

Is Nuclear Deterrence Superior to Conventional Deterrence?

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ABSTRACT

After the development of the atomic and hydrogen weapons, nuclear deterrence has been commonly viewed as the ultimate form of deterrence among civilians and politicians. Throughout the Cold War and even in the present, various nations strived to initiate their nuclear weapons program to enhance national security and presence in international affairs. However, has our fear of nuclear weapons blinded us from objectively evaluating its effectiveness in deterring conflicts and wars? This paper aims to evaluate nuclear deterrence and conventional deterrence to determine which is effective. Components of deterrence are discussed to determine the characteristics of nuclear and conventional deterrence. In addition, various historical events and defense technologies are analyzed.

Introduction

After the birth of the atomic bomb, humanity had access to a new dimension of explosive power that shadowed conventional weapons. Politics on the international stage and military strategy received a layer of complexity as nuclear weapons became the prime interest during the Cold War. Nuclearism, being dependent on or having faith in nuclear weapons, predominated in the minds of civilians, politicians, and commanders of the military, which led to the common belief that possessing nuclear weapons is the best method to prevent war. However, as our obsession with nuclear weapons made us overvalue and overestimate them? If so, is nuclear deterrence truly superior to conventional deterrence?

Deterrence

Deterrence in a military context simply means discouraging the adversary from pursuing war or aggression. To elaborate, deterrence is a game where there is the challenger, who seeks to destroy the equilibrium state, and the preserver, who seeks to preserve the equilibrium. According to Chong Woo Kim's study on South Korea's conventional deterrence in 2020, "Capability and credibility play critical roles in success or failure of deterrence" (13). In a military context, capability means the ability to discourage conflict. A nation or weapon with high capability would have sufficient influence and destructive power on the battlefield to make the opponent refuse conflict and war. Credibility can either mean being willing to be aggressive when referring to nations or willing to use when referring to weapons. For example, a nation with high credibility would have a history of participating in various wars or conflicts while a weapon with high credibility would have a history of being used or deployed frequently on multiple battlefronts. Mr. Kim further describes these factors as "strategic variables [that] are probabilities connected to the States' choices" (13).

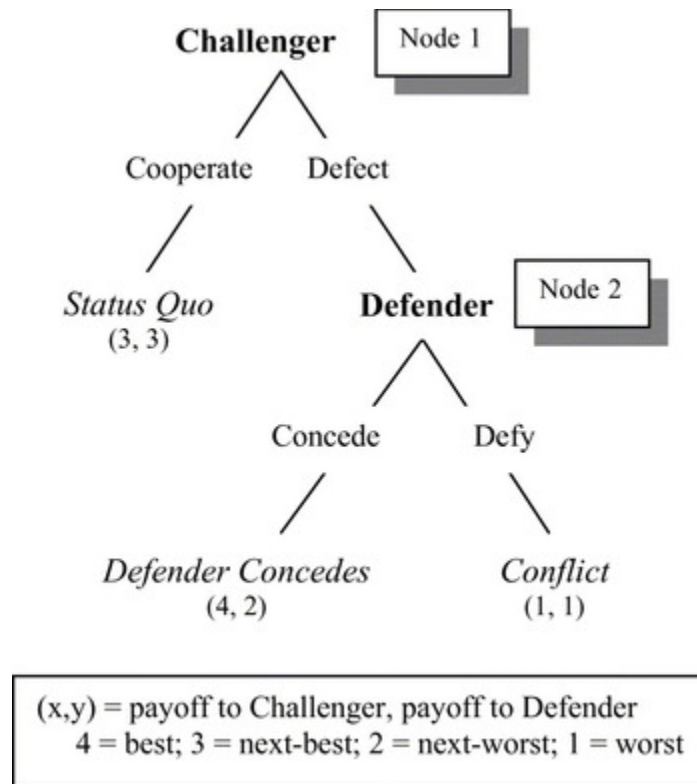


Figure 1. Deterrence game that depicts how conflict is made

The wording of probabilities is an accurate and concise description for a few reasons. A country with higher capability may have a higher probability of conducting military warfare for its national interest. Another reason is the fact that there are different types of governments. Consider a democratic government and a dictatorship. Assuming that both countries have the same military power, the dictatorship may conduct more provocative military action because dictatorships are usually less susceptible to public opinion and support. Moreover, a regime's leader may have a different approach to dealing with national or political crises. A leader who is not risk-averse may engage in war with other nations to regain political support or divert public attention from a nation's internal problems. The political environment, leader's psychology, and a nation's credibility are factors to consider, in addition to the nature of conventional and nuclear weapons, when it comes to deterrence. These factors that act as probabilities are reasons why James Wirtz, in 2018, acknowledged that "credibility of nuclear and conventional deterrence is probably context-specific" (10) which further complicates making objective or even reliable evaluations of nuclear and conventional deterrence capabilities.

Nuclear deterrence

Nuclear deterrence is a strategic concept that argues maintaining nuclear arsenals prevents war. Nuclear weapons, in nature, have unparalleled capability relative to conventional weapons due to their unimaginable destruction. Proponents of nuclear deterrence claim that "If one argues for further nuclear reductions and nuclear disarmament, then one needs to be responsible and also think seriously about conventional arms control" (Leah and Lowther 8). The enormous capability of nuclear weapons results in a serious lack of credibility due to the unbearable social and political consequences it brings, which explains why nuclear bombs have never been used since 1945. On the other hand, the lack of capability of conventional weapons means that their credibility is higher than its counterpart, meaning that

conventional weapons are more likely to be used in combat globally, stimulate an arms race, and eventually reach a point that requires arms control. This is the reason why “conventional imbalances [in] any remaining system of deterrence . . . would serve as the source of instability” (Leah and Lowther 8).

Many refer to the Cold War as the primary example of nuclear deterrence in action. Colin Gray in 1993, a year after the Cold War ended, viewed the immense capability of nuclear warheads of the United States and the Soviet Union as “two unstoppable strategic offensive instruments [that] should have the same implications as a standoff between two impenetrable defenses” (Wirtz 7). If one situation results in total annihilation and another results in a complete neutralization of missiles and bombs through defense systems, there is no logical reason to initiate a nuclear war. Mr. Wirtz states that this was exactly what happened because “Under no realistic scenario was it conceivable for either side to declare victory following a full-scale nuclear exchange” (7). Thus, the proponents conclude that possessing nuclear arsenals is an effective deterrence against nuclear war because it is suicidal. However, there is one key occurrence that the proponents neglected: Proxy Wars.

Cold War Proxy Wars

- 1945-1949 Chinese Civil War
- 1946-1949 Greek Civil War
- 1948-1949 Berlin Blockade
- 1950-1953 Korean War
- 1954-1975 Vietnam War
- 1961-1962 Cuba
- 1967-1975 Cambodia Civil War
- 1973 Chile military junta
- 1973-1989 Middle East conflict
- 1977-1978 Ethiopia
- 1978-1992 Soviet occupation of Afghanistan
- 1976-1988 Angola Civil War
- 1980-1992 Salvadoran Civil War
- 1979-1990 Nicaraguan Civil War

Figure 2. List of proxy wars during the Cold War

Although the United States and the Soviet Union did not directly engage in nuclear and even conventional warfare, both nations had used other satellite or allied countries as a frontier of conflict. The Korean War and Vietnam War are the most notable examples of large-scale prolonged conventional warfare, intended to divert the use of nuclear weapons by avoiding direct combat between the Soviets and the United States. The whole point of deterrence is to prevent any type of warfare. The proponents of nuclear deterrence made the mistake of primarily focusing on how nuclear deterrence prevented nuclear warfare, not war in general, which led them to neglect the fact that conventional warfare occurred in place of nuclear warfare in the form of proxy wars. As a result, when both nations possess nuclear arsenals, nuclear deterrence has been successful at deterring nuclear warfare, but not in conventional warfare. The same can be said when nuclear and non-nuclear state is involved.

The Falklands War in 1982 is an example of nuclear deterrence failing to prevent escalation of conflict and deter conventional warfare. The Argentine Forces, which only had conventional weapons, invaded the British-occupied Falkland Island and caused around 600 Argentine and 300 British troops casualties during the three-month war. Argentina invaded British-occupied territory even though the British Royal Navy had Resolution Class submarines that were armed with submarine-launched nuclear missiles. However, the deployment of nuclear weapons in a low to

medium level of conflict like the Falklands War would be unreasonable, which the Argentine forces may have taken advantage of. The role of nuclear weapons in such a situation can be described as “a police officer armed with a backpack nuclear weapon [that] would be unlikely to deter a robber: ‘Stop in the name of the law, or I’ll blow us all up!’” (Barash). As one can imagine, the use of nuclear weapons is mostly pointless unless there is a national catastrophe. Aggressive or risk-accepting political leaders can exploit this low credibility of nuclear weapons by causing multiple low-level conventional warfare. Based on this historical example, it is reasonable to conclude that nuclear deterrence and weapons are a double-sided sword that can be exploited. The fact that nuclear weapons possess unparalleled capability generates a considerable political burden to utilize such weapons in war, which the aggressor can take advantage of. Thus, nuclear deterrence is partially effective; It prevents nuclear but not conventional warfare.

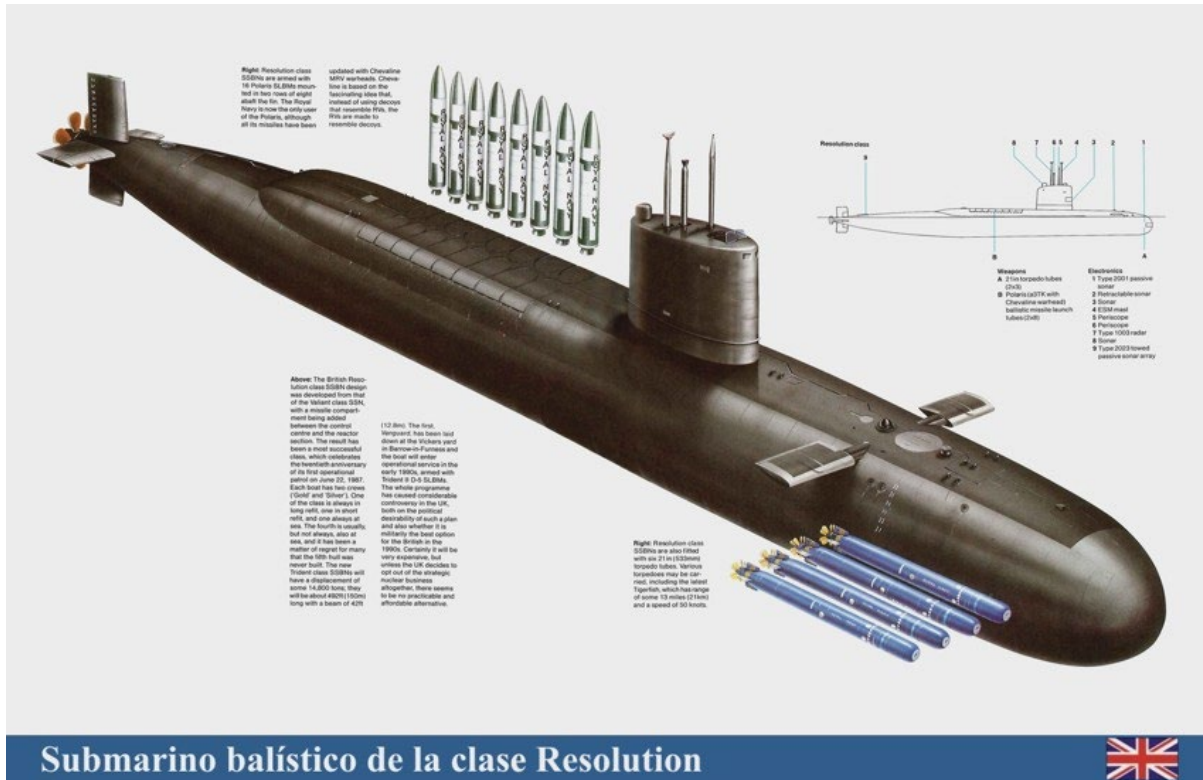


Figure 3. Picture of the British Resolution Class submarine (1968-1996), armed with 16 nuclear missiles. It was never deployed in real combat.

Conventional deterrence

Conventional deterrence, unlike nuclear deterrence, involves not only weapons but also defense systems such as anti-air and anti-ship missiles. Moreover, recent technological advancements increased the capability and precision of conventional weapons. Although conventional weapons significantly lacked capability relative to nuclear weapons, technological advancement introduced new conventional weapons with enhanced capabilities such as “graphite black-out bombs [that are] capable of taking down DPRK power networks, an effect that the United States assigned to its nuclear forces during the cold war” (Mount). Nuclear weapons, when detonated, not only generate explosive heat and radioactive materials, but also an electromagnetic pulse that can physically damage electric circuits and permanently damage any electronic devices (Mosher). The increased precision of conventional bombs and missiles, along with the fact that conventional weapons can generate some effects of nuclear weapons in a non-lethal method, further

strengthens the capability of conventional weapons. For example, South Korea’s conventional missile, Hyunmoo-2c, has a center area probable of 1 to 5 meters (“Hyunmoo-2C”). This allows South Korea to strike key military facilities such as aircraft shelters, military bases, and underground bunkers reliably.



Figure 4. Picture of South Korea’s conventional missile, Hyunmoo-4, precisely striking the center of target

The fact that conventional weapons can be lethal and non-lethal makes them flexible in reacting to multiple levels of aggression, which also increases credibility. This degree of adaptability and flexibility that conventional deterrence possesses is why “Conventional deterrence in crises less than national survival can be more effective than nuclear deterrence, as its capability is enhanced by the certainty (therefore, credibility) of a response” (Haffa 105). The lethal and non-lethal aspect of conventional deterrence reduces the political pressure of deploying and actively using conventional weapons, which can signal to the adversary that a counterattack or some form of military response is almost guaranteed. The same degree of credibility for nuclear weapons can not be said with confidence. Since conventional weapons have been deployed consistently throughout history and lack the degree of political consequences compared to nuclear weapons, conventional military power is a practical threat to the adversary, hence the meaning “capability is enhanced by the certainty (therefore, credibility) of a response” (105).

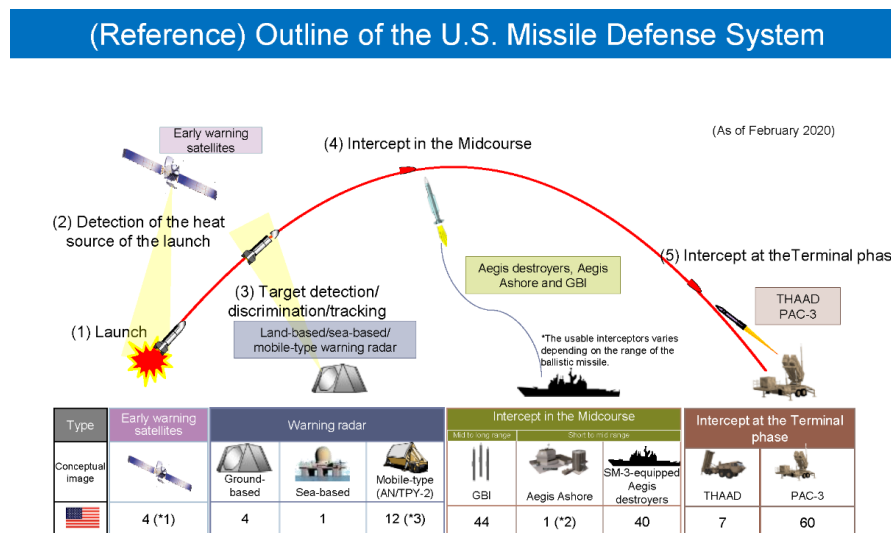


Figure 5. Various components of the U.S. Missile Defense System

Furthermore, conventional defense systems also provide additional deterrence. Anti-air or anti-ship defense systems in a concentrated area have the potential to nullify the majority of incoming ballistic missiles and provide area denial to warships operating near the coast of a nation. This can limit the adversary from conducting a military show of force and military operation near another nation, reducing the possibility of building tension that could lead to conflict. In addition, strong defense systems would reduce the amount of potential damage the adversary can inflict, benefitting the defending nation.

However, there is a simple action that the adversary, whether nuclear or conventionally armed, can take to simply nullify conventional defense: become more aggressive and launch more missiles. Since modern ballistic missiles' maximum speed can reach up to 24,000 kph, which is approximately 6.4 kilometers per second, a flood of missiles heading toward the defending nation would overload the missile defense system, eventually causing significant damage (Boyd). Moreover, modern ICBMs such as the Russian RS-28 Sarmat not only travel at multiple times the speed of sound but also contain multiple warheads capable of performing evasive maneuvers and decoys to increase survivability against missile defense systems ("RS-28 Sarmat"). Although not ballistic missiles, the United States launched more than 800 cruise missiles during Operation Iraqi Freedom, more than enough to nullify Iraq's air defense systems as well as target critical infrastructures. This allowed the United States to gain total air superiority which significantly expedited military operations and reduced casualties.

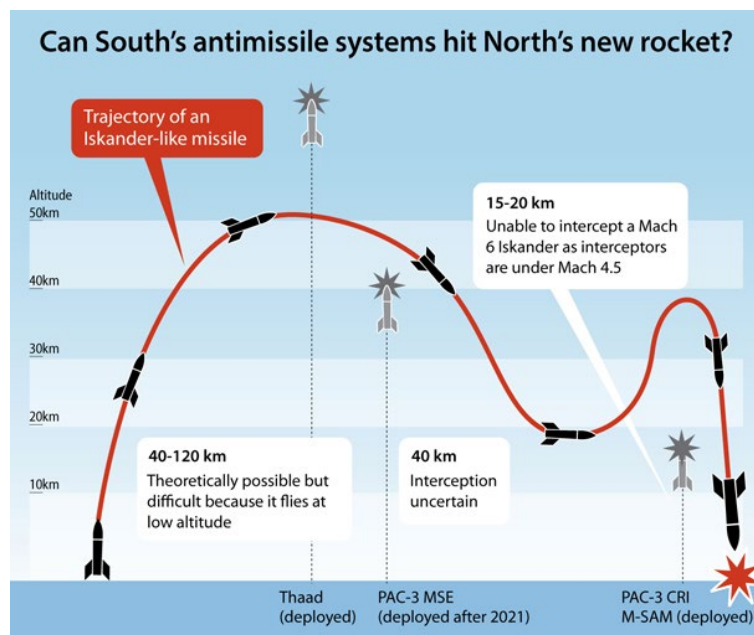


Figure 6. A trajectory of a Russian Iskander-like missile performing an evasive maneuver

Similarly, if the adversary nation possesses nuclear weapons and has enough political imperative for war, "Missile defenses may incentivize nuclear missiles if the regime is uncertain in its ability to destroy a runway or hardened facility with a salvo of conventional missiles" (Mount). A leader desperate to start and win a war may prefer to use nuclear weapons to nullify defense systems and increase the chance of causing maximum damage if it lacks sufficient conventional missiles. Therefore, if the defense is increased, the incoming desperate attack will only increase proportionally, which does not provide a fundamental solution. If conventional defense is not a reliable deterrence against a nuclear-armed nation, then strengthening a weapon's capability would be necessary to provoke fear and persuade the adversary that an unrecoverable destruction and consequence will be the result. This psychological fear will increase the threshold of war and ultimately prevent the opponent from pursuing war.

Despite the technological advancements, conventional weapons still lack capability compared to nuclear weapons, which makes conventional deterrence ineffective. If a defending nation only has conventional weapons, the aggressor would be less fearful of the defender's military power. As a result, the aggressor may choose to engage in war with the defending nation, believing that it will win the war with minimal damage. Conventional weapons' lack of capability and destructive power makes the aggressor optimistic about the outcome of a war, which increases the chance of starting a war. Nuclear weapons, on the other hand, do not allow any optimistic predictions of war, which decreases the probability of anyone starting a war. Of course, while the credibility of nuclear weapons is extremely low, no one can confidently say that nuclear weapons will never be deployed in the future. This psychological fear and uncertainty can offset the low credibility disadvantage of nuclear deterrence. More importantly, while credibility or the decision to deploy a certain weapon can be changed overnight, the inherent capability or power of a weapon can not be changed overnight. Ultimately, capability and power are paramount in deterrence, which conventional deterrence lacks compared to nuclear deterrence. As a result, conventional deterrence is not effective; It can not deter nuclear and conventional warfare.

Summary & Conclusion

When evaluating nuclear and conventional deterrence, it is important to acknowledge that credibility and capability affect the probability of deterring war. Nuclear weapons' high capability and destruction make them low in credibility while the opposite is true for conventional weapons. Although nuclear weapons' low credibility can be exploited by causing low-level conventional warfare, nonetheless it has deterred nuclear warfare because initiating nuclear warfare guarantees suicidal consequences. Therefore nuclear deterrence partially works in that it prevents nuclear warfare but not conventional warfare. Conventional defense system is meaningless if the adversary launches numerous missiles. Moreover, conventional weapons, although having high credibility, lack capability and power. This can cause the adversary to be optimistic about the outcome of the war, which increases the possibility of causing war and conflict. Therefore, conventional deterrence does not prevent nuclear and conventional warfare. Ultimately, it can be said that nuclear deterrence is superior to conventional deterrence not because it prevents all types of wars, but because it at least prevents nuclear warfare.

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