Strategy Research Project

DETERRING TERRORIST HIGH YIELD WMD ATTACK

BY

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USAWC STRATEGY RESEARCH PROJECT

DETERRING TERRORIST HIGH YIELD WMD ATTACK

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ABSTRACT

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As the United States confronts threats in a post Cold War era it increasingly finds itself in conflict with non-state actors. Many of the non-state enemies of the United States show an interest in acquiring nuclear or biological weapons in order to employ those weapons against the United States or its allies. Terrorist organizations wishing to acquire and use such weapons require intentional or accidental assistance from state actors. Currently the United States relies primarily on diplomatic and economic means to prevent terror acquisition and employment of such weapons. The current methodology does not appear to succeed in its desired ends. If the United States is to survive, it needs to entertain new deterrent alternatives. Announcing a new policy that includes a limited nuclear retaliation option directed against any state sponsor of a terrorist network that employs a high yield nuclear or biological weapon may have a significant deterrence and compellence effect on state sponsors of terrorism and their proliferation of nuclear and biological weapons.

DETERRING TERRORIST HIGH YIELD WMD ATTACK

> The Commission believes that unless the world community acts decisively and with great urgency, it is more likely than not that a weapon of mass destruction will be used in a terrorist attack somewhere in the world by the end of 2013.
>
> —Commission on the Prevention of WMD Proliferation and Terrorism

The world changed on August 6, 1945. With the explosion of the first atomic bomb over Hiroshima, the world witnessed a terrifying increase in the destructive power of weapons. A single device could now destroy an entire city, along with much of its population. The invention of the atomic bomb, and the development of even more gruesomely efficient nuclear weapons, introduced the world to a new reality of weapons of mass destruction (WMD).

Although traditional WMD definitions include chemical, radiological, and explosive weapons, this paper will only address what the author refers to as high yield WMD. The Commission on the Prevention of WMD Proliferation and Terrorism agrees that nuclear and biological weapons pose a greater risk than the other WMD categories.[1] For the purposes of this paper, a high yield WMD is defined as a weapon that possesses the potential to kill or contaminate hundreds of thousands of people, destroy or contaminate enough crops and/or livestock to cause hundreds of thousands of US citizens to starve, or has the ability to destroy or contaminate sufficient US infrastructure that results in the cessation of essential services over a large area. This paper focuses on the very real threat of terrorist acquisition and use of a nuclear or high yield biological WMD. It introduces the dangers we face and argues they threaten the United States' survival interest. It provides a broad overview of current strategy and will analyze the successes and failures of our strategy. Lastly, this paper will identify a

potential additional option to United States strategy and will analyze the strengths and weaknesses of this new approach toward deterring terrorist acquisition and use of WMD, specifically terrorist employment of a nuclear or high yield biological weapon.

The National Security Strategy identifies nuclear weapon proliferation as the greatest threat to United States security.[2] A single nuclear bomb could threaten hundreds of thousands to millions of citizens, as well as result in the destruction of most of the infrastructure of a large city. Since the dissolution of the Soviet Union, the world has witnessed rapid proliferation in the pursuit and development of nuclear weapons. This pursuit is aided by technology and rapid dissemination of information. Expansion of international markets and technological advances have lowered barriers for acquiring advanced capabilities.[3]

Many rogue and potentially hostile states already possess or are currently pursuing development of nuclear weapons.[4] This is in spite of the fact that most countries have ratified the Nuclear Nonproliferation Treaty (NPT), which acknowledges January 1, 1967 as the date determining legitimate nuclear weapon states. Although Iran and North Korea are signatories to the NPT, the international community recognizes that they are violating their NPT obligations.[5] Iran has a long history of denial and refusal to comply with International Atomic Energy Agency (IAEA) inspections and appears determined to acquire a nuclear weapon capability. India, Pakistan, and North Korea have detonated nuclear weapons. Even more worrisome, there is tremendous potential for increased violations from other NPT signatories. Over 40 countries already possess nuclear materials that could be weaponized.[6]

Preventing proliferation of nuclear weapons is made more difficult by the fact that peaceful research and development of nuclear technology is often easily transferrable to more nefarious purposes. The NPT allows governments to produce potential nuclear weapons materials by simply claiming their programs are for civilian purposes.[7] Civil nuclear programs create significant challenges for monitoring and securing materials. Largely due to these programs, in the past 20 years the amount of safeguarded materials usable in nuclear programs has grown six to ten fold.[8]

Although they have been present in crude form for centuries, advances in medical science have increased the effectiveness of biological weapons to a point that casualty producing effects approach or exceed those of a nuclear weapon. Our own strategic documents acknowledge that biological weapons can easily threaten hundreds of thousands of Americans.[9] The World Health Organization published casualty estimates over 40 years ago that predicted a highly developed biological weapon strike would result in tens of thousands to hundreds of thousands of casualties.[10] Technological advances and our understanding of pathogens have progressed much further since this study. Recent intelligence reports predict that an aerial release of one to two-kilograms of anthrax spores could produce more American casualties than World War II, and could cost nearly $2 trillion in clean up costs.[11]

Countering high yield biological weapon proliferation is perhaps even more challenging than countering nuclear proliferation. It is easier for states to acquire biological weapons than nuclear weapons. Due to the fungible nature of bio-technology, weapons programs are very hard to detect.[12] Even more than nuclear technology, medical advances often provides a dual use capability. Although many

nations are signatories to the Biological and Toxin Weapons Convention (BWC), some of these nations may be secretly developing biological weapons in defiance of the convention.[13] Still others never ratified this treaty, and there is no existing international verification process. The increase in high yield WMD proliferation in potentially hostile states and the danger they present to the United States' survival interest is clear. Indeed, the threats posed by states pursuing WMD have been well documented and addressed in the media and by our leaders for decades.

These threats are further exasperated by the rapid growth of ideologically driven non-state actors. National concerns that al-Qaeda or other extremist groups may acquire a nuclear or high yield biological device are increasing. These apprehensions are well founded. Terrorists are actively engaged in the pursuit of WMD in order to cause catastrophic effects against the US and its partners.[14] Many of our nation's leaders conclude that Osama Bin Laden perceives acquisition and utilization of nuclear and biological weapons as a "religious duty".[15]

Simply wishing for a capability does not guarantee that one obtains that capability. Any extremist group that desires nuclear or high yield biological weapons must pursue acquiring them. The avenues available to extremists wishing to obtain these means are limited. Terrorists may pursue high yield WMD acquisition through state sponsorship, theft, or purchase on the black market.[16] Extremist groups could also attempt to create their own weapon by recruiting skilled bio-scientists and developing their own research and manufacturing capability.[17]

Although advances in technology have lowered the bar for research and development, it is still extremely difficult for non-state actors to develop and

manufacture their own nuclear weapon capability. It would be nearly impossible for a non-state actor to create the infrastructure necessary to research and develop its own nuclear weapons program without early detection and interdiction by the United States or its allies. Independent development and manufacturing of nuclear weapons materials requires significant infrastructure. Using designs that are readily available, terror organizations could bypass much of this process if they acquired the requisite fissile materials. Such a transaction would entail great risk as obtaining weapons-grade uranium or plutonium remains extremely difficult.[18]

Even if an extremist organization were to obtain these essential materials, it would still need the expertise to create a deliverable bomb. Nuclear science experts have ventured into free lance work in the past. The recent exposure of the A.Q. Khan nuclear scientist ring is perhaps the most famous example. The United States and its allies discovered these scientists, primarily originating from the Pakistan nuclear weapons program, as they attempted to assist the Iranian, Libyan, and North Korean weapons programs.[19] Even so, state actors were the recipients of this expertise, because development of a nuclear weapon requires modern infrastructure.

This necessity for facilities, weapons-grade materials, and advanced scientific expertise, suggests the most likely avenue for a terrorist organization to acquire a nuclear weapon is through the intentional or unintentional assistance of a state. Purchase or theft are the most likely avenues for extremist organizations to successfully obtain a weapon. Terrorists certainly have attempted to buy nuclear weapon materials on the black market.[20] Most black market nuclear materials originally came from the dissolution of the Soviet Union.[21] Proliferation by state actors increases the threat of

terrorist acquisition of weapons technology by increasing the states that posses and can transfer it, and also increases risk of the theft and sale from states with established programs.[22]. Even so, theft or purchase through the black market requires a state with nuclear technology to inadvertently provide the materials. Non-state actors will be hard pressed to acquire a nuclear weapon without outside assistance. The Commission on the Prevention of WMD Proliferation and Terrorism concluded that terrorists can only acquire a nuclear weapon or the materials to construct a functioning device from a state actor.[23]

High yield biological weapons are also difficult to obtain without state assistance, intentional or otherwise. The Commission on the Prevention of WMD Proliferation and Terrorism agrees that a high yield biological weapon capable of inflicting large scale devastation "is an intricate undertaking, both technically and operationally complex."[24] We know al-Qaida desired biological weapons.[25] During the time frame they were known to be attempting to develop their own capability, al-Qaeda used state sponsorship in Afghanistan.[26]

Whereas there have been numerous examples of small scale biological attacks on the United States that have had limited success, the nation has not yet experienced a catastrophic biological attack. In the 1980s, a cult intentionally contaminated salad bars with *Salmonella typhimurium* causing illnesses, but no loss of life.[27] The anthrax scare of 2001 infected dozens of people and unfortunately resulted in a few deaths. Although relatively easy to execute, the perpetrators of these acts did not possess the technological expertise necessary to develop both a pathogen and a delivery system that could create suffering on the scale of a nuclear weapon. For the present, an

extremist organization desiring high yield biological weapons still likely requires state assistance, whether intentional or otherwise.

The current strategy and doctrine of the United States addresses many of these concerns. United States strategy acknowledges the threat of severe consequences should an enemy strike the nation with a WMD.[28] Our national strategic assessments view the worst case scenario as either the release of a highly contagious biological pathogen targeting either populations or food supplies, or the detonation of a nuclear weapon in a large population center. Both of these scenarios have great potential to cause unthinkable loss of human life and would result in grave damage to our economy and infrastructure. They strike at the survival interest of the United States.

The United States' strategic goal in combating nuclear weapon and high yield biological weapons proliferation is clear. It must ensure the United States, its allies, and its partners are not coerced or attacked with WMD.[29] Our current strategic doctrine focuses primarily on denying state actors from acquiring new capabilities, securing our own facilities and weapons and those of state actors abroad, and preparing to respond to and recover from a future WMD attack. Interdiction of illicit transactions and intelligence sharing also play critical roles in our ability to successfully prevent a terrorist nuclear or high yield biological attack. Clearly, the national policy makers understand the threat and are determined to defeat it.

United States strategy identifies denial of access to materials as the best method of preventing WMD acquisition by rogue states or terrorists.[30] The United States' preferred method for preventing proliferation is diplomacy.[31] We engage in a comprehensive approach to confront challenges and focus on international initiatives,

with the United States energizing and leading partners whenever possible. Cooperative efforts begin with traditional diplomatic ties. Our strategy identifies strong partnerships, especially with our transatlantic allies, as essential to the United States ability to curtail threats to its survival.[32] National efforts to counter terrorist acquisition of a high yield WMD also depend on broader approaches. We depend heavily on partnering with international communities and non-governmental entities to reinforce societal norms through laws, international conventions, and relations.[33] By working through the United Nations we try to shape the future security environment by attempting to enforce current non-proliferation treaties. When diplomacy fails, the United States relies heavily on international sanctions to coerce tyrants.[34]

Denial efforts also rely on timely and accurate information. After the attacks of September 11th, the United States reviewed its intelligence procedures and recommended changes to how our law enforcement and defense agencies share information. The national leadership also looked long and hard at improving international intelligence cooperation. The United States views the sharing of intelligence among all agencies and our allies as essential for success.[35]

The United States has also actively implemented measures to identify and secure fissile materials used for legitimate civilian needs. Our strategy fosters work with partner nations to improve security of nuclear sites.[36] In 2006, the United States established a Nuclear Materials Information Program to consolidate all U.S. intelligence on global nuclear materials.[37] Other attempts to secure fissile materials include the Global Threat Reduction Initiative.[38] The success of programs like these may determine

whether a rogue state or extremist group is able to acquire fissionable materials for future weaponization.

One novel proposal is the establishment of a fissionable materials bank. If enacted, this proposal would create a secure central world supply of fissile material for use within legitimate civilian programs. States participating would receive these materials for free in return for program transparency. Current nuclear powers would provide the primary financial and security support for the program. The National Security Strategy alludes to supporting this initiative.[39] President Obama also recently endorsed a nuclear fuel bank.[40] This proposal has potential promise, but has not received sufficient international support for implementation.

Linked closely to intelligence gathering and fissile material security, United States efforts to deny rogue states from proliferating WMD significantly depend on material and technology interdiction. In May 2003, the United States implemented the Proliferation Security Initiative (PSI) in order to interdict shipment of WMD and associated systems.[41] Combined with improvements in intelligence gathering, these efforts bore positive fruit early when cooperation with partner law enforcement agencies resulted in the dissolution of the A.Q. Khan network. The success of the PSI also directly influenced Libya's decision to eliminate its WMD programs.[42] The PSI has expanded into a global effort to interdict WMD materials.[43]

Another means to curtail proliferation, as identified in our strategic documents, is safeguarding nuclear weapons in states currently possessing them. International efforts to account for and protect nuclear weapons have improved over the past few years.[44] Our nation expends substantial resources to insure existing warheads and

biotechnology, including our own, are secure. The Nunn-Lugar Amendment established cooperative nuclear security assistance programs for countries within the former Soviet Union.[45] The United States later identified materials security assistance to Pakistan as a national vital interest.[46]

Pakistan's military has colluded with Islamic extremists in the past, and the United States became very concerned with warhead security as soon as Pakistan successfully culminated its nuclear weapon program.[47] Initial concerns for the Pakistan nuclear arsenal security centered on potential political instability or direct terrorist action leading to extremist group acquisition of a warhead.[48] Pakistan had thought of these issues independently and indeed established strong internal controls to protect its new arsenal. The United States leveraged positive incentives to assist Pakistan. It tied economic aid to nuclear material security assistance. Prior efforts, combined with recent improvements, have sufficiently increased Pakistani nuclear material security capability to restrict illicit access.[49]

The ongoing success of identifying, interdicting, and securing nuclear weapons materials is a positive example of sound implementation of strategy. Nuclear material security is perhaps the most mature of the United States' strategic counter-WMD initiatives. The Commission on the Prevention of WMD Proliferation and Terrorism recently provided one of its few passing grades to national and global efforts in this category.[50] These initiatives closely align with the National Security Strategy's declaration that the United States and its allies must prevent rogue states and terrorists from acquiring fissile material.[51]

Unfortunately, similar success cannot be easily found in the realm of biological materials security. United States' oversight and security of its own civilian facilities that research pathogens for lawful health purposes recently earned a "D+" grade from the Commission on the Prevention of WMD Proliferation and Terrorism.[52] When the Commission first met two years ago, it recommended improving biosecurity by creating an international conference to develop options to ensure safe and responsible biological scientific advancement.[53] This international effort has not materialized. Confirmation of current BWC compliance is extremely difficult without a strong global effort. This creates serious challenges for a biological weapon strategy that purports to rely on detection, response, pathogen security, and limiting the spread of biological weapon materials.[54]

Incident response is the final major strategic objective for our nation's nonproliferation efforts. The National Defense Strategy lists the ability to withstand an attack as fundamental to our strategic success.[55] Through preparation, response, and mitigation the United States communicates a message that terrorists cannot attain their desired ends with a nuclear or high yield biological weapon. Consequence management is one of three pillars of the National Strategy to Combat WMD.[56] The Commission on the Prevention of WMD Proliferation and Terrorism reinforces the importance of being able to withstand an attack. It views incident mitigation as the key to bioterrorism deterrence. Unfortunately, the Commission awards a grade of "F" in United States incident preparation efforts. [57]

Our current strategy and doctrine assumes tremendous risk in one critical area. The oversight lies in the realm of potential failure of non-proliferation efforts. What if,

despite all efforts, terrorists acquire a nuclear or high yield biological weapon? What is our strategy to deter *use* of a weapon? Rarely, if ever, do existing United States strategy documents provide options for credibly deterring nuclear or high yield biological weapon use by non-state actors against the United States or its allies.

This is perplexing when one considers that the United States possesses the greatest strategic deterrent force in the world. The National Security Strategy mentions credible nuclear forces as an important aspect to WMD proliferation deterrence, but fails to outline in what ways these forces can be used to deter WMD use by an adversary. After the collapse of the Soviet Union, the United States altered its strategy for its nuclear arsenal. It no longer views retaliation as a primary ways.[58] This seems to conflict somewhat with the current nuclear operations doctrine, which – despite lacking identified options – still identifies the purpose of our nuclear arsenal as helping to deter the use of WMD.[59]

Current United States nuclear weapons doctrine is arguably outdated and in need of revision. The United States retains its nuclear arsenal for the expressed purpose of deterring attacks on the United States and its allies, but fails to address deterring use by extremist groups. It assumes that we will receive advance warning of a nuclear attack.[60] This ignores delivery means other than ballistic missiles. The current doctrine only mentions non-state actions in one sentence, and only in the context of proliferation deterrence, not use deterrence.[61] Our message to terrorists seems to be, "Don't acquire and use these weapons or else we will do everything we can to limit your attack's effectiveness after you succeed." This is likely not a credible deterrent to a terrorist enemy who arguably believes they need to get it right only once in order to

impose devastating human and economic cost on their enemies. Our current deterrent message is arguably ambiguous and may send conflicting messages to our state and non-state adversaries. We may be unintentionally projecting weakness, thus emboldening our enemies to acquire and use a high yield WMD device.

Deterring a terror organization from using nuclear or high yield biological weapons is a complex challenge. Many terror networks do not recognize the post-Westphalia nation state system nor do they feel compelled to follow its rules. The United States possesses direct evidence of extremist groups attempting to obtain WMD.[62] Their craving for WMD is fueled by their desire to inflict catastrophic harm on the United States, its allies, and its partners.[63]

Terrorists do not view peaceful coexistence with those who disagree with their views as an option.[64] Suicide bombing, including al-Qaeda's employment of suicide pilots using planes as bombs, demonstrates the ability of certain terror networks to motivate followers into concluding their own lives can be legitimately sacrificed for what they perceive as a just cause. They glorify violence and their own death to achieve their goals, and they pursue the means to inflict grave damage on their enemies. Traditional threats against terrorists will have limited effectiveness due to their clear disregard for their own welfare or the safety of innocent civilians.[65] Deterrence focused on the survival interest of our enemies may not resonate with members of these extremist groups, and appeals along these lines will most likely fail.

Our strategy is published. Our enemies can read the nebulous messages in our doctrine. The United States' identification of objectives such as deterring WMD use *and* subsequent use may mystify our enemies.[66] Our strategic documents seem to imply the

probable failure of current deterrent policy. The coalescence of WMD proliferating rogue states, the spread of radical ideology, and state-sponsored terrorism amplify the dangers of lacking credible deterrence for use of nuclear or high yield biological weapons. How do we prevent a rogue or hostile state that possesses these forms of WMD from striking through a terrorist proxy while claiming plausible deniability? How can the United States credibly deter terrorist acquisition and use of a weapon?

Our strategy implies that the nation has largely turned away from significantly destructive retaliatory options. The removal of massive reprisal options ignores the fact that nuclear retaliation had been the successful bedrock of our strategy for half a century. The period of peace between major powers from 1945 to the present is unprecedented, and it is commonly understood that nuclear weapons played a significant role in that result.[67]

The United States perceives that the treaties and customs of armed conflict deny the legitimacy of devastation as an end.[68] This perception is likely true of Mutual Assured Destruction (MAD) between two adversaries unleashing waves of nuclear weapons against each other and each other's allies. However, that does not mean a massive retaliation option would be illegitimate if more circumscribed forms of nuclear retribution were used as a ways to achieve the desired end of United States survival.

It is time to re-evaluate our nuclear doctrine and use our nuclear strategic forces to introduce a limited concept of retaliation as a ways to deter terrorist acquisition and use of a nuclear or high yield biological weapon. The United States should consider implementing a deterrence policy that includes nuclear retaliation as one of its strategic elements. Jean Louis Gergorin seems to have alluded to a deterrence policy along

these lines. After identifying terrorist nuclear blackmail as one of three post-cold war challenges, he stated that the United States should evaluate options that include deterrence and retaliation with low-yield nuclear warheads, but only if attacked by WMD.[69]

Two uses of force in international relations are compellence and deterrence. Robert Art defines deterrence as preventing an adversary from doing something he might otherwise desire to do.[70] Art defines compellence as using military power to influence an adversary to either stop an action already undertaken, or to convince him to perform an action he might not normally do.[71] This paper will use these definitions of deterrence and compellence for arguing this new approach.

This paper previously outlined the difficulty of terrorists acquiring a high yield weapon without direct or indirect state assistance. The author believes the nuclear retaliation deterrence message must focus on the rogue or hostile state actor who, in spite of non-proliferation efforts by the international community, still pursues nuclear or high yield biological weapon capability. Focusing on the nexus of state supporter of terrorism and the terrorist organization may result in breaking the link of proliferating states and terror sponsorship. It may also compel past and current state sponsors of terror to actively deter terrorist acquisition and use of the most devastating technologies against the United States and its allies.

The United States should make clear that the state that provided the weapon, materials, or expertise will be held equally accountable and their nation may pay the greatest price for terrorist use of a nuclear or high-yield biological device. This is not a completely radical departure from current doctrine. The United States already does not

differentiate between those that commit acts of terror and those who sponsor them.[72] The United States should announce that it has targeted military and major population centers of high yield WMD proliferating state sponsors of terror. The United States should announce that it will retaliate with a nuclear strike on one or more of these targets in the terror-sponsoring state most likely responsible for providing a high yield weapon that was successfully used by terrorists against the United States or its allies. This response will occur whether the proliferating state sponsor of terror provided the capability intentionally or unintentionally. The US should also advertise that it reserves the right to determine the size and number nuclear strikes, as well as the types of targets, based on the target(s) and magnitude of devastation inflicted on the United States.

Nuclear strategic forces introduce a significant psychological deterrent advantage not found in conventional means. They provide a quantum leap in antagonism and influence.[73] Nuclear weapons communicate a unique deterrent message specifically because of their immediate and devastating results.[74] Even an irrational enemy may be swayed when he is *guaranteed* his actions will lead to his destruction.[75]

Examples exist that support this claim. During a 2005 congressional delegation visit to North Korea, the delegation reported that US nuclear capability appeared to be the only capability concern of the North Korean government.[76] Terrorist organizations themselves seek high yield WMD because they recognize the fear these weapons induce and the resultant potential to alter the policies of their adversaries. In a recent article in *Foreign Affairs*, Ariel Roth argues that Israel need not fear a nuclear capable Iran providing a nuclear warhead for use by a terror proxy. That is specifically because

Iran would realize they would likely receive a nuclear response from Israel.[77] The threat of nuclear retaliation transmits a tangible mortal threat to national survival that the most destructive conventional means cannot match. It provides the ultimate safeguard against the failure of other alternatives.[78]

Transparency is crucial if the United States is to receive the full benefits of a limited nuclear retaliation strategic option. Our current strategic doctrine identifies that United States deterrence posture is intended to convince potential aggressors that they will not achieve their desired ends by attacking the United States and any such attack will result in "an overwhelming response."[79] Current doctrine recognizes that, "Deterrence is only achieved when both capability and will are explicitly defined, demonstrated, and known by all partners."[80] Our strategy and doctrine already possess internationally identified capability. Transparency would project our will. Without transparency, we would remain ambiguous and could be misunderstood by our enemies. The Commission on the Prevention of WMD Proliferation and Terrorism highlights that any policy or strategy "must be backed by the credible threat of direct action."[81] An announced and clearly articulated nuclear retaliation option would communicate what that response would be. State-sponsors of terror would then be able to make an informed decision of cost versus benefit of risking terrorist theft or of directly providing high yield WMD materials to terrorists.

A lack of transparency could counter the intent of the proposed limited nuclear retaliation option by projecting an absence of will. Contradictory and veiled messages have resulted in undesired perceptions in the past. Shortly after the Gulf War the United States offered public statements that the US would not have retaliated with

nuclear weapons in response to Iraqi use of WMD. This declaration was contradictory to understood retaliatory strategy. Statements such as these undermine our deterrence credibility.[82] Introducing ambiguity into the limited nuclear retaliation strategy may permit a miscalculation by a state that, had it recognized our determination, would not have chosen a certain course of action. The devastation caused by nuclear weapons necessitates that the United States provide clear intent in order to prevent miscalculation by a state.

The deterrent effects of this credible threat are obvious. Assuming all states still possess survival interests of their own, it is arguably far less likely they will commit national suicide by risking their own annihilation. By both proliferating nuclear or high yield biological weapons and sponsoring terrorism, such states would realize extreme risk to their own survival if these capabilities reached terrorists by any means. Presenting states that meet the targeting criteria with a true nuclear retaliation threat for their own actions would provide a level of deterrence that does not currently exist in United States strategic doctrine.

This strategy augmentation option would also supplement diplomatic deterrence options. It would provide a new deterrent characteristic to the state sponsor of terror list. The list would no longer be simply an announcement of who the United States believes to be the worst offenders to international stability. It would not only identify those nations against which we intend to impose diplomatic and economic sanctions. It would also project an intensity previously missing. The diplomatic message sent to states added to – or removed from – the state sponsor of terror list would be powerful, dramatic, and tangible.

There are many risks that accompany including transparent nuclear retaliation in our deterrence strategy. The strategic communications effort must mobilize the nation's citizens or it will lack domestic support and incur tremendous political pressure to change. The United States' international messages also must be forcefully clear as to the necessity of this strategic option, or it will result in potentially negative diplomatic and economic responses from traditional friends. There is most likely no way to guarantee that terrorists did not steal the capability against a state's desires. Lastly, if identification efforts produce an incorrect conclusion, the United States may retaliate against the wrong state sponsor of terror.

Strategic communications is perhaps the greatest challenge to the success of a limited nuclear retaliation option. United States strategy identifies strategic communications as an essential element of combating WMD proliferation.[83] Our own citizens are the most important audience. Failure to garner their support will certainly result in the preclusion or eventual elimination of this option. In order to succeed, the strategic communications theme must center on the survival interests of the nation. National and international documents provide plentiful supporting messages to reinforce this theme.

The Commission on the Prevention of WMD Proliferation and Terrorism concluded, "The simple reality is that the risks that confront us today are evolving faster than our multilayered responses."[84] Our strategic documents acknowledge that terror movements will use the rules of the international system when they benefit them, and ignore or exploit them when in their best interest.[85] The latest commission report states, "Plans must be based on the assumption that what is likely to occur, given the current

trajectory of risk, will occur, unless the trajectory is reversed."[86] There are numerous international messages that also acknowledge the reality we face, including the Director General of the IAEA stating, "The possibility of terrorists obtaining nuclear or other radioactive material remains a grave threat."[87] The National Security Strategy clearly identifies that we have a moral understanding that those who support acts of terror are equally guilty of murder as those who commit such acts.[88]

Our strategy also acknowledges that there can never be perfect information or certainty of cause. It identifies that, as risks of inaction become great, the United States possesses a more compelling case to act.[89] If government departments and senior leaders clearly communicate the threat, provide a concise moral argument that legitimizes retaliatory response, and unequivocally outlines the overall logic of the proposal, American citizens may likely understand and endorse the strategic change.

International strategic communications would be nearly as important as national efforts, and would potentially be much more difficult to successfully accomplish. Non-United States citizens may not identify with our survival interests and the risks we face as Americans. The theme of the international Strategic Communications effort can be found in existing strategy. Our documents clearly state the fact that a nation's greatest obligation is to protect its citizens.[90] However, messages supporting this theme must come predominantly from international organizations. United Nations Security Resolution 1373 (2001) is a terrific example of how the United States could leverage existing international resolutions and agreements to clarify national survival interests and justify the addition of limited nuclear retaliation in extreme and rare cases.

UNSCR 1373 (2001) reiterates the General Assembly declaration of October 1970 and Security Council Resolution 1189 (1998) that all states have a duty to refrain from assisting or participating in terror attacks against states.[91] It also reaffirms the need to combat terrorist threats to world peace by all means.[92] The resolution declares that no states should support terrorism, and that all states should ensure any that do are brought to justice.[93] The last statement arguably implies that nations can be held accountable for the actions of their national leadership. The global community has repeatedly condemned terrorism, and the state system in place for centuries has always affirmed the sovereign responsibility of nations to protect their citizens. The United States should use this long history of international acknowledgement of the rights and obligations of nations to earn support for including limited nuclear retaliation options against state sponsors of terror that provide nuclear or high yield biological capabilities to terrorists who then use them.

Incorrect targeting is another obvious risk to this strategy. Despite our best efforts, the United States could identify, target, and retaliate against the wrong nation. This outcome would result in the death of a multitude of citizens in a nation that did not actually provide the capabilities employed against the United States. The limited nuclear retaliation strategy must honestly identify this risk, and it must also recognize that although an error would cause immense suffering in the wrong nation, this dreadful mistake would not necessarily result in the punishment of an innocent state. This strategy application is defined and limited. It only applies to states that meet two very specific criteria. In order to assume risk, states must violate international non-proliferation agreements, and the United States must recognize them as state sponsors

of terror. Any state that does not meet *both* of these measures does not need to fear a nuclear strike under this proposed strategy.

The risk of erroneous targeting also creates compellence effects that may potentially provide the greatest rewards. All nations that meet the limited nuclear retaliation criteria would certainly recognize the small, but catastrophic risk of accidental targeting after an attack on the United States. It is very probable that this realization may, due to their own survival interest, compel them to police themselves. They may also feel compelled to share intelligence with United States agencies in order to remove any doubt as to their own culpability for future attacks. The risk of incorrect targeting may eventuate intentional and unintentional non-proliferation cooperation within the very states that present the greatest risks to international security.

Some nations in the international community likely would still feel extremely concerned about erroneous targeting, despite the positive aspects this risk creates. Many states may not agree with the assertion that no nation incorrectly targeted would be completely innocent. Fortunately, the risk of erroneous targeting is actually very small. Current nuclear forensics capabilities are extremely accurate. The United States possesses the capability to identify nuclear weapon sources after an attack.[94] Biological forensics is also very advanced and is constantly improving.

Biological forensics is aided by the fact that relatively few high-risk pathogens can be deliberately employed to cause high yield results.[95] The National Biological Forensics Analyses Center is the nation's pre-eminent biological material analyses facility.[96] Along with other facilities, it can determine which laboratory provided a virus or bacteria, as well as help identify those responsible for an attack.[97] Implementation of

an interagency Bioforensics Strategy is underway and will soon be completed.[98] The United States continues to increase its biological forensics and attribution capabilities.[99] Current and future forensics competencies provide an extremely high degree of reliability.

In the event The United Sates is attacked by terrorists with a high yield WMD, it must be prepared to share its forensic evidence. This could occur before or immediately after a counter-strike against the state sponsor that provided the capability. The American public and the international community will demand proof of culpability before granting legitimacy to United States retaliatory actions. US forensics capabilities for both nuclear and biological threats already provide an exceptionally high level of confidence and fidelity, thus allowing the United Sates to present a compelling case to the world.

Lastly, there is also a small risk that credibility would suffer by creating another Cold War-era MAD situation. This would occur if a nation possessing large numbers of high yield weapons and rapid delivery systems were to be identified by the United States as a state sponsor of terror. At present, the United States does not identify any nation that possesses massive retaliation capability as a state-sponsor of terror. It is highly unlikely that this situation will change in the near future. A change of this nature certainly would create obstacles to the credibility of this strategic option, at least as it applies to nations with large-scale rapid retribution capabilities of their own.

Current strategic efforts do provide positive accomplishments. The United States has achieved significant success in surveillance and interdiction efforts. It has partnered with a large number of nations to share information and costs. The

Commission on the Prevention of WMD Proliferation and Terrorism continues to perform admirably in identifying shortfalls and recommending solutions. Forensics capabilities continue to improve, as do response and mitigation capacity.

Despite these facts, we still must face a difficult truth. We are failing in deterring proliferation of high yield WMD. Numerous nations have entered the nuclear weapons club since the signing of the NPT. Still more nations are pursuing biological and nuclear weapons today. Many of those proliferating WMD also have a history of supporting terrorists. Continuing along our current path incurs significant risk that terrorists will eventually strike at our survival interests with a high yield WMD.

As stated in our National Security Strategy, "There are few greater risks than a terrorist attack with WMD."[100] It is the author's belief that extremist groups who perceive injustice and rationalize using all means and ways to achieve their desired ends will always exist. It is crucial that the United States use all available strategic options to prevent this from happening. Should diplomatic actions and economic efforts fail, the United States must work through international organizations to receive strong global support for military action. The military should continuously update plans that allow a full spectrum of operations against proliferating states. The United States must clearly transmit that it is not a matter of "if", but rather of "when" we will retaliate with nuclear weapons upon any WMD proliferating nation that is recognized by the United States as a state sponsor of terror, and who is responsible for a terrorist acquisition and use of a high yield weapon against our nation or its allies.

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