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The Effects of The Nuclear Arms Race on The United States and The Soviet Union

The Nuclear Arms Race is an example of technological advancement fueled solely on fear. During this tension filled period, the United States and the Soviet Union competed fiercely for supremacy in nuclear weaponry. During this time thousands of warheads were built, and countless technological advancements were made in the context of nuclear bombs. Ironically, while the nuclear weapons were built with the intent of imposing physical harm on the other superpower, they inflicted more damage on their own creators. While the Nuclear Arms race remained completely cold, the arms race itself shows the negative repercussions that weapon technology had on both the United States and the Soviet Union from an economic, political, and societal standpoint.

To properly understand the Nuclear Arms Race, it is important to first analyse the events that preceded it. Interestingly, the development of the first nuclear bomb, during the Second World War, was prompted by similar motives as those seen in the arms race itself. On August 2nd 1939, a letter written by Hungarian physicist Leo Szilard and signed by Albert Einstein was sent to then-United States President Franklin D. Roosevelt, warning that the Germans were seeking to develop nuclear weapons. This event would lead to the commencement of the Manhattan Project in December 1942, a project that would later develop a bomb capable of harnessing energy from nuclear fission, a process in which individual nuclei are split apart. Two bombs were created, and in 1945 were dropped on the cities of Hiroshima and Nagasaki, effectively leading to a Japanese surrender.

Following the Second World War, the world witnessed the emergence of two global superpowers, the United States and the Soviet Union. This shift in global power brought with it a shift in the methodologies through which warfare was conducted. The Burch Plan, an American proposal based on a plan constructed by Dean Acheson and David E. Lilienthal, was submitted to the United Nations Security Council in 1946. The plan argued that nuclear technology was to be used solely for peaceful endeavors, that weapons of mass destruction were to be eliminated from government arsenals, and that there needed to be an efficient means of ensuring that the first two stipulations were properly followed. The United States agreed to turn over their weapons on the basis that no other country produced nuclear warheads. The Soviet Union, however, argued that the United Nations Security Council was dominated by the United

States and its western allies, and therefore could not be trusted; they rejected the plan outright. Tensions naturally began to rise and with no compromise on regulations over nuclear weaponry, it became one of the focal points as the Cold War began to develop.

During the 1940s there had been no significant signs of Soviet progress in nuclear weaponry. That, however, changed after German physicist Klaus Fuchs released vital information from the Manhattan Project to Soviet intel. On August 29th, 1949, the Soviet Union successfully detonated their own atomic bomb code named "Joe 1," ultimately commencing the start of the Nuclear Arms Race. The 1950s were full of many technological innovations from both nations. On July 1950, President Harry S. Truman released a statement in which he emphasized an American pursuit of all forms of nuclear weapons. This was crucial given that previously, all nuclear weapons relied on nuclear fission as their source of energy. In 1951, physicist Edward Teller proposed the hydrogen bomb, a nuclear weapon that could theoretically draw its power from nuclear fusion, a process in which atomic nuclei come together. On November 1, 1952, the United States successfully detonated the first hydrogen bomb code named "Mike" on the Enewetak Atoll part of the Marshall Islands. The physicists were correct; the explosion from the bomb was 700 times greater than "Little Boy". The cloud from the bomb stretched over 100 miles wide and 25 miles high. However, Klaus Fuchs once again supplied the Soviet government with information on this recent American feat, and in 1955 the Soviet Union successfully detonated their own hydrogen bomb.

The Americans, however, were not the only ones who made significant advances during the 1950s. While not strictly related to nuclear technology, the Soviets managed to launch the satellite, Sputnik 1, into orbit on October 4, 1957. What frightened the United States government was not the satellite being in orbit, but rather the way in which it got there. Sputnik 1 was a momentous feat because it was the first object to be launched into orbit by an intercontinental ballistic missile. American officials feared that, if the Soviets could attach satellites to the missiles, then nothing would prevent them from attaching a nuclear warhead. The Soviets could theoretically target major US cities, and within an hour and without warning, millions of people would be killed.

The 1960s marked the height in tensions between the two superpowers. On October 30, 1961, the Soviet Union detonated the most powerful bomb in history, code named by the United States as the "Tsar Bomba," that yielded an explosion with the same amount of energy as 50 megatons of TNT. While this was terrifying for the American public, it would not match the events that would occur within the following year. In April 1961, then US president John F. Kennedy had approved a plan, labeled The Bay of Pigs Invasion, to overthrow leader of Cuba Fidel Castro who had implemented a very anti-capitalist ideology within the Cuban society. The goal was to replace him with a much friendlier and pro-American leader who would help restore relations between the two countries. The counter-revolutionary military group assigned to the

project was made up mostly of Cuban exiles, who had been trained by the United States' Central Intelligence Agency, and became known as the Cuban Democratic Revolutionary Front. Their aspirations of changing Cuba's government, however, were short lived as the invasion turned out to be a complete and utter disaster. While embarrassing for Kennedy's Cabinet, the failed invasion had far worse ramifications for the United States. The following year while a US bomber was flying over Cuba, it spotted Soviet nuclear missile sites pointed directly at the United States. This would ultimately commence the beginning of the Cuban Missile Crisis. With close proximity to the mainland of the United States, a Soviet nuclear warhead could reach America within a half an hour. Unsurprisingly, this caused great panic amongst the US government and its denizens. From the sixteenth to the nineteenth of October, President Kennedy and the leader of the Soviet Communist Party, Nikita Khrushchev, arranged for the removal of the missiles. During their period together, both world leaders understood the dangers of mutually assured destruction (MAD) which stated that if one country launched its nuclear weapons at the opposing superpower, then the chance of that nation retaliating would be high, assuring that both countries would ultimately be destroyed by each others nuclear weapons. Both leaders agreed that this was one of the primary reasons why both countries were so hesitant to actually attack the other. They therefore instead looked to mend the relationship between the United States and the Soviet Union.

The late 1960s and 1970s were commonly referred to as the Nuclear Detente, in which both the United States and the Soviet Union looked to ease their tenuous relations. In July 1968, both countries agreed to sign the Treaty on the Non Proliferation of Nuclear Weapons, a treaty that aimed to prevent any nation without nuclear weapons from obtaining them. In November the following year, the first Strategic Arms Limitation Talks (SALT 1) took place in Helsinki, Finland. This bilateral conference led to the creation of the Anti-Ballistic Missile Treaty. This was an exceptionally important treaty given the importance of anti-ballistic missiles during this period. An ABMs primary role was in the defense against enemy missiles. Although it might appear that limiting the number of defensive measures would encourage offensive action, it actually led both the United States and the Soviet Union to be more hesitant about launching their missiles given their respective lack in nuclear defenses. However, relations between the two nations were still not ideal. This was because the ABM treaty failed to recognize multiple independently targetable reentry vehicles (MIRVs), missiles that could carry multiple warheads and ultimately attack multiple targets. Because the ABM Treaty never addressed this type of technology, both the United States and the Soviet Union would add more than a combined 12,000 nuclear warheads to their arsenals. Naturally, this led to another rise in tension between the two nations giving rise to a second SALT convention. In 1979, the SALT 2 treaty was created, setting strict limits on both MIRVs and the number of weapons that each nation could have, and also on how quickly nuclear technology could progress; nuclear detente was finally underway.

While during the 1980s relations didn't improve to the extent that they did during the prior decade, scares such as the Cuban Missile Crisis, or the Tsar Bomba did not occur. Then-United States President Ronald Reagan made weapons advancements one of the primary objectives of his presidency. One of his proposed ideas was to develop an anti-ballistic missile system in orbit that became colloquially known as "Star Wars." Over 80 billion dollars were invested into the plan, but no progress was made and the plan was eventually abandoned. While there is no precise date on which the Nuclear Arms race and conflicts between the United States and the Soviet Union ended, in 1989 the Berlin Wall, which separated East Berlin —occupied by the US and its allies— and West Berlin— occupied by the Soviet Union— fell and two years later the Soviet Union ceased to exist.

While the story of the Arms Race between the United States and the Soviet Union is fascinating, it is important to understand the negative impacts that the nuclear crisis had on the two countries. From an American perspective, the Nuclear Arms Race greatly influenced American society and politics. For example, during the 1950s, The National Emergency Alarm Repeater program was created with the intent of forewarning US citizens of oncoming nuclear attacks through small black boxes containing receivers which obtained their input from electric utility lines. When triggered, the boxes would emit a loud buzzing sound that could easily be heard by those indoors. Furthermore, during the Kennedy administration, US citizens were advised to build bomb shelters in the event of a full scale nuclear attack.

Politically, the United States witnessed the Second Red Scare. While the Second Red Scare was not a direct product of the Nuclear Arms race, it was heightened by frightening events during that time frame such as the detonation of Joe 1 and the Tsar bomb. Joseph McCarthy, a US Senator from Wisconsin who was an avid propagator of the Second Red Scare, ultimately became known for making accusations of treason and increasing the national fear of communist infiltration in the US government. Such practice would later be coined "McCarthyism." However, the Second Red Scare itself went far beyond Senator McCarthy, and its effects reached all corners of the US government. In March 1947, then-US President Harry S. Truman established the Loyalty Order, an executive order that required all government officials to undergo inspection to determine whether they were loyal to the United States. An infamous committee that greatly contributed to the Second Red Scare was the House Un-American Activities Committee (HUAC). Although created in 1938, the HUAC reached its height in the early 1950s. Its primary objective was to conduct investigations on suspected communist spies working within the US government. During this period, through the combination of McCarthyism, the Loyalty Act and the House Un-American Activities Committee, many politicians were accused of treason. But the effects of the Second Red Scare went beyond the three branches of the United States' federal government. People began to simply accuse those

who they disliked or those who they disagreed with as communists. Artists such as Paul Robeson and Arthur Miller were unable to work due to the accusations that had been made against them. All in all, the Second Red Scare was a period in which paranoia dominated the American people and caused the United States to suffer not at the hands of its enemies, but from misperceptions of its own people.

The Soviet Union, like the United States, was not immune from the negative repercussions of the Nuclear Arms Race. While the US was greatly affected from a societal and political standpoint, on the outside, it appeared that the Soviet Union suffered more from an economic standpoint. At its peak during the mid 1980s, the Soviet Union's arsenal contained around 40,000 nuclear warheads. It was clear that during the Nuclear Arms Race the Soviet government had invested large amounts of money into the development of its nuclear arsenal, however, the main indicator of the country's ever-growing economic instability was surprisingly the events that unfolded during the Cuban Missile Crisis, a question that must be accounted for is: Why would Soviet premier Nikita Khrushchev choose to place short range missiles in Cuba rather than simply building long range missiles from the Soviet mainland? Cuba is in much closer proximity to the US, but the process of coming to an agreement with Cuban leader Fidel Castro about building nuclear sites in his country, and then actually going to Cuba to do so, seem to be a much more strenuous process with little to no benefit over long range missiles in the USSR. So why then would the Soviets go out of their way to do so? The answer is that they simply did not have the funding to build long range missiles due to such resources being invested in their extensive nuclear arsenal. The idea of an insecure Soviet economy can also be reflected in the fact that the Soviet Union eventually collapsed in the early 1990s partly due to the economic problems that the country faced.

Despite it being widely known that the Soviet Union suffered greatly from an economic perspective, during the Nuclear Arms Race, not much is often given about how both Soviet society and politics were affected during this time. Although not much is known about the exact situation of the Soviet government, its leaders believed that the Soviet Union was the first socialist state and the only power that could defend the world from the spread of a capitalist ideology. While this belief held firm throughout the Nuclear Arms Race, the USSR did not experience any event similar to the Second Red Scare. Soviet Society can be divided into two periods: Stalin, and Post-Stalin. During Stalin's reign the USSR was very a consolidated and reclusive society. Many were taught that capitalism was the true enemy, but reasons for this besides being different communism were non-existent. They were informed far less about the brink of a nuclear war and in that sense the same panic that American citizens experienced was not experienced by Soviets. Following Stalin's regime, the Soviet people became far more unsheltered to western ideology. This potentially fueled differences in political ideals and could have contributed to the fall of the Soviet Union

In 1991, Soviet Union collapsed ending the Cold War and also the Nuclear Arms Race between the two superpowers. It was clear that both the Soviet Union and the United States were affected by the nuclear weapons they built, and while the consequences could have been far more dire, they were still nonetheless damaging. Post Cold-War, both countries looked to reduce their arsenals and efforts in nuclear warheads, even signing the New Start Treaty in 2010. Today, however, we know Nuclear threats are not gone; North Korea, who abandoned the Treaty on the Non-Proliferation of Nuclear Weapons in 2003 recently detonating both a hydrogen and an atomic bomb while also developing ballistic missiles leading to the 2017 North Korean Crisis and widespread panic among neighboring nations. While no warheads were ever launched, the crisis once again reinforces the idea that nuclear weapons don't have to be used to be damaging.

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