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NUCLEAR FIRST STRIKE—HAVE THE RULES CHANGED?

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14. ABSTRACT This paper considers the morality of a first strike attack against a nonstate terrorist organization that possesses nuclear weapon capability.
Nuclear first strike is the policy that reserves the right to use nuclear weapons against an enemy before that enemy employs a like weapon without any constraints on the decision to employ the weapon. First strike has been part of the strategies on nuclear weapon use since the earliest debates on nuclear arms, when the United States was the only nuclear power (Brodie, "The Atomic Dilemma," 32). For the purposes of this paper, first strike is expanded to include the use of conventional weapons to attack a terrorist-controlled nuclear weapon that would result in nuclear casualties either from the detonation of a nuclear bomb or fallout from a nuclear dirty bomb.
Parallel to the United States and global policy debates on the use of nuclear weapons is a debate among social, religious, medical, and legal experts on the morality of the use of nuclear weapons. This dialog, grounded in the concepts of the principles of just war, shaped the historical United States nuclear policy debates of massive retaliation, mutually assured destruction (MAD), graduated response, and deterrence. All these polices were predicated on the assumption that the United States "would not deliberately initiate a total war for the sake of securing for ourselves the military advantage of first blow" (Brodie, World Politics, 174). As the community of nuclear powers expanded, the US nuclear arms policy was revisited and debated. Through it all, one of the fundamentals remained that nuclear capability was developed and maintained by nation states. However, the cast of potential nuclear players may change shortly to include nonstate terrorist organizations. Recent US policy states that our nation is reevaluating deterrence, now that these organizations are attempting to acquire nuclear capability. It is against this backdrop that this paper considers the moral authority of a US pre-emptive strike against such an organization with a confirmed nuclear capability. Moral authority is defined for this paper as being in compliance with the traditional principles of just war. The paper provides a brief history of the development of nuclear weapons and nuclear employment strategies to include first strike. It also provides a very concise evolution of just war theories with references for further study. An analysis is done of each of the eight traditional just war principles against the scenario of US first strike. The conclusion is that as long as the US employs this tactic as a last resort against the terrorist threat, it has the moral authority to employ first strike against nuclear-armed terrorists even if that attack may result in nuclear casualties.

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TABLE OF CONTENTS

ABSTRACT iii

TABLE OF CONTENTS v

ACKNOWLEDGMENTS vii

ILLUSTRATIONS ix

Introduction 1

History of Nuclear Weapons 1

Recent Nuclear Weapon Proliferation 2

The Nuclear Weapon Terrorist Threat 3

The Nuclear Dirty Bomb Threat 6

Defining First Strike 6

Ethics of War 8

Analysis of First Strike Using the Just War Principles 10

Conclusion 14

Appendix 1 15

ENDNOTES 17

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ILLUSTRATIONS

Table 1. Principles of Just War 10

NUCLEAR FIRST STRIKE—HAVE THE RULES CHANGED?

Introduction

This paper considers whether or not the United States or any other nation has authority under the principles of just war to strike first against a non-state sponsored, terrorist organization with nuclear weapon capabilities even if that strike has high risk of producing nuclear casualties. The paper begins with a brief history of global nuclear weapon capabilities and the current status of nuclear weapons and weapons grade materials. This background is provided in order to validate the threat of a non-state sponsored, terrorist organization obtaining nuclear weapons. This paper also provides a concise history of just war principles and the roll that these principles play in the study of warfare. The principles will be analyzed to determine if they remain valid for state against nonstate conflict. If they are determined to be valid, each will be applied as a criterion to determine if the US would be acting ethically in a first strike against the threat even if there is a high risk of detonation of the nuclear device.

History of Nuclear Weapons

Nuclear weapons have been a reality since the United States' Manhattan Project produced the bombs that ended the war in the Pacific in August 1945. With the Soviet first nuclear detonation in 1949, the policies for use of nuclear weapons became interwoven with the Cold War and Cold War strategies. As the nuclear club expanded to the present day list of nuclear-armed states—the US, Russia, England, France, China, India, Israel, Pakistan and most recently North Korea [1]—the global strategies for use of nuclear weapons have become more complex.

As a side note, South Africa also maintained nuclear weapons from 1979 when it conducted its first successful weapon test until 1990 when it dismantled its seven bombs as part of the transition to a democratic state.[2] A more detailed chronology of the nuclear arms race is provided in Appendix 1.

As the community of nuclear powers expanded, nuclear arms policies were debated and revised. Few foreign policies were developed without consideration of nuclear weapons and likewise nuclear weapon tactics were inescapably linked to foreign policy. The foreign policy of containment, first proposed by George Kennan, was determined to restrain the spread of

communism and counter-attack any attempts to spread it beyond the boundaries of the USSR and China.[3] The Truman Doctrine and NSC 68 were implementations of the containment policy that increased military spending and the US nuclear arsenal in an attempt to maintain a balance of power with the USSR.[4] The strategies for the use of nuclear weapons in this era are described as Mutual Assured Destruction (MAD) with both super powers prepared to counter strike with massive retaliation against any nuclear strike. While MAD was largely a second-strike policy, both the US and the USSR never abdicated their right to first strike under extreme circumstances. Other nations obtained nuclear weapons and policies for their use during this period, however, containment remained the overarching global policy as the east and the west counted their arsenals in order to maintain parity.

In the early 1970s, with the advice of Secretary of State Henry Kissinger and building on the polices that were being developed during the late 1960s, President Richard Nixon implemented a policy of détente with the USSR; relaxing many of the tenants of the containment policy. Détente was the policy to reduce tensions between the US and USSR across all four instruments of power—diplomacy, information, military and economic means. Economically, the US began selling wheat to the USSR in order to alleviate their food shortages. Militarily, it lead to a series of meetings designated the Strategic Arms Limitation Talks (SALT) and eventually a series of treaties (Anti-Ballistic Missile Treaty in 1972, SALT I in 1974, and SALT II in 1979) that reduced nuclear weapons by type, quantity, and location in both the US and USSR. Of key note for the purposes of this research, during the détente period both the US and USSR stated at different times that they did not have first strike policies; however, they both maintained the right and capability use any means to prevent any nation from executing a nuclear strike against them.

Recent Nuclear Weapon Proliferation

Studies of the procurement methods of recent nuclear weapon proliferation is troubling because of the as methods used by North Korea and most recently Iran's ongoing attempts to obtain the capability. North Korea announced itself as nuclear power in February 2005,[5] and announced its first successful nuclear weapon test on 9 October 2006.[6] North Korea's ability to develop the centrifuge technology required to produce a uranium bomb is due in large part to the ability to purchase centrifuge technology and equipment from Dr. Abdul Qadeer Khan, a

Pakistani scientist and the man considered the father of the Pakistani nuclear program.[7] The centrifuges are necessary to convert low grade uranium into the highly enriched uranium (HEU) necessary for a nuclear weapon. In his statements about the dealings, President Masharraf denied that Dr. Khan provided the technology necessary to convert the highly enriched uranium into an actual weapon. However, Dr. Khan had the access necessary to provide both the enrichment technology and the weapon system technology. Dr. Khan also confessed to providing centrifuge technology to Libya and Iran.[8] In deference to his high regard within Pakistan, he was placed under house arrest and President Masharraf has refused to provide the international community to access to Dr. Khan to determine the extent of his information sharing.

The ability of one nation to obtain technical data and nuclear materials from another is not new. Both the UK and France obtained much of their early nuclear capability through cooperative scientific research with the United States. However, Dr. Khan's prolific sharing of technology and equipment with nations that openly support terrorist organizations creates a new level of threat.

The Nuclear Weapon Terrorist Threat

Is there a valid threat of a terrorist organization obtaining a nuclear weapon? As recently as February 2008, the head of the UN International Atomic Energy Agency (IAEA), Mohamed ElBaradei, warned that the most imminent threat to global security is nuclear materials being obtained by terrorists/extremists. He stated that the IAEA handles 150 cases of illicit trafficking of nuclear materials every year.[9] One of the many incidents that were thwarted occurred in Slovakia resulting in three personnel being arrested for attempting to sell 2.2 pounds of enriched uranium.[10]

Studies of terrorist' ability to obtain nuclear weapons focus on three scenarios: terrorists stealing, buying or building a weapon. With over 2,700 nuclear weapons stored throughout the world with differing levels of security,[11] there are unfortunately many opportunities of theft. A great deal has been done to improve the security of these weapons through local security; safe-ing, arming, firing and fusing (SAFF) procedures; and permissive action links (PALs) that require special codes and/or procedures for deploying the weapons. The US uses PALs on all its weapons and is a contributor to the G-8 Partnership against the Spread of Weapons of Mass

Destruction (Global Partnership) that is committed to sharing technology in order to safeguarding nuclear weapons globally.[12] Russia received funds and technology support under the Materials Protection, Control and Accounting (MPC&A) and Weapons Protection, Control, and Accounting (WPC&S) programs funding by the Global Partnership to further secure its weapon arsenal.[13] It is also widely believed that the US is providing similar assistance to Pakistan, as much as it will accept it, as part of the financial and security aide resulting from the global war on terrorism.[14] These efforts to secure the world's nuclear weapons are necessary and as implemented they reduce the likelihood that a terrorist organization will be able to successfully steal a weapon. However, they are not complete. Even if they are fully implemented, the continued proliferation of nuclear weapons will create new opportunities for theft and the additional risk of a nuclear-armed nation willingly providing weapons to a terrorist organization.

The second route for obtaining a nuclear weapon is for a terrorist organization to purchase a weapon. This purchase would have to be done through one of the nations that currently have weapons—the US, Russia, the UK, France, China, Israel, India, Pakistan, or North Korea. The risk of one of these nations selling nuclear weapons is directly related to two factors: support for terrorist organizations and ability to secure weapons against a nonstate sponsored sale. Using factor one, support for terrorists, it is highly unlikely that the US, Russia, the UK, France, China, Israel, or India will sell their weapons. All of them value their positions in the international community that would condemn such an act. According to Richard A. Clarke, President George H.W. Bush's chief counter-terrorism advisor to the National Security Counsel, North Korea's "well-known reputation for sponsoring organized crime and selling missile technology to anyone with hard currency, and Kim Jung-Il's hatred for the United States, the possibility that the country would provide terrorists with a nuclear capability it not unrealistic."[15] However, North Korea has also proven themselves to be influenced by the international community whose brutal retaliation for such a sale serves as a clear, if not, complete deterrent. The greater risk of a national nuclear arms deal with terrorists is via Pakistan. As this paper is being written, the political situation in Pakistan is tenuous with the assassination of Benazir Bhutto, the results of the Parliamentary elections, and Masharraf's insistence that he will not step down as the president. It is very possible that the country may

end up with an extremist government that openly supports terrorist organizations and would possibly even sell them a nuclear capability.

The final method of procurement is for a terrorist organization to build a nuclear weapon. In order to accomplish this, the terrorists will have to obtain either highly enriched uranium (HEU) or plutonium as fuel for the weapon. Based on current technologies, it is impossible for a terrorist organization to independently create either of these fuels. Additionally, based on the complexities of both machining of parts and perfecting the timing required to initiate the reaction, it is not in the realm of the possible for a non-state entity to build an implosion bomb. In fact, few nation-states possess the scientific sophistication required to build this type of weapon. A non-state terrorist organization is therefore left with the option of building a gun-type of weapon. The technology behind the gun-type weapon is not difficult; the US didn't even test the gun-type bomb it dropped on Hiroshima. An unrefined internet search of 'how to build a uranium bomb' resulted in 154,000 hits, many that included diagrams and detailed descriptions. However, it is not practical and largely not feasible for a nonstate terrorist organization to build the centrifuge fields necessary to produce HEU. The terrorists will have to procure the uranium fuel by purchase or theft.

Discussion on both methods are similar to the discussion above, with the exception that there is much more HEU available then there are actual weapons. The majority of the stored HEU was produced by the USSR and US during the Cold War. Exact accounting of locations and quantities remains a moving target but neither country is currently producing HEU and there is a joint program to reduce the stockpiles. The US is working with Russia to eliminate HEU under the Megatons-to-Megawatts Program which converts the material into low enriched uranium for use in US electricity producing nuclear reactors. This National Nuclear Security Administration (NNSA), a subordinate organization of the US Department of Energy, oversees the program and in February 2008 announced that 322 metric tons of Russian HEU had been down-blended and sold to the US.[16] However, in addition to the HEU stored as a result of weapons programs, the NNSA also estimated in 2004 that there were 128 research reactors throughout the world with at least 20 kg of HEU.[17] While the technology exists to convert civilian nuclear reactors to low enriched uranium, which is not viable for weapons, the implementation of this technology is neither mandated nor being voluntarily implemented. As long as there is HEU available, especially outside of national weapon programs, the threat of

theft exists and with relatively simple technology a bomb that is sufficient for the needs of a terrorist organization that would not require sophisticated deliver means.

The Nuclear Dirty Bomb Threat

While the above discussion establishes the real challenges for a terrorist organization to obtain a nuclear weapon, it would be much easier for terrorists to obtain the materials for a nuclear dirty bomb which does not require a nuclear reaction. A dirty bomb uses high explosives to disburse radioactive material.[18] The ability for terrorist organizations to obtain high explosives is unfortunately as obvious as the terrorist attacks across the globe. The radiation materials, while a greater challenge, are not unobtainable. According to the US Nuclear Regulatory Commission's Fact Sheet on Dirty Bombs published in March 2003 "certain other radioactive materials, dispersed in the air, could contaminate up to several city blocks, creating fear and possibly panic and requiring potentially costly cleanup."[19]

The projected damage from a dirty bomb is not nearly as catastrophic as expected from an actual fission-induced explosion. However, the long-term effects of radiation poisoning would be significant, and the clean up expensive. It is also possible that the clean up would require demolition of significant parts of an urban area. Additionally, the psychological effects would be devastating and reach far beyond the site of the actual explosion. Dirty bombs are included in the analysis of this paper because they are an easier route for a terrorist organization to follow in order to produce the desired results of radiation terror and because a US preemptive attack against a dirty bomb could produce the same shattering results as if the bomb were detonated by the terrorists themselves.

Defining First Strike

The concept of first strike has been part of warfare for centuries—attacking first in order to prevent an attack by your enemy or to gain a military advantage in order to impose your will. It became part of nuclear weapon policy as early as 1948 when the philosopher Bertrand Russell advocated a preemptive first strike against the USSR before it gained nuclear weapons in a speech at Westminster School in November 1948.[20] Russell later rejected this approach and became a strong supporter for nuclear non-proliferation. However, his speech is indicative of an early belief that the offensive use of nuclear weapons against the Soviet Union would eventually

lead to a greater peace. The concept of nuclear first strike was expanded by the Secretary of Defense Robert McNamara in a speech on mutual deterrence in San Francisco, California in 1967 when he stated that:

> "Let us consider another term: first-strike capability. This is a somewhat ambiguous term, since it could mean simply the ability of one nation to attack another nation with nuclear forces first. But as it is normally used, it connotes much more: the elimination of the attacked nation's retaliatory second-strike forces. This is the sense in which it should be understood. *Clearly, first-strike capability is an important strategic concept.* The United States must not and will not permit itself ever to get into a position in which another nation, or combination of nations, would possess a first-strike capability against it. Such a position not only would constitute an intolerable threat to our security, but it obviously would remove our ability to deter nuclear aggression"[21] (italics added for emphasis).

As the list of nations with nuclear weapons expanded and the Cold War ended, use of nuclear weapons was marginalized but never completely eliminated in US foreign policy strategy. Recent United States policy documents state that our nation is reevaluating the use of our nuclear arsenal now that terrorist organizations are attempting to acquire nuclear capability. The February 2006 Quadrennial Defense Review Report says that these "actors may not respond to traditional tools and concepts of deterrence."[22] The final coordinating draft of Joint Publication 3-12, Doctrine for Joint Nuclear Operations, which was posted on the internet for review in March 2005 was nested in this report. The draft stated that the laws of armed conflict and the principles of proportionality "do not prohibit nuclear weapons in armed conflict" and that "The United States does not make positive statements defining the circumstances under which it would use nuclear weapons."[23] Although the draft has not received final approval, its verbiage indicates that the National Command Authority is developing a nuclear arms strategy that includes first strike as an option. As long as such policies exist, the use of a nuclear weapon is not about a President doing the right thing; it is about a President doing what he believes is the right thing.

So, is it likely that the US will use a nuclear weapon to thwart a terrorist organization that threatens the use of such a weapon? It is hard to envision a scenario where the US could not use conventional weapons to achieve the same purpose. But, even if a conventional weapon is employed, there will remain the risk that the terrorist organization could identify the imminent attack and set off the weapon to achieve their purposes. It is also possible that the conventional strike could result in the uncontained release of radiation from a terrorist dirty bomb. Therefore,

for the purposes of this paper, the concept of first strike is expanded to include the use of conventional weapons to attack a terrorist-controlled nuclear weapon that would result in nuclear casualties either from the detonation of a nuclear bomb or fallout from a nuclear dirty bomb.

Ethics of War

Three lines of thought evolved from the debates about the ethics of war. The first of these, realism, dissociates all thoughts and plans of war from any need for morality. Realists are differentiated because while they see the justifications for war, they believe that trying to apply moral rules and edicts to war is an oxymoron. The most die-hard realists contend that there is no moral authority that can dictate how a nation should act or react in conflict or any other actions.[24]

Pacifists, the second group in the debate, believe that war of any kind is morally wrong and therefore any attempt to create ethical guidelines is extremely counterproductive and irrelevant. The foundations of pacifism are in the Christian Church with numerous references to the Bible's New Testament such as "Blessed are the peacemakers."[25] Over time, the term 'pacifist' has been expanded and contracted. An example of this contraction is the term 'nuclear pacifism' which refers strictly to a ban on nuclear weapons. The term has also been expanded to include all forms of violence to include local and personal violence, far beyond the context of military actions. But in any context, pacifists will not validate warfare by establishing parameters for its execution.[26] Because these two philosophies discount any rational guidelines for the execution of war, they are not of value to this discussion.

However, the third line of reason for the ethical execution of war, just war theory, is very appropriate. This theory argues that "war is sometimes justifiable and that the conduct of war is always subject to moral criticism."[27] Michael Walzer goes on to say that "just war theorists set themselves in opposition to pacifists and realists … although some of the pacifists are selective in their opposition to war and some of the realists have been heard, in the heat of battle, to express moral sentiments."[28] Writings on the theory of just war date back to the early 400s A.D. when Saint Augustine, Roman Catholic Bishop of Hippo, first articulated the conflict between idealized pacifism and the reality of armies fighting in the name of peace.[29] His writings are often considered the first in-depth argument for rationalizing nation-state sponsored warfare within the parameters of the Christian faith. The broad theory of justifying war has been refined over time and the arguments between just and unjust wars have been further defined by

guidelines applicable to determining if a specific war is just or unjust. One of the mid-twentieth century theologians, St. Thomas Aquinas, stated in his writing, *Summa Theologiae*, that:

> In order that a war may be just three things are necessary. In the first place, the authority of the prince by whose order the war in undertaken, for it does not belong to a private individual to make war … In the second place, there must be a just cause; that is to say, those attacked must, by a fault, deserve to be attacked … In the third place, it is necessary that the intention of those who fight should be right; that is to say, that they propose to themselves a good to be effected or an evil to be avoided ... those who wage wars justly have peace as the object of their intention.[30]

This list of three precursors has again been argued, discussed and amplified by numerous theorists, philosophers, churches and lawyers through the ages. In recent history, just war theory has been the basis for such international treaties such as Hague Conventions of 1899 and 1907[31] and the Kellogg-Briand Pact in 1928.[32] It can also be found as an underlying purpose of the United Nations Charter as stated in its opening article:

> "To maintain international peace and security … and to bring about by peaceful means, and in conformity with the principles of justice and international law, adjustment or settlement of international disputes or situations which might lead to a breach of the peace."[33]

As just war theory evolved, it produced a refined list of principles by which it is measured. The list of principles varies from one theorist to another, but is largely based on two categories – *jus ad bellum* (just in starting war) and *jus in bello* (just in execution of war). The debate on the exact definitions and inclusions on this list is far beyond the scope of this document. Several reference documents for this debate are provided as references for this paper. Additionally, the Air University Library, Maxwell Air Force Base, maintains a detailed online bibliography of publications in their online library.[34] The following list of just war principles is provided in Rethinking the Just War Tradition, published by the State University of New York in 2007 with contributors from throughout the US to include current and former members of the military.[35] It is similar to other lists and will be used for the analysis.

Table 1. Principles of Just War [36]

Jus Ad Bellum	
Just Cause	A war is justified only if waged for one or more just causes. Just cause theorists generally agree that defense against an unjust attack is just cause. Similarly, although this might be contested, assisting an ally against an unjust attack is just cause. More controversial just causes involve protecting civilians against massive basic human rights violations committed by their own government or by other parties in a civil war, the imminent threat of aggression, and especially, future threats – notably, as posed by the possible use of weapons of mass destruction by terrorist or 'rogue' states.
Legitimate Authority	The use of military force is permissible only if it is authorized by a political body that is widely recognized as having this power.
Right Intention	A war must be waged with the pursuit of its just cause as its sole (or primary) motive. For instance, if the just cause is stopping genocide, then the sole motive guiding the armed humanitarian intervention must be to stop the genocide.
Last Resort	Nonmilitary alternatives, including diplomacy, negotiations, sanctions, and legal adjudication, must be pursued – within reasonable limits – prior to resorting to military force.
Reasonable Chance of Success (Hope)	A war should be fought only if there is a reasonable hope that the goals embedded in its just cause will be realized. It is objectionable to demand great sacrifices of combatants – or inflict serious harms on noncombatants – if military victory seems a very remote possibility.
Proportionality	The anticipated goods of waging a war must be proportionate or commensurate with its expected evils. This principle of proportionality is also referred to as the *principle of macro-proportionality,* so as to distinguish it from the *jus in bello* principle of proportionality, which is then referred to as the *principle of micro-proportionality.*
Jus In Bello	
Discrimination	Soldiers should discriminate between combatants and noncombatants and target only the former. … Some weapons, such as nuclear weapons, biological weapons, and (more controversially) landmines, are morally objectionable due to their indiscriminant impact.
Proportionality	Force should be used in proportion to the end pursued, and destruction beyond what is necessary to reach a military objective is morally suspect. It might be claimed that the laws of war allow the killing of enemy soldiers without limit, but such a claim is objectionable in terms of the principle of proportionality. Weapons that cause injuries to people long after they have ceased to be combatants, such as nuclear and biological weapons, are disproportionate.

Analysis of First Strike Using the Just War Principles

The first question to be answered is whether or not these just war principles apply when one of the parties to the conflict is a nation-state and the other is a nonstate terrorist organization. The *jus ad bellum* principles all remain valid measures of the morality of the attack. There is

nothing within these precombat principles that should not be considered while the US or any nation considers whether or not to attack a terrorist organization. There is controversy as to what, if any, criteria a terrorist organization must possess in order to be considered a legitimate authority in warfare. However, since in our scenario, the physical attack is actually initiated by a nation-state, this controversy is not relevant. The same is true of the *jus in bello* principles. Both discrimination and proportionality continue to apply in a conflict against a nonstate enemy.

With no reason to eliminate any of the just war principles, a detailed application of each one is necessary to determine if the US has the ethical authority to strike first against a nuclear-armed terrorist regardless of the outcome. This paper does not attempt to speculate about the rationale behind a terrorist nuclear attack; the background is not relevant to determining whether or not the US has just cause to initiate an attack. Assuming the appropriate intelligence to conclude that the terrorist attack is imminent, the US, like any nation, has both the right and the duty to protect its citizens. It would be more easily argued that any nation that knew about such an attack and failed to take the necessary action to protect its citizens would be ethically corrupt. Under the first principle, the US is not only morally authorized, it is morally obligated to act.

The second principle is legitimate authority. This principle is most often debated in acts of revolution or civil war. The mere ability to obtain arms and raise an army does not legitimize the initiation of war. But the traditional just war tradition "has been open to a just revolution position, recognizing that an oppressive government may lose its claim to legitimacy."[37] The right for terrorists and insurgent groups to conduct war has also been heatedly argued on the fringes of the just war debate. However, these debates do not apply to the United States conducting a military attack under the constraints of its own constitution because the US is recognized in the international community as a nation-state with the responsibility of national security.

The next *jus ad bellum* principle is right intention, which mandates that war is only ethical when it is pursued for a just cause as its sole or primary motive. While the preemptive first strike against a nuclear terrorist attack may have the added consequence of degrading its financial and/or popular support and even eliminating key leaders of the organization, the case outlined above for just cause far outweighs any collateral results.

The principle of last resort is also valid as long as the US makes realistic attempts through direct dialog, surrogate nation intervention, and legitimate international organizations to derail the terrorist attack. These attempts do not have to be immediately prior to the attack, they can be within the construct of a larger foreign policy to counter terrorist activities. They may also include clandestine attempts to deactivate the weapon. This principle includes the quantifier that the attempts must be within reasonable limits. This quantifier is absolutely key and essential for providing ethical credibility when dealing with terrorist organizations, because it eliminates the requirement for any nation to negotiate with a terrorist organization while under duress. This includes any demands made under the threat of the nuclear terrorist attack.

The next principle reasonable chance of success, is easy to apply because the US attack is limited in nature—aimed at destroying the terrorist's nuclear weapon. Even if the attack includes simultaneous attacks on other elements of the terrorist organization that may or may not meet the individual tactical objectives, the immediate success of destroying the nuclear weapon meets this criterion.

The final *jus ad bellum* principle is proportionality. This is perhaps the most difficult analysis because of the many variables. Because it is comparative in nature and an actual comparison is impossible, the principle can only realistically be applied in the analysis prior to the attack. The lack of clarity of this principle extends beyond the scenario of this research, and many just war theorists struggle with metrics in which to measure this principle.[38] Without specific metrics and using the definition that the expected harms do not greatly exceed the benefits, a series of questions can be developed to measure the principle:

> Is the number of civilian casualties both from the initial attack and the residual effects less than the number of casualties that would be achieved if the terrorist organization were able to detonate the weapon based on its own plans?
>
> Are the impacts of the attack on the environment (both infrastructure and natural) less than those that would be achieved by the terrorist plot?
>
> Does the greater good of showing national strength against a terrorist organization outweigh the anticipated loss of civilian lives and the environmental impacts?

As long as the answers to these questions are 'yes,' the US is justified in executing the attack. Once the US attack is executed, it becomes counter-factual to predict the outcome of a successful terrorist attack, and the US can not be graded after the fact. Instead, it must apply its

very best analysis to ensure that the attack limits civilian casualties, limits environmental impacts, and is executed in a manner to deter future terrorist actions.

The first *jus in bello* (during the conduct of war) principle is discrimination, which states that soldiers should discriminate between combatants and noncombatants and only target the former. It is this principle that is primarily referenced to denounce the existence of weapons of mass destruction to include nuclear weapons. If this were a discussion on nonproliferation, there would be room for a very strong argument that nuclear weapons, by their very nature, violate this principle. But the scope of this discussion is very different. Nuclear weapons do exist and within this construct they are in the hands of a nonstate, terrorist group that plans to employ the weapon with a significant risk of civilian casualties. Once every attempt is made to disarm the weapon without an explosion, there are two remaining alternatives: US first strike or a terrorist-initiated attack. Both alternatives have the potential for a tremendous number of noncombatant casualties and potentially even the exact same number. The difference is in intent. It is in the US best interests to do everything possible to limit those casualties. Alternatively, it is highly likely that it will be the terrorist's objective to achieve the most possible casualties by employing the weapon at the ideal time to inflict the greatest cost. Additionally, the success of the US first strike to foil the terrorist plans may deter future terrorist attacks and in the long term save lives. A successful nuclear terrorist attack will only result in strengthened bravado and future loss of lives. Within this construct, the US first strike is the alternative that discriminates in favor of reducing noncombatant casualties.

The remaining *jus in bello* principle is proportionality. The definition in the conduct of war is slightly different from its definition prior to war because it refers to actual force that is employed. As stated above, the immediate actions of either a US first strike or a terrorist explosion are in essence use of the same force, resulting in potentially the same casualties. But there is a clear difference between the motives of the two sides. For the terrorist organization, this is an offensive attack. It is planned to bring destruction with the most heinous of weapons in order to further the terrorist agenda. Assuming again that the US is in compliance with the principle of last resort and has made every attempt to thwart the attack, its first strike is a defensive act. It will be planned to minimize casualties and employ the least force possible to deactivate the terrorist's nuclear weapon. If the result of this attack is either a complete nuclear fission employment or dispersed radiation contamination, then it will be the unintended result of

an attempt to defend our security. The nuclear capability was not introduced by the US and the US cannot be held accountable for taking the necessary actions to minimize the success of a terrorist organization to employ that force to its advantage.

Conclusion

This paper has demonstrated that a nuclear attack by a nonstate terrorist organization is a real threat. The US and international community are taking steps to limit this threat, but the plans have not been fully implemented and are not sufficient to eliminate the threat.[39] As long as the threat exists, the US must consider the actions that it would take in the face of such an attack.

This paper applies the traditional just war principles to a US first strike attack against this nuclear threat. This threat includes both a nuclear explosion or dispersion of radiated contamination associated with a dirty bomb. As long as the US makes every attempt to stop or limit the damages of the attack, the six *jus ad bellum* principles are met. Because of its history as the only nation to employ nuclear weapons, the US has a recognized and disproportionate responsibility to prevent any nuclear attack. This responsibility ensures that every attempt to prevent the attack will be taken and they will adhere to the *ad bellum* principles. The *jus in bello* principles of discrimination and proportionality require additional considerations. This paper argues that the US is in compliance with these two principles because they are not the aggressor in this scenario and it will be in their best interest to minimize civilian casualties.

The conclusion is that the US has the moral authority, under the traditional principles of just war, to execute a first strike against a non-state terrorist organization threatening a nuclear attack, even if there is a risk that this attack will result in nuclear casualties.

Appendix 1

24 Jul 1945	President Truman informs Stalin that the US has nuclear weapons.
6 Aug 1945	President Truman authorizes use of uranium bomb—target Hiroshima, Japan.
9 Aug 1945	President Truman authorizes use of plutonium bomb—target Nagasaki, Japan.
22 Feb 1946	George Kennan publishes the Long Telegram outlined Containment.
29 Aug 1949	The USSR tests nuclear weapon becoming the second nuclear power.
21 Jun 1952	US launches the USS Nautilus, the first nuclear submarine.
2 Oct 1952	The UK tests nuclear weapon and becomes the third nuclear power.
1 Oct 1957	Strategic Air Command (STRATCOM) begins twenty-four hour nuclear alert procedures in order to detect USSR ICBM attacks.
4 Oct 1957	USSR launches Sputnik satellite.
13 Feb 1960	France tests nuclear weapon becoming the fourth nuclear state.
Oct 1962	Cuban Missile Crisis.
20 Apr 1964	President Johnson and Premier Khrushchev simultaneously announce plans to reduce production of nuclear weapon materials.
16 Oct 1964	China tests a nuclear weapon becoming the fifth nuclear power.
2 Nov 1966	Suspected date of Israeli early nuclear weapon system test (zero yield). Israel may have had a small number of nuclear bombs by 1967. Although the dates vary and Israel has never officially announced itself as a nuclear power, it is routinely considered to be the sixth nuclear power.[40]
5 Mar 1970	Nuclear Non-Proliferation Treaty ratified by USSR, US, UK and others in effect.
26 May 1972	The SALT I agreement ends the US strategy of containment—détente begins.
18 May 1974	India becomes seventh nuclear power with weapon test.
1 Aug 1975	The Conference on Security and Cooperation in Europe produces the Helsinki Final Act which is signed by Canada, European countries, the USSR and the US.
18 Jun 1979	SALT II is signed by President Carter and Premier Brezhnev.
27 Dec 1979	USSR ends détente with invasion of Afghanistan.

2 Nov 1983	USSR places nuclear forces on high alert based on misinterpretation of NATO Exercise Able Archer 83, which exercised NATO's nuclear employment procedures.
18 Jan 1984	President Reagan approves strategy Mutual and Balanced Force Reductions in National Security Decision Directive 122.
26 Apr 1986	Chernobyl, Ukraine nuclear power plant explosion.
11 Oct 1986	President Reagan & Premier Gorbachev meet (Iceland) to discuss nuclear arms control.
8 Dec 1987	President Reagan & Premier Gorbachev sign Intermediate-range Nuclear Forces Treaty.
1987-1990	South Africa suspected of building and then dismantling up to seven nuclear bombs.[41]
31 Jul 1991	Strategic Arms Reduction Treaty I.
18 Oct 1991	NATO Ministers order reductions in Europe.
31 Dec 1991	The USSR is officially dissolved. Russia assumes control of USSR nuclear weapon arsenal.
2 Oct 1992	US Nuclear Testing Moratorium.
3 Jan 1993	Strategic Arms Reduction Treaty II.
28 May 1998	Pakistan tests nuclear weapon and becomes the eighth nuclear state.
9 Oct 2006	North Korea tests nuclear weapon.

Abcd – highlights each nation as it obtains nuclear weapons.

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