Taylor Patton-Gentert graduated from Waubonsie Valley High School, where he pursued baseball, weightlifting, finance, and was named Accounting Student of the Year. He is majoring in accountancy and is a member of NIU’s Student Accountancy Society. Taylor hopes to become the CFO of a major corporation at some point. Taylor’s maternal grandmother is Japanese and was young when Hiroshima and Nagasaki were bombed; the stories Taylor’s grandmother told his family about the devastating effects of those bombs drove his interest in learning about nuclear technology and writing this essay.

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NUCLEAR WEAPONS
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Throughout human civilization, differences in political, economic, and religious views have created conflicts that have escalated into war. History has shown that warfare has dramatically changed from the small tribal conflicts of the past to the global threat of nuclear war today. Our understanding of the consequences of nuclear war is based on the experiences of the Japanese people in the aftermath of the two atomic bombings in the cities of Hiroshima and Nagasaki by the United States military. Given the horrendous consequences, many argue that the possession and use of nuclear weapons are morally wrong and that they must be abolished. However, the possession of nuclear weapons is a necessary evil and their inherent catastrophic consequences make the world a safer place.

Albert Einstein, a scientist and physicist, laid the theoretical foundations of the relationship between energy and mass. A very basic explanation of his theory of relativity, \( E=MC^2 \), is that tiny pieces of mass can be converted into huge amounts of energy. With just that one equation, the nuclear age was ushered in and the atomic bomb was born (“Nuclear Fission Bombs” 2). Nuclear weapons unleash the power within an atom. A single nuclear weapon can release more energy in a micro-second than the energy released by conventional weapons used in all wars throughout history (Secretary-General of the Department for Disarmament Affairs 9). Nuclear weapons have multiple and far reaching effects and massive destructive potential, which can extend to areas beyond the borders of the target country. Their creation was a significant scientific achievement, but it has left civilization threatened as never before.

The explosion of one nuclear bomb carries cataclysmic consequences to human life, society, and the environment. Most people within a six square mile area from where the nuclear bomb is dropped will die from the gamma rays emitted from the blast itself. Those individuals will be instantly incinerated and will cease to exist, many represented only as a ghostly shadow burnt onto the wall where they were standing (Hoffman 1). The light radiating
from the explosion will immediately and permanently blind every living thing because it is so bright and several times hotter than the sun. Those looking directly at the blast will have a large spot permanently burned into their retinas and the last image that they will see will be the large mushroom cloud looming ten miles across and ten miles high in the sky (Hoffman 3).

Many others will be crushed by collapsing buildings, will be impaled by flying objects, or will sustain blunt force trauma injuries as they are hurled like rag dolls by high winds that accompany the pressure wave following the blast. This pressure wave will reach velocities of a hundred miles per hour near the epicenter and will cause people to bleed from every orifice (Hoffman 2). After the gamma blast, heat blast, pressure wave, and sudden fierce wind, a fire storm will quickly follow producing hurricane-force winds in a matter of minutes. The fire burns so hot that the asphalt in the street will melt and then burn (Hoffman 4). Those who are killed instantly are the lucky ones. Those less fortunate will be severely injured and left to suffer in great pain and terror.

Radiation is probably the most terrifying effect of nuclear weapons. Those who manage to escape the blast and firestorm will not be aware that they have received a potentially lethal radiation dose until days to weeks after the explosion. They will begin to suffer from nausea, vomiting, intestinal cramps, and diarrhea as a result of damage to the gastrointestinal tract, which will lead to unquenchable thirst and nutritional problems. Their hair will begin to fall out in clumps, and they will suffer from bleeding gums, skin rashes, peeling skin, uncontrolled infections, and wounds that will not heal (“The Medical and Environmental Effects of Nuclear Weapons” 1-2). Those who are unfortunate enough to receive a large dose of radiation but manage to survive will start to break down internally at the molecular level. Their organs will begin to resemble unrecognizable masses of bloody pulp. Within days or weeks, they will bleed from every pore and hole in their body, experiencing a horrifying and painful death (Hoffman 4).

After a nuclear exchange, a worldwide “nuclear winter” of extreme cold and dark will likely follow, further threatening human survival. Significant amounts of soot, dust, and chemicals from the firestorm and mass fires will saturate the atmosphere (Scherr 4-5). Large amounts of combustible materials are stored in nations of
the world. Sooty smoke will be produced from fires in oil and coal storage facilities and from the burning asphalt in cities. This dense layer of smoke will block sunlight from reaching the Earth’s surface for a period as long as ten years. Since the earth cannot get sunlight, it will begin to rapidly cool. Freezing cold air will rapidly move into regions that rarely or have never experienced frost, including those regions near the equator (Crutzen 8-11).

Due to the reduction in sunlight and below-normal temperatures, the survival of natural ecosystems will be at risk. Chemical pollutants and an increase in ultraviolet radiation associated with the depletion of the ozone layer will further exacerbate the problem. This effect will shorten or eliminate agricultural production and constitute a severe threat to world food production (Secretary-General of the Department for Disarmament Affairs 85). The transport of food nationally and internationally will likely be halted for long periods of time. Much of the world’s food stores will be depleted before food production can be resumed, which will put the world’s population at risk for starvation (Crutzen 35).

It is clear that the consequences of nuclear war are terrifying and pose a serious threat to human civilization. As a result, many have argued that the only rational solution to address nuclear weapons is to eliminate them completely. Proponents of abolishing nuclear weapons argue that they are morally repugnant. They argue that nuclear weapons are indiscriminate weapons of mass destruction and that the recognition that life is sacred is fundamental to all moral values (Granoff 1421-1422).

These moral arguments are hard to dispute and most would agree with the theoretical arguments against nuclear weapons. However, proponents of abolishing nuclear weapons fail to recognize: “The moral analysis is not a fixed doctrine, but a fluid progression of practical reasoning that must adhere to the reality of changing technology and new political circumstances” (Quinlan 46-47). To take the position that a country is morally obligated to abolish and prohibit the possession of nuclear weapons under all circumstances means that a country would have to stand by passively in the face of any adversary who possesses nuclear weapons and who is willing to use them. It means that a country would be morally obligated to not put up any resistance or take any recourse against the adversary no matter how horrendous the
adversary’s character, past record, or present action may be. For example, there have been long standing hostilities between Israel and Iran. Iran’s President Ahmedinejad has repeatedly stated that Israel should be wiped off the map. To adopt the proponent’s position would require us to say that Israel would be morally obligated to give up its nuclear weapons even if Iran were to obtain nuclear capabilities pointed directly at them (Quinlan 50).

It is unrealistic to think that non-violent resistance can protect a country and its citizens from a hostile adversary who possesses nuclear weapons. Indeed, the International Court of Justice, which was established in the United Nations system to settle legal disputes submitted by states in accordance with international law, seems to recognize this. The Court would not definitively state whether the threat or use of nuclear weapons would be contrary to international and humanitarian law in an extreme circumstance of self-defense in which the very survival of a country would be at stake (Granoff 1427-1430). Therefore, it appears that the Court believes it would be morally tolerable to maintain and use nuclear weapons under certain circumstances.

Unfortunately, we must rely on the catastrophic consequences of nuclear weapons as a deterrent to prevent conflicts from ever starting, to prevent conflicts from escalating, or to aid in bringing conflicts to an end. The United States’ nuclear policy of deterrence reflects that rationale. The objective of deterrence is to convince potential adversaries that if they take any course of action against the United States or its allies, it could lead to their own destruction (Frederick 109).

However, in order for deterrence to work, an adversary must perceive that its actions would result in unacceptable damage to its own interests. As a result, the United States must have a nuclear arsenal capable of executing the threat. It must also convince the adversary that the threat is credible. In other words, the United States must have the political will to use nuclear weapons if necessary. This does not mean that the United States has to move from a deterrence posture to a policy of using nuclear weapons as war-fighting tools. Rather: “If not backed by the capability and the credibility to execute threats, deterrence is merely a dangerous bluff” (Lieber et al. 49).
The Commander-in-Chief of the Strategic Command, Admiral Rich Mies, reflects the current U.S. deterrent policy in his testimony to the United States Senate:

Deterrence of aggression is a cornerstone of our national security strategy, and strategic nuclear forces serve as the most visible and most important element of our commitment [to] further deterrence of major military attack on the United States and its allies, particularly attacks involving weapons of mass destruction, [and it] remains our highest defense priority. (Sandia National Laboratories 4).

There are a growing number of nuclear-capable countries and of hostile rogue elements, as well as there is a proliferation of weapons of mass destruction, missile technology, and expertise. As a result, the threats to the United States and its allies have increased enormously. Thus, the possession of nuclear weapons is a necessary evil which will guarantee that potential adversaries will be convinced that there would be no benefit from the use or threat of use of nuclear weapons against the United States or its allies.

Although the abolition of nuclear weapons is a worthy goal, it is an impractical dream. Ken Adelman, Director of the Arms Control Agency in the 1980s explains, “To think that we’ll ever be able to verify nuclear matters everywhere around the world is to lose all grip on reality. This is not, as [Senator] McCain said, ‘a distant and difficult goal’ which must be handled ‘prudently and pragmatically.’ Rather, it’s sheer fantasy” (1). Adelman goes on to ask that if people are dreaming of a world with no nuclear weapons, why not ban war all together? (1).

Interestingly, an attempt to ban war was made in the late 1920s. Diplomats from many nations came together to negotiate a no-war treaty. On August 27, 1928, nearly all nations signed the Kellogg-Briand Pact in an effort to prevent another world war. However, it had little effect. “Before too long, Japan turned militaristic, Italy turned Fascist, and Germany turned Nazi. The nations of the world, having signed a solemn pact to eliminate war, engaged in the biggest war ever, one which brought some 50 million deaths” (Adelman 1).

Even if we were to outlaw nuclear weapons, we would be met with similar results as with the Kellogg-Briand Pact. Other nations and extremist groups will not necessarily play in accordance to the rules. The reality is that nuclear technology exists and it
would be impossible to undo the knowledge of how to build such weapons ("Pursuing a New Nuclear Weapons Policy" 3). It would only take one country to secretly maintain nuclear capabilities to make abolition of nuclear weapons as a deterrent impractical. Without the threat of a retaliatory strike, a country will not be deterred and can attack at will. This is an important reason to maintain an effective nuclear arsenal.

Many historians believe that the absence of a large scale war in Europe after World War II proved that nuclear deterrence works. Additionally, during the Cold War, nuclear weapons and their potentially catastrophic destructive capabilities created a unique security environment where neither country would ever seriously think of pushing the button to send off a nuclear warhead ("Nuclear Deterrence" 2). We have been without a major war or nuclear attack for nearly sixty-five years. I believe that nuclear deterrence remains a large factor in the relative stability that persists between the United States, Russia, and China. To abolish nuclear weapons would disrupt this stability.

Nuclear weapons remain of vital importance to the security of the United States and to its allies, and they play a large role in making the world a safer place. Margaret Thatcher, the former Prime Minister of the United Kingdom stated, “A world without nuclear weapons would be less stable and more dangerous for all of us” ("Nuclear Quotes” 1). She quoted the words of Winston Churchill to the United States Congress: “Be careful above all things not to let go of the atomic weapon until you are sure, and more sure than sure, that other means of preserving the peace are in your hands” ("Pursuing a New Nuclear Weapons Policy” 3).

To date, the proponents of abolishing nuclear weapons have not proposed a viable alternative to deter nuclear-capable aggressors without using nuclear weapons. Passive defense of building bomb shelters and evacuating people would be ineffective against a nuclear attack. Further, it is unclear whether a global defense shield is technologically and scientifically feasible today. Some proponents have suggested civil disobedience and passive resistance should be used against aggressors as it has been used in the past. However, governments responsible for the safety and freedom of their citizens should not have to rely on these types of security policies to protect its people.
The most urgent national security threat facing the United States is the possibility that a nuclear weapon might be used against our country. On December 13, 1793, George Washington warned Congress, “If we desire to avoid insult, we must be able to repel it; if we desire to secure peace, one of the most powerful instruments of our rising prosperity, it must be known, that we are at all times ready for War” (“George Washington” 1). This still rings true today. Nuclear deterrence is the only defense possible to avert attack. Therefore, in order to communicate to potential adversaries that the United States is at all times ready for war, the possession of nuclear weapons is a necessary evil. A capable nuclear arsenal will create a retaliatory threat so great that no adversary would dare act deliberately and bring about its own destruction. It is the inherent catastrophic consequences of nuclear weapons and their threat that keep the world more secure.
WORKS CITED


