

## Causes and Prevention of War

### Nuclear War in Europe: A Thought Experiment

American foreign policy in the near future will be shaped by theories regarding nuclear proliferation; thought experiments which examine various historical situations and assume nuclear power are essential tests of these theories. An obvious starting point for such thought experiments is World War II which ended with the advent of atomic weapons. Political scientists should ask themselves: would World War II in Europe have been more intense if all major powers (Germany, France, the Soviet Union, the United Kingdom, and the United States) had had nuclear weapons and secure second strike capabilities? This thought experiment is simple to perform and yields an interesting answer--despite the assumption of nuclear power, the number of lives lost would have been only slightly higher than the number observed historically, but the war would have been shorter and would have had wide reaching environmental effects stemming from the use of nuclear weapons. By defining intensity as the net cost of war per unit time, more death and destruction in a shorter period is axiomatically more intense.

Two theories tested by this thought experiment are the theory that nuclear weapons lead states to feel more secure making them less likely to go to war and the theory that nuclear weapons have little effect on the likelihood that states will go to war, but make wars more intense. If World War II could have been averted through the introduction of nuclear weapons, the first hypothesis is likely true, but if World War II would have occurred regardless, this is strong evidence for the second hypothesis.

The sequence of events leading to nuclear war in Europe can be deduced by applying modern strategies to the nations assumed to have atomic weapons. An un-deterrable Hitler would have brought war to Europe regardless of the nuclear situation. Had Hitler used nuclear weapons in this conquest, a European nuclear war would have decimated all nations involved, ending the war through total

destruction. If Hitler had recognized the danger in using nuclear weapons and had instead engaged in conventional warfare, history would have played out unchanged until the collapse of France, when strategy would have dictated the use of nuclear weapons. A nuclear war, initiated by a dying France, would have decimated much of Europe making further conflict impossible.

Before these postulates regarding an alternate history can be accepted, a basic understanding of history must be established. In the mid to late 1930's, the Nazi party began an aggressive military build up. When Germany invaded Czechoslovakia in 1939, Britain and France agreed to neutrality in hopes that Hitler would be satiated. The Nazi invasion of Poland later that year prompted a strong reaction from France and Britain due in part to a mutual assistance treaty signed by Britain and Poland<sup>1</sup>. After sporadic fighting in Poland, Belgium, and Holland, Germany invaded France and quickly overran the British and French defense force resulting in the "Miracle at Dunkirk" where over 300 hundred thousand British soldiers were evacuated from Dunkirk, a beach in Northern France<sup>2</sup>. Despite fighting in Europe, the United States remained neutral until the infamous attack on Pearl Harbor in December 1941. Over the next four years, the industrial might of the United States allowed an effective European campaign against the Nazis, coming to an end on "V-E" day, March 8, 1945, when fighting ended after the unconditional surrender of all German forces the previous day<sup>3</sup>.

Most political scientists see the German invasion of Poland as a critical point in World War II. The invasion made Britain and France feel insecure enough to desire war because Poland was a large and resource rich country. Some might speculate that with nuclear weapons Britain and France would have felt secure enough to allow Poland to fall, but this is unlikely. The British right viewed Poland as an essential buffer against communism, and Poland's resources would have substantially enhanced the

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1 "World War Two in Europe" The History Place, 01 May 2009  
<<http://www.historyplace.com/worldwar2/timeline/ww2time.htm>>.

2David J. Knowles, "BBC NEWS | UK | The 'miracle' of Dunkirk," BBC NEWS | News Front Page, 01 May 2009 <<http://news.bbc.co.uk/1/hi/uk/765004.stm>>.

3 "World War Two in Europe"

German war effort. Poland's large size would have allowed Germany more missile or bomber bases enabling the expansion of German nuclear stockpiles without creating large vulnerable depots. A nuclear situation would have increased rather than diminished tensions because the occupation of Poland would have resulted in a rapid change in the nuclear status quo. In addition to these strategic considerations, a German--Soviet Border, would have increased regional tensions giving Britain and France reason to intervene. The increased security derived from British and French nuclear arsenals would have been offset by fears of German nuclear expansion and regional conflict allowing history to play out unchanged.

Nuclear strategies rely heavily on deterrence, and therefore, before considering an alternate history, it is important to establish that Hitler and the German people could not have been deterred. Psychology suggests that Hitler was un-deterrable--his actions implied mental instability and an active desire for war. The ferocity with which he undertook the extermination of the various peoples exemplified his appetite for the macabre, and eyewitnesses have stated that upon receiving concessions from France and Britain, he was furious because war had been delayed. This mental picture is compounded by Hitler's suicidal tendencies which indicated a lack of concern for his own life<sup>4</sup>. Similarly, by the time that France and Britain realized deterrence would be necessary, there is strong evidence that the German people could not have been deterred. In 1939 Germany was a highly militarized society and much propaganda had been effectively disseminated to the public<sup>5</sup>. Although the German people may have been more easily deterred than Hitler, it is unlikely that they would have ever realized the threat because of Germany's highly effective propaganda. History also indicates that German military leaders would have been strongly influenced by Hitler. He had earlier forced the German military to adopt a strategy (Blitzkrieg), which most German generals thought absurd, and most of the early German military campaigns were incited and orchestrated by Hitler. Perhaps the

4 Sebastian Haffner, The Meaning of Hitler (Cambridge, Mass: Harvard UP, 1983).

5 Stephen Van Evera, "Origins of the Second World War," 17.42 Lecture, MIT, Cambridge, MA, 6 Apr. 2009.

strongest evidence of this is that despite British and French military superiority (which was recognized by the German military), when Britain and France made threats in late 1939, they were ignored by Hitler, the German people, and the German military.

With a historical and psychological basis, the effects of nuclear weapons on World War II are deducible. Despite their willingness to offer concessions, both Britain and France would have been drawn into a war with Germany. Hitler desired war in Eastern Europe and would have pursued this desire regardless of concessions; Britain and France would have been drawn into this war for security considerations. Britain entered into World War II believing that bombers would cause destruction on a nuclear scale and therefore would not have been deterred by the possibility of a nuclear conflict<sup>6</sup>. The fighting might have remained conventional until France was conquered--the known result of a conventional war. At this point nuclear doctrine would have required the use of nuclear force by France. The postulate of secure second strike would have led to the destruction of France, Germany, and possibly Britain, making these countries unable to continue fighting.

Scholars agree that concessions to Hitler were driven by feelings of guilt regarding the punitive Treaty of Versailles and a desire for peace stemming from the atrocities of World War I<sup>7</sup>. These considerations would have either been unaffected (guilt regarding Versailles) or enhanced (a desire for peace) by the presence of nuclear weapons. Therefore, concessions would have been given despite the nuclear threat. This argument assumes Hitler acquired Czechoslovakia without using of nuclear weapons. If nuclear weapons had been used, France and Britain might have realized the threat posed by Germany and chosen to launch a preventive war. This would have simply accelerated the course of events.

Following concessions to Germany, it is likely that war would have broken out. Hitler desired

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<sup>6</sup> Van Evera, Stephen

<sup>7</sup> Van Evera, Stephen

further territories in Eastern Europe despite liberal concessions<sup>8</sup> so France and Britain would have been drawn into a war with Germany through fear. Britain would have been exceptionally willing to enter the war as historical documents indicate that Britain went into World War II anticipating destruction on a level consistent with nuclear weapons<sup>9</sup>. Hence, despite the presence of nuclear weapons Britain would have engaged Germany. Once this war broke out, the use of nuclear weapons would be unavoidable. If either side chose to use nuclear force, the other side would have been forced to retaliate in kind. Had both sides fought the war conventionally, history tells us that France would have been overrun. Modern nuclear theory dictates that when a country is facing destruction it should use its nuclear arsenal as a final defense<sup>10</sup>. As such, Germany, France and Britain would have entered into nuclear war by June 22, 1940, the date France surrendered to the Nazis<sup>11</sup>. Such a war would have exhausted the resources of all countries involved making further fighting impossible.

While nuclear war would have destroyed much of Europe, it is important to consider the effects nuclear stockpiles would have had on the United States' entry into the war. Although the United States' industrial might would not have been important to peace in Europe, because most of the continent would have been physically unable to engage in war, the United States could still have entered the war zone as peace keepers or imperialists, but this is unlikely. The event that mobilized the American public for war was the attack on Pearl Harbor. Japan, a state which was assumed not to have had nuclear weapons, would not have attacked a nuclear power--such an action would have been absurd. Although Japan's attack on the United States was unreasonable even without the assumption of nuclear power, the ridiculous nature of such a plan would have been much more evident had the United States been armed with nuclear weapons, and Japanese doves such as Kido Koichi would have had greater

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8 Van Evera, Stephen

9 Van Evera, Stephen

10 "Nuclear Posture Review [Excerpts]," [GlobalSecurity.org - Reliable Security Information](http://www.globalsecurity.org/wmd/library/policy/dod/npr.htm), 06 May 2009  
<<http://www.globalsecurity.org/wmd/library/policy/dod/npr.htm>>.

11 "World War Two In Europe"

influence. This lack of Japanese aggression would have been compounded by the United States' isolationist philosophy which would have been strengthened by wide spread nuclear power--a nation unwilling to enter a conventional war is highly unlikely to enter a nuclear war. Hence the United States would not have entered the war limiting the destruction to Europe.

In addition to providing information on nuclear strategies, studies of the Cold War gives historians accurate estimates of the damage a nuclear war would have caused. Most Cold War estimates indicate that a nuclear war between the United States and the Soviet Union would have destroyed 50-80% of both countries<sup>12</sup>. By applying these numbers to Europe in the early 1940's it is possible to estimate the total number of lives which would have been lost in a nuclear war. In the best possible case, only France and Germany would have used their nuclear arsenals obliterating each other, but causing little damage to the rest of Europe. At the time, the population of France was approximately 40 million people, and Germany (including Austria) reported a population just shy of 80 million people in 1938<sup>13</sup>. Combining these numbers with Cold War estimates, the best possible scenario ends with 60-92 million people dead. However, Britain probably would have joined France in a nuclear war, meaning the British population would also have been affected. Given that the population of Britain was about 50 million people before the war<sup>14</sup>, total deaths would have numbered about 85-117 million distributed between France, Britain, and German in proportion to their prewar populations. This is slightly higher than the 72 million actually killed in WWII and would have occurred much more quickly. This loss of human life would have been accompanied by decreased European productivity. After World War II, the combined Gross Domestic Product (GDP) of Britain, France, and German was about 750 billion dollars per year, a slight increase from the prewar years<sup>15</sup>.

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12 Robert Johnston, "The Effects of a Global Thermonuclear War," Johnston's Archive, 01 May 2009 <<http://www.johnstonsarchive.net/nuclear/nuclearwar1.html>>.

13 "Population History," Tacitus.nu, 01 May 2009 <<http://www.tacitus.nu/historical-atlas/population/>>

14 "Population History

15 Ralph Zuljan, "Allied and Axis GDP," OnWar.com - Wars, Military History, International Relations, 01 May 2009 <<http://www.onwar.com/articles/0302.htm>>.

However, after a nuclear war, production would have been effectively eliminated. Crops would have failed due to clouds of radioactive particles saturating the atmosphere, and almost all industry would have been targeted destroyed in the nuclear attack<sup>16</sup>. Hence, the GDP of Europe after a nuclear war would have been many orders of magnitude lower than the actual GDP observed after World War II. This destruction of productivity, a net decrease of about 750 billion dollars per year, twenty-five percent of world production. These figures are substantially higher than those actually observed and the destruction would have occurred in a shorter amount of time--an axiomatically more intense war.

These estimates of intensity ignore externalities (effects on countries not directly involved in the conflict) which would have significantly affected the intensity of the war. Specifically, environmental and genetic damage would have had global consequences. There has never been a large scale nuclear war, so it is difficult to predict the environmental response; however during the Cold War, certain "doomsday" theories were postulated. The theory of nuclear winter speculates that a large scale nuclear war could potentially destroy humanity by clouding the skies with radioactive dust<sup>17</sup>. Although the extent to which this would have occurred is debated, it is likely that any large scale nuclear war would result in a significant number of deaths due to environmental damage<sup>18</sup>. A second externality presented by a nuclear war is the dispersal of radioactive material. The radiation from this material would have increased genetic mutations worldwide leading to reduced life expectancies and a general degradation in quality of life. These factors would have significantly increased the intensity of a European nuclear war.

The information gained from this experiment supports the hypothesis that nuclear weapons have no effect on the likelihood of war, but make war between nuclear powers far more intense, or in the

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16 Johnston, Robert

17 Martin J. Rees, Our final hour a scientist's warning : how terror, error, and environmental disaster threaten humankind's future in this century on earth and beyond (New York: Basic Books, 2004) 30-31.

18 "WORLDWIDE EFFECTS OF NUCLEAR WAR - - - SOME PERSPECTIVES," Center for Digital Discourse and Culture | @ Virginia Tech, U.S. Arms Control and Disarmament Agency, 1975, 01 May 2009  
<<http://www.cddc.vt.edu/host/atomic/nukeffect/nukwr10.txt>>.

word of Albert Einstein, "The release of atomic energy has not created a new problem. It has merely made more urgent the necessity of solving an existing one."<sup>19</sup> It should be noted that this thought experiment is unique because nuclear weapons were introduced into an already volatile situation; had these weapons been introduced during at a more stable time say after World War II, the results might have been dramatically different, as highlighted by the lack of nuclear war in the modern era. More experiments assuming mutually assured destruction in historical situations must be performed before the results from this experiment can be generalized.

Although it is an easy thought experiment to perform, the conclusions drawn from assuming nuclear power in Europe before World War II are difficult to condense into policy recommendations. The experiment illuminates two dangers presented by nuclear states with secure second strike capabilities. The first danger is un-deterrable leaders. The second danger is less obvious and requires careful examination of France's role in the hypothetical nuclear war. When a nuclear state has a weak or ineffective conventional military, nuclear war tends to follow any conventional war because the nation's military fails. These dangers lead to several distasteful policy prescriptions. The United States must keep a close watch on the leaders and politics of states with nuclear weapons and should consider assassination or other black ops if an un-deterrable leader comes to power. Similarly, states with nuclear weapons should be encouraged to maintain strong conventional armies and given military aid to ensure that nuclear weapons are not used in conflicts which could be resolved conventionally.

From this simple thought experiment, many dangers of nuclear warfare have become evident. Had nuclear weapons been prevalent in Europe prior to World War II, Hitler's strong desire for conflict would have forced both France and Britain into nuclear war despite their peaceful intentions. This war would have resulted in the loss of 85-117 million lives and billions of dollars per year in productivity. Meanwhile, externalities such as environmental damage and the spread of radiation would have

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<sup>19</sup> "Albert Einstein Quotes," S.F.Heart, 01 May 2009 <<http://www.sfheart.com/einstein.html>>.

significantly increased the cost and intensity of the war. Hence, it is reasonable to conclude that nuclear weapons have little effect on the causes of war but make war much more intense.

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