks on larger strategic targets, it should be remembered that any industrial society and advanced military has long and complex dependency chains that include the small and medium businesses that normally have had weak cyber security. The ability to disrupt these chains easily could have at least short-term consequences that appear unlikely at first glance. Supply chain security management, discussed elsewhere in this chapter, is an example of this type of dependency chain, spreading consequences from a low-cost and common component. Operations and manufacturing using just-in-time delivery, now widespread, are highly vulnerable to disruption.

A contractor for U.S. government agencies published estimated economic impact figures from cyber attacks alone. These impacts ranged from electric power, with 1.5% of GDP directly affected and 72% dependent GDP, to hospitals and health care, with 6.7% GDP directly affected and 16% dependent GDP.⁹²

7.7.1 Using a Recent Cyber Attack to Help Define Cyber War

It would seem that any conflict called a cyber war would have to have cyberspace acts of war. Some might consider the Stuxnet worm to be an act of war in that it was aimed at causing physical destruction with a strategic purpose to what is widely perceived as a nuclear weapons program, within the physical boundaries of a specific nation/states. Stuxnet, to be discussed in more detail later in this section, does not appear to fit the category of cyber attack detailed in *Technology, Policy, Law, and Ethics Regarding U.S. Acquisition and Use of Cyberattack Capabilities*.⁹³ It did not involve an attack on computer systems or networks as an end; and the apparent exploitation of these systems was a means to a physical destruction goal.

Libicki, in *Cyber Deterrence and Cyber War*,⁹⁴ makes the case that in cyberspace, any attack being declared an act of war can be governed by whether it is in your interest to declare it to be an act of war. In the absence of a universal definition such as by many nation/states, or the United Nations, one method of categorizing is not available. Any past specific cyber attack could have been declared as an act of war, and now available to use as guidance for the Stuxnet attack but such declarations have not been made.

Libicki further suggests a spectrum of seriousness of harm in cyberspace with network probes ranking at the bottom and creating casualties or interfering with nuclear systems at the top. Based on this ranking, the Stuxnet worm would appear to be only moderately serious. The Bushehr nuclear power plant facility manager stated that Stuxnet affected some PCs at the nonoperational plant.⁹⁵ However, because the plant was not operational and there was no evidence that ICSs for the reactor were affected, there was no reason to advance this particular attack into the most serious Libicki category: interference with nuclear systems.

North Atlantic Treaty Organization (NATO) appears to be moving toward the view that a cyber attack might be considered the equivalent of

other acts of war or terrorism if it results in physical damage, as in this statement from their recent Parliamentary Assembly Draft General Report.⁹⁶

The Rapporteur believes that the application of Article 5 should not be ruled out, given that new developments in cyber weapons such as Stuxnet might eventually cause damage comparable to that of a conventional military attack.

Article 5 is the NATO collective defense clause, stating that an armed attack against one or more of the Allies in Europe or North America shall be considered an attack against them all. Article 5 was invoked for the first time following the New York City World Trade Center attacks on September 11, 2001.⁹⁷

The U.S. International Strategy for Cyberspace, May 2011, states:

Right of Self-Defense: Consistent with the United Nations Charter, states have an inherent right to self-defense that may be triggered by certain aggressive acts in cyberspace.⁹⁸

And in the deterrence section, states the following:

We fully recognize that cyberspace activities can have effects extending beyond networks; such events may require responses in self-defense ...

When warranted, the United States will respond to hostile acts in cyberspace as we would to any other threat to our country. All states possess an inherent right to self-defense, and we recognize that certain hostile acts conducted through cyberspace could compel actions under the commitments we have with our military treaty partners. We reserve the right to use all necessary means—diplomatic, informational, military, and economic—as appropriate and consistent with applicable international law, in order to defend our Nation, our allies, our partners, and our interests.⁹⁹

The reference to “informational” likely refers to current U.S. doctrine on information operations, which has as one of its five encompassed activities, CNOs. Joint Publication 3–13 Information Operations sets out U.S. doctrine under the direction of the Chairman of the Joint Chiefs of Staff, providing “military guidance for the exercise of authority by combatant commanders and other joint force commanders.”¹⁰⁰ Included in this document is the guidance that all information operation capabilities (which would include CNO) may be employed in both offensive and defensive operations.

CNO is subdivided into computer network attack, computer network defense, and computer network exploitation, all of which are concerned with attacks on, defense of, or exploitation of computers, computer networks, and information systems and the information stored in them.

None of the discussion of these capabilities makes specific reference to damage to physical systems and equipment that interact with computer systems. So, current U.S. military doctrine offers no obvious guidance as to

when actions carried out solely through computer code, and communications might constitute an act of war, or cyber war.

The IISS uses the term “cyber-warfare” to refer to activities including disabling the infrastructure of a country, compromising the integrity of military data, or trying to confuse a country’s financial transactions.¹⁰¹ As in other views of cyber warfare, the term here seems to apply more to the amount of potential damage than to the exact nature of the attack or systems attacks.

7.7.2 International Law, Cyber War, and Stuxnet

International law uses concepts of “illegal intervention,” “use of force,” “armed attack,” or “aggression” instead of “act of war” as a single concept when dealing with state violence. A state can legally use force under the auspices of the United Nations or to respond to an armed attack. The response of the state that is the subject of an incident is an important consideration in determining the nature of an incident although other criteria that would often be applied include instrumentalities, effects, gravity, duration, intent, and context.¹⁰²

The International Court of Justice states:

It is also clear that it is the State which is the victim of an armed attack which must form and declare the view that it has been so attacked.

and also that not every use of force rises to the level of an armed attack.¹⁰³

There is a distinction between peacetime standards and wartime rules of conduct, with specific terms having different definitions under each of those conditions. Even the determination of a use of force, prohibited under international law in peacetime, becomes complicated where it relates to cyber attacks instead of kinetic weapons such as missiles. Requiring a use of force threshold to roughly equal an act of war, or cyber war, indicates that without a formal protest by Iran, Stuxnet was not an act of war.

Another suggested framework uses seven factors to attempt a quantitative determination of what constitutes an act of force. These are severity, immediacy, directness, invasiveness, measurability, presumptive legitimacy, and responsibility. Scores assigned to each of these factors can be averaged to provide a more precise, or perhaps more generally accepted, determination in any particular fact case. A cursory application of these factors to Stuxnet that indicates that the deployment of Stuxnet and its damage averages approximately 5 on a scale of 10 and may only weakly support a finding of an illegal use of force.^{104,105}

The evaluation of Stuxnet under international law with different suggested criteria, above, calls attention to the multitude of perspectives and the lack of any settled law surrounding the use of cyber attacks, even between (assumed in the case of the Stuxnet creator/operator) nation/states. Lacking

an Iranian government or other governments' declaration of Stuxnet as an illegal use of force, it becomes harder to support this particular act of industrial espionage as an act of war, armed attack, or aggression. However, attacks like Stuxnet will surely be part of any cyber conflict by adversaries in the future that will deserve the designation of cyber war.

While not an act of cyber war, Stuxnet does appear to fit the U.S. DOD defined term "cyberspace operations."¹⁰⁶

The employment of cyber capabilities where the primary purpose is to achieve objectives in or through cyberspace. Such operations include computer network operations and activities to operate and defend the Global Information Grid.

In order to further consider more fully what future cyber war might consist of, it is helpful to consider the characteristics of cyberspace since the U.S. DOD is treating cyberspace as an important war-fighting domain as distinct as air, land, sea, and space.¹⁰⁷

7.7.3 The Nature of Cyberspace

As defined by the U.S. DOD current *Dictionary of Military and Associated Terms*, cyberspace is

A global domain within the information environment consisting of the interdependent network of information technology infrastructures, including the Internet, telecommunications networks, computer systems, and embedded processors and controllers.¹⁰⁸

Many of the "embedded processors and controllers" involved in ICSs and critical infrastructure are owned and operated by the private sector in the United States, and not under the direct control of the military or other agencies of the federal government. Government initiatives may not, and perhaps cannot, legally, properly mesh with, or push forward measures required to protect critical U.S. infrastructure.

The following cyberspace characteristics (but not the discussions of them) are quoted from "Deciphering Cyberpower, Strategic Purpose in Peace and War."¹⁰⁹

7.7.3.1 *Cyberspace Relies on the Electromagnetic Spectrum*

The electromagnetic spectrum includes communications by fiber optic cables, microwave and other radio transmissions, electromagnetic signals propagated by wiring in local area networks, and electron flows within computing processors, associated devices, and circuit boards. Widespread remote destruction of electronic components is possible through electromagnetic pulses generated by nuclear and other technology. Such physical destruction

is time-consuming and very expensive to repair and would provide a long window of opportunity for other attacks carried out through physical means and not by CNOs. Electromagnetic signals, whether in fiber, terrestrial, or in space, are often subject to interception or jamming, or the introduction of signals by an opponent.

7.7.3.2 Cyberspace Requires Man-Made Objects to Exist

Cyberspace is an artificial war-fighting domain unlike land, air, sea, and space, existing only through science and technology. Without sufficient financial support and continued development, neither individuals nor nation/states will be capable of either offensive or defensive operations in cyberspace. Many, if not most, of these components are dual-use (military and industrial) and as such are difficult to prohibit or control. Further, if the components are not trustworthy, any systems built with them may fail under the control of an outside party. There is a major supply chain security management issue discussed elsewhere in this section.

7.7.3.3 Cyberspace Can Be Constantly Replicated

Physical components, along with computer code, create virtual neighborhoods in cyberspace. Because tens of millions of computer components are created that are either identical or designed to interoperate with other mass production components, virtual neighborhoods can be, and are, created in seconds and replaced in seconds, on different physical components. In fact, this is an everyday operation in cloud computing environments and in medium and large businesses.

7.7.3.4 The Cost of Entry into Cyberspace Is Relatively Cheap

A portal in cyberspace is as inexpensive as time rented on a computer on an Internet café or a \$250 netbook computer. Both useful and malicious computer programs can be created using either of these portals and may propagate to and affect the working of tens of millions of similar computers, creating an asymmetrical advantage for a cyberspace attacker.

For the time being, the offense rather than the defense is dominant in cyberspace. There are theoretical and practical reasons why the creation of computer program code without flaws is not possible for most purposes. Each flaw may create a vulnerability, and computer code operates at different levels within devices. Even devices that are considered hardware, such as wireless access points or network routers, normally have both firmware, which enables startup, and operating systems for accomplishing their primary purpose. Most of these devices are readily available for inspection and testing of attacks. Computer programs known as applications, such as word processors or video viewers, have their own flaws and again are very commonly available for reverse engineering and testing of attacks. Many

vulnerabilities are published on public websites, and intelligence operations help determine the equipment, the applications, and the configurations that are in use by a potential target. Some vulnerabilities only become known to defenders at the time of a successful attack. It is relatively easy to obscure the origin of an attack, which can take place in seconds across thousands of miles of communications networks. Deputy Secretary of Defense, William J. Lynn, III, stated recently that: “We want to enhance network security to reduce the advantages the attacker presently enjoys relative to the defender on the Internet.”¹¹⁰

7.7.3.5 Cyberspace Consists of Four Layers, and Control of One Layer Does Not Mean Control of the Others

Infrastructure is the facilities and physical pieces such as cabling that allow the creation of a working network. The physical layer allows the transmission of information using the electromagnetic spectrum and electrons or photons. Syntax is the set of rules that control information systems, with communications protocols, allowing useful work to be done. The semantic layer is information that can be directly perceived and interpreted by humans. The semantic layer can be used to persuade the target to disconnect itself from the infrastructure and achieve the same aims as a physical attack against the infrastructure. Many times, a semantic layer is used to persuade the target to help facilitate an attack by enabling malicious computer code to operate on their system, when it might be otherwise blocked by defenses already in place. At the same time, a network attack that disabled the infrastructure layer would prevent further transfer of desirable intelligence from a compromised adversary system, which is why U.S. military information operations consider deconfliction (separate operations with different goals impacting the same target) important. CNOs have been considered part of information operations within the U.S. DOD.

7.7.3.6 Information Content and Communication

Cyberspace enables a huge increase in information content and a huge increase in the nearly immediate availability of that content. Any type of information available to human sight or hearing can now be captured, indexed, sorted, correlated, and transmitted planetwide in seconds, and outside the solar system at the speed of light. Unauthorized access to content, denial of access to content, and manipulation of content have become goals for cyber espionage and cyber attacks. Some types of deception may become easier as communication bandwidth grows and humans can be presented with very “real” environments tailored to take advantage of known and newly discovered human perceptual and cognitive processing limitations.

7.7.4 Possible Nature of Cyber War

Highly industrialized countries conduct much of their activity in cyberspace. The great majority of financial transactions in the United States have a cyberspace component, and much of everyday life is spent partly in cyberspace.

If capable attackers believe their sphere of operation can include, but is not limited to, military equipment or operations, they might hope to achieve dominance through economic damage, energy or transportation disruption, or through denial of use by causing large numbers of computers or network devices to fail in a way that requires hardware replacement.

Any operations that will probably be called cyber war in the future will probably take place over an extended period of time of years or tens of years with different opponents. Because each specific attack provides enough information for defenders to block that particular attack, or class of attacks, there is likely to be a high rate of adaptation by both attackers and defenders over a period of time.

A high rate of adaptation and innovation favors the opponent who has better research, better education, better training, and more experience.

“Our adversary is a learning, adaptive force ... and they will continue to target our vulnerabilities,” said Mark Bacharach, technical director at the Marine Corps Cyberspace Command, who spoke June 28, 2011, at the IDGA Cyber Warfare and Security Summit in Washington. “This adversary will adapt faster than us if we don’t change our processes.”¹¹¹

In large part because the intelligence information on a cyber target is likely to be incomplete or inaccurate in some ways, the initial stages of a cyber attack may well be unsuccessful. Thus, for a cyberattack to succeed the attack plan may need to be modified in real time as unexpected defenses and unanticipated problems are encountered. Some cyberattack’s can be “fire-and-forget”—especially those attacks for which the target set is relatively large and individual successes or failures are not particularly relevant. But if a cyberattack is very specifically targeted, adaptability and flexibility on the part of the attacker may well be needed.¹¹²

7.7.5 U.S. DOD Strategy for Operating in Cyberspace, 2011

There are five primary initiatives of the strategy. Cyberspace is an operational domain equivalent to land, air, sea, and space. New cyberspace operations will be commenced, including active cyber defenses with the goal of detecting and stopping malicious computer code before it affects operations. The third initiative is the recognition that a number of nonmilitary networks support important military functions, in particular the power grid, the transportation system, and the financial sector, and DOD expects to work with the department of homeland security and the private sector

to protect critical infrastructure. The fourth initiative is the recognition of interconnection to allies and international partners, with the goal of building collective cyber defenses. Finally, DOD plans to develop and retain an exceptional cyber workforce, to push rapid adoption of advanced systems, and to secure the supply chain.¹¹³

7.7.6 Right of Response to Attacks

Many incidents of cyber espionage and cyber attacks have appeared to originate from China and Russia. Officials of both nations have publicly denied any responsibility for these attacks. Because the attacks are both numerous and ongoing, some have wondered whether there may be a legal right to respond, despite the difficulty of attribution to specific parties within these nations, and whether the attacks received official sanction and assistance or not.

According to the International Law Commission's draft articles on the Responsibility of States for Wrongful Acts, as recognized by the UN General Assembly, a state has a duty to prevent its territory from being used to launch attacks (differentiated from an attack transiting a state along with other Internet traffic). If the state consistently fails to undertake measures designed to prevent attacks, which might include the criminalization of cyber attacks and investigation and prosecution, that state might be considered to be properly vulnerable to a use of force by the attack target.¹¹⁴

7.7.7 Prospects for the United States in a Protracted Cyber Conflict

The United States has a total population of approximately 300,000,000. China and India both have in excess of 1 billion. Ignoring education and other factors, each country has approximately a 3 to 1 advantage over the United States in the presence of the number of people with high intellectual ability and a willingness to learn.

Meanwhile in the United States, General Elder, in charge of America's cyber command in 2009, was quoted as saying that he had plenty of new recruits ready and able to operate drones or other virtual fighting machines—but no one capable of programming them, or even interested in learning how. He was not even getting recruits who were ready to begin basic programming classes. Meanwhile colleges in Russia, China, and even Iran were churning out an order of magnitude more programmers than universities in the United States. Unless something changes radically, Elder said, the United States will be surpassed in cyber skills within a single generation.^{115,116}

Not all jobs in attacking or defending systems in cyberspace require advanced degrees. But to the extent that adaptability and flexibility are needed

on timescales of minutes to years, those people with a better fundamental understanding of both the principles and practices will be better able to adapt and innovate, and to do so faster.

According to the National Center for Education Statistics, in 1992 the U.S. science and engineering degrees were a smaller percentage of all university degrees awarded than in most other countries with available data. The United States ranked below Canada, West Germany, Italy, Japan, the United Kingdom, Australia, the Czech Republic, Denmark, Finland, Hungary, Ireland, the Netherlands, Norway, Spain, Sweden, Switzerland, and Turkey. For just mathematics and computer science, U.S. degrees, by percentage of all degrees, were below only West Germany, the United Kingdom, Australia, Finland, Ireland, and Sweden, but for engineering degrees, the results are similar to the total of science and engineering degrees listed above.¹¹⁷

National Center for Education Statistics data for 2004 shows that degrees in engineering in the United States as a percentage of all degrees was much lower than France, Italy, Germany, and Japan.¹¹⁸ An additional 24 countries were higher than the United States. Degrees in computer science as a percentage were lower in the United States than 12 of the other OECD countries reporting data.

7.7.7.1 Useful Networking and Information Technology Workforce Study Final Report Statistics

This report was issued May 29, 2009, and makes a distinction for two types of information technology workers used by the National Research Council.¹¹⁹ Category One information technology (IT) workers are involved in the development, creation, specification, design, and testing of an IT artifact, or the development of system-wide applications or services, who rely heavily on conceptual ability and theoretical knowledge. Examples include computer scientists, systems analysts, and programmers, typically requiring at least a bachelor's degree. Category One IT workers in the United States fell in most job categories between 1999 and 2007.¹²⁰

The fraction of U.S. universities' IT graduates who are U.S. citizens and permanent residents was approximately 90% for bachelor's degrees in 1995, and 60% of master's and doctoral degrees awarded in 1995. By 2006, bachelor's were down to 85%, master's to 55%, and doctoral degrees less than 40%. About 75% of foreign nationals receiving doctorate degrees in 2000 were still working in the United States in 2005.¹²¹

The number of students indicating computing and information sciences as their intended major on the SAT dropped from approximately 60,000 in 2001 to approximately 35,000 in 2007.¹²²

This same report shows Bureau of Labor Statistics projections for computer programmer jobs in the United States to decline from 2006 to 2016, which continues the trend of declines in this job category in most years since 2000.¹²³ According to Occupational Employment Statistics (OES) data, the

number of computer hardware engineers decreased slightly from 2004 to 2007.¹²⁴ The number of electrical engineers and electronics engineers stayed the same within less than 1%, and the number of computer and information scientists engaged in research increased from 27,000 in 2004 to 29,000 in 2007. Some other categories including computer software engineers showed an increase. Current Population Survey (CPS) data using somewhat different categories showed a greater decline in computer hardware engineers from 2004 to 2007, a slight increase for electrical and electronics engineers of around 1% and an increase in computer systems analysts and scientists, who are lumped together in a single category, from 700,000 to 825,000.¹²⁵

While the National Science Foundation had a program in 2011 to promote computer and information science and engineering degrees, the debt reduction bill passed by Congress in August 2011, removed federal subsidies for graduate and professional student loans as of July, 2012. It is unknown at this time whether there may be exceptions for certain fields of study during the next few years in the United States.

7.7.7.2 U.S. Cyber Security Strategic Education Plan

The U.S. National Institute for Standards and Technology, in August 2011, published a draft plan for a national initiative focused on cyber security awareness, education, training, and professional development.¹²⁶ The mission of this initiative is

to enhance the overall cyber security posture of the United States by accelerating the availability of educational and training resources designed to improve the cyber behavior, skills, and knowledge of every segment of the population....¹²⁷

The three goals to be implemented are raising awareness, broadening the pool of skilled workers, and developing and maintaining a globally competitive cyber security workforce.

One critic of the plan, whose organization is heavily involved in hands-on cyber security training, was quoted as stating that the strategy will lead to the training of thousands of people with the wrong skills and will exacerbate the shortages of talent unless it is amended to include training by people who currently have hands-on experience.¹²⁸

7.7.8 One New Area for Cyber War and Psyops Synergy

Among the many possibilities offered by the enhanced communications of cyberspace, influence operations against military personnel and their families have become cheaper and more available than ever before. Military personnel serving in foreign theaters of operation communicate more easily and more often with family members than ever before. Use of social networking

sites by military personnel and family members, and the ease of exploitation of the sites to gain information on individuals and to be able to communicate with them is unprecedented.

Morale and discipline of serving troops could be affected by deception campaigns, financial crimes, reputation damage or threat of reputation damage, identity theft, and other distractions made possible by individual communications. As with political campaigns in the United States now reported to be furnishing many different messages to subgroups of their supporters that other subgroups never see, tailored and calculated messages to military personnel and their families may have greater effect than previous media broadcasting.

Intelligence on individuals can be purchased through U.S. corporations like ChoicePoint and Experian or obtained more directly through the entries made by people themselves on social networking sites like Facebook and Google+.

The speed of collection and breadth and depth of collection of data formerly considered private, including online and other credit card purchases, geolocation data, and preferences based on web searches and websites visited, is at least an order of magnitude greater than 20 years ago. However, the purchase cost is at least an order of magnitude lower than 20 years ago. All of this information could make selection of targets for intelligence operations easier than in the past, and faster.

7.7.9 Stuxnet Methods as an Example of Cyber Attack

Any near-term cyber war will depend in part on techniques and system characteristics already known in the cyber security community. It is useful to examine Stuxnet to see the elements required for a successful cyber attack and to raise awareness of the depth of technical skills and resources needed to create those elements.¹²⁹

Stuxnet is the name given to computer code designed to target a particular ICS from the Siemens corporation and to change the operation of machines being controlled. (See ICS protection elsewhere in this chapter for additional explanation.)

Stuxnet is considered one of the most complex cyber attacks publicly known. Its level of sophistication indicates a well-organized development and testing effort. Stuxnet used a number of well-known techniques, however, and some question whether the use of these indicates a different responsible party than nation/states concerned about Iran's nuclear development, or just to provide plausible deniability.¹³⁰

Stuxnet was able to copy itself and/or also start executing its program code through all of the following means:

- Removable computer drives
- Through a local area network

Through larger networks via Microsoft Server Message Block communications or network shares, but not primarily using the Internet
On computers running a specific brand of Supervisory Control and Data Acquisition associated with ICS software

According to Kim Zetter,¹³¹ it spreads with a bias toward portable or USB flash pocket drives, and then across local networks instead of the Internet, unusual for malware (computer code designed to accomplish tasks not knowingly authorized by the computer user): It can copy itself into Siemens Step 7 software (ICS) projects and executes when the project is loaded.

It can update itself using peer-to-peer communications inside a local area network.

Once on a computer, Stuxnet could contact a command and control server allowing the download and execution of program code including updated versions from a remote location.

It exploits four Microsoft software vulnerabilities for which there was no Microsoft patch (program code fix) available at that time. This is a record for malware.

It uses a Microsoft Windows rootkit (a rootkit is a set of computer operating system modifications for concealment and persistence) that was able to hide its binary files from normal inspection.

Parts of the code were digitally signed as an integrity assurance measure, in order to avoid alerting users while Stuxnet was being secretly installed. This required the compromise of two valid digital certificates from two different companies during the preparation, testing, and adaptation of the cyber attack code.

It checked for the presence of specific defensive software versions on computers so as not to cause an alert if there were any it could not bypass.

It was programmed to search for a specific Siemens ICS and modify the program code on the programmable logic controllers (PLC) in order to sabotage the control system.

It used techniques to hide these PLC code modifications. It contained code to provide false speed-readings to an operator for the centrifuges that it was designed to damage, in order to hide the damage in progress.

An analysis by Symantec indicated that while computers containing the Stuxnet code could be found in at least 26 countries, the overwhelming number of these computers, more than 60,000, were in Iran. Indonesia had the next highest number at approximately 13,000, and India had approximately 7,000.

There were different versions of Stuxnet found,¹³² indicating that the controlling agency found it necessary to adapt this attack code once it had been introduced in the field. This behavior is predicted by the quote from *Technology, Policy, Law, and Ethics regarding U.S. Acquisition and Use of Cyberattack Capabilities* above, that “if a cyberattack is very specifically targeted, adaptability and flexibility on the part of the attacker may well be needed.”¹³³

The United Nations International Atomic Energy Agency records indicated that Iran replaced more than 900 centrifuges used to concentrate uranium isotopes during the time that Stuxnet is thought to have been on computers in Iran.¹³⁴

There is speculation and some evidence that Stuxnet was introduced, by means unknown, into computers belonging to more than one company in Iran. It may have spread from there to the Natanz enrichment facility, as well as to the Bushehr nuclear plant under construction, although the nuclear plant was not an apparent target of the Stuxnet worm.

7.7.10 Who Is Preparing to Participate in Cyber Conflict?

Approximately 120 countries are developing or have developed offensive cyber attack capabilities, according to NATO’s director for policy and planning.¹³⁵

The capabilities of China, India, Iran, North Korea, Pakistan, and Russia were the subject of a report for the U.S. Department of Homeland Security in 2004. China and Russia were considered to have a military doctrine for warfare that includes cyber attacks and to be actively developing their already present capabilities. The other countries are developing their information technology industries, have trained IT personnel, and have some hacking or attack capability.¹³⁶

Israel’s head of military intelligence was quoted as saying that the use of cyberspace “is as important to warfare today as the advent of air support was to warfare in the 20th century.” Israel has had an infrastructure for cyber war since the early 1990s.¹³⁷

There is now a strategic cyber security alliance between the United States and India. In July 2011, the two countries agreed to exchange critical cyber security information and expertise through the Indian Computer Emergency Response Team (CERT-In), and the Department of Homeland Security United States Computer Emergency Readiness Team (U.S.-CERT).¹³⁸

7.7.10.1 China and Cyber War

The IISS finding, in 2011, is that the Chinese continue military upgrading and that this includes cyber war capabilities. According to the executive summary for *The Military Balance 2011*, the United States and other Western powers are losing their monopoly in key areas of defense technology, which include cyber warfare.¹³⁹

The U.S. DOD reported in 2010 that

“Developing capabilities for cyberwarfare is consistent with authoritative PLA military writings.”¹⁴⁰

The People’s Liberation Army is the unified military organization of the People’s Republic of China (PRC). The same report stated that numerous computer systems around the world had been targeted for intrusions in 2009, that these intrusions appear to have originated within the PRC, and that

“The accesses and skills required for these intrusions are similar to those necessary to conduct computer network attacks.”¹⁴¹

Another 2010 report, from the U.S.–China Economic and Security Review Commission, states:

China’s government, the Chinese Communist Party, and Chinese individuals and organizations continue to hack into American computer systems and networks as well as those of foreign entities and governments. The methods used during these activities are generally more sophisticated than techniques used in previous exploitations. Those responsible for these acts increasingly leverage social networking tools as well as malicious software tied to the criminal underground.

Recent high profile, China-based computer exploitations continue to suggest some level of state support. Indicators include the massive scale of these exploitations and the extensive intelligence and reconnaissance components.¹⁴²

The *Wall Street Journal*, in 2009, stated that cyberspies had penetrated the U.S. electrical grid and left behind software programs that could be used to disrupt the system, with the intrusions coming from China, Russia, and other countries. This information was attributed to unnamed current and former national security officials.¹⁴³

The PLA is training and equipping its force to use a variety of Information Warfare (IW) tools for intelligence gathering and to establish information dominance over its adversaries during a conflict. PLA campaign doctrine identifies the early establishment of information dominance over an enemy as one of the highest operational priorities in a conflict; INEW appears designed to support this objective.¹⁴⁴

INEW is the formal information warfare strategy called Integrated Network Electronic Warfare adopted by the PRC.

The consideration of cyber attacks and defenses in a military context has been under way in China for at least 7 years. As of 2003 the PRC had

announced the creation of cyber warfare units, based at that time at a naval base on Hainan Island.¹⁴⁵

The conclusions of various recent U.S. government reports are that:

1. The PRC continues to develop capabilities useful for cyber war.
2. The government of the PRC supports, if it does not directly carry out, very widespread cyber espionage and exploitation of information systems.
3. Exploitations show increasing sophistication.

It seems clear that if the political will and political situation cause the leadership of the PRC to favor cyber attacks that might rise to the level of cyber war, the PRC will be positioned to carry these out and to defend against at least some sophisticated cyber attacks toward information systems under its control.

7.7.10.2 Iran and Cyber War

Iran has not been officially and publicly engaging in offensive and defensive cyber war preparation until recently. On May 18, 2011, the *Tehran Times* published a notice that Islamic Revolution Guards Corps General Masood Jazayeri said preliminary studies have been completed and Iran will be establishing its first cyber command.¹⁴⁶ In a *Mehr News* article, General Jalali said that the United States and Israel flouted international law in a cyber attack targeting Iranian industrial systems and that this matter can still be pursued through legal channels.¹⁴⁷

A Middle East news site reported that General Gholam-Reza Jalali, head of Iran's Passive Resistance Organization, called on good intentioned, revolutionary hackers to help advance the objectives of the Islamic Republic. He commented on the establishment of cyber commands in the United States and Germany during the past year and said dealing with Stuxnet had brought about increased coordination and cooperation in cyber warfare between Iran's various security and intelligence apparatus. General Jazayeri reportedly stated during the last week of July 2011 that the United States is exposed to Iranian cyber attacks; "Americans' failures to protect their vital facilities show that they are unable to successfully deal with the weak spots of their vital and strategic infrastructure."¹⁴⁸

7.8 Cyber Security

It is not possible to provide a meaningful answer to the question, "Is this system secure?" Clarifying questions, before a qualified opinion can be provided, include "secure against which attackers, over what period of time, using what means of attack?"

The security of a single computer, or a network of computers, is dependent on dozens to millions of different combinations of configuration settings. Although each computer might be the same model as computers on another network, there are millions of unique combinations of software that help determine whether a computer is easy or difficult to compromise. The type of defensive measures in use, and the alertness and knowledge level of the people using the computer, as well as the security policy of the organization and the degree of compliance to that policy, are all determining factors in whether a given computer and the confidentiality, integrity, and availability of its data contents can withstand any particular attack.

7.8.1 Critical Infrastructure Protection

Fred Cohen, a well-known expert in information system security, in a detailed analysis, took the position in 2007 that while damage to infrastructure is quite possible from cyber attacks alone, there is little reason to expect massive, successful, coordinated infrastructure attacks with lasting consequences that would threaten the economic future of the United States. There are both technical and social reasons why this is unlikely.¹⁴⁹

Changes as of 2011 resulted in his observation that technologies supporting ICS security are essentially unchanged, although there continues to be greater connectivity to these systems and movement toward lower surety platforms. ICSs are an essential element of critical infrastructure. Additional concern is warranted because of these developments. There is no framework in place to provide any meaningful metrics to determine whether the changes taking place have resulted in less effective protection for ICS or for other information system components of critical infrastructure protection in the past 4 years.¹⁵⁰

7.8.2 Critical Infrastructure Protection and ICSs

ICSs are used, not only in manufacturing, as the name implies, but as part of the critical infrastructure that furnishes electrical power, water, natural gas, and nuclear power generation.

An ICS may include speed, temperature, and pressure or other sensors and electronic devices that interact with moving machinery like elevators, centrifuges, pipeline valves, and electrical generators, or fire suppression and heating and ventilation systems in buildings.

ICSs are extremely common worldwide and used to help provide electrical power, water, extraction and transportation of oil and gas, and all large-scale manufacturing.

These systems were not designed to be secure against cyber attacks by skilled attackers, and they are not secure in the sense that they can be compromised

only by teams with the resources of a nation/state. According to one expert on ICS security, “they are very brittle, and attacking them is not rocket science.”¹⁵¹

Did Stuxnet change the near-term prospects for more damaging cyber attacks that may be considered cyber war?

An additional real-world threat emerged last year that significantly changed the landscape of targeted cyber attacks on industrial control systems. Malicious code, dubbed Stuxnet, was detected in July 2010. DHS analysis concluded that this highly complex computer worm was the first of its kind, written to specifically target mission-critical control systems running a specific combination of software and hardware...

Looking ahead, the Department is concerned that attackers could use the increasingly public information about the code to develop variants targeted at broader installations of programmable equipment in control systems. Copies of the Stuxnet code, in various different iterations, have been publicly available for some time now.¹⁵²

Ralph Langner, who was the first analyst to publish technical information about Stuxnet, made available his email to a U.S. congressional representative. Major points in this letter are the following:

1. He believes the black hat (malicious actors) community will use Stuxnet.
2. Some of the vulnerabilities that Stuxnet exploits cannot be quickly fixed with a software patch.
3. He believes that programmable logic controllers can be attacked using exploit code without insider knowledge of the systems they are in and that this will be possible without a high degree of technical sophistication, or in his words “every script kiddy will be able to assemble and distribute it as worm payload,” and there will be non-directed denial-of-service attacks on PLCs.^{153,154}

Attacks on ICSs are quite possible from a technical standpoint, with a good chance that skilled attackers could cause disruption, property damage, possible loss of life, and considerable economic damage. Whether these attacks occur is more dependent on the potential attacker motives than on the current level of protection or design security of ICS installations.

7.8.3 Cloud Computing and Security

Some businesses are moving to public cloud computing. These businesses are allowing an outside computing service provider to furnish number crunching or database power, data storage, and/or remote business applications for their company employees and their customers. The subject of cloud services

and security is complicated and goes beyond the outages that large cloud providers have recently experienced. The extent to which cloud providers should be trusted with business-critical computing or highly confidential proprietary data deserves careful analysis. The U.S. Federal government is planning to purchase cloud services and has instituted a Cloud First policy for IT policy that requires agencies to consider cloud solutions before making any new IT investments.¹⁵⁵

Gus Hunt, chief technology officer at the Central Intelligence Agency, recently warned against the dangers of not getting cloud right. He said that any cloud solution must keep up with a changing threat landscape where the pace is increasing—and that a failure to keep up will result in real penalties. He highlighted his top security maxims: absolute security is impossible, people are the weak link, and current methods are insufficient and unsustainable.¹⁵⁶

7.8.4 Deception for Cyber Security Defense

Deception has an important role to play in defending network systems and computers. Deception can be quite effective against low to higher skilled attackers who are using most of the available attack tools.

Attackers count on these tools to report the state of remote systems “honestly,” and generally accurately. There is a wide array of attack tools available, both free and for tens of thousands of dollars. Some have suggested making either possession or use illegal. It is poor policy to try to make common software/hardware illegal in some particular country with the thought that an attacker in another country, with the means to conceal his location and affiliation, will not use such tools. Rather, because these tools are commonly available, system defenders also need legal access for analysis and for testing defenses.

A weak point of attack tools and some attacker training, as mentioned above, is their expectation that tool reports are helping create a picture of the existence and status of remote systems, or even of a system that is being directly examined by an attacker at a physically attached keyboard.

One use of deception is the creation of communication ports or computer systems that are not present, or in use. When network reconnaissance tools show that these ports are available, attempting to connect to them provides an unambiguous indication of exploration or attack. Normal users and intraorganization computers will not attempt to connect to unauthorized and unused services normally found at these port addresses.

A much more detailed explanation of deception and its potential use in system defense can be found in Fred Cohen’s, “A Framework for Deception.”¹⁵⁷

Deception is underused in computer system defense currently and offers an excellent opportunity for attacker detection, delay, and confusion.

Deception methods can provide false information tailored for a specific purpose, with the added benefit of increasing the work factor enough to lend credibility to the misinformation.

7.8.5 The Current State of Cyber Security and the Outlook

These comments apply only to private computer and network systems, and the author has no special or privileged knowledge covering any military systems or systems used to store or process classified information.

It is possible to gain insight into the current state of cyber security by considering a single recent and well-publicized incident. In the spring of 2011, RSA SecurID customers were informed that RSA corporate systems had been compromised and that information about SecurID had been extracted.¹⁵⁸ Millions of SecurID physical tokens are used to improve authentication trustworthiness through the use of multiple factors, such as something the user knows at login time (password) and something the user has at login time (SecurID token). Because of the expense of the physical tokens and integration of RSA SecurID software, these are used where login security is considered very important. Their 30,000 customer organizations include major U.S. defense contractors, such as Lockheed Martin.¹⁵⁹

The RSA's executive chairman stated that RSA "had detected a very sophisticated cyber attack on its systems" and that "the most likely motive was to obtain an element of security information that could be used to target defense secrets and related IP, ..."¹⁶⁰

There are two alternative explanations for this incident, with no implication of negligence intended. The alternatives are hypothetical even though the incident was real.

1. A U.S. supplier of security products to large enterprises, including the U.S. defense industry, took all precautions justified by its high risk, spent appropriately on all prudent security measures including training of personnel, appropriately monitored for indications of a successful attack, and was outmatched by an attacker.
2. The company failed to act appropriately in one or more of the above areas.

There is no public evidence to establish a factual basis for either alternative but their implications are really the issue. If #1 is true, then almost any cyber security program, no matter how well designed and executed, is subject to failure from some attackers. If #2 is true, then even an established company with expertise in cyber security apparently could not make the right choices and allocate protection resources appropriately in a continuing manner, to avoid security failures.

Whether #1 or #2 is true, the conclusion is that a combination of hardware vulnerabilities, software vulnerabilities, physical security vulnerabilities, and human vulnerabilities leave today's systems without any assurance that all attacks can be prevented, or detected in time to prevent harmful consequences.

7.8.5.1 Supply Chain Security

From a system reliability viewpoint, if the lowest level components such as computer processors or device firmware cannot be trusted, nothing built with those components can be trusted. In the past 15 years, as manufacture, and then programming, and then design, of many computer and electronic devices shifted from the United States to other countries, the degree of control over future devices shifted away from the United States. Other countries have the same potential problem of suddenly discovering consumer or military devices subject to planned failure, sometimes with serious consequences.

In January, 2008, an international task force seized \$78 million in counterfeit Cisco network hardware.¹⁶¹ In September 2010, two people were indicted for selling over 59,000 counterfeit microchips from China to the U.S. Navy and other clients for military use.¹⁶² The U.S. Commerce Department announced in 2010 that incidents of counterfeit electronics increased from 3868 in 2005 to 9356 in 2008.¹⁶³ A U.S. government report in 2010 found that "most DOD organizations do not have policies in place to prevent counterfeit parts from infiltrating their supply chain," and that "all elements of the supply chain have been directly impacted by counterfeit electronics."¹⁶⁴

More recently, in July 2011, a U.S. Department of Homeland Security official testified before a congressional committee that he was aware of cases in which foreign security-compromising components have been embedded in equipment being sold in the United States.^{165,166}

7.8.5.2 The Overall Picture for Cyber Defense

Many technical measures are being put into place at some organizations, in response to numerous recent successful attacks. These organizations are primarily those that have suffered a recent major security incident or those mandated to comply with a set of rules, which include, in the United States, banks, defense contractors, and electrical power companies. If applied appropriately, within an adequate enterprise security architecture, these measures should increase the expense or difficulty for most attackers. In some cases, these same organizations are using personnel training to mitigate human risk, such as opening an email attachment, which was a factor in the RSA attack mentioned above.¹⁶⁷

A finding by the U.S. National Research Council includes the following, from 2009:

Actions taken to strengthen important U.S. computer systems and networks promote deterrence by denial, but for a host of reasons described in Chapter 2, and in other reports, the gap between defensive capabilities and the adversarial cyberattack threat is large and growing today.¹⁶⁸

Within the next 5 years, it seems unlikely that the security balance will change in favor of system defenders, meaning that attack, in general, will have an advantage over defense, when considering the human element. The human element includes not only humans who are deceived with a malicious email attachment, but those who can be persuaded or coerced into providing an attacker with an inside foothold.

7.9 Cyber Power's Role in Transformative Global Events

Cyber power, for this chapter, is considered to be a strategic use of cyberspace alternatives to provide an advantage in gaining policy objectives. It is important to distinguish those characteristics of cyber power that may not be obvious to some whose experience is in economic power, political power, or military power.

Cyber power, like cyber war, is in only the beginning stages of being consciously applied to political, social, military, and economic balance of power issues. Its cumulative effects will be moderate only if the major players are relatively well-balanced in capabilities. As a strategic issue, rather than as improved communications during uprisings like the Arab Spring protests and changes in 2010 and 2011, the major effects can only be inferred from cyber power characteristics.

The following three characteristics of cyber power, but not the accompanying explanations, are quoted from Sheldon.¹⁶⁹

7.9.1 Cyber Power Is Ubiquitous

The previous discussion of cyberspace made it clear that in heavily industrialized nations, heavy use of cyberspace is normal to accomplish ordinary daily tasks, as well as to operate infrastructure including electrical power and transportation, and most actions in the economic, political, or military spheres.

Since most of the important activities for major subsets of the world's population depend on the correct functioning of systems in cyberspace, the opportunity to subvert or sabotage for advantage is ever present. Unlike the

“fighting season” in Afghanistan that seems to have a yearly cycle, attacks in cyberspace can be damaging around the clock, and in every month of the year. While timing may still make some attacks easier or help produce greater aggregate damage, it is less likely to be cyclical based on the calendar. And where timing is important, events initiated in cyberspace may influence the timing upon which a major action depends.

One implication of timing being less dependent on outside invariants or cyclical events is that the tempo of any conflict might be driven up, to the advantage of the better prepared, the more adaptable, and the participant with more resources. As conflicts between skilled participants approach or exceed normal real-time constraints, the observe, orient, decide, act (OODA) loop, as originally presented by Col. John Boyd, may become more relevant. The OODA loop as originally presented dealt with real-time decisions by pilots in air-to-air combat¹⁷⁰ and has been applied to information warfare concepts previously in Air Force Doctrine Document 3–12,¹⁷¹ and other documents.¹⁷² The participant with faster loop execution speed gains an advantage. However, inappropriate development of a faster than human time response capability may lead to a weakness in which undesirable consequences are triggered by a well-informed attacker but inflicted by the defending party on itself.

If poorly designed automated defenses are used in larger and more critical systems, including ICSs with physical consequences (where the perceived need may be greater), then even establishing the existence of an external attack may be difficult. Also, a poorly chosen mix of automated and human response may be used as an attack. An example would be a condition where an automated response initiates a shutdown sequence for an important system. A human operator intervenes, believing properly that a shutdown is not required or desirable. Because of an incomplete shutdown sequence, the automated control system will not allow a restart, as a safety consideration. Specialist human intervention is now required to diagnose and fix this problem, but a restart, no matter how important or time-critical, may be delayed for hours, at a minimum. But this raises the question, again, of how many important systems, including those in the industrial control arena, have sufficiently robust design and programming to withstand both random failures and malicious actions? And what is the feasible replacement rate?

7.9.2 Cyber Power is Complementary

Since the public disclosure of Stuxnet, it has become clear to everyone, not just cyberspace specialists, that cyber power might consist of more than the control of electrons and bits, which could only very indirectly affect the physical world and the safety of persons and property. Some exercises of cyber power through cyberspace attacks have had transitory effects, although

computer penetrations are assumed to have contributed or been essential to the success of the Israeli physical attack of a Syrian nuclear reactor in Deir-Az-Zur in 2007.¹⁷³ Other cyber attacks targeting most or all services reachable in Estonian cyberspace in 2007 were disruptive, but failed to destabilize the government or create social panic and therefore may have failed in their larger objective.¹⁷⁴

Stuxnet, although apparently narrowly targeted against one physical facility at Natanz, did not result in abandonment of Iranian uranium enrichment, but may have caused a setback of months or more in the program and averted more drastic actions. As recently as 2009, a top Israeli official thought that Iran could produce a nuclear weapon by 2011.¹⁷⁵ But in early 2011, and after Stuxnet, a retiring head of Israeli intelligence expressed the belief that 2015 is now the earliest possible date.¹⁷⁶

With widespread vulnerabilities in ICSs (discussed in Section 7.8) that will likely persist for years, a view that cyber power is not useful by itself to achieve strategic ends may be more a description of the past than the future.

At the same time, there is a consideration that good defenses against cyber attack may be more effective as a deterrent than a strong attack capability, a position argued by Libicki in a study for the U.S. Air Force.¹⁷⁷ Deterrence by the threat of in-kind response is unlikely to be sufficient.¹⁷⁸ At least as long ago as 1993, there was recognition that the conditions for cyber offense and defense were different from previous strategic threats and that a good offense was not the best defense.¹⁷⁹ But because attackers often have the advantage, defenses as they exist today are not, in themselves, sufficient.¹⁸⁰

Many groups around the world are now working to neutralize the specific methods used by variations of Stuxnet, and some of these methods would have continued to be available to attackers otherwise. In addition, the demonstration of the success of an attack on a facility intended to be highly secure has apparently caused an increase in the priority of cyberspace offensive and defensive measures by some number of nations. More resources will be devoted to thwarting all cyber attacks, having the effect of making future cyber attacks more difficult for all, including the originators of Stuxnet. In a sense, instead of a “use it or lose it” for a specific capability, cyber attacks are “use it and lose it.” In physical space, a good defense might mean having to plan, design, and pull in physical resources with a long supply chain to overcome the next physical attack. In cyberspace, specific known attacks can be defeated by setting a few bits or applying a software patch to vulnerable devices within minutes to hours of the attack discovery.

The U.S. government has now contributed to the viewpoint that cyber power may not be only complementary, and has apparently determined that potential damage is worthy of a threat of retaliation by cyber attacks and

also by military or economic means with a policy issued in May 2011. There is a public threat

The United States will ensure that the risks associated with attacking or exploiting our networks vastly outweigh the potential benefits.¹⁸¹

The arguments against stating this type of public threat and retaliation include potential attackers asking why such a declaration is being made, and why at this time, and then to conclude that the United States must have discovered that it is more vulnerable than previously thought.¹⁸² Libicki also makes the point that an explicit deterrence policy can make the target of an attack look weaker if it does not respond to an attack for any reason, such as uncertainty about the attacker's identity. Certainly, the public threat and the enumeration of possible responses to a cyber attack including military means have changed the U.S. policy to an explicit one, with some downside consequences.

7.9.3 Cyber Power Can Be Stealthy

Because the origin of cyber attacks can often be concealed or made ambiguous, and because sabotage can be hidden and timed, damage or other effects can be caused to the detriment of an opponent without public knowledge and attribution. There is the possibility that the target can be deceived into retaliating against an innocent third party, and perhaps two opponents can be tricked into a conflict with each other. To an extent greater than in the past, espionage can be accomplished without motivating a human agent to supply their organization's secrets. The difficulty and expense of physically positioning observers who are using other technical means, or getting trained people across political and geographic borders is reduced.

7.9.4 Trends and Possibilities

The uses and limits of cyber power will become more clear as operations in this fifth domain of warfare establish the boundaries. Current international law as it pertains to warfare will have to be extended to new types of actions in which there may be significant economic damage without much or any direct damage to property or human life. The threat of reverse engineering of cyber attack code and methods may cause more sophisticated attacks to be limited to situations like Stuxnet at Natanz, where the alternative was rumored to be an air power offensive, probably followed by escalation in both international tensions and other physical attacks.

Potential productivity gains from the use of connected computers will continue to push the rapid increase in the amount of automation in most systems, whether for power generation and distribution or those that operate personal automobiles.

The ability to research, design, manufacture, and limit the use of computing devices will play a role in any balance of power. If a primary design and manufacturing or assembly center of electronics and computer hardware were China, and the nation with the highest concentration of use of the hardware were the United States, who would wield power in cyberspace? For defense and military systems, today only one-third of printed circuit boards are produced outside of North America.¹⁸³ But in most corporations and small businesses, mobile computing devices like smartphones and tablets are being used to conduct a lot of the business activity, and these devices are very much subject to globalization in their supply chain and manufacture. According to summarized U.S. trade statistics in a 2010 report, the total share of U.S. demand being supplied by China for computers and computer equipment was over 30%, while China's share of U.S. computer imports was over 70%.¹⁸⁴

In August 2011, a list on <http://www.chinahot.com>, a Chinese job opening site, showed jobs in mainland China for software engineers at Apple, IBM, Microsoft, Autodesk, Redhat, VMware, and other well-known companies (computer software). The list also included IT and other engineering jobs for Intel, Qualcomm, Ericsson, Alcatel-Lucent, Motorola, and other well-known companies (communications hardware and software), Cisco (network infrastructure hardware), and Siemens (ICS hardware/software).

Without a change in funding, attitudes, training and education, research, and engineering, security will become more difficult as system complexity increases, and many groups, not just nation/states, will be able to exercise some amount of cyber power by continuing to take advantage of this.

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Challenges Confronting the Global Transition of Power

8

THOMAS A. JOHNSON

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This book has focused on the challenges three nations will encounter as a result of transformational global events that will impact their respective national security. The identification of transformational global events is in its simplest terms, a retrospective analysis of past major events and the impact these events will have on society or nations, in this case, America, China, and Iran. However, the real challenge is for each nation to have scientists, scholars, or appropriate authorities who have the knowledge, skill, and abilities to identify the consequential events that no one has foreseen. In short, how does one identify the strategic surprise or the unexpected development of a game-changing event that can abruptly alter the balance of power between nations or potential adversaries? What produces these consequential events that surprise people, and how do we explain our inability to foresee or predict their occurrence?

8.1 Strategic Surprise: Game-Changing Events

Nassim Nicholas Taleb best describes our inability to foresee sudden strategic surprises, as well as our inability to predict the occurrences of such surprises, by presenting the problem of inductive knowledge as discussed by the philosopher Bertrand Russell. The problem of inductive knowledge probes the question of how in making observations we can logically go from specific instances to reach general conclusions? How do we know that what we have observed from given objects and events provides us the data and ability to enable us to figure out their other properties?¹ Nassim Taleb maintains that there are traps which may deceive us when we use knowledge gained from observation, and the example he provides in his excellent book, *The Black Swan: The Impact of the Highly Improbable*, focuses on a specious research conclusion he refers to as the turkey problem.

Consider a turkey that is fed every day. Every single feeding will firm up the bird's belief that it is a general rule of life to be fed every day by friendly members of the human race.... On the afternoon of the Wednesday before Thanksgiving, something unexpected will happen to the turkey. It will incur a revision of belief.²

Taleb refers to this as the *Black Swan problem*, or “how can we know the future, given knowledge of the past; or more generally, how can we figure out properties of the (infinite) unknown, based on the (finite) known.” Another barrier to predicting strategic surprise originates from our excessive focus on what we do know when the Black Swan logic makes what we do not know far more relevant than what we do know. Of course, in applying the vignette of the turkey feeding problem analogy, it is clear that to the turkey, it was what the turkey did not know about the celebration of Thanksgiving that was far more important than what the turkey did know about the knowledge of daily feedings. So the problem of strategic surprise is not only what we do not know, but our focus in studying events is typically based on the “normal,” and science uses bell curve method of inference that in many situations leaves us unprepared to discover the strategic surprise since the bell curve ignores large deviations and provides us the confidence level that what we have observed is in fact correct and supported by statistical evidence. The logic behind the Black Swan analogy is that our observations and analysis will be based on the structure of statistical randomness in empirical reality.³ The problem confronting intelligence agencies is to guard against strategic and operational surprises. Therefore, an emphasis must be placed on what we do not know, and not simply using research methodological tools to apply science to the information and data that is known.

8.1.1 The Black Swan

As we begin to prepare for understanding and foreseeing strategic surprise, we would be well advised to appreciate the three attributes of Taleb's Black Swan logic. These attributes are unpredictability, consequences, and retrospective distortion, the latter providing the illusion of posterior predictability by assessing matters only after the fact.⁴

An excellent example of strategic surprise that America designed to end World War II was the creation of the Manhattan Project and the development of the atomic bomb. This event created a strategic surprise for Japan as it was not predicted by our enemies; moreover, it was so consequential that it brought World War II to an end.

Another example occurred on October 4, 1957 when the Soviet Union launched Sputnik, the world's first artificial satellite and totally caused a strategic surprise for America. Again, the United States failed to foresee this first launch into space, and the event was so consequential that it really was pivotal to the launching of a "space race" between the Soviet Union and the United States.

America's development and use of precision-guided weapons and electronic warfare against Iraq in the first Gulf War was also a strategic surprise not only for Iraq, but for all nations that had military assets. This strategic surprise was not predicted by Iraq, or for that matter virtually any nation, and the consequential result of this strategic surprise was to totally change modern warfare and their military operations. It is interesting to note that China observed this new form of modern warfare and has totally redesigned the manner in which the People's Liberation Army (PLA) would reorganize around these modern concepts of electronic warfare.

8.1.2 Missed Opportunities of Strategic Surprise

Nassim Nicholas Taleb and Mark Blyth raise the very interesting question, "Why is surprise the permanent condition of the American political and economic elite?" In 2007–2008 when the global financial system imploded, the statement that no one could have seen this coming was heard everywhere.⁵ However, this event was in fact recognized by several financial analysts who bet short on securities and made a fortune. Also, Goldman Sachs saw this event coming and they even bet against their own customer's investments. The U.S. Senate subcommittee's scathing criticism of Goldman Sachs investment practices of betting against their own clients' investments resulted in a classic case of retrospective distortion when Goldman Sachs executive officers suggested they were only making a "market" for their clients to make investments on either the short or long side. Goldman Sachs felt entitled to participate so a market could be established for any of their customers who might

be interested in making investments in the collateralized debt obligation securities. Since retrospective distortion is a concept to explain a process by which people tend to evaluate and assess matters after the fact, Goldman Sachs executive officers constructed an explanation and offered it to the U.S. Senate subcommittee in what many might describe as an orderly explanation of previous behavior in hindsight no matter how unbelievable it may seem.

Today, we once again hear this same surprise refrain regarding the Arab Revolution in the Middle East that no one could have seen the fall of President Mubarak of Egypt and the cascading revolution throughout so many nation/states of the Middle East. The reason we do not foresee major events such as the Great Recession and the Arab Revolution centers on our almost exclusive focus on what we do know, thus, limiting our opportunity to explore the more relevant focus of what we do not know. For example, our intelligence community has assets throughout Egypt and the Middle East and our diplomatic community from the U.S. Department of State has had a 40-year relationship with Egypt's President Mubarak. So why were our political leaders surprised and caught off guard by the overthrow of President Mubarak? The critical issue in both the global financial meltdown and the Arab Revolution is the artificial suppression of volatility, in each case, so as to provide stability and even more specifically:

Complex systems that have artificially suppressed volatility tend to become extremely fragile while at the same time exhibiting no visible risks. In fact, they tend to be too calm and exhibit minimal variability as silent risks accumulate beneath the surface. Although the stated intention of political leaders and economic policy makers is to stabilize the system by inhibiting fluctuations, the result tends to be the opposite. These artificially constrained systems become prone to "Black Swans"—that is, they become extremely vulnerable to large scale events that lie far from the statistical norm and were largely unpredictable to a given set of observers.⁶

Since most people prefer stability over chaos, the policy makers restricted the variability as a measure of their good intentions, but they actually increased the risk of a major blowup. It was this identical misperception that led to both the economic crisis in 2007–2008 and the inability to foresee the current Arab Revolution. In other words in order to foresee a strategic surprise, all risks must be visible and out in the open.⁷

American policy makers, military leaders, and intelligence officials must redouble their efforts to minimize our vulnerability to an unforeseen strategic surprise. We already know that America's great strength comes from its outstanding critical infrastructure. We also know that our nation's vulnerability to a cyber attack on our critical infrastructure is clearly a reality. Knowing

these risks, we can begin the process to mitigate and manage these risks. This implies the development of a rather sophisticated strategy of research that not only embraces probability analysis in which we look for “Black Swans,” but also includes a research protocol that anticipates a strategic surprise. The research methodology should also focus on locating the causality of strategic surprise, as well as the refinement and introduction of additional algorithms to search databases and the data mining of open source resources. In short, to prevent a strategic surprise, we must provide innovative science-based systems research solutions that are focused on those things we do not know and do not understand.

8.2 Strategic Surprise: Nation/State Vulnerabilities to Collapse

Niall Ferguson’s excellent article “Complexity and Collapse: Empires on the Edge of Chaos” offers a historian’s perspective on Empires and the nature in which they collapse both in terms of cyclical and gradual terms. The British political philosopher Henry St. John noted in 1738 that “the best instituted governments carry in them the seeds of their destruction, and though they grow and improve for a time, they will soon tend visibly to their dissolution.” The British historian Arnold Toynbee’s universal theory of civilization proposed a cycle of challenge, response, and suicide. Paul Kennedy’s *The Rise and Fall of the Great Powers* suggests that nations fall according to the growth rates of their industrial bases and the costs of their imperial commitments relative to their gross domestic product (GDP). The most striking observation to Ferguson was the speed in which the Empires collapsed, and he reviewed the Roman Empire, the Ming Dynasty in China, the Bourbon Monarchy in France, the British Empire, and the Soviet Union. Ferguson raises the very profound and disturbing question, “What if history is not cyclical and slow, but arrhythmic at times almost stationary, but also capable of accelerating suddenly.... What if collapse does not arrive over a number of centuries, but comes suddenly, like a thief in the night?”⁸

In the discussion of transformational global events and the challenges confronting America, China, and Iran, it would be an oversight to not consider the possibility of a strategic surprise leading to, or causing, the collapse of the nation/state. Accordingly, the major vulnerabilities of America, China, and Iran will be briefly highlighted as a notation of the respective challenges they will be confronting in the ensuing years, if not immediately, as in the case of America.

8.2.1 America: Surprise Warning of Collapse

As a result of the 2008 Great Recession and the wars in Iraq and Afghanistan, America's national debt of more than \$14 trillion is now so far out of control that it has undermined both the military power, as well as America's soft power. America's economic crisis now presents major problems for our military operations in Asia, at the very time China is building its power base and deploying antiaccess strategies to keep America's military out of the Asian theatre, or at least so removed by distance that it further weakens America's power.

America's power and especially its moral authority and international reputation have been diminished in the last three decades in large measure due to the absence of an enlightened body of political leadership. The enormous array of tangible and intangible assets has been wasted on poorly thought out political engagements both internationally and domestically. The ineffectual political leaders and the bitter divisive, almost meaningless battles that both political parties position themselves in has caused massive gridlock of our American political system and will prevent it from translating power resources into power outcomes. James Fallows observes that while America still has the means to address its structural weaknesses ... the American tragedy for the twenty-first century is that its governing system increasingly looks like a joke.⁹

If Empires are complex systems that eventually succumb to sudden and catastrophic malfunctions, given the enormous federal debt of the United States, what are the concerns and challenges Americans will address? First, it is the sudden collapse of a nation that should most concern its citizens. Second, most empires that have collapsed in the historical past all had sharp imbalances between revenue and expenditures, exactly the current position within America today. In June 2011, the United States federal debt reached \$14.8 trillion, an amount that required Congress to increase the authorized federal debt level by August 2, 2011 or confront the reality of our nation's first default. Congressional action did occur and resulted in our nation avoiding default, however once again our federal debt is on the rise, and by February 27, 2012 our federal debt was \$15.4 trillion with an economic forecast of reaching \$16.4 trillion by the end of 2012.

Niall Ferguson is critical of America's current monetary and fiscal policies, as

Neither interest rates at zero nor fiscal stimulus can achieve a sustainable recovery if people in the United States and abroad collectively decide overnight that such measures will lead to much higher inflation rates or outright default... it is not the debt-to-GDP ratio that determine government solvency, but the interest rate that investors demand. Bond yields can shoot up if expectations change about future government solvency, intensifying an already bad fiscal crisis by driving up the cost of interest payments on new debt.¹⁰

America faces some extraordinary fiscal challenges, and unless there are deep cuts in federal spending, which will by necessity have to include entitlement programs as well as defense spending, the future of America will begin to sharply decline. Government officials will be well advised to anticipate where the next strategic surprise will emerge, will it be further political gridlock, or a global depression as so many nations are now experiencing very severe financial turmoil.

Should the political system in America realize the seriousness of the nation's financial crisis, and finally begin to address the structural problems, economic confidence can be restored over an extended period of time. However, there will have to be required major economic changes and sacrifices at all levels of government. Living conditions in America will clearly be affected, and the political leadership to sustain the harsh and long-term economic programs will be tested.

8.2.2 China: The Surprise of Sustainability

The concern that the Chinese leaders have to address is centered on their export-based economic system, which coupled with their monetary policy keeps the prices of their goods low and prevents the Yuan and Chinese banks from becoming vulnerable to world market condition changes. At some point in the near future, China will experience internal problems due to its great disparities of wealth and poverty. Also, the absence of any serious programs that include retirement and social benefits will emerge as major internal challenges.

The Chinese economic growth model has well-documented flaws and is not sustainable in its present form. The Chinese economic model has used cheap labor to build and export products, which, in turn, have created a very healthy revenue stream that has been used to build up the PLA, the People's Liberation Navy, and to introduce new stealth aircraft to the People's Liberation Air Force. While pursuing this course of action, the Chinese Communist Party has maintained total control of the state-owned banking system and set monetary policies that have thwarted and suppressed personal consumption by the Chinese people.

In terms of China's internal domestic political pressures, the Chinese Communist Party fully recognizes that its continued survival is dependent on the continuing success of its economic model. Economic development remains the foundation of the Chinese Communist Party's popular legitimacy, and at the same time it underwrites its military power. Demographic pressures will continue to increase in China's future and will create a structural constraint on China's ability to sustain high economic growth rates. Finally, China's environment has suffered as a result of the economic model, and China's leaders are concerned that these problems could undermine

regime legitimacy by the poor public health programs created by the singular direction of their economic growth model.¹¹

Given China's enormous population, the number of citizens living below poverty, the absence of retirement programs, and the rapid aging of its population along with the high level of corruption of public officials, China has a great deal of work ahead of itself not only to refine its economic model but also to address the massive environmental problems of air pollution, water pollution, and water shortages.

8.2.3 Iran: The Arab Revolution Surprise

Iran's major surprise has been the Arab Revolution that deeply impacted Syria, which is the only Arab nation that supports and works closely with Iran. Should President Bashar al-Assad of Syria be deposed or overthrown, this will create a massive problem for Iran since Iran has deployed its proxy armies of Hezbollah and Hamas with the assistance and full support of Syria.

Another facet of the Arab Revolution that is most troubling to the extreme authoritarian leadership of Iran is that Syrian citizens are protesting for more democratic participation. Iran also has to worry about its own Green Party demonstrations, especially due to the high unemployment rate in Iran. Also, the educational level of Iranians is quite high, and many are simply looking to leave Iran or consider participating in any further demonstrations.

Another factor emerging for Iran to consider is the interest that Turkey is exhibiting, specifically in relation to the tenuous position of President Bashar al-Assad in Syria. Turkey views the possibility of replacing Iran's influence in Syria since Turkey has a Sunni majority population, which other Arab nations will be more receptive to than the Iranian Shiites. Further, as Turkey enhances its military, it seeks to build a greater presence in the entire Middle East, especially since most Arab nations now view the United States as not being financially able to continue its presence in the Middle East. Also, due to the deadline established by the status of forces agreement between Iraq and the United States, which calls for the removal of U.S. military forces from Iraq, this provides a real challenge for Iran because it wants to become the dominant military force in the Middle East and hopes to enhance its current role and presence in Iraq and the entire Middle East. Turkey will present a clear challenge to the Iranian aspiration, especially since Iran's longer term goal is to overwhelm Turkey and have access to the Mediterranean.

Clearly, the Arab nations are not comfortable with the historical past of Turkey and the Ottoman Empire; however, this pales into insignificance with the concerns Arab nations have regarding Iran's motives and capabilities. Further, the historical animosity between the Turkish Sunnis and the Iranian Shiites is deeply felt even to this day by Turkey citizens and their

government. Therefore, one of Iran's major dilemmas will be in how it will respond to the aspiration and possible challenge of Turkey and the animosity of the Arab nations in the Middle East.

8.3 The Zero-Sum China–America Relationship

Two very important books were recently approved by the Chinese Ministry of Propaganda, which has total censorship control of books published in China. Each of these books sends a message to the Chinese people and has the approval of the Chinese government or they would not have been published. The book *China Is Unhappy* by Song Xiaojun begins with the premise that the United States and the West are a dangerous and fundamentally adversarial force to China. Song further maintains that because China currently has a position of strength due to its economic growth, America's export controls are now irrelevant because China already possesses the technology it needs to become an industrialized power.¹² Further support for this position centers on China's success in acquiring dual-use technologies from America, and this has not only provided the support for the buildup of China's industrial base, but it has also been key to the Chinese use in their military buildup.

The second book by all accounts is far more dogmatic and adversarial to America, and yet it received approval to be published by the Chinese Communist Party. The *2010 China Dream* was published by PLA Senior Colonel Liu Mingfu, and in his book he defines a national goal of China becoming number one in the world, and he makes it absolutely clear that this will require displacing the United States. Further, Liu Mingfu totally rejects the concept of a "peaceful rise" and states that China's rise can only occur if China amasses a military force sufficient to deter, or if necessary, defeat its adversaries. China must be prepared, both militarily and psychologically, to struggle and prevail in a contest for strategic preeminence. In Liu Mingfu's view, conflict is inherent in the United States and China's relationship. Moreover, the relationship is essentially zero-sum in which one country will win and the other country will experience a humiliating loss.¹³

Zero-sum logic, in which one country's gain is another country's loss, has led to increasing tensions between China and America, and this could be a very dangerous course of development. As the world emerges with a zero-sum perspective, this implies that large global threats will not get solved, and they will continue to become more dangerous, increasing the possibility of regional conflict and preventing meaningful agreements on such matters as nuclear proliferation, global warming, and energy resources.¹⁴

Relations between China and America need not and should not become a zero-sum game, as Henry Kissinger has stated. Consensus may prove difficult, but confrontation on the many issues between China and America do not have to become self-defeating.¹⁵

8.3.1 Strategic Trust versus Strategic Threat

In his typical diplomatic fashion, Henry Kissinger has raised the question, “Can strategic trust replace a system of strategic threats?” This is central to the new emerging superpower relationship between America and China. Of course, each nation is aware of its military capabilities and the potential array of strategic threats each possesses. The key to how these threats are managed will be dependent on the best diplomacy each nation can marshal to the forefront so as to develop and implement a plan for the peaceful coexistence of one another.

In framing the question as to whether strategic trust can replace a system of strategic threats, Kissinger raises a second question, “Will history repeat itself?” and he draws on how the pre-World War I European structure could emerge in Asia today between China and America similar to how the United Kingdom and Germany rivalry operated just prior to World War I.¹⁶

In 1907, a senior official in the British Foreign Office, Eyre Crowe, wrote a brilliant analysis of the European political structure and Germany’s rise. The key question he raised, and which has acute relevance today, is whether the crisis that led to World War I was caused by Germany’s rise, evoking a kind of organic resistance to the emergence of a new and powerful force, or whether it was caused by specific and, hence, avoidable German policies. Was the crisis caused by German capabilities or German conduct?¹⁷

What was Germany’s real goal? Was it a natural evolution of their growth and economic interests throughout Europe and the world to which German diplomacy was articulating to all of the interested nations? Or did Germany seek a general political hegemony and maritime ascendancy, threatening the independence of its neighbors and England.

Crowe concluded that it made no difference what goal Germany avowed. Whichever course Germany was pursuing, “Germany would clearly be wise to build as powerful a navy as she can afford.” And once Germany achieved naval supremacy, Crowe assessed, this in itself—regardless of German intentions—would be an objective threat to Britain, and “incompatible with the existence of the British Empire.”¹⁸

The parallel between the 1907 pre-World War I situation, which by 1914 erupted into World War I, is very similar to the current situation of China's evolution as a major power and the concerns of America losing its formidable power. The focus of both China and America is to engage their diplomats, reject the logic of a zero-sum relationship, and replace strategic threats with a strategic trust commitment.

8.3.2 Military Encounters between China and America

To highlight the importance of establishing strategic trust between China and America, we will briefly review the most notable military encounters between these two nations beginning in 1996 and continuing to 2010. These encounters if they were not carefully managed could well have led to deeper conflict.

In March 1996, the United States sent two aircraft carrier battle groups into the Taiwan Strait in response to China's announced round of military exercises planned close to Taiwan, and prior to the presidential election in Taiwan. This incident was preceded by China's military exercises just prior to the December 2, 1995 Taiwan parliamentary elections. The presence of two U.S. aircraft carrier groups in the Taiwan Strait embarrassed Chinese leaders, and China began two programs to prevent this from happening again, the first being their development of two aircraft carrier groups and the second, the refinement of the PLA Navy's anti-access strategy.

Another encounter occurred during the Kosovo War when an American B-2 bomber was given a bombing map that did not state the correct location of targeting sites, and in May 1999, the bombing destroyed the Chinese Embassy in Belgrade. The American officials apologized, but the Chinese leadership termed this incident a deliberate provocation.¹⁹

The next major incident occurred on April 1, 2001 when an American EP-3 electronics aircraft was on a routine mission over the South China Sea and in international airspace conducting a reconnaissance mission 70 miles from the China shoreline. Since this was international airspace, the United States plane was authorized to be there, as were the Chinese entitled to dispatch aircraft to monitor activities of this type. The EP-3 plane was intercepted by two Chinese F-8 jets, one of which flew into the EP-3 propeller and caused the Chinese F-8 jet to crash and the American EP-3 made an emergency landing on Hainan Island after entering Chinese airspace. The 24-member crew of the EP-3 was held until U.S., Admiral Joseph Prueher, Ambassador to China, "expressed regret over China's missing pilot and aircraft, and for our EP-3 entering China's airspace without verbal clearance." Prior to this incident, there were 44 Chinese Air Force interceptions of American reconnaissance flights and 10 of these incidents came within 30 feet of each aircraft, far too close at those speeds and maneuverability to be considered safe.²⁰

Military engagements of these types can deteriorate very quickly, and unless good and intelligent command officers are present, there becomes a potential for these engagements becoming viewed as serious threats, which could quickly culminate into a combat situation. The importance of diplomatic relations is fundamental to the resolution of potential conflict in situations which hopefully will restore a sense of trust and civility.

8.3.3 Electronic Warfare: Threats and Danger

Currently several nations have developed the capability of engaging in electronic warfare, but none have advanced to the sophisticated level of the U.S. military's precision use of electronic weapons systems. China is developing an integrated network electronic warfare system that they envision as a strategy of electromagnetic dominance in the early phases of a campaign as one of the foremost tasks to ensure battlefield success. Their electronic warfare system uses computer network operations and kinetic strikes to disrupt battlefield information systems that support their adversary's war-fighting and power-protection capabilities.²¹

As nations throughout the world are becoming more dependent on computer networks, the Internet, and the management of information systems, we realize that we have now entered an era of cyberwarfare. The ability of a nation/state, a terrorist group, or an association of hackers intent upon penetrating another nation's computer systems at a level of military, commercial, or a national research laboratory-based institution to extract data, modify data, or steal data is now becoming so intolerable and so difficult to defend against that there are new approaches being considered by several nations. The United States issued its *International Strategy for Cyberspace*, effective May 31, 2011, with a forthcoming classified document issued by the Pentagon, which will treat a grave attack on U.S. networks as an act of war. If the cyber attack against U.S. interests is serious enough that it causes destruction and death, this may result in the use of military force against the source of the attack. Also, very importantly, the Pentagon has determined that computer sabotage coming from another country could constitute an act of war and may result in the U.S. response of using military force.

The United States recognizes that the rules that guide traditional definitions of war and the use of force do not include the category of cyberwarfare. Therefore, we can anticipate the need for international consultation on this subject and discussion with many nations. This will be an important step because the more consensus among the nations of the world, the greater the possibility for dissuading nation/states to engage in cyberwarfare and cyber espionage.

In the interim, the United States has announced to the world community through its paper entitled, *International Strategy for Cyberspace: Prosperity, Security and Openness in a Networked World*, the following statement:

When warranted, the United States will respond to hostile acts in cyberspace as we would to any other threat to our country. All states possess an inherent right to self-defense, and we recognize that certain hostile acts conducted through cyberspace could compel actions under the commitments we have with our military treaty partners. We reserve the right to use all necessary means—diplomatic, informational, military, and economic—as appropriate and consistent with applicable international law, in order to defend our Nation, our allies, our partners, and our interests. In so doing, we will exhaust all options before military force whenever we can; will carefully weigh the costs and risks of action against the costs of inaction; and will act in a way that reflects our values and strengthens our legitimacy, seeking broad international support whenever possible.²²

The United States and China have accused each other of instituting cyber attacks against one another and the threat level that is created by this type of activity can only increase the danger level to a point that diplomatic intervention will become progressively more tenuous and difficult. We have to begin to develop strategies of trust and not remain vulnerable to strategies of threats.

8.3.4 Where Will Conflict Lead?

The United States and China are each too large to be dominated by the other, and since neither is capable of defining terms for a victory in a war or even in a cold war type of conflict, they then should ask themselves the question Henry Kissinger poses: “Where will conflict take us?”²³ At times it seems as though China and America are on a collision course, and an aspect of this tension is attributed to China’s fear that America is seeking to contain China and prevent its full emergence as a new world power. On the other hand, America is concerned that China is seeking to exclude America from Asia while undermining America’s activities to remain a superpower.²⁴ This is the dilemma that must be resolved so that both China and America discover ways to trust one another, especially for the benefit of their respective populations.

8.3.5 Focus on the Future

When analyzing the challenges that confront America, China, and Iran, perhaps we would be advised to encourage today’s leaders of each of these three nations to make special note of Henry Kissinger’s recollection for the success of the first China–America meeting. “When China and the United States first restored relations forty years ago, the most significant contribution of

the leaders of the time was their willingness to raise their sights beyond the immediate issues of the day This enabled the leaders of a generation ago to deal with their future, not the immediate pressures Every great achievement was a vision before it became a reality, and it materialized as a result of a commitment to the hopes of the future, not the resignation to the inevitable troubles and conflict of the present.”²⁵

8.4 Summary

The challenges that now confront America, China, and Iran are substantial, and the political leadership of each nation has the responsibility of providing the resources and guidance to their respective people at a time when it is far easier to prepare for conflict as opposed to cooperation. The two major events that were missed by virtually every nation in the world were the 2008 economic collapse, which almost created a worldwide depression, and the Arab Spring, which has resulted in a revolution throughout the entire Middle East and continues to this day. Missed opportunities of identifying strategic surprise can be devastating to a nation, but so can missed opportunities for seeking rapprochement, as would be the situation between America and Iran. An additional tragedy would be not sustaining the rapprochement between America and China, an event that occurred 40 years ago and would certainly qualify as a world-class strategic surprise.

Today, our world has been fundamentally changed as a result of the information revolution, which has made it so much easier for the creation of activities and events that can alter power relationships and jeopardize the security and economic stability of nations. There will continue to be new technologies and innovative discoveries that will serve nations throughout the world; most will be positive and welcomed by all, but some will have the capacity of increasing the threat level that nations must guard against.

As nations pick up the challenge to focus on the future and not become encumbered by the events of the day, we will require the political and diplomatic leadership to focus on rebuilding strategic trust between each other and to reject the zero-sum logic, which offers little except distrust and conflict.

Notes and References

1. Taleb, *Black Swan: Impact Highly Improbable*, 40.
2. *Ibid.*
3. *Ibid.*, xix, xxi, and xxvii.
4. *Ibid.*, 164.
5. Taleb and Blyth, “The Black Swan of Cairo,” 149.
6. *Ibid.*, 150.
7. *Ibid.*

8. Ferguson, "Complexity and Collapse," 19, 22, 28–30.
9. Nye, Jr., *Future of Power*, 197, 198.
10. Ferguson, "Complexity and Collapse," 31, 32.
11. Office of the Secretary of Defense, *Military and Security Developments*, 15, 16.
12. Kissinger, *On China*, 505, 506.
13. *Ibid.*, 507, 521.
14. Rachman, *Zero-Sum Future*, 176, 177.
15. Kissinger, *On China*, 523.
16. *Ibid.*, 518.
17. *Ibid.*
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19. *Ibid.*, 476, 477.
20. Rumsfeld, *Known and Unknown: Memoir*, 312, 313.
21. Office of the Secretary of Defense, *Military and Security Developments*, 25.
22. Office of the White House, *International Strategy for Cyberspace*, 14.
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Power, National Security, and Transformational Global Events

Challenges Confronting America, China, and Iran

As the United States struggled to survive the recent recession, China quietly acquired a vast amount of U.S. Treasury bills and bonds. With China now holding so much of America's debt, currency valuation issues have already caused tensions between the two superpowers. Couple this with Iran's efforts to develop into a nuclear power in an area that lacks political stability, and the United States and China could soon find themselves in a global power tug-of-war.

Power, National Security, and Transformational Global Events: Challenges Confronting America, China, and Iran explores the shifts in power that have initiated major transformational events around the world. Expert contributors identify the major challenges that now confront America as a result of these transformations. Filled with authoritative insights into how current and emerging situations will impact the United States, the book illustrates the policy problems and limited choices facing America. It also:

- Describes the information technology and social media tools that were instrumental in the Arab revolution
- Provides the insights of experts from the Intelligence Community on emerging issues that will soon impact America
- Illustrates the policy problems involved in addressing the challenges with Iran
- Explores the rapid growth of China's economic wealth and military power

This much-needed reference describes and analyzes the emergence of cyber power and its capabilities for cyber attack, cyber warfare, and cyber defense. It examines the information revolution and social media instruments, such as Facebook, Twitter, and YouTube, in terms of their role and impact on the Arab revolution. It also discusses the fallacy of the decline of the United States as a superpower in terms of its formation and distribution of power resources and its continued formidable military and national security strengths.

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