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DEALING WITH A NUCLEAR IRAN:

APPLYING HISTORICAL LESSONS

IN DETERRENCE

by

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Biography

Colonel Mark Doria is a U.S. Air Force fighter pilot assigned to the Air War College, Air University, Maxwell AFB, AL. He graduated from the University of Memphis in 1990 with a Bachelor of Arts degree in Geography, Embry Riddle Aeronautical University in 1996 with a Masters of Aeronautical Science, and the U.S. Army Command and General Staff College in 2005. He earned his pilot wings in 1992 and has over 3,300 flying hours in the F-16, T-38, and T-37. Colonel Doria has served as an airpower strategist at Headquarters, U.S. Air Forces Central Command and is a graduated squadron commander.

Abstract

Can the world live with a nuclear armed Iran? The root of the question is whether or not Iran can be deterred. This paper examines the elements required to successfully apply deterrence theory, analyzes those elements in historical context and then applies them to a future deterrent strategy against Iran. The author explains why Iran's current leaders *can* be deterred from overtly using nuclear weapons; but, there is *little chance* of deterring them from proliferating nuclear material or technology. Although rhetoric from leaders in Iran has frequently called for the destruction of Israel, in fact Iran has behaved as a rational nation. A strategy for deterring Iran from overtly using a nuclear weapon would be fairly straightforward. The combined elements of denial, second strike capability and a clearly communicated promise of assured annihilation would be adequate.

However, the US and the rest of the world have not been very successful at nuclear counter-proliferation. Recent examples include the transfer of nuclear material and technology by North Korea and Pakistan to nations the US has labeled state sponsors of terrorism. These and other examples have largely gone unpunished resulting in a lack of credibility in the world's efforts at deterring nuclear proliferation. The lack of a credible deterrent for proliferation, an ever growing list of nations acquiring nuclear material and the potential for an untraceable delivery of a nuclear or radiological weapon combine to present a dangerous situation. A state could devise a scenario in which the benefits of a nuclear strike against the west might be gained with little chance for catastrophic retaliation. This paper concludes with recommendations on how to eliminate anonymity and prevent any nation from considering the possibility of such a scenario.

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Introduction

The world must decide whether or not it can live with a nuclear armed Iran. In November of 2011, the International Atomic Energy Agency reported that Iran has been working towards a nuclear weapon at least since 2003.[1] Estimates on how close they are to completing a weapon are wide-ranging. Although diplomatic processes to prevent their success are ongoing and it appears clandestine methods are being used to slow their progress, a nuclear armed Iran could be a reality in the near future. If so, is it possible to prevent Iran from carrying out President Mahmoud Ahmadinejad's apocalyptic vision? The root of the question is whether or not Iran can be deterred. If not, then perhaps no measure to prevent their nuclear ambitions should be considered too drastic or risky. This paper explains why Iran's current leaders *can* be deterred from overtly using nuclear weapons; but, there is *little chance* of deterring them from proliferating nuclear material or technology.

For this paper, deterrence is defined as:

> the manipulation of an adversary's estimation of the cost/benefit calculation of taking a given action. By reducing prospective benefits or increasing prospective costs (or both), one can convince the adversary to avoid taking the action.[2]

It is influencing another party's behavior, most often by threat of punishment. It may sound simple but, the study of deterrence is actually littered with lengthy academic treatises dissecting every aspect of the theory to the extreme. For the purpose of this argument I will address the basic elements.

The primary mechanism of deterrence is to make the price for undesirable behavior so costly that the adversary must choose to comply.[3] Four main elements are required for the successful execution of a deterrence strategy:

1. A credible threat

2. Communicated and understood

3. A rational adversary

4. A cost/benefit analysis by the adversary that favors compliance with the defender's demand

A credible threat is one that is within the capabilities and will of the defender. He must possess the tools and the power to follow through. If the threat is a military strike, the defender needs the required weapons and ability to conduct the strike without the adversary effectively defending against it. It also has to be realistic that the defender would actually put the punishment into action. Threatening a cataclysmic retaliation for a minor infraction would enrage the rest of the world. It is not realistic and therefore not credible.[4]

The threat must be clearly communicated by the defender. There cannot be room for misinterpretation by the adversary. He must know which specific actions on his part will result in what specific punishment and the certainty of retaliation cannot be ambiguous. If the enemy is to be deterred, he must know the retaliation will definitely occur, rather than might occur, if the trigger act is committed. "To say that one *may* act is to say that one *may not*, and to say this is to confess that one has kept the power of decision—that one is not committed."[5] This would allow an opponent to consider the possibility of devising a strategy or scenario where punishment can be avoided. The adversary must understand that his actions will determine the defender's behavior.

Assuming an adversary is rational is more complex than one might first imagine. It is useful to assume that he is a cool, level-headed and well informed actor who will carefully weigh all courses of action before making the most procedurally correct decision in line with an accurate cost-benefit calculation. This is a good fixed point from which to begin since it allows strategy development to be clearer and more straightforward. However, few individuals meet

such a strict definition, especially while in a crisis. Therefore the defender must take into account his adversary's beliefs, perceptions, motivations, culture and other psychological factors that may influence the cognitive process.[6] Robert Jervis described some of the possibilities for misunderstanding the mind of an adversary:

> Once one looks in detail at cases of international conflict, it becomes apparent that the participants almost never have a good understanding of each other's perspectives, goals or specific actions. Signals that seem clear to the sender are missed or misinterpreted by the receiver; actions meant to convey one impression often leave quite a different one; attempts to deter often enrage, and attempts to show calm strength may appear as weakness.[7]

It is important to note that decision makers are neither completely rational nor completely irrational, rather they are somewhere along a sliding scale.[8] We will assume that a rational actor is one who has the ability to make an informed decision based on a reasonable cost-benefit analysis and is motivated to maximize his benefit at the minimum cost. This is an adversary we can study, evaluate, understand and devise a deterrent strategy against.

A deterrent strategy might focus on either the cost or the benefit side of the adversary's equation. These are referred to as deterrence by punishment or denial. Deterrence by punishment, obviously, is a threat of offensive retaliation. Deterrence by denial is defense oriented and it entails making the aggressor believe that his attack cannot succeed, therefore denying any benefit in attacking.[9] For example, one might install a ballistic missile defense system capable of defeating the adversary's weapons delivery platform.

Another important concept of nuclear deterrence is second strike capability. The goal is to prevent an attacker from striking first by making some portion of the defender's nuclear arsenal capable of surviving an initial attack. The attacker, knowing that even a full-scale first strike on his part will leave the defender with usable nuclear weapons for retaliation, must chose not to strike first. A defender could make his nuclear weapons difficult to target by mobility or

deeply burying them. Resiliency is the quality of a nuclear force capable of absorbing an adversary's first strike and maintaining offensive capability. The US currently uses a triad of widely dispersed delivery systems (ICBM, submarine, and bomber) to give its force resiliency.

Historical Cases of Deterrence

Nuclear deterrence has never failed. At least, threat of nuclear retaliation as retribution for a first strike with a nuclear weapon has never failed. Since the end of World War II, at least ten countries have joined the nuclear club.[10] Those nations collectively have fought several wars[11] and been involved in numerous confrontations while armed with nuclear weapons, yet did not use them. To be fair, while some nuclear armed states have lost wars, none has been in imminent danger of catastrophic defeat. Also, it is difficult to credit the absence of a nuclear strike for the last 66 years entirely to successful deterrence strategies. While hardly proof of the theory's dependability, it is true that nuclear deterrence has always been successful.

Lack of a nuclear exchange does not mean national leaders have always been successful at predicting their adversary's actions. Remember that a key component of a deterrence strategy is a rational opponent we can know well enough to affect his cost-benefit calculation. Thus, even when the opponent is rational, successfully assessing and influencing his behavior is required. Noted political and behavioral scientists Alexander George and Richard Smoke point out that during the Cold War, there were instances when the nuclear armed superpowers were at odds with one another and the threat of conflict was real. In each of these circumstances it was apparent:

> the chronic difficulty American policy-makers experienced in trying to estimate how the opponent calculated the risks of his options. In all three Berlin cases, the Korean War, and the Cuban missile crisis, American policy-makers were surprised by the action the opponent took. In each case American officials had thought the opponent would not act as he did because such action would entail high risks.[12]

Since no nuclear war occurred in these illustrations, the nuclear deterrence strategy employed by both the US and USSR worked as advertised. At the height of tensions, one or both sides decided to forego the continuing escalation because the risks were too high. In fact, it could be argued that in each case the crisis occurred due to an inadequate deterrent mechanism being in place against that precise action. However, it is important to note multiple miscalculations caused by a lack of understanding of the other side's perspective.

The British partitioned India in 1947, creating Pakistan in the process. The two states where divided mainly along religious lines, the predominantly Muslim areas in the east and west became Pakistan while India retained the mostly Hindu central part. The Muslim majority Kashmir, however, went to India creating a major source of hostility. In the first 24 years after this division, India and Pakistan fought three separate wars, each conflict exacting more casualties than the previous.

In 1974 India detonated a nuclear device.[13] Since then, they have only engaged in open hostilities with Pakistan once. In 1999 fighting broke out in the Kargil region of Kashmir. By this time Pakistan had tested their own nuclear weapons, making this their first conflict after both had proven nuclear weapons capabilities. As it turned out, the risk of escalation was too high for both. The scale of military operations was limited by both sides and the dispute turned into a minor skirmish relative to the three previous wars. Both countries recognized the possibility of another conflict in the future spiraling out of control. In an effort to mitigate that risk, for the first time both countries have been engaged in negotiations on the Kashmir issue.[14]

Why Iran Wants "The Bomb"

Hopefully Iran can be convinced to stop short of building a nuclear weapon, but they actually have practical, rational motives to continue. Quite simply, nuclear weapons will deter

the United States and elevate Iranian prestige and power. In his State of the Union address to Congress on January 29, 2002, President George W. Bush branded North Korea, Iran, and Iraq an "axis of evil."[15] In doing so he clearly put them at the top of the list of US adversaries, similar to the way Ronald Reagan described the Soviet Union as an "evil empire."[16] Just thirteen months later, the US invaded Iraq with the objective of regime change as part of a preemption strategy implemented following the September 11, 2001 al-Qaida attacks. At the time of the Iraq invasion, in addition to the axis of evil list, all three were designated as state sponsors of terrorism by the US State Department.[17] Although North Korea had already demonstrated a nuclear weapons capability and therefore might have been considered the greater threat, Iraq was attacked first.

The message received by the rest of the world may not have been one that was intended. Those states watching saw the United States deterred by a nuclear armed North Korea. By the Spring of 2003 Iran was surrounded by the US military, one of two remaining members of the axis of evil and described by the US State Department as the "most active state sponsor of terrorism" since at least 1996.[18] Clearly Tehran felt their national survival was threatened.

Possession of nuclear weapons would give Iran a strong negotiating position and increase their influence in regional issues. Neighbors would be more inclined to accede to Tehran. "Nuclear weapons states are more likely to prevail in either gaining concessions or convincing an opponent to back down in their crises than non-nuclear weapon states."[19]

Why Iran Won't Use "The Bomb"

Even without a deterrent strategy in play, there are several inhibitors to Iran employing a nuclear weapon against Israel. Even one weapon detonated in the capitol of Tel Aviv would carry significant costs. Over 1.2 million Muslims live within the small nation itself and millions

more live in the four countries that surround Israel.[20] A nuclear explosion in Israel would likely kill thousands of Muslims.

Many Islamic holy sites would be damaged or contaminated with radiation, including two of the most significant. Located in Jerusalem, just 25 miles from Tel Aviv, they are the Dome of the Rock and the Al Aqsa Mosque, third in importance to Muslims behind Mecca and Medina.

More importantly, Iranian leaders know that the world-wide backlash against them for using a nuclear weapon would be unprecedented. They would cast themselves among the most evil regimes to ever exist in the eyes of most of the world. The Sunni Muslim nations (Saudi Arabia, Egypt, and Turkey for example) who already watch Iran with suspicion would feel a heightened vulnerability to the Shi'a Muslim Islamic Republic. They could decide they need their own nuclear weapons to deter any future Iranian aggression on the Arabian Peninsula. In December 2011, Prince Turki al-Faisal, former chief of the Saudi Arabian intelligence serve and ambassador to the US, stated publicly that they may have to consider this if Iran develops a nuclear weapon, let alone actually use one.[21]

Paul Pillar, a 28-year CIA veteran and a national intelligence officer for the Middle East 2000-2005 wrote, there is nothing "in the record of behaviour by the Islamic Republic that suggests irrationality."[22] The anti-Semitic rhetoric coming out of Tehran is loathsome, to be sure. But, Ahmadinejad's calls to wipe Israel of the map do not indicate a willingness to commit national suicide. On the contrary, Iranian leaders have routinely acted to minimize risks while working towards their goals. They use the Lebanese Hizballah as surrogates in order to preserve deniability. After 8 years of war with Iraq, the Iranian decision makers accepted an end to the war without the avowed victory. This was a rational decision considering the high costs of continuing and remote chance of success but, not the action of Ayatollah Khomeini's nation of

martyrs. They also acted with caution during the 1991 Shi'a uprising against a weakened Iraq after DESERT STORM.[23]

Shortly before his death, Khomeini provided guidance to the President of Iran and the Council of Guardians on decision making. He authorized the destruction of a mosque or suspending the five pillars of faith if it was in the best interest of Iran. In doing so he was instructing them that there could be times when the interests of the state had to come before the interests of Islam.[24]

Deterring Iran from overt use of nuclear weapons against Israel is fairly straightforward. Israel alone presents a formidable deterrent. Israel is widely considered to have acquired nuclear weapons in the late 1960's. Although never acknowledged, the "overall consensus is that Israel possess an extensive arsenal of nuclear devices and an array of medium-range missiles to deliver them."[25] A small nation, any nuclear attack represents an existential threat. There can be no doubting Israeli resolve to answer any nuclear attack with a full-scale nuclear retaliation. Israel is well known to present a credible threat that has been communicated quite clearly.[26]

Israel's strategy also includes deterrence by denial and a second strike capability. Their Patriot batteries are capable of destroying inbound aircraft and missiles, significantly reducing Iran's chances of a successful direct attack.[27] Even if an attack were to be successful, Iran would be obliterated by retaliation from an Israeli nuclear armed submarine.[28] An assurance of extended deterrence from the US will guarantee the leadership in Tehran there would be no escaping catastrophic consequences for a nuclear attack on Israel.

Why Iran is likely to proliferate

Deterring Iran from transferring nuclear material or technology is an entirely different problem. The world's efforts at counter proliferation of nuclear weapons have been a

miserable failure and there is ample precedent in this regard. There have been a few successes. South Africa, Belarus, Kazakhstan, and Ukraine had them and gave them up voluntarily. Several nations with the capability to develop nuclear weapons have agreed not to do so. Most recently, Libya abandoned a fledgling program. However, cases of truly disturbing proliferation have gone largely unpunished. Rogue states, unstable nations, and state sponsors of terrorism have developed or are in the process of developing nuclear weapons and it appears the world community is unwilling to stop it. Thus, further proliferation is the gravest danger of a nuclear armed Iran.

Not since the Americans, British and French built the first atomic weapons during the Manhattan Project has a nation started from scratch to build them on their own without help from another country. Americans Julius and Ethel Rosenberg, among others, transferred US atomic secrets to the Russians. The Soviet Union aided the Chinese program. France assisted the Israelis who, in turn, helped South Africa.[29] India received materials from eight different countries including, unwittingly, the US and Canada.[30]

India's nuclear program directly resulted in Pakistan beginning their journey towards nuclear weapons. Beginning in 1975, the Ford administration had indications Pakistan was beginning a nuclear weapons program. Over the next several years, the US applied a full spectrum of diplomatic, informational, and economic measures to stop their progress to no avail. There were warnings in advance of sanctions and sanctions following violation of the warnings. Pakistani metallurgist A.Q. Kahn joined the program and brought technical expertise for enriching uranium and a list of sources from his work in the Netherlands. He established an elaborate supply network to purchase the necessary materials from countries around the world. Pakistan's first nuclear detonation was in 1998, although they likely had operational weapons as

early as 1988.[31] Largely ineffective measures including sanctions and a US arms embargo remained in place until 2001 when the US needed Pakistan's assistance for Operation ENDURING FREEDOM.

In 2003 the US intercepted a shipment parts for a Libyan nuclear weapons program. The source was Pakistani nuclear scientist A.Q. Kahn. He had also sold nuclear weapons information and components to North Korea and Iran. Although General Pervez Musharraf, the military dictator of Pakistan at the time, denied any knowledge of his actions, there is widespread speculation that Kahn must have had support or least a blind eye from the Pakistani Army. A few days after he was arrested, Kahn made a televised confession and apology, absolving the army of any involvement. Musharraf called him a hero for his work on the Pakistani nuclear program, pardoned him and confined him to house arrest in his large estate.[32] Since this discovery, the government of Pakistan has continued to receive billions of dollars in US aid for their part in the war in Afghanistan while denying US access to Kahn for questioning.[33]

North Korea detonated two nuclear devices then promptly helped Syria, Iran[34] and Burma begin nuclear programs.[35] In an effort to stem the continuing spread, President Obama recently made the strongest warning yet by the US to any nation against proliferation of nuclear technology. In a speech to the Australian Parliament he declared that North Korean transfer of nuclear materials to other nations would be "considered a grave threat to the United States and our allies" and warned that the US would "hold North Korea fully accountable for the consequences of such action."[36] This message obviously is meant to deter any further North Korean proliferation. If so, alone it is inadequate. It is not clear what specific actions will result in what specific punishment. Does nuclear material include dual-use designs or equipment? Or, does it only mean nuclear fuel? Will the punishment be military in nature or simply more

sanctions? If the punishment will be military, does that mean limited conventional strikes, an invasion for regime change, or a nuclear attack? It is likely the message is deliberately ambiguous. The important question is what message was understood in Pyongyang?

The problem with ambiguity is that the receiver may not receive the intended message. The North Korean leadership has a history of operating at the edge of inciting a major conflict. As Secretary of Defense Leon Panetta said recently, they continue to "engage in reckless and provocative behavior."[37] Time and again they have committed hostile acts that would incite most nations to retaliate in self-defense. Yet, time and again there has been denouncement for their actions, but no serious punishment. They have become accustomed to holding the US and South Korea at bay with a massive standing army at the DMZ and now they possess the ultimate deterrent, nuclear weapons. That is the lens through which the leaders in Pyongyang view the current dispute, regardless how those in Washington see it.

Thus, the US and the rest of the world have no credibility in the area of nuclear proliferation deterrence. For decades world leaders, including US presidents, have extolled the great threat caused by nuclear proliferation while taking insufficient measures to prevent it. Political rhetoric including proclamations about never tolerating a nuclear armed Iran or holding proliferators accountable will continue to fall on deaf ears. The implied threats ring hollow.

The US needs to construct a comprehensive deterrence strategy to prevent Iran from proliferating nuclear weapons, material and technology. The two most likely scenarios are helping Syria establish a nuclear program and clandestine transfer of a weapon or material to a terrorist organization.

How would Iran benefit from these courses of action? If Syria became a nuclear state, the two nations would provide mutual support for one another, similar to the way the US and UK

have done for so long. With a mutual defense agreement in place, they would provide resiliency for one another's nuclear deterrent. Syria would also be an additional suspect in the event of a terrorist nuclear attack.

Iran's gains for a terrorist use of a nuclear device against Israel or any city in the US would be a major boost in regional power. Obviously, Iranian involvement would have to be suspected but not proven. This is not to say the Arab states would ally themselves with Tehran, the rift between Shi'a and Sunni would remain too great for that. However, it would cement the Islamic Republic as the vanguard of the Muslim world in their struggle against the Zionists and the Great Satan. As the world's third highest exporter of oil, Iran would also see an economic windfall as the crisis would send prices skyrocketing to unimaginable new highs.[38]

The one area of mutual agreement in the Middle East is disdain for the US and Israel. In a 2011 survey, the Brookings Institution found that 59% of Arabs express negative views of the US. That is a huge improvement from the 85% negative opinions the previous two years, which is attributed to US handling of the Arab Spring. 42% say stopping aid to Israel is the action that will most improve their opinion of the US. When asked to name the two biggest threats, 71% named Israel, 59% the US, and just 18% Iran. On the nuclear issue, 64% of Arabs believe Iran has a right to continue their program even though the majority believes they intend to build a nuclear weapon. As to which world leader Arabs most admire, third on the list was Mahmoud Ahmadinejad with 13% of the vote, fifth was Saddam Hussein with 6%, while Barrack Obama came in ninth with 3%. All respondents were from overwhelming Sunni majority countries.[39]

Identifying Israel as the top threat is obviously still a mainstream regional opinion while an overwhelming majority of the Arab population feel more closely aligned with Iran than with the US. How would this manifest itself in the event of a nuclear attack against Israel? Sadly, it

is not too difficult to imagine celebrations throughout the region on a much larger scale than those seen in limited numbers after the September 11, 2001 attacks on the US.

Anonymity must be denied. The best way to avoid punishment for violation of a stated retaliation threat is being able to cast doubt on culpability. If a nuclear device were to detonate in a western city, Iran need not prove their innocence. The onus would be upon those who wish to retaliate to determine the origin of the weapon. The burden of proof would be extremely high before a nuclear retaliation could be launched, especially from the US. A weapon that arrives in an untraceable shipping container, rather than atop a missile with an undeniable point of origin, is the beginning of that uncertainty.

How difficult would it be to cast doubt as to the source of the nuclear device? What if the attackers are terrorists having no clear association with a nuclear armed nation? What if it is never determined who actually delivered and detonated the device? There are plenty of reports about the insecurity of weapons in Pakistan and the former Soviet Union. There has also been concern that North Korea would sell one. A radiological device as opposed to a nuclear detonation would be less catastrophic, yet produce much the same psychological results and make identifying the culprit infinitely more difficult due to a more widespread availability of nuclear material. The problem is a complete lack of deterrence if Iran thinks they can transfer nuclear weapons or material without the results of that transfer being attributed to them.

The US has realized this weakness and is addressing it. In February, 2010 President Obama signed the Nuclear Forensics and Attribution Act into law. The purpose is to encourage the scientific community to develop the technology to determine where nuclear material came from by identifying combinations of isotopes. It establishes a nuclear forensics center in the Department of Homeland Security and scholarships for undergraduate and graduate students who

study it. As the greatest threat to national security, efforts should be accelerated in this endeavor. Iran, among others, must know that all of their radiological material can be positively identified even after a nuclear explosion and eliminate anonymity as a course of action.[40]

Deterring Iran against proliferating nuclear material is much more complicated than deterring them from overtly using a weapon. Reflecting back on the necessary elements, the first element is credibility and as we've already seen, the US has no credibility for deterring proliferation. Nonetheless, a threat will have to be communicated to the Iranian leadership. It needs to be more specific than the vague warning to North Korea. The threatened punishment must exact a heavy toll, one that Iran is not willing to accept. Just as important, the US must be committed to carrying out the threatened punishment. It is fortunate the world has gone this long without another nuclear attack of some kind. All the mechanisms need to be in place for future deterrence strategies to succeed. One of them is credibility. In the event of a nuclear attack the culprit must be identified and there must be overwhelming retaliation.

Finally, if the world is going to live with a nuclear armed Iran, a deterrence strategy must review the sanctions on the regime. Those applied during the failed efforts to prevent their obtaining a weapon create a dilemma. Removing them after Iranian success could embolden Tehran to take their newfound power out for a test drive and encourage other nations to start shopping for their own nuclear program. Keeping them in place or applying more punishment risks putting them in the same strategic position as Japan in 1941, except with nuclear weapons.

Conclusion

In 2010, President Barack Obama warned, "the greatest threat to US and global security is no longer a nuclear exchange between nations, but nuclear terrorism by violent extremists and nuclear proliferation to an increasing number of states…For the first time, preventing nuclear

proliferation and nuclear terrorism is now at the top of America's nuclear agenda."[41] Preventing Iran from completing a nuclear weapon is the right thing to do and must be the goal. However, it is likely that world resolve will be insufficient and the cost-benefit analysis for a military strike will fall on the side of inaction.

It is possible that on any given day, without warning, Iran will detonate a nuclear device or Ahmadinejad will publicly declare that Iran is now a nuclear power. There must be a plan for that day. Iran can be deterred from overtly employing a nuclear weapon. In addition to natural inhibitors, they routinely behave as a rational actor intent on preserving the Islamic Republic. The father of their revolution, religious leader Ayatollah Khomeini, even provided guidance to put the interests of the state before those of Islam.

However, Iran is likely to proliferate unless serious steps are taken. A clear message must be delivered to the Iranian leadership from the American and Israeli leaders containing an unequivocal commitment to destroy Iran in the event an Iranian nuclear or radiological device is employed, regardless of who commits the attack. All hope of anonymity must be removed. Exchange access to Iranian nuclear weapons and samples of their nuclear material for gradual removal of economic sanctions. The ability to trace nuclear material to its source is imperative and must be an international priority. The US should lead the establishment of a library containing the identifying characteristics of nuclear material from every source in the world.

Lastly, all nations possessing nuclear weapons and material must know they will be held accountable. To this end, the US must be prepared to retaliate for a nuclear attack against itself or its allies. The best chance of deterring additional attacks will be to fulfill the overwhelming retribution that has been threatened and establish the credibility that is lacking in anti-proliferation efforts.

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