

Risk Analysis, Cuba, and the Golden Rule

Critical thinking applied to nuclear optimism

In September 2009, Newsweek carried a cover story, [Why Obama Should Learn to Love the Bomb](#), that quoted Columbia University Professor Kenneth Waltz: “We now have 64 years of experience since Hiroshima. It’s striking and against all historical precedent that for that substantial period, there has not been any war among nuclear states.” Waltz is a leading advocate of a school of thought known as *nuclear optimism*, which argues that fears of nuclear war are greatly exaggerated. Elsewhere, Waltz has claimed: “The probability of major war among states having nuclear weapons approaches zero.”¹ Waltz is not alone. In a [July 2009 interview](#), former Secretary of Defense and Director of Central Intelligence James Schlesinger claimed, “We will need a strong deterrent . . . that is measured at least in decades – in my judgment, in fact, more or less in perpetuity.” While not directly stating that the risk of nuclear deterrence failing is near zero, requiring it to work “more or less in perpetuity” either implies that or sees the destruction of civilization as acceptable. In September 2009, after President Barack Obama was awarded the Nobel Peace Prize for his efforts to rekindle the vision of a world free of nuclear weapons, Time magazine had an [online essay](#) arguing that the Nobel Committee should have awarded the prize to the atomic bomb instead. The headline read, “Want Peace? Give a Nuke the Nobel.”

This handout is an exercise in critical thinking that reexamines whether society’s nuclear optimism is warranted. First, it should be noted that Waltz’ argument confuses correlation with causality. It is true that we have not had a world war since nuclear weapons were developed in 1945, but it is equally true that we have not had a world war since the UN was initiated in 1945. Without more evidence showing a causal link, we cannot attribute “the long peace” to either nuclear weapons or the UN. Secondly, even if nuclear weapons have played a role in preventing a third world war (and I believe they have), we need to know how long we can expect that to last.

BP’s 2010 Deepwater Horizon oil spill demonstrates why nuclear optimism would require much more evidence than the absence of world war in the last 67 years. In November 2009, BP’s vice president for exploration in the Gulf of Mexico, David Rainey, touted offshore drilling’s safety record in [these words](#): “I think we also need to remember that OCS (Outer Continental Shelf) development has been going on for the last 50 years, and it has been going on in a way that is both safe and protective of the environment.” Five months later, BP’s Deepwater Horizon drilling rig exploded, killing 11 workers, creating an environmental catastrophe, and proving that 50 years of success was inadequate evidence for complacency.

¹ Kenneth N Waltz, “Nuclear Myths and Political Realities,” *American Political Science Review* 84: 731-745, 1990. See page 740 for this quote.

The Gulf of Mexico will eventually recover from the BP oil spill, but the same cannot be said for mistakenly extrapolating 67 years without a nuclear exchange into the indefinite future. Where nuclear weapons are concerned, we cannot afford to wait for disaster to strike before realizing that complacency is unwarranted.

A temperamental nuclear coin

Fortunately, an engineering discipline known as quantitative risk analysis or QRA² can illuminate the danger by gleaning more information from the available data than might first appear possible. Start by thinking of each year since 1945 as a coin toss with a heavily weighted coin, so that tails shows much more frequently than heads. Tails means that a nuclear war did not occur that year, while heads corresponds to a nuclear catastrophe, so nuclear optimism's evidence corresponds to noting that the last 67 years produced 67 tails in a row. Risk analysis reclaims valuable information by looking not only at whether each toss showed heads or tails, but also at how the coin behaved during the toss. If all 67 tosses immediately landed tails without any hesitation, that would be evidence that the coin was more strongly weighted in favor of tails, and provide additional evidence in favor of nuclear optimism. Conversely, if any of the tosses teetered on edge, leaning first one way and then the other, before finally showing tails, nuclear optimism would be on shaky ground.

In 1962, the nuclear coin clearly teetered on edge, with President John F. Kennedy later estimating the odds of war during the Cuban Missile Crisis at somewhere between “one-in-three and even.”³ Other nuclear near misses are less well known and had smaller chances of ending in a nuclear disaster. But, when the survival of civilization is at stake, even a partial hesitation before the nuclear coin lands tails should be of grave concern:

- During the 1961 Berlin crisis, Soviet and American tanks faced off at Checkpoint Charlie in a contest of wills so serious that President Kennedy briefly [considered a nuclear first strike](#) option against the Soviet Union.
- In 1973, when Israel encircled the Egyptian Third Army, the Soviets threatened to intervene, leading to implied nuclear threats.⁴
- The 1983 Able Archer incident was, in the words of Secretary of Defense Robert Gates, “one of the potentially most dangerous episodes of the Cold War.” This incident occurred

² Quantitative risk analysis is also known as probabilistic risk analysis, abbreviated PRA.

³ Sorenson Theodore C (1965) *Kennedy*. New York: Harper and Row, page 705.

⁴ Ury William L (1985) *Beyond the Hotline: How We Can Prevent the Crisis that Might Bring on a Nuclear War*. Boston: Houghton Mifflin Company, pages 19-20.

at an extremely tense time, just two months after a Korean airliner had been shot down after it strayed into Soviet airspace, and less than eight months after President Ronald Reagan's "Star Wars" speech. With talk of fighting and winning a nuclear war emanating from Washington, Gates notes that Soviet leader Yuri Andropov developed a "seeming fixation on the possibility that the United States was planning a nuclear strike against the Soviet Union." The Soviets reasoned that the West would mask preparations for such an attack as a military exercise. Able Archer was just such an exercise, simulating the coordinated release of all NATO nuclear weapons.⁵

- Certain events during the 1993 Russian Constitutional Crisis that were not recognized by the general public led a number of American intelligence officers at the North American Aerospace Defense Command (NORAD) headquarters to call their families and tell them to leave Washington out of fear that the Russians might launch a nuclear attack.⁶
- In 1995, a Russian false alarm mistook a meteorological rocket launched from Norway for an American submarine-launched ballistic missile, causing the codes for authorizing a nuclear attack to be opened in front of President Boris Yeltsin. Fortunately Yeltsin made the right decision and this false alarm did not occur during a crisis, such as the 2008 Georgian War, when it would have been more likely to be mistaken for the real thing.⁷
- Confusion and panic during the 9/11 attacks led an airborne F-16 pilot to [mistakenly believe](#) that the US was under attack by Russians instead of terrorists. In a dangerous coincidence, the Russian Air Force had scheduled an exercise that day, in which strategic bombers were to be flown toward the United States. Fortunately, the Russians learned of the terrorist attack in time to ground their bombers.
- The August 2008 Russian invasion of Georgia would have produced a major crisis if President George W. Bush had followed through on his [earlier promises to Georgia](#): "The path of freedom you have chosen is not easy but you will not travel it alone. Americans respect your courageous choice for liberty. And as you build a free and democratic Georgia, the American people will stand with you." The danger is compounded because most Americans are unaware that [Georgia fired the first shots](#) and Russia is not solely to blame for that war. Ongoing tensions could well produce a rematch, and Sarah Palin, reflecting the mood of many Americans, has said that the United States should be [ready to go to war](#) with Russia should that occur.

⁵ Gates Robert M (1996) *From the Shadows*, Simon & Schuster, New York, pages 270-273.

⁶ Peter Vincent Pry, *War Scare*, Praeger, Westport, CT, 1999, pages x and 129-169.

⁷ Peter Vincent Pry, *War Scare*, Praeger, Westport, CT, 1999, pages x and 183-238.

The majority of the above incidents occurred post-Cold War, challenging the widespread belief that the nuclear threat ended with the fall of the Berlin Wall. Further, nuclear proliferation and terrorism have added dangerous, new dimensions to the threat:

- India and Pakistan combined [have approximately](#) 200 nuclear weapons. These nations fought wars in 1947, 1965, 1971, and 1999. India suffered a major attack on Mumbai by Pakistani-based terrorists in November 2008.
- Pakistan is subject to chaos and corruption. In October 2009, internal terrorists attacked Pakistan's Army General Headquarters, killing nine soldiers and two civilians. A. Q. Khan, sometimes called "the father of the Islamic bomb," ran a virtual nuclear supermarket and is believed to have sold Pakistani nuclear know-how to North Korea, Iran, and Libya.
- If terrorists were to obtain 50 kg of highly enriched uranium (HEU), they would be most of the way toward making a usable nuclear weapon.⁸ The worldwide civilian inventory of HEU is estimated at 50,000 kg. HEU is used in over 100 research reactors world wide, many of which are not adequately guarded.
- South Africa stores the HEU from its dismantled nuclear arsenal at its Pelindaba facility. In November 2007, two armed teams, probably with internal collusion, [circumvented a 10,000 volt fence](#) and other security measures. They were inside the supposedly secure facility for almost an hour, but fortunately, were scared off before obtaining any HEU.
- In the recent film, *Nuclear Tipping Point*, former secretary of state Henry Kissinger states that "if the existing nuclear countries cannot develop some restraints among themselves – in other words, if nothing fundamental changes – then I would expect the use of nuclear weapons in some 10-year period is very possible." [This video is [available](#) free of charge.]
- Richard Garwin, a former member of the President's Science Advisory Committee (1962-65 and 1969-72) holds an even more pessimistic view. In [Congressional hearings](#) he testified: "We need to organize ourselves so that if we lose a couple hundred thousand people, which is less than a tenth percent of our population, it doesn't destroy the country politically or economically. ... We need to have a way to survive such an attack, which I think is quite likely – maybe 20 percent per year probability, with American cities and European cities included."

⁸ Unlike more complex plutonium-based implosion weapons, those using HEU's simple gun assembly are unlikely to require testing prior to use. As noted earlier, the HEU bomb dropped on Hiroshima was never tested before hand.

These incidents show that the nuclear coin has teetered on edge far too often, yet society's lack of concern and resultant inaction demonstrate that nuclear optimism is a widespread illusion. Defusing the nuclear threat requires making society aware of the risk that it bears *before* catastrophe strikes. That is precisely the kind of task for which risk analysis was developed.

The July 2000 crash of the Concorde supersonic transport, which killed everyone on board, provides a good example of the value of risk analysis. Prior to that crash the Concorde had absolutely no fatalities, so how could anyone have predicted that it was much riskier than the rest of the jetliner fleet? Risk analysis breaks down a catastrophic failure into a sequence of smaller mistakes, known as a *fault tree*. It then looks at how often the fault tree has been traversed and how close to catastrophe those excursions came. The fatal Concorde accident sequence started with runway debris striking a tire, which caused the tire to blow out, which caused a fuel tank to rupture, which caused a fire, which led to loss of control of the aircraft and the fatal crash.

Prior to this crash, it was known that the Concorde had a higher than normal rate of tire failures – more than 6,000% higher than that of the rest of the jet liner fleet! And 10% of those tire failures resulted in fuel leaks.⁹ If more attention had been paid to these early warning signs, the fatal crash could probably have been averted. In the same way, to date we have experienced no failures of nuclear deterrence, but need to look more carefully at nuclear near misses.

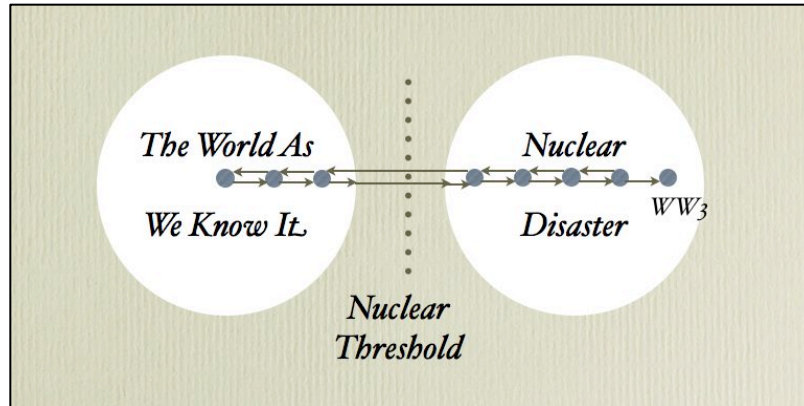
Risk analysis applied to the 1962 Cuban Missile Crisis

By fostering a culture of risk awareness, quantitative risk analysis [has improved safety](#) and illuminated previously unforeseen failure mechanisms in areas as diverse as nuclear power reactors, space systems, and chemical munitions disposal. Quantitative risk analysis also has been applied to the risk of nuclear proliferation¹⁰ and [nuclear terrorism](#), and both Los Alamos and Lawrence Livermore National Laboratories have performed such analysis for various aspects of the country's nuclear programs. It is therefore surprising that the applicability of quantitative risk analysis to estimating and reducing the failure rate of nuclear deterrence has only recently [been recognized](#), and its serious employment is yet to be accomplished.

The state diagram introduced in Handout #1 and reproduced below depicts how quantitative risk analysis decomposes a catastrophic failure of nuclear deterrence into a sequence of smaller, partial failures. Most of the time, we are in one of the leftmost, safest states (dots) in that

⁹ See pages 93 and 146 of the BEA [report on the crash](#). BEA is the French equivalent of our NTSB.

¹⁰ Caswell David J (2010) *Analysis Of National Strategies For Combating The Proliferation Of Nuclear Weapons*. Ph.D. thesis, Stanford University, Stanford, California.



Risk analysis decomposes a catastrophic failure into a sequence of partial failures

diagram, but occasionally, events occur which increase the risk and move us closer to the nuclear threshold. That threshold is crossed the first time a nuclear weapon is used in anger, leading to possible further escalation, including to the final state denoted WW3.

To correctly assess the level of risk, it is important to pay attention not just to the typical, safe states, but also to the rarely visited, dangerous ones. The 13 days of the Cuban Missile Crisis constituted less than 0.1% of the nuclear deterrence era, but probably accounted for at least 25% of its total risk.

This section dissects the 1962 Cuban Missile Crisis and identifies six key mistakes (“state transitions” or steps in the above diagram) that took us to the brink of the nuclear abyss. The next section then identifies six recent mistakes that came close to repeating 1962’s errors, and that still retain that potential. Because those more recent events did not produce a full-blown crisis, most people are unaware that they occurred.

The Cuban Missile Crisis surprised President Kennedy, his advisors, and most Americans because we viewed events solely from an American perspective and therefore missed warning signs visible from the Russian perspective.¹¹ Fortunately, that view has been recorded by Fyodr Burlatsky, one of Khrushchev’s speechwriters, as well as a man who was in the forefront of the Soviet reform movement of the 1980s. While all perspectives are limited, Burlatsky’s deserves our attention as a valuable window into a world which we need to better understand:

In my view the Berlin crisis [of 1961] was an overture to the Cuban Missile Crisis and in a way prompted Khrushchev to deploy Soviet missiles in Cuba. ... In his eyes [America

¹¹ Even the names used here and in Russia are indicative of our very different perspectives. Our calling it the Cuban Missile Crisis focuses on Khrushchev’s putting Soviet missiles on Cuba, and tends to see that action as the sole cause of the crisis. The Russians usually call it the Caribbean crisis, because they see it in a larger context, including the Bay of Pigs invasion the year before and the US deploying similar missiles in Turkey.

insisting on getting its way on certain issues] was not only an example of Americans' traditional strongarm policy, but also an underestimation of Soviet might. ... Khrushchev was infuriated by the Americans' ... continuing to behave as if the Soviet Union was still trailing far behind [in the nuclear arms race]. ... They failed to realize that the Soviet Union had accumulated huge stocks for a devastating retaliatory strike and that the whole concept of American superiority had largely lost its meaning. ... Khrushchev thought that some powerful demonstration of Soviet might was needed. ... Berlin was the first trial of strength, but it failed to produce the desired result, [showing America that the Soviet Union was its military equal]. [Burlatsky 1988, page 164]¹²

[In 1959 Fidel Castro came to power and the U.S.] was hostile towards the Cuban revolutionaries' victory from the very start. ... At that time Castro was neither a Communist nor a Marxist. It was the Americans themselves who pushed him in the direction of the Soviet Union. He needed economic and political support and help with weapons, and he found all three in Moscow. [Burlatsky 1988, page 169]

In April 1961 the Americans supported a raid by Cuban emigres ... The Bay of Pigs defeat strained anti-Cuban feelings in America to the limit. Calls were made in Congress and in the press for a direct invasion of Cuba. ... In August 1962 an agreement was signed [between Moscow and Havana] on arms deliveries to Cuba. Cuba was preparing for self-defense in the event of a new invasion. [Burlatsky 1988, page 170]

The idea of deploying the missiles came from Khrushchev himself. ... Khrushchev and [Soviet Defense Minister] R. Malinovsky ... were strolling along the Black Sea coast. Malinovsky pointed out to sea and said that on the other shore in Turkey there was an American nuclear missile base [which had recently been deployed]. In a matter of six or seven minutes missiles launched from that base could devastate major centres in the Ukraine and southern Russia. ... Khrushchev asked Malinovsky why the Soviet Union should not have the right to do the same as America. Why, for example, should it not deploy missiles in Cuba? [Burlatsky 1988, page 171]

In spite of the similarity between the Cuban and Turkish missiles, Khrushchev realized that America would find his deployment unacceptable and therefore did so secretly, disguising the missiles and expecting to confront the U.S. with a *fait accompli*. Once the missiles were operational, America could not attack them or Cuba without inviting a horrific nuclear retaliation.

¹² All references to Burlatsky are to: Fedor Burlatsky, *Khrushchev and the first Russian Spring*, Scribners, New York, 1988.

Our Turkish missiles had a similar purpose. Stationing nuclear weapons on an ally's soil provides a "nuclear trip wire." An opponent is deterred from threatening, or even pressuring, the allied nation out of fear for the consequences. But that begs the question, addressed here, of how much risk is involved in threatening nuclear war over much more minor issues. As the name "nuclear trip wire" so presciently implies, it is possible for the opponent to accidentally trip and spring the trap, except this trap destroys the trapper as well as the trapped.

Just as Kennedy did not think through likely Soviet responses to our Turkish missiles, Khrushchev did not envision what would happen if he was caught before completing his missile deployment – which is exactly what happened. With respect to the Cuban Missile Crisis, the sequence of mistakes (transitions in the state diagram) that brought us to the brink of nuclear war can now be identified as:

1. conflict between America and Castro's Cuba;
2. Russia demanding to be treated as a military equal and being denied that status;
3. the Berlin Crisis;
4. the Bay of Pigs invasion;
5. the American deployment of ballistic missiles in Turkey; and
6. Khrushchev's deployment of ballistic missiles in Cuba.

The actors involved in each step did not perceive their behavior as overly risky. But compounded and viewed from their opponent's perspective, those steps brought the world to the brink of nuclear disaster. During the crisis, there were additional, fortunately unvisited states that would have made World War III even more likely. The strong pressure noted by Burlatsky to correct the Bay of Pigs fiasco and remove Castro with a powerful American invasion force intensified after Khrushchev's Cuban missiles were discovered. But those arguing in favor of invasion were ignorant of the fact, not learned in the West until many years later, that the Soviets had battlefield nuclear weapons on Cuba designed to repel just such an American invasion.¹³ Also totally unknown to the American participants, a Soviet submarine which was "hunted" and forced to surface by American destroyers carried a nuclear torpedo, and its captain [considered using it](#) against his American attackers.

¹³ [Coleman](#) argues that the possibility of Soviet tactical nukes was considered by some, but my reading of the history (particularly transcripts of President Kennedy's formerly secret tapes) indicates that those arguing for an invasion either largely or completely ignored that information. Later material presented here will help you decide.

Anatomy of another near miss: The 2008 Cuban Bomber Mini-Crisis

The sequence of six steps listed above that resulted in the Cuban Missile Crisis is a concrete example of state transitions that took us from a relatively safe state within *The World As We Know It* to a state just this side of the *Nuclear Threshold*. Contrary to conventional wisdom, which sees both the Cold War and the nuclear threat as ghosts of the past, this section shows that in July 2008, we came perilously close to repeating that sequence of mistakes, and that those conditions continue to persist today. Because the 2008 Cuban Bomber Mini-Crisis stopped short of becoming a full-blown crisis, most people are unaware of it. But, as shown below, we came within what might be characterized as “half a step” of once again staring at the nuclear abyss and wondering how we got there. This section lists the six steps that led to the 1962 crisis and then provides examples of recent mistakes that fit the same pattern, leading up to July 2008’s events:

Step #1: conflict between America and Castro’s Cuba

Cuba still is an emotional land mine for many Americans. In July 2008, when word reached Air Force Chief of Staff General Norton Schwartz that the Russians might deploy nuclear capable bombers to Cuba, he said that would cross “a red line,” even though that threatened move was in response to American actions seen as equally provocative by the Russians.

Step #2: Russia demanding to be treated as a military equal and being denied that status

The same is true today. Even though Russia and the U.S. can destroy each other in under an hour, we see ourselves as the world’s sole remaining superpower, leading even Mikhail Gorbachev to say in a [2008 interview](#), “there is just one thing that Russia will not accept ... the position of a kid brother, the position of a person who does what someone tells it to do.”¹⁴ Repeated American statements that we defeated Russia in the Cold War add fuel to that fire since the Russians see themselves as equal participants in ending that conflict. An additional irritant is the way D-Day ceremonies repeatedly give the impression that the West won World War II, [overlooking the immense Soviet contribution](#) in the victory over Nazism. Other irritants, such as the Jackson-Vanik Amendment discussed in Handout #5, are more minor, but add fuel for a potential fire.

Step #3: The Berlin Crisis

Several hotspots (e.g., Chechnya, Georgia, [Estonia](#), Cuba and Venezuela) test Russian-American relations in ways that are similar to Berlin forty years ago.

Step #4: The Bay of Pigs invasion

The 2008 Georgian war is almost a mirror image of the 1961 Bay of Pigs invasion. In 1961, Kennedy was humiliated and therefore looking for ways to regain his manhood, both in the eyes

¹⁴ Nicholas Tatsis, “A Brave New World: President Mikhail Gorbachev on the nuclear age and Russia’s future,” *Harvard Political Review*, January 13, 2008. I could not find a link to this interview all by itself. The link given in “2008 interview” will take you to a collection of articles, where you can search on *Tatsis* to find the beginning of this article.

of the Soviets and the American electorate. In 2008, Georgia's President Mikheil Saakashvili was soundly whipped by the Russians after his attempt to regain South Ossetia and Abkhazia by force. Pushed by some of the same motivations that drove Kennedy, Saakashvili [has taken actions](#) that could result in a rematch. While Georgia's 2012 parliamentary elections brought in a government less confrontational to Russia, some risk still exists and a long-term view needs to consider the possibility of future elections reviving, or even increasing the risk.

The danger is increased because most Americans [mistakenly believe](#) that Russia's invasion of Georgia was totally unprovoked. In consequence, in September 2008, vice presidential candidate Sarah Palin [said](#) that we should be prepared to go to war with Russia should it invade Georgia again, and many Americans, including President Obama, still support NATO membership for Georgia.

Step #5: The American deployment of ballistic missiles in Turkey

The missile defense system President George W. Bush planned for Eastern Europe, with American missiles in Poland, bears an ominous similarity to our deploying nuclear armed missiles in Turkey. While these new missiles are seen as defensive and a non-issue in America, the Russians see them as offensive and part of an American military encirclement. In October 2007, [Putin warned](#), "Similar actions by the Soviet Union, when it put rockets in Cuba, precipitated the Cuban Missile Crisis." Two months later Gorbachev questioned America's stated goal of countering a possible Iranian missile threat, "What kind of Iran threat do you see? This is a system that is being created against Russia." Russia's fears are exacerbated by [Poland's seeing the system](#) as protecting it against Russia.

While President Obama's September 2009 decision to emphasize options that are less threatening to the Russians partly defused the danger, basing part of the system in Romania leaves the issue [far from resolved](#). (For recent developments showing the continuing danger, see my November 10, 2012, blog post, "[US Creates Nuclear Trip Wire in Poland](#).") Also, a future American president could reactivate Bush's original plan, further adding to the danger.

Step #6: Khrushchev's deployment of ballistic missiles in Cuba

While there is not yet a modern day analog of this complete step, serious warning tremors occurred in July 2008. That was when *Izvestia*, a Russian newspaper often used for strategic governmental leaks, reported that, if the US proceeded with its Eastern European missile defense system, then nuclear-armed [Russian bombers would be deployed to Cuba](#). During Senate confirmation hearings as Air Force Chief of Staff, [General Norton Schwartz responded](#) that "we should stand strong and indicate that is something that crosses a threshold, crosses a red line." While the Russian Foreign Ministry later [claimed that *Izvestia's* report](#) was unfounded, some elements within the Russian Defense Ministry appear to be in a similar state of mind to the one that prompted Khrushchev to deploy his Cuban missiles.

Izvestia's report [appeared only in Russian](#), so I'll include an English translation of key parts:

(Headline in bold) **Our Side Has Already Landed on Cuba and Has Done Reconnaissance. The Readiness of "White Swans" and "Bears" to "serve" on the Island of Freedom [Cuba] Was Confirmed to *Izvestia* By The Russian Defense Ministry, *Izvestia*, July 24, 2008:** Strategic rocket carriers Ty-160 ("The White Swan") and Ty-95MC ("The Bear" according to NATO's classification) can be sent to air bases in Latin America and Africa at any moment, said The Defense Ministry to *Izvestia*. Moreover, we are talking not only about Cuba, but Venezuela and Algeria. It is interesting to note that Venezuela's President Hugo Chavez, having been on a visit to Moscow last Tuesday, said that Caracas would be happy to accept the Russian military. ... The military does not hide the fact that sending strategic rocket planes to the shores of the United States is a reaction to the deployment of elements of the American anti-missile defense in Poland and the Czech Republic, and to the expansion of NATO eastward.¹⁵

Two months later, in September 2008, Russian bombers visited [Venezuela](#). Fortunately, that operation did not receive much public attention in the United States, and the crisis died down before reaching full blown proportions.

In terms of assessing future risks, it is instructive to consider whether the risk would have been greater if Obama, rather than Bush, had been president when the Russian bombers made those 2008 flights (or a month later, when the Georgian War erupted, and President Bush did little to aid Georgia). That would be the case if Obama's political opponents are more likely to use such an event to tar him as soft on national defense. That in turn would spotlight the issue for the American electorate and place pressure on the president to act aggressively, thereby increasing the risk. Domestic politics played a similar role in the Cuban Missile Crisis: Both Kennedy and McNamara agreed that the Cuban missiles did not upset the strategic balance, but were heavily influenced by domestic politics – including the upcoming midterm elections. That led them to respond to the Soviet move with a strong (and therefore risky) response.

In some ways, these incidents in July 2008 stopped half a step short of a full-blown crisis, which is little cause for comfort. We were – [and still are](#) – at a very dangerous point in the process and need to recognize complacency as our true enemy. As noted at the beginning of this handout, "Where nuclear weapons are concerned, we cannot afford to wait for disaster to strike before realizing that complacency is unwarranted." It is essential that we start paying greater attention to these early warning signs of a potential disaster.

¹⁵ This translation is courtesy of Dr. Inna Sayfer, who also assisted with ensuring the accuracy of English language reports of Russian language news articles.

A Positive Role for Risk Analysis

Thus far we have been applying risk analysis to illuminate the risk posed by our nuclear weapons strategy. Those seemingly gloomy findings have a silver lining: By identifying the most likely failure mechanisms, such as a crisis involving Cuba, risk analysis allows us to focus remedial efforts where they will be most effective. One approach is to revisit the modern day analogs of the six steps which led to the 1962 Cuban crisis and see what they might tell us. I repeat each of those six steps below, and then comment on some lessons we can learn:

Step #1: Cuba still is an emotional land mine for Americans.

The risk would be greatly reduced if we reacted more rationally to events surrounding that island nation. Given that Cuba, in and of itself, poses little or no threat to our national security, we should reexamine why we have such an emotional response to events there.

This step also shows the danger of drawing “red lines” in Russian-American confrontations. What would General Schwartz would have done if the Russians had called his bluff? In 1962, both Kennedy and Khrushchev were haunted by similar “red lines” they had drawn, but which were crossed. They then faced the dilemma of either admitting that they had been bluffing, thereby losing all credibility in future nuclear standoffs, or following through with actions that would have risked hundreds of millions, or even billions of lives. Here are the red lines they drew:

Under attack by the Republicans for his passivity over Cuba, the president [JFK] had issued a public statement on September 4 [1962] warning the Soviets that “the gravest issues would arise” if they developed “a significant offensive capability” in Cuba. He had planted a marker in the sand, and was now committed to defending it. “Last month I should have said we don’t care,” Kennedy said wistfully, as if to himself. ... Doing nothing was no longer an option.¹⁶

[On September 12, 1962 Moscow warned that] “one cannot now attack Cuba and expect the aggressor will be free from punishment. If this attack is made, this will be the beginning of the unleashing of war.”¹⁷ [Khrushchev thus faced a similar dilemma to Kennedy if America did not heed his warning.]

Step #2: Russia demanding to be treated as a military equal and being denied that status.

This risk would be reduced by reassessing the limits of American military power, the extent of Russian (and other nations’) military power, and whether our words and deeds need to change as

¹⁶ Michael Dobbs, *One Minute to Midnight*, Alfred A. Knopf, New York, 2008, page 16.

¹⁷ Richard K. Betts, *Nuclear Blackmail and Nuclear Balance*, The Brookings Institution, Washington, DC, 1987, page 112.

a result. As demonstrated by the Russian reaction to President Obama's [2009 D-Day speech](#), it would not take much to diminish tensions. His speech included the following (emphasis added):

This is the story of the Allied victory. It's the legend of units like Easy Company and the All-American 82nd. It's the tale of the British people, whose courage during the Blitz forced Hitler to call off the invasion of England; the Canadians, who came even though they were never attacked; *the Russians, who sustained some of the war's heaviest casualties on the Eastern front*; and all those French men and women who would rather have died resisting tyranny than lived within its grasp.

That one phrase was enough for a [Russian news article](#) to contrast America's recognition of the Soviet losses with Britain's and France's more self-centered perspectives:

Russia Thursday protested that its role in defeating Nazi Germany in World War II had gone unrecognized at this month's D-Day ceremonies. Not a single word was said by Sarkozy, Brown or Harper about the decisive role in the victory of the Soviet Union, which took the hardest blows from Hitler's army and sustained the heaviest casualties ... Only U.S. President Barack Obama mentioned the Soviet Union's contribution to defeating fascism and its horrendous losses at the ceremony to mark the 65th anniversary of the landings ... Twenty-six million Soviet citizens paid the ultimate sacrifice in defeating Hitler's project of Armageddon on Earth. Nine out of every ten Wehrmacht personnel killed in battle were killed on the Eastern Front. ... Full marks to President Obama for bothering to mention the Soviet contribution towards defeating Hitler and his Nazis.

Step #3: Modern day, hotspots, such as Chechnya, Georgia, Estonia, Cuba and Venezuela, test Russian-American relations in ways that are similar to Berlin forty years ago.

The risk can be reduced by reexamining our perspective on each of those hotspots and rooting out any mistaken assumptions. While, ideally, the other nations involved would do the same, having one of the players behave more rationally is better than none. Taking the August 2008 Georgian War as an example, it would reduce the risk if Americans were to recognize that [Georgia fired the first shots](#) and Russia is not solely to blame.

Step #4: The 2008 Georgian war is almost a mirror image of the 1961 Bay of Pigs invasion.

The best way to reduce the risk of this step is also to reexamine our perspective on Georgia to produce a more accurate picture. Reexamining NATO expansion also would help. That will be done in the next handout.

Step #5: America's plans for missile defense in Europe bear an ominous similarity to the Turkish missiles we deployed in 1961-62.

This risk can be reduced by trying to put ourselves in the Russian's shoes and see how our actions might make them respond. Surprisingly, some far-sighted individuals did that both before our 1960's Turkish deployment and while our more recent Eastern European missile defense system was debated. Unfortunately, these individuals were not heeded – sometimes by themselves, as we will see in the first example. Prof. Barton Bernstein, one of the world's leading experts on the Cuban Missile Crisis, wrote:

[Referring to plans to place American missiles in Italy, Turkey, and possibly Greece:] in summer 1959 ... President Eisenhower privately expressed his worries about placing these IRBMs so near the Soviet Union. "If Mexico or Cuba had been penetrated by the Communists," he said in the paraphrased words of the minutes, "and then began getting arms and missiles from [the Soviets], we would be bound to look on such developments with the gravest concern and in fact... it would be imperative for us [even] to take ... offensive military action." Such thinking, however, did not block his administration's movement toward an agreement with Turkey to take some Jupiter missiles.¹⁸

Bernstein cites another instance of this ability to see the danger of our Turkish deployment. An April 1961 letter written by Undersecretary of State Chester Bowles to President Kennedy warned: "I am particularly concerned that we may fail to understand the Soviet reaction to our own defense programs. A double standard which allows us to react angrily at the slightest rumor of a Soviet missile base in Cuba, while we introduce ... missile set ups in Turkey... is dangerously self-defeating."¹⁹

President Reagan's March 23, 1983, ["Star Wars" speech](#) proposed missile defense as a solution to the nuclear dilemma. But recognizing that, "If paired with offensive systems, they can be viewed as fostering an aggressive policy," he promised that, "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." In spite of that pledge, the work was done in secret, with the promise to share the technology with the Soviets to be fulfilled at some indefinite future time. Recognizing this dangerous inconsistency, noted defense expert [Dr. Richard Garwin responded](#):

I think we ought to work on these military technologies [missile defense] ONLY openly and jointly. [emphasis in original] And I go farther than Edward [Teller], ... because I think we shouldn't work on them unless we are willing that the Soviet Union have them

¹⁸ Barton J. Bernstein, "Reconsidering the Missile Crisis: Dealing with the Problem of the American Jupiters in Turkey," in James A. Nathan (Editor), *The Cuban Missile Crisis Revisited*, St. Martin's Press, New York, 1992, page 58. While Castro's revolution had taken control of Cuba the preceding winter, Castro was not yet a Communist. As noted in earlier references to Burlatsky's book on Khrushchev, "At that time Castro was neither a Communist nor a Marxist. It was the Americans themselves who pushed him in the direction of the Soviet Union."

¹⁹ Bernstein, page 55.

as well. Had we done that with MIRV we would not be in the present situation where we feel our land-based forces are vulnerable. That's really a test of whether the government regards this as truly stabilizing or just states that its stabilizing in order to sell the program. If it is truly stabilizing for both sides to have it then let's give it to the Soviet Union, let's get the advantage of getting something in return – some access to their programs if possible. But if it is truly stabilizing they ought to get it when we do.

In October 2007, Senator Richard Lugar (R-IN) made a [similar proposal](#) with respect to the specific system that constituted step #5 in the modern-day failure process:

Henry Kissinger has suggested that President Putin's initiative to link NATO and Russian warning systems was one of those initiatives easy to disparage on technical grounds, but also one that allows us to, "imagine a genuinely global approach to the specter of nuclear proliferation which until now been treated largely through national policies." ... I agree with former Secretary Kissinger. ... President Putin's proposal is not a new concept. In fact, it is surprisingly similar to the strategic vision that President Ronald Reagan laid out more than two decades ago. ... The United States and Russia should also consider the establishment of jointly manned radar facilities and exchanges of early warning data. They might also consider joint threat assessments, as well as undertake bilateral discussions on options for missile defense cooperation. Lastly, we might consider placing Russian liaison officers at U.S. missile defense tracking sites in exchange for U.S. officers in Russian strategic command centers. The transparency gained from such steps would be useful in offering reassurances that these radars are not meant for spying on Russia.

Step #6: Possible deployment of Russian bombers to Cuba.

We clearly have less control over this step than we do over earlier ones, which is consistent with a general rule: The earlier you stop the failure process, the better off you are. The best way to reduce the risk of this step is to pay adequate attention to remedial actions earlier in the process! But, should we ever find ourselves this close to the nuclear threshold, we still can reduce the risk by responding more rationally. For example, in the 1962 crisis, Kennedy and his advisors regarded the downing of an American U-2 as a major provocation even though it had violated Cuban airspace. In contrast, when the commander of the North American Defense Command asked the Pentagon for advance permission "to use nuclear weapons ... in the event of an IL-28 [Soviet bomber] raid from Cuba which penetrates U.S. air space." The Joint Chiefs agreed to his request, in the event that his air defense system indicated a general "Cuban and Sino-Soviet attack."²⁰ While such a plan made military sense if Soviet bombers were en route to destroy an American city, it also created the possibility for errors similar to the unauthorized firing of Soviet

²⁰ Michael Dobbs, *One Minute to Midnight*, Alfred A. Knopf, New York, 2008, page 248.

ground-to-air missiles that took out our U-2 and added tremendous pressure on Kennedy to take military action against Cuba.

Hillel's lesson for defusing the nuclear threat

According to the Talmud, a man came to the famous first century Jewish sage, Hillel, and demanded to be taught the Torah while he “stands on one foot.” Given that Hillel had spent his whole life studying the Torah, asking him to condense the Torah into such a short summary was an insult. But, according to the story, the great sage met the challenge with aplomb by replying, “What is hateful to you, do not do unto others.” When the man insists that the Torah is so long that there must be more, Hillel points to his summary as “the essence” and states that “the rest is mere commentary.”

This story is highly relevant to defusing the nuclear threat because many of the above recommendations for reducing the risk of a nuclear disaster are just applications of the Golden Rule. While there are many other examples, here are two from the above list:

- We react strongly to any Russian interest in Cuba, yet object when they respond to our similar interest in nations on their own borders. For example, during the Georgian war of 2008, [an essay in Newsweek](#) compared the Russian invasion of Georgia to Hitler's takeover of Czechoslovakia in 1938, even though that it [has been determined](#) that Georgia fired the first shots and bears some of the blame for that war.
- When he learned that the Russians might deploy bombers to Cuba, General Schwartz declared that would cross a red line. Yet we have reacted angrily whenever Russia objects to our actions, no matter how close to her borders, even when phrased in less humiliating terms than a “red line.” NATO's expansion into Eastern Europe has been protested by Russia as dangerous, but is [dismissed as unwarranted meddling](#) by us – in spite of [an assurance](#) we gave in 1991 that, if Gorbachev did not resist the reunification of Germany within NATO, then “NATO's jurisdiction would not shift one inch eastward from its present position.”

These are just two examples where recommendations for reducing the nuclear risk are special cases of the Golden Rule, and I would not be surprised if moving away from dangerous double standards were all that is needed to start solving this seemingly unsolvable problem.

If something as simple as following the Golden Rule would reduce the nuclear threat, why hasn't that already been done? Because following the Golden Rule is far from simple! It's even hard to see when we are not following it. The Talmud's story about Hillel provides an excellent example.

In the shortened version which started this section, I left out two points. First, Hillel's inquisitor is a Gentile, so the story is a Jewish put down of Gentiles. Jews would be offended if the story were reversed, with a Jew asking a Christian saint to teach him the Gospels while he stood on one foot, and then being made to look like a fool. Second, in the full story, the inquisitor first goes to Hillel's major competitor, a Jewish sage named Shammai. Shammai is understandably insulted by the challenge and angrily shoos the man away. Only when he later visits Hillel is he shamed by an incisive answer. While the Talmud doesn't tell us, I am sure this story was created by followers of Hillel, not Shammai. Under that assumption, this story violates the Golden Rule a second time, in that Hillel's followers would have been angry if Shammai's students had created its mirror image.

This goes to show that, even when trying to teach the Golden Rule, it is all too easy to violate it. Constant vigilance, critical thinking, and critical self-examination are needed. We need to carefully reexamine our thoughts and deeds to ensure that we are seeing ourselves and the world as clearly as possible, so that we can be as consistent as possible with our stated ideals – and have the greatest chance of avoiding a nuclear catastrophe.