

Critical Thinking, War, and Nuclear Weapons

This handout explores the role of critical thinking in defusing the nuclear threat.

Eliminating the threat posed by nuclear weapons is such a huge task that critical thinking may seem too small to be of any real value. Compared to other proposed goals, such as arms control or nuclear abolition or world peace, how could something as subtle as thinking things through more carefully possibly make a difference?

Those advocating more concrete goals such as arms control, nuclear abolition, or world peace are not necessarily wrong. But none of those larger, more concrete steps is possible until society adjusts its thinking to the realities of the nuclear age. The state diagram (see Handout #1) that breaks down both the negative and positive nuclear possibilities into a sequence of small moves helps put critical thinking in perspective. By itself, critical thinking does nothing to change the concrete reality of how many weapons we have or the war fighting plans that are in place for using them. But, by rooting out incorrect but deeply held beliefs, critical thinking creates a firm foundation for concrete changes to occur. In the incorrect world view, those changes look dangerous and could never occur.

The fact that, initially, our military posture does not change even has a positive aspect: Because merely engaging in critical thinking does not change deterrence or our other military strategies, it is hard to oppose this suggested first step as too risky. Contrast that with the strong opposition to ratifying the New START Treaty in December 2010, even though it only reduced our deployed warheads from 2,200 to 1,550, and put no limit on the thousands of weapons in storage.

There are many ways to practice critical thinking, but perhaps the most important first step is to recognize that many seemingly absolute truths are, in fact, mere beliefs. It is easy to see this in terms of past errors in human thinking, such as believing the earth was flat, or that the sun revolved around the earth, or that slavery was an immutable part of human nature. It is harder to see in terms of society's currently cherished beliefs.

There is a problem in that critical thinking is very time consuming. Whenever I write, many things that I thought I knew have to be researched further, and even after that effort, there are often points that I believe to be facts but that I have to call allegations. Writing what I had hoped would take an hour, often takes a whole day. Given that none of us have that kind of time to apply to every issue that comes before us, how are we to ever reach conclusions and act on them? I have two suggestions.

First, we need to do a kind of triage. Most issues are not important enough to expend so much energy, but some demand that we be as certain as possible before taking action. It boils down to the likely consequences. Buying a new computer is a significant purchase, but making a decision on incomplete data incurs a relatively small cost. Some research is in order, but it would be irrational to invest more of one's time on that process than the likely savings. At the other extreme, decisions to go to war can cost many thousands – and potentially billions – of lives, as well as billions or trillions of dollars. I therefore propose that the deepest critical thinking be applied to questions of war and peace, and particularly before going to war. Doing that will also reduce the risk of nuclear weapons being used in anger because small wars are a frequent cause of confrontations that could lead to the use of nuclear weapons. Cuba in the 1960's and Georgia in 2008 (and, as we shall see later, even today) are examples. Unfortunately, history shows that critical thinking is rarely, if ever, applied before going to war:

- The *USS Maine* probably was not sunk by the Spanish, yet it precipitated the Spanish-American War.
- World War I was sold to Americans as the war to make the world safe for democracy, which it did not.
- According to [declassified, originally Top Secret documents](#), the second Gulf of Tonkin incident that provided the legal basis for Lyndon Johnson's Vietnam buildup never occurred.
- Contrary to statements at the time, American support for Afghan *mujahideen* fighting the Soviets started before the Soviet invasion, [almost in the hope](#)¹ that the Soviets would invade. While viewed at the time as “freedom fighters” many *mujahideen* now are seen as terrorists who want to do grave harm to the U.S.

¹ This link is to an English translation of a French article. I have the original French article in my library, but it appears to have disappeared on line. If anyone would like the original, I can send you a copy. I checked the translation, and it is accurate. The original appeared in 1998 in *Le Nouvel Observateur*, which has been likened to *Newsweek* in this country. Note that Brzezinski's interview occurred *before* the terrorist attacks of 9/11. I suspect he wishes he could take back what he said about defeating the Soviets in Afghanistan being far more important than the role that played in giving “arms and advice to future terrorists.”

- The 1988 downing of Iran Air flight 655 by the *USS Vincennes* may have been a consequence of a [much larger alleged subterfuge](#)² in which almost half of Iran's navy was sunk by American warships.
- The two major justifications for the 2003 Iraqi invasion have been found to be groundless. Claims that Saddam Hussein collaborated on the 9/11 attacks [have been disavowed](#) by former Vice President Cheney, and possession of WMD's also turned out to be unfounded.

Critical Thinking as a Synthesis of Perspectives

At times, critical thinking requires that we discard perspectives that turn out to be false. But, more frequently, critical thinking involves adding a perspective that our previous world view lacked. In that case, rather than forcing us to discard our old idea, critical thinking adds a new dimension to our understanding.

A good example is the scientific perspective on the nature of light. In the 17th and 18th centuries, scientists argued whether light was a particle or a wave. For example, Sir Isaac Newton was in the particle or corpuscular camp. In the late 19th century, James Clerk Maxwell developed a set of four elegant equations that clearly showed light behaved like a wave. The particle nature of light came to be seen as a quaint theory that no educated scientist could possibly embrace. Thus, when in 1900, Max Planck could only explain a phenomenon known as "black body radiation" by assuming that light was emitted in packets of a fixed size, he saw this as "a purely formal assumption," and did not recognize its importance. Giving the particle nature of light any more prominence probably felt like going back to the incorrect thinking of two centuries earlier.

Five years later, Albert Einstein's work on the photoelectric effect helped him recognize that light, while at times exhibiting wave-like behavior, at other times behaved like a particle. By expanding his world view from one where light must be either a wave or a particle to one where light could exhibit both properties, Einstein laid the foundation for quantum mechanics, a branch of science that has given us many modern marvels, including integrated circuits that power personal computers and the Internet. Such paradigm shifts always involve embracing what previously seemed to be patently false or impossible. My invention, joint with Diffie and Merkle, of public key cryptography, while not in the same league as the discovery of quantum mechanics,

² This link is to a 1992 ABC TV newscast by Ted Koppel, but I was unable to find it on ABC's web site. That raises questions, but given that 1992 preceded the Internet and stories on official web sites are sometimes removed, it is not damning evidence. Given the completeness of the report and the risk associated with an outright forgery, I believe it to be accurate, but cannot be certain.

also involved breaking out of a mindset that had restricted thinking in the field. Roughly 100 years prior to our discovery, the field had been modernized by correctly requiring that all secrecy reside in the key. With that requirement, how could the key be public? The answer lay in recognizing that there could be two keys, one public and one secret.

The value of critical thinking also can be seen from the story of the three blind men and the elephant:

Three blind men who have never experienced an elephant stumble onto one – literally. The first one grasps the tail and is sure that the elephant is a rope. The second, who has run into the leg, is sure this is a tree. The third touches the trunk and knows it is a serpent. As frequently happens when people with such incompatible perspectives meet, they start to argue and eventually come to blows. Each has a piece of the truth, but so long as they assert that their perspective is the whole truth, it becomes a falsehood. Only by opening their minds to new perspectives can they come closer to the truth.

The story of the blind men and the elephant helps explain a saying that otherwise might be enigmatic: *The greatest value is in the opposing point of view*. If you and I agree on something, we cannot learn from one another. But, if we disagree, there is a chance that we can learn something new from one another. Note that the saying was not: *The greatest value is always in the opposing point of view, or only in the opposing point of view*. Sometimes the other point of view really is wrong. But, until we truly open our minds to the other perspective, it is impossible to determine whether the other person is wrong or merely appears wrong from our vantage point. I can attest that often this is not easy to do, but well worth the effort. Very often, as was the case in understanding the nature of light, I have found that both points of view possess some of the truth and a synthesis of the two is required.

Critical Thinking Applied to Some Societal Beliefs

This section lists a number of societal assumptions that I believe warrant reexamination. You may not agree with me that all of these need reexamination. Some may not be as widespread as I believe. Many are not wrong, but as with the blind men and the elephant, become wrong if taken as the whole picture when, in fact, they are only one piece of the truth. And I may be wrong on some. The goal is not to convince you of my position, but for you to think these issues through and come to your own conclusion. If enough of us do that, and especially if we then share our perspectives, I am convinced the nuclear threat will start to be resolved.

The US is the world's sole remaining superpower.

The United States spends [almost as much](#) on its military as the rest of the world combined. That gives us unique capabilities, yet Russia can destroy us in under an hour, and other nuclear-armed nations can inflict grievous harm that we should avoid if at all possible. That leads to two questions: Are we the sole remaining superpower and, if not, what risk do we incur by mistakenly acting as if we were? Here are just two of the many examples of this thinking that I found in a quick Google search:

For them [jihadists] to be seen to defeat the sole remaining superpower in the same place [the border area of Afghanistan and Pakistan] would have severe consequences for the United States and the world. [[Testimony of Secretary of Defense Robert M. Gates](#) before the Senate Armed Services Committee, December 2, 2009]

... they [the rest of the world] want to know exactly what the world's one remaining superpower is able to do and willing to do. [[transcript of "Special Report With Brit Hume,"](#) October 20, 2008]

The term "superpower" itself needs to be dissected via critical thinking. We may be the world's sole superpower when it comes to conventional armaments, but not when nuclear weapons are factored in.

America's military strength allows us to impose our will wherever we want.

Evidence for this belief can be seen in some American actions, as well as in calls for the US to undertake yet others. Some of this comes from outside the country. For example, one colleague who recently hosted a South Korean diplomat told me the man asked him why the US didn't force North Korea to give up its nuclear weapons, something my colleague saw as beyond our abilities to impose – at least at an acceptable cost. Seoul is within artillery range of the DMZ and North Korea now has a small nuclear arsenal.

Russia is a modern day Nazi Germany that only understands force.

This is usually not stated so baldly, and is often put in terms of the danger of appeasing Russia. While appeasement theoretically has other connotations (see the section on appeasement below), it has become a codeword for Neville Chamberlain's agreeing to Hitler's takeover of Czechoslovakia. Rather than "peace in our time" (Chamberlain's infamous claim on his return to England), appeasement now is seen as a prelude to World War II, with Hitler made stronger by

such concessions. This appears to be a frequent association since a Google search on “russia appeasement” (without the quotes) gave 596,000 results. Here’s a sample:

Is that “appeasement” we see sidling shyly out of the closet of history? ... As those of a certain age will recall, “appeasement” encapsulated the determination of British governments of the 1930s to avoid war in Europe, even if it mean capitulating to the ever-increasing demands of Adolf Hitler. ... It is impossible to view the Russian onslaught against Georgia without these bloodstained memories rising to mind. [[Newsweek editorial](#) subtitled “The historical reasons why the West should intervene in Georgia,” August 11, 2008.

Russia: Appeasement or confrontation? [Title of [an article in International Real Estate Digest](#), May 12, 2007. This article relates to [an incident](#) that could have resulted in Russia and Estonia, a member of NATO, coming to blows. While Russia is not blameless, [neither is Estonia](#).]

What Russia needs most: Civil society engagement, not appeasement [Title of an [OpEd in The Christian Science Monitor](#), February 10, 2010]

Does Russian Appeasement Include Joining the WTO? [Title of a [blog post](#), September 20, 2009]

The EU’s Appeasement of Russia [Title of [an article by Uffe Ellemann-Jensen](#), former Danish Minister for Foreign Affairs, April 30, 2007. This article concerned Ukrainian membership in the EU.]

Obama’s Appeasement: The Obama administration chose an historic month to appease the Russians by renegeing on the U.S. proposal to place ballistic missile defenses in Poland and the Czech Republic. September 1st of 2009 was the 70th anniversary of the Nazis’ unprovoked attack on Poland. [[An article in The Weekly Standard](#), a neocon magazine]

Appeasement only postpones the inevitable day of reckoning. Better to stand up to bullies early on, when they are weaker, than later when the fruits of appeasement have made them stronger.

As noted immediately above, appeasement has come to mean buying short term gain (Chamberlain’s vain belief that appeasing Hitler meant “peace in our time”) at the expense of long term pain (facing a stronger Hitler when his appetite proved insatiable). Yale Prof. Paul

Kennedy's article [A Time to Appear](#) questions that belief. It appeared in the July-August 2010 issue of *The National Interest*, the magazine of the Nixon Center. Key excerpts follow:

“APPEASEMENT!” What a powerful term it has become, growing evermore in strength as the decades advance. It is much stronger a form of opprobrium than even the loaded “L” word, since Liberals are (so their opponents charge) people with misguided political preferences; but talk of someone being an Appeaser brings us to a much darker meaning, that which involves cowardice, abandoning one’s friends and allies, failing to recognize evil in the world – a fool, then – or recognizing evil but then trying to buy it off – a knave. Nothing so alarms a president or prime minister in the Western world than to be accused of pursuing policies of appeasement. Better to be accused of stealing from a nunnery, or beating one’s family. ...

There was a time when appeasement was an inoffensive, even a rather positive term. ... Even today, Webster’s dictionary’s first definition of “appease” is “to bring peace, calm; to soothe,” with the later negative meaning [associated with Nazi Germany] being, well, much later in the entry. ...

Even as the great powers entered the twentieth century, one of the most exceptional acts of appeasement, and repeated conciliation, was occurring – yet it is something that very few American pundits on appeasement today seem to know anything about. It was Great Britain’s decision to make a series of significant territorial and political concessions to the rising American Republic.

For example, in 1895 London decided on a diplomatic solution (read: concessions) regarding the disputed Venezuela–British Guiana border they had spent more than five decades arguing over because of the belligerent language coming out of Washington on the side of Caracas. In 1901, the cabinet overruled Admiralty opinion and agreed that Britain would give up its 50 percent share of a future isthmian (i.e., Panama) canal, to which it was perfectly entitled under the Clayton-Bulwer Treaty signed with the United States in 1850 to guarantee the waterway remained neutral. In 1903, London outraged Canadian opinion by siding with the U.S. delegates over the contentious Alaska–British Columbia border. Yet another retreat. Kaiser Wilhelm II, who so eagerly reckoned to benefit from an Anglo-American war that distracted his European rival, was bewildered that the British kept giving way – kept appeasing – when it was obvious to most naval observers that the far larger Royal Navy could have spanked the nascent U.S. fleet. London did not see things that way ... better to buy the American imperialists off,

preserve their enormous mutual trade across the Atlantic and save the cost of defending Canada. Sometimes, giving way made sense. In this case, appeasement worked, and arguably played a massive role in helping to bring the United States to an official pro-British stance as the two great wars of the twentieth century approached. Curiously, I have never seen any of our current American neocons and nationalists declare it was a bad thing that Britain essentially surrendered over the isthmian canal, Venezuela, the Bering Sea seal fisheries and the Alaska boundary. ...

the basic problem [is] ... when do you know that the revisionist state is never going to be appeased by small-scale, or even middle-size, concessions? ... When do you say to yourself, “This guy can only be stopped by the threat of serious armed force and, most probably, having to use that force”? How do you know that the concession you just reluctantly made was not the last one needed? After all, Hitler assured the West that acquiring the Sudetenland was his final objective. Was it? By late 1938, Churchill was arguing that appeasement was just feeding a crocodile with smaller and smaller tidbits until it finally turned on you, and many Britons were at last beginning to agree and wanted stiffer actions. But it really wasn't until Hitler's March 1939 conquest of the rump state of Czechoslovakia – breaking his Munich promises and seizing a country without any Germans in it – that the die was cast. By the time of his move against Poland six months later, appeasement was finished, and within a year of fighting, the Appeasers, the “guilty men,” were to be execrated for the rest of time. No wonder that policy became the greatest insult you could throw at any later political opponent. ...

Certainty about such matters only comes, I suspect, with hindsight; and there we are all wise, because we know what happened. It was wise, we now know, for the English to give up Calais to France in 1558 because they would no longer be tied to the Continent. It was wise for Stalin to stay on reasonable terms with the Japanese during the 1930s and early 1940s because he couldn't afford a Far Eastern war while Nazi Germany was preparing to blast its own way eastward. It was wise, clearly, for then-President Charles de Gaulle to extricate France from the Algerian bloodbath in the early 1960s – though “clearly” was not a word used by the French nationalists who sought to assassinate the general. It was wise, very wise, not to go to nuclear war over the Korean, Hungarian, Berlin and Cuban crises. It was wise, we can now see, for the United States to abandon the colossal encumbrance of Vietnam.

As with appeasement, isolationism is a short term solution that creates much larger, long term problems. The United States must be constantly vigilant, searching out and attacking likely adversaries before they become stronger.

This belief also can be traced to World War II. Woodrow Wilson's 1917 request for a declaration of war against Germany portrayed that war as the one that would make the world safe for democracy. When the results were far different, many Americans became disillusioned with interventionist policies and retreated into isolationism. When the Second World War broke out, isolationist sentiment made it difficult for FDR to oppose Hitler. To get elected in the 1940 presidential election, Roosevelt felt the need to promise "not send American boys into any foreign wars." As with Chamberlain's 1938 appeasement of Hitler, isolationism is now seen as a horrible mistake that made the Second World War more devastating than needed.

I am not advocating isolationism. In today's interconnected world, ignoring external threats and opportunities would be disastrous. The problem is the assumption that, if isolationism is bad, then interventionism is good, and more intervention is even better. Each possible intervention needs to be judged on its own merits, and no single policy (always intervene or always stay isolated) is optimal.

The problem here is symptomatic of a more general error, a kind of bipolar thinking. In relation to nuclear weapons, this frequently manifests itself as an assumption that the only alternative to business as usual is immediate and complete nuclear disarmament. Such straw men need to be seen for what they are.

Nuclear weapons form a protective umbrella.

The metaphor of a "nuclear umbrella" protecting us is frequently used. Examples include:

15 years ago ... U.S. Defense Secretary William Perry ... clarified that European NATO countries would be covered by the U.S. nuclear umbrella regardless of whether nuclear weapons are stationed on their territory. [February 15, 2010 [OpEd](#) in *The New York Times*]

The United States has maintained a nuclear umbrella over South Korea since the Korean War. [October 2006 [article](#) on NukeStrat.com]

U.S. President-elect Barack Obama's administration will offer Israel a "nuclear umbrella" against the threat of a nuclear attack by Iran. [December 11, 2008 [article](#) in Israeli newspaper, *Haaretz*]

While the term “nuclear umbrella” is used in different ways, the most frequent implication is that the threat of American nuclear retaliation will protect our allies from all aggression. The image of an umbrella protecting one from the rain gives a positive impression, and critical thinking would examine whether or not that image is appropriate. Katy Ferron, who was a student in this seminar in 2010, observed that perhaps the nuclear umbrella is made of metal. It protects us from normal rain, but can prove deadly in a lightning storm.

Thousands of nuclear weapons are needed for deterrence.

While rarely, if ever, stated so baldly, there is evidence for this belief in the strong resistance to efforts such as the New START Treaty, which reduced both American and Russian nuclear arsenals from 2,200 to 1,550 warheads. In considering how many nuclear weapons we need, it helps to consider that President Kennedy [was deterred](#)³ from attacking the Soviet missiles on Cuba out of fear that even one or two might survive and retaliate by hitting American cities. A [summary statement](#) I wrote concerning risk analysis of nuclear deterrence asserts that “a few hundred [nuclear weapons] would more than deter any rational actor and no number will deter an irrational one.” One of its endorsers is a man with impeccable national security credentials: Adm. Bobby Inman (USN, Retired) headed the National Security Agency and was Deputy Director of the CIA. Other evidence comes from Kennedy’s Secretary of State Robert McNamara: “It is true that at that time [the Cuban Missile Crisis] we had a strategic nuclear force of approximately five thousand warheads compared to the Soviets three hundred. But despite this numerical superiority of seventeen to one, we did not believe we had the capability to launch a successful ‘first strike’ against the USSR.”⁴

Our nuclear deterrent is safe, secure and reliable.

A Google search on *nuclear deterrent safe reliable* produced 137,000 results. Examples include:

As long as these weapons exist, the United States will maintain a safe, secure and effective arsenal to deter any adversary, and guarantee that defense to our allies.
[President Obama’s [speech in Prague](#), Czech Republic, April 5, 2009.]

For most of the nuclear era, successive U.S. administrations of both parties regarded periodic nuclear testing as essential to the maintenance of a safe, reliable and effective

³ Search on *even one missile* to find the relevant quote in this long web page.

⁴ Robert McNamara, *Blundering Into Disaster: Surviving the First Century of the Nuclear Age*, Pantheon Books, New York, 1986, pages 8-9.

nuclear deterrent. [Peace Through Strength [argument](#) in favor of nuclear testing. While no date was given, it refers to a September 2009 Jason report, so it appeared after that and no later than my finding it in November 2010]

A safe, credible, secure and reliable U.S. nuclear deterrent requires a modern infrastructure and strategic force structure, no matter what level of nuclear weapons we deploy. [[U.S. Nuclear Deterrence in the 21st Century: Getting it Right](#), a white paper, July 2009. This paper has many other, similar statements.]

This policy would be backed up with programs that assure that our nuclear forces are safe, secure, and reliable, and in sufficient quantities to perform their deterrent tasks. [[Final Report](#) of the Congressional Commission on the Strategic Posture of the United States, May 2009]

There are variations on the words used, with *credible* sometimes substituted for *reliable*, but the point is the same. *Safe*, *secure* and *reliable* have [specific meanings](#) within the nuclear weapons industry, and some of the above quotes undoubtedly have those specialized meanings in mind. But such statements mislead people who interpret those words in their more usual sense, as most undoubtedly do.

For example, *nuclear weapon safety* has the following specialized meaning: “positive measures to prevent nuclear weapons involved in accidents, incidents, or jettisoned weapons, from producing a nuclear yield.” That says nothing about how safe nuclear deterrence is, and my 2008 paper “[Risk Analysis of Nuclear Deterrence](#)” indicates that the risk of it failing is highly unacceptable.

Nuclear deterrence has preserved the peace for over 67 years, so it would be dangerous to try and fix it.

Whether this is true or not depends on two questions:

- To what extent is the absence of a world war since 1945 due to nuclear weapons? Nuclear weapons came into being in 1945, but so did the U.N. Why should the lack of a world war be assumed to be due solely to nuclear weapons? Without evidence to support that assumption, it could just as easily be asserted that this “long peace” (as it is sometimes called) is due to the U.N. I suspect that the existence of nuclear weapons has played a role in increasing the time between world wars, but also suspect that the U.N. and other factors have played roles.

- How long can we expect before the next world war? As noted in Handout #1's section "How likely is nuclear war," even if we could expect to go 1,000 years between world wars in the current international environment, a child born today would have almost a 10% chance of not living out his or her natural life. 100 year floods do not occur once every hundred years. Rather, they have a 1% chance of occurring in any given year, and roughly a 10% chance over a decade. In the same way, expecting to go 1,000 years between world wars would have almost a 10% chance over that child's 80-year life expectancy. We shall explore this question in greater detail in a later handout on risk analysis.

Nuclear deterrent

The term *nuclear deterrent* is often used interchangeably with *nuclear weapons*, which is only correct if the sole purpose of nuclear weapons is deterrence of adversaries' bad behavior. This has two problems that warrant critical reexamination:

- Bad behavior is a matter of perception. For example, the vast majority of American media accounts of Russia's 2008 invasion of Georgia make no mention of Georgia's [firing the first shots](#), thereby giving the impression that this was naked aggression on Russia's part. In consequence, Sarah Palin is on record as saying that the United States should be [ready to go to war](#) with Russia should that occur again – presumably an attempt to deter further such bad behavior. Unfortunately, [actions by Georgia](#) increase the danger of reigniting that war.
- Deterrence itself needs to be defined. See the next point, immediately below for more on that.

Nuclear deterrence means that we will only use our nuclear weapons in retaliation for a nuclear attack on our homeland.

While this appears to be conventional wisdom, it is far from the reality. Both we and other nuclear powers have used nuclear threats over relatively minor issues compared to national survival. As we shall see in later handouts, that was certainly the case in the Cuban Missile Crisis. The Soviets were primarily concerned with preserving Castro's government and being treated with more respect by the United States, while both Kennedy and McNamara recognized that the Soviet missiles on Cuba did not change the strategic balance. McNamara wrote that the Cuban missiles "did not change the military balance. It did, however, represent a political move that, it was believed, must be reversed."⁵

⁵ Robert McNamara, *Blundering Into Disaster: Surviving the First Century of the Nuclear Age*, Pantheon Books, New York, 1986, page 9.

[Threats to use nuclear weapons against Iran](#) are more recent examples of nuclear deterrence being used for lesser goals than national survival. A [2006 New Yorker article](#) stated:

A senior Pentagon adviser on the war on terror expressed a similar view. “This White House believes that the only way to solve the problem is to change the power structure in Iran, and that means war,” he said. The danger, he said, was that “it also reinforces the belief inside Iran that the only way to defend the country is to have a nuclear capability.”

One of the military’s initial option plans, as presented to the White House by the Pentagon this winter, calls for the use of a bunker-buster tactical nuclear weapon, such as the B61-11, against underground nuclear sites. [emphasis added]

Another area where critical thinking needs to be applied to nuclear deterrence has to do with the name itself. In a way, *deterrence* is a marketeer’s dream. It implies that it will deter, when that result is not at all ensured. In the 1980’s, I noted that nuclear deterrence could be viewed as a [global version of Russian roulette](#) that I called *nuclear roulette*.⁶

Missile defense will make the world safer and is vastly preferable to holding whole nations hostage.

Perhaps the best expression of this yearning for a more moral approach to nuclear weapons is President Reagan’s March 23, 1983 so-called [Star Wars speech](#):

[We currently] rely on the specter of retaliation, on mutual threat. And that’s a sad commentary on the human condition. Wouldn’t it be better to save lives than to avenge them? ... Let me share with you a vision of the future which offers hope. It is that we embark on a program to counter the awesome Soviet missile threat with measures that are defensive. ... I call upon the scientific community in our country, those who gave us nuclear weapons, to turn their great talents now to the cause of mankind and world peace, to give us the means of rendering these nuclear weapons impotent and obsolete. ... This could pave the way for arms control measures to eliminate the weapons themselves. We seek neither military superiority nor political advantage. Our only purpose, one all people share – is to search for ways to reduce the danger of nuclear war. ... As we cross this threshold, I ask for your prayers and your support.

⁶ The book in which this essay appeared was published simultaneously in Russian in the Soviet Union and in English in the United States. The Russians objected to my calling the game *Russian roulette*, so I used the term *pistol roulette* instead.

On the surface, missile defense appears preferable – both militarily and morally – to nuclear deterrence, but as always, the devil is in the details. First, there is the question of whether it is possible to render nuclear weapons “impotent and obsolete” through missile defense. This is sometimes stated in terms of creating a “leakproof umbrella” that would be 100% effective against offensive missiles. Scientific studies rejected that goal as wishful thinking, but I suspect that large segments of American society, including a large number of political leaders, still view missile defense that way.

A second problem concerns strategic stability. If the United States were to approach having a significant missile defense – and especially if the dream of a leakproof umbrella ever should seem possible – Russia would have a strong incentive to prevent completion of the system, even if nuclear threats were required. It might seem preferable to Russia to risk nuclear war while both sides were equal, rather than wait until it was at our mercy and we were inviolate.

Other issues surrounding missile defense that would benefit from critical thinking are contained in my blog posts, [Is our hand in the nuclear cookie jar?](#) and [Missile Defense: A Play in One Act?](#), both of which are suggested reading.

Russia has nothing to fear from NATO expansion.

Even though NATO was formed as a military alliance in opposition to the Soviet Union, in today’s post-Cold War world, it is often said that Russia has nothing to fear from NATO expanding right up to its borders. In February 2010, former Secretary of State Madeleine Albright [told a group](#) of Moscow university students, “This is a new NATO ... Its enemy is not Russia.”

Russia sees things differently, as do the new, Eastern European members of NATO, who understandably fear being resubjugated by Russia. Even if Russia’s fears were totally unfounded, it still would be wiser to inquire why it feels that way, because dismissing its fears as delusional only reinforces them.

Digging a bit deeper shows that Russia’s fears do have some basis in fact. After the 2008 Georgian war, a number of leading Eastern European political leaders wrote an [Open Letter To The Obama Administration](#) condemning Russia’s actions while making no mention that Georgia attacked first. Going further, the letter stated, “It was a mistake not to commence with proper Article 5 defense planning for new members after NATO was enlarged.” Article 5 states that an attack on any NATO member “shall be considered an attack against them all,” so the authors of the letter were calling on the United States to be prepared to go to war with Russia if any of their

nations already in NATO (e.g., Poland and the Baltic states) were attacked. This is complicated because Vice Admiral Ulrich Weisser (Ret.), former head of the policy and planning staff in the German Ministry of Defense from 1992 to 1998, [claims that](#) “Poland and the Baltic states use every opportunity to make provocative digs at Russia; they feel themselves protected by NATO and backed by the U.S.”

A later handout will apply critical thinking to NATO expansion in greater depth.

Reversing nuclear proliferation by nations such as North Korea and Iran requires military threats, and possibly military action.

We will study those two nations’ nuclear programs in detail in a later handout. For now I will cite two defense-oriented individuals who question this assumption. In a [2007 article](#), Prof. Jonathan Pollack of the Naval War College wrote:

The immediate policy questions relate to what outside powers can do both to minimize the risks posed by North Korean actions and to make it as difficult as possible for North Korea to achieve significant headway in its nuclear goals, without triggering responses from Pyongyang that make the existing situation even more dangerous. In this context, it is imperative that communication channels remain open to North Korea and that new ones be considered. ... There is the obvious risk that the DPRK will endeavor to “pocket” the political gains that would derive from more sustained efforts to open doors to North Korea’s leaders, but this should be the least of the outside world’s concerns.

Stanford’s Prof. Siegfried Hecker, a former Director of Los Alamos, argued in a [2010 article](#):

Many observers now look at the last two decades as a dismal diplomatic failure because Pyongyang’s nuclear program was not eliminated. ... Although Pyongyang now has nuclear weapons, its weapons program is much smaller than it would have been if left unchecked. With the capabilities it already had or was soon to complete by the early 1990s, Pyongyang today could have an arsenal of a hundred or more nuclear weapons. Instead [because of diplomacy], it has enough plutonium for four to eight weapons and currently is not producing more. It has the capacity to put the 5 MWe reactor back into operation and produce one bomb’s worth of plutonium annually for the foreseeable future, but it has not taken steps to do so, perhaps indicating that it believes its small nuclear arsenal provides a sufficient nuclear deterrent.

My own nation usually does all that it can to resolve international conflicts. In such situations, nothing can change until the other side starts to behave reasonably.

While sometimes this will be true, in my experience, it usually fails to see the whole picture. Both personally and at a national level, we all have a tendency to magnify the wrongs done to us and to minimize the pain we inflict on others. This is understandable given that we feel our own pain and must work to understand that of others. But it is very dangerous distortion of reality.

For Americans, North Korea is a good example. The conventional wisdom is summarized by a February 2011 [Wall Street Journal article](#) (also [accessible without subscription](#)) that describes the history of nuclear weapons agreements with North Korea as follows: “On Pyongyang's part, it is a history marked by lies, broken promises and clandestine programs, including illegal uranium-enrichment facilities. On the part of the U.S., the history is marked by gullibility and wishful thinking about North Korea's intentions to abide by its promises.” This view contrasts with Prof. Pollack’s and Prof. Hecker’s statements immediately above.

Contrary to the picture painted by the *Wall Street Journal Article*, a later handout that deals with North Korea in depth will show that nation has a reasonable record of adherence to nuclear agreements, and our own record is not blameless. North Korea shut down plutonium production from 1994 to 2002 under the Agreed Framework, and only restarted after certain actions by the United States. Prior to 2002, the best American intelligence estimates are that the North probably did not have enough plutonium for even one weapon or test, and at most enough for two. Those estimates are supported by the fact that North Korea’s two nuclear tests occurred in 2006 and 2009, indicating the need for additional plutonium bomb fuel.

Under the Agreed Framework, North Korea not only disabled plutonium production at its small research reactor, but ceased construction of two much larger reactors that would have produced plutonium at correspondingly higher rates. It was on this basis that, as noted above, Prof. Hecker stated, “Pyongyang today could have an arsenal of a hundred or more nuclear weapons. Instead [because of diplomacy], it has enough plutonium for four to eight weapons and currently is not producing more.”

To compensate North Korea for not completing its larger nuclear reactors, we agreed to provide them with two, more proliferation resistant, light water reactors.⁷ We also agreed that, until those reactors were complete, we would give them enough heavy fuel oil to make up for the energy

⁷ The mothballed reactors were Magnox reactors that can run on natural, unenriched uranium and are more prone to nuclear proliferation. Light water reactors require enriched uranium. In a guest lecture in this seminar, Prof. Hecker described Magnox reactors as good for making bombs, but not so good for making electricity. In contrast, he described the promised LWR’s as not so good for making bombs, but good for making electricity. Even LWR’s have proliferation potential, but not as great as Magnox reactors.

that would have been produced by the mothballed reactors. Even prior to 2002, we had taken no actions to deliver the light water reactors, and a 2005 [Washington Post article](#) goes further, noting: “Clinton administration officials have privately said that they agreed to the plan in 1994 only because they thought the North Korean government would collapse before the project was completed.”

In a [December 2010 article](#), Prof. Hecker summarized his conclusions, based on his experience directing Los Alamos and his seven semi-official visits to North Korea: “The fundamental and enduring goal as agreed to in the joint statement must be denuclearization of the Korean Peninsula. However, since that will take time, we must quickly press for what I call the three no's: No more bombs, no better bombs (which means preventing further nuclear testing), and no export, in return for one yes – our willingness to seriously address North Korea's fundamental insecurity.”

While there is much that North Korea could do to improve our relationship, fortunately, as shown above, there are also actions that we can take in that direction. I say “fortunately” because that gives us power to change the situation. If the assumption that we have done everything in our power were true, we would be powerless and totally dependent on North Korea behaving more rationally.

Rogue nations, such as North Korea and Iran, only responds to threats of military force. If threats fail, military action is the only recourse.

Many actions of North Korea, Iran and other despotic regimes are deplorable, but labeling them as rogue nations conjures up an image that can lead to self-defeating actions on our part. To what extent they deserve that appellation is a question that deserves critical reexamination, rather than being taken as a self-evident truth.

As an example from the past, in a [March 1983 speech](#) to the National Association of Evangelicals, President Reagan branded the Soviet Union “an evil empire” – a term with much the same loading as “rogue nation.” An example of behavior allegedly warranting that appellation occurred on September 1, 1983, when the Soviet Union shot down a South Korean airliner (KAL flight 007) after it had violated Soviet airspace, killing all 269 on board. In [a speech two days later](#), President Reagan condemned this as a “crime against humanity [that] must never be forgotten.” Yet, when five years later, on July 3, 1988, the guided missile cruiser *USS Vincennes* shot down Iran Air flight 655 over the Straits of Hormuz, killing all 290 on board, [President Reagan described](#) this act as “a proper defensive action by the *USS Vincennes*.” The following day, when answering press questions on the White House South Lawn, he stated: “With regard to the Soviets comparing this to the KAL shoot down, there was a great difference. Our shot was

fired as the result of a radar screen of a plane approaching it at quite a distance. Remember, the KAL – a group of Soviet fighter planes went up, identified the plane for what it was, and then proceeded to shoot it down. There's no comparison.”⁸ A [1992 ABC news report](#) by Ted Koppel⁹ not only questions US government claims that try to legitimize the downing of Iran Air 655, but also asserts that at the time of the incident the US was involved in a major effort to lure the Iranians into a fight.

National security

This very term warrants critical reexamination. If there is no completely effective defense against nuclear weapons and the technology will continue to spread to nations we threaten, then national security requires cooperation from our potential adversaries. Critical thinking would examine to what extent national security is becoming an obsolete concept, and to what extent we need to think in terms of international security or global security to make our nation more secure.

Democracy is the solution to the world's problems.

This mistaken belief has cost many lives and greatly complicates solving many of the world's problems. As explained by Fareed Zakaria in *The Future of Freedom: Illiberal Democracy at Home and Abroad*, what we value is liberal democracy that protects minorities from a tyranny of the majority. The American Bill of Rights enshrines a number of anti-democratic rules to prevent just such tyranny. Even if a majority of my countrymen want to jail me for criticizing the government, the first amendment prevents them from doing so. It also should be remembered that Hitler came to power in a democratic election, but it was the last one for a long time. If a majority within a nation wants to massacre a minority group, democracy would dictate that should be done, whereas liberal democracy would prohibit such actions.

War and violence are an immutable part of human nature.

Two recent books (Joshua Goldstein's *Winning the War on War* and Steven Pinker's *The Better Angels of Our Nature*) present evidence that questions this widely held belief. Goldstein's related [article in Foreign Policy](#) quotes data from the respected Peace Research Institute Oslo that shows “the last decade has seen fewer war deaths than any decade in the past 100 years. ... Worldwide, deaths caused directly by war-related violence in the new century have averaged about 55,000

⁸ Transcript courtesy of Federal News Service.

⁹ This link was given earlier when the Iran Air 655 tragedy was first mentioned. The earlier caveat also applies here: Although understandable that a 1992 transcript is not on ABC's web site, it does raise a question.

per year, just over half of what they were in the 1990s (100,000 a year), a third of what they were during the Cold War (180,000 a year from 1950 to 1989), and a hundredth of what they were in World War II. If you factor in the growing global population, which has nearly quadrupled in the last century, the decrease is even sharper. Far from being an age of killer anarchy, the 20 years since the Cold War ended have been an era of rapid progress toward peace.”

While statistics are always open to question, these ideas fit with my own observation that we have become too civilized to win wars, but not civilized enough to avoid them. I came to that conclusion by comparing Hamburg, Dresden, Tokyo, Hiroshima and Nagasaki, the Blitz, the Rape of Nanking and the Holocaust to Vietnam, Iraq and Afghanistan. In World War II, civilian casualties were often a planned part of the war fighting strategy, and a frequent American slogan was that “the only good Jap is a dead Jap.” In contrast, today we agonize over every needless death that comes to our attention. Aside from other problems, this puts our troops between a rock and a hard place. If they don’t fire on a suspected enemy first, they are more likely to die. If they do fire first, and the suspected enemy turns out to be harmless, they may be court martialed.

Individual action is a waste of time. Only world leaders have the power to make changes in our nuclear weapons policies.

Leaders who get too far in front of the crowd cease to lead. If society’s beliefs on nuclear weapons are far from reality, then no leader can do what is needed until those societal beliefs have been questioned by enough of us. Everett Rogers, the originator of a field known as “the diffusion of innovations,” [identified characteristics](#) of the first group to adopt a new idea or product that clearly rules out societal leaders: “The first adopters of an innovation, called *innovators*, are usually perceived as atypical members of their local community, and their example is not immediately followed by others.” Only after the innovators have adopted the idea or product, can societal leaders entertain adoption.

True patriots support their nation’s actions.

If that were true, those who questioned slavery and those who advocated women’s suffrage were unpatriotic. I believe that true patriots search for ways that their nation is failing to live up to its highest ideals, so that they then can work to bring the reality closer to the ideal. Such a process results in an ever improving nation. Much depends on the attitude with which this process is carried out. Done with ridicule or disparagement, it is not patriotic. Done with love of country, a genuine desire to see the nation improve, and a recognition that no human institution is perfect, it can be the highest form of patriotism.

Summary of Critical Thinking

Another advantage of advocating critical thinking as a first step in resolving the nuclear threat is that it is something we should do whether or not the nuclear threat is too great. Even if conventional wars had zero chance of escalating into a nuclear conflagration, shouldn't we think things through more carefully before going to war, so that we can avoid needless wars?

I conclude with a story from [Plato's *Apology*](#). Socrates was perplexed when the Delphic Oracle declared him wisest of men. Comparing how much there was to know with how little he knew, this made no sense to Socrates. But since these words came from God, Socrates felt he must investigate. He went to those in Athens who had reputations as being wise, and found a constant pattern. These people knew more than Socrates about their specialties, but made the fundamental mistake of assuming their wisdom extended to areas where they knew very little. Finally, Socrates understood what the Oracle meant:

... the truth is, O men of Athens, that God only is wise; and in this oracle he means to say that the wisdom of men is little or nothing; he is not speaking of Socrates, he is only using my name as an illustration, as if he said, He, O men, is the wisest, who, like Socrates, knows that his wisdom is in truth worth nothing.

It is particularly hard to remember that ancient truth at a place like Stanford where one's worth is judged by how much one knows. But that makes it all the more important to try.