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How to Teach Nuclear War to High School Students

Nuclear war education includes not only the ways a war might start, but also the numerous ways they can be averted.



Photo: Ground Zero

Nuclear war is the paramount issue of our time—and probably the most challenging problem the human community has ever faced. Clearly, as secondary schools prepare students for citizenship, they must introduce them to the possibility of nuclear war and the fact that its prevention will soon be part of *their* responsibility. It is therefore essential that our secondary schools incorporate nuclear war education in the curriculum.

How should nuclear war be taught in secondary schools? One of the major objectives of Ground Zero, a nonpartisan nuclear war education project, is to facilitate this basic education. We had considerable success this past year in designing a program to help students confront the nuclear war issue in a constructive way, both in facing their fears and learning about the problem.

The approach is simple and straightforward—present students with the basic facts: the story of the first atomic bombs; the evolution of nuclear weapons delivery systems; the arms race; the “close calls” of the nuclear age (and especially the experience of the Cuban missile crisis, which most young people today don’t even remember); the immediate effects of nuclear war and the challenge of survival in the post-war world; and, finally, a contemporary look at the problem in the world today.

One might ask, “Why is all of this necessary? Isn’t it enough to know that the planet’s nuclear powers possess the equivalent of 10,000 tons of TNT for every man, woman, and child on earth?” No, it is not. This situation has existed for years, and legions of experts and government officials have not succeeded in forging a long-term solution to the problem.

The problem is not in counting who has what or who can do what to whom. While this is part of the background to the problem (and makes for interesting parlor conversation between generals and strategic planners), there are other more relevant questions. Thus, part of the challenge for educators is to structure the problem of preventing nuclear war in a logical way by examining how a nuclear war might start and specific routes to prevention.

Six Routes to Nuclear War

With the concept of “structuring the problem” in mind, let’s begin by examining the six routes by which a nuclear war might occur.

First is a “bolt from the blue” attack, a la Pearl Harbor, in which the Soviet Union attacks the United States, or vice versa, at a time when the two countries are only at their usual level of hostility—like today. Most national security experts consider this unlikely because of the condition known as “Mutually Assured Destruction” (MAD)—the predictable destruction of each society. Such destruction is ensured because each side would have more than enough weapons left to use in a catastrophic counterattack.

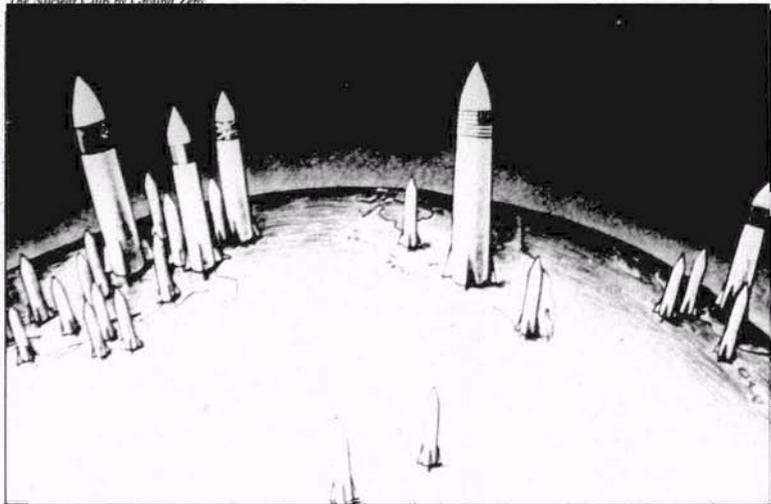
Now, you may find it rather comforting that a mutual balance of terror with the acronym MAD has kept us from having a second nuclear war (recalling that the first use of nuclear weapons occurred in August 1945 when the U.S. bombed Hiroshima). And you may think that this MAD situation should be adequate to prevent nuclear war or even the use of nuclear weapons. But when we consider the next five routes to nuclear war, we see that they do not confine themselves to so neat and rational a box as MAD. The reason they do not is that, in these scenarios, factors such as stress, fear, fatigue, national pride, and misinformation come into play.

The first of these doomsday scenarios is the escalation of a European conflict—for example, if the Soviet bloc countries were to invade West Germany or the West’s intervention in a crisis in Poland or East Germany.

Most military observers today do not think that NATO is capable of repelling a major conventional assault by the Soviets and the Warsaw Pact with conventional weapons. For this reason we have deployed nearly 6,000 nuclear weapons of various sizes and yields in Western Europe. In this scenario, the dynamics become impossible to predict. What does the Kremlin do when Russian soldiers are being vaporized on the battlefield? What does the White House do when the Soviets respond in kind?

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The Nuclear Club by Ground Zero



Some analysts are convinced that the situation would deteriorate rapidly, resulting in an all-out exchange between the superpowers.

The likelihood of this scenario has been reduced in recent years, primarily because the Western Europeans and the Soviets have seen it as in their interest to improve relations. But despite this lessening of tension (as demonstrated by Western Europe's refusal to agree to U.S. sanctions against the Soviet natural gas pipeline), this scenario is still a possibility. No serious student of 19th and 20th century European history could disagree.



The scenario that worries most strategic thinkers today is that a nuclear war between the superpowers could be triggered by a Third World conflict over the Mideast or the Persian Gulf, or between India, which exploded a nuclear device during the 1960s, and Pakistan, whose Prime Minister at the time pledged that his nation would obtain nuclear weapons even if the Pakistanis were reduced to eating grass. (There is strong evidence that the Pakistani government is trying to meet his commitment.)

This route would likely take on one of two forms. The first would involve a regional military conflict into which the Soviets and Americans are drawn, first with conventional weapons, with subsequent escalation to nuclear weapons.

Alternatively, there is a growing possibility that the Third World nations will themselves possess and use nuclear weapons. We currently believe the Israelis could have as many as several dozen nuclear weapons, and that other nations, including South Korea, Brazil, and Argentina will soon join the Nuclear Club.

Given past intense regional conflicts, current events that pit the U.S. and the U.S.S.R. on opposite sides, and the rapidity with which the political and diplomatic winds shift, escalation in a Third World crisis will remain the number one concern for at least the foreseeable future.

A fourth possibility, though less likely, is escalation after a false alarm. The current policy of both the U.S. and the U.S.S.R. is to "ride out" a nuclear strike and then assess the options. But what if either country decides to abandon this policy and launch on warning? To put that in perspective, during a 14-month period beginning in January 1979, the United States recorded 147 false alarms; some quite serious. Consider also the Soviet threat to advance a computer launch-on-warning system if we insist on deploying cruise and Pershing II missiles in Europe. Such a change in policy would literally put us a hair trigger away from nuclear war.

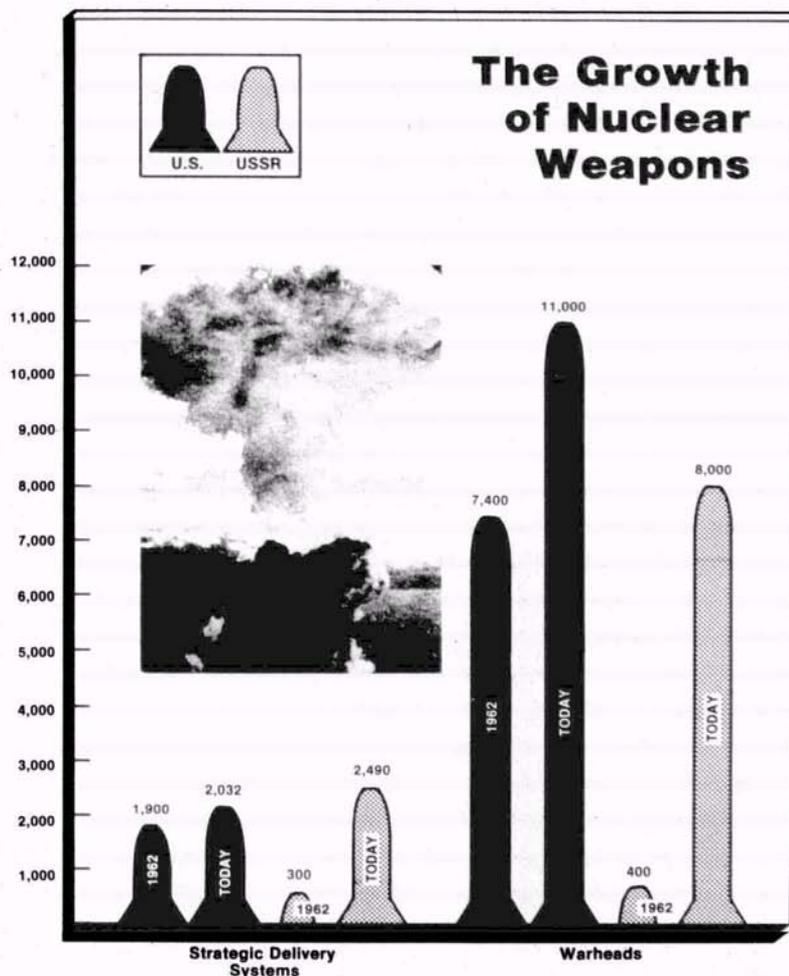
A fifth possibility would occur in the case of terrorist use of nuclear weapons against the superpowers. Because no terrorist would likely claim credit for blowing the lid off Manhattan or Kiev, leaders in Washington or Moscow would conclude that it was the act of the number one enemy. What would you do if you were the President or the Soviet General Secretary?

The final route to nuclear war could occur if a cabal of military officers on either side decided to launch nuclear weapons without proper authorization by the head of government or appropriate military commander. Though U.S. or Soviet satellites would note the launches, there would be no way to determine whether this were part of a coordinated first strike or the isolated act of a madman. Again ask yourself: If you were President, what would you do?¹

These are the six generic routes to nuclear war and the challenge we face is to eliminate them all.

The Failure of Arms Control

From the bombing of Hiroshima in 1945 until the Cuban missile crisis in 1962, we sought to ensure our national security by building nuclear weapons whose yields increased and whose accuracy improved. After the Cuban missile crisis, both the Soviets and the U.S. sought a somewhat different path. While the nuclear arsenals grew, particularly those of the Soviets, we both attempted to limit some areas of competition.



The method of doing so has been to negotiate arms control treaties and accords with the Soviets on such measures as banning the testing of nuclear weapons in the atmosphere, under water, and in space; limiting the size of nuclear detonations underground to 150 kilotons; essentially forbidding each country to deploy an antiballistic missile system; and limiting the number of missile launchers and silos that each side possesses.

These arms control measures, coupled with the development of new weapons systems (MX, Trident, cruise missiles, and so on) were supposed to make us safer, but this search for a technical solution has failed. As proof, I offer the statistics in Figure 1. Now I ask you, have arms control initiatives worked since 1962? Clearly not.

If the solution is not the technical one that we and the Soviets have so doggedly pursued, what is the solution? Several have been proposed—solutions called "firebreaks," similar to those thrown into the path of a raging forest fire by rangers to prevent the fire from racing totally out of control.

Firebreaks

Though the firebreak concept can be broken down into five specific measures, one firebreak stands out as having the greatest potential for preventing nuclear war: *reduce tensions between nations by seeking improved relations.*

In fact, a successful effort to improve relations between nations is tantamount to ensuring that several of the nuclear war scenarios are not even credible—that the fuses cannot ever be lit. If nations who are currently adversaries can be persuaded to settle their differences peacefully or simply put them aside, then the likelihood of war, including nuclear war, will be greatly reduced.

Obviously this argument applies not only to improving relations between nations in the Third World, but to the industrialized nations as well, and especially to relations between the superpowers.

A second potentially useful firebreak is strategic nuclear arms control (such as SALT and START, covering long-range nuclear weapons delivery systems

including ICBMs, submarine-launched missiles, and intercontinental bombers). Though such efforts have in the past been only modest, a change in our relations with the Soviets could make arms control much more significant. Such agreements can help make the outcome of an all-out nuclear exchange so certain (mutually assured destruction) that neither side would rationally be tempted to launch such an attack. Since virtually every scenario eventually comes to a point where superpower decision makers—those with their fingers “on the button”—face the certainty of mutual destruction if that button is pushed, strategic arms control negotiations are vital in a comprehensive plan to prevent nuclear war.

But will cool heads prevail in a crisis? We would like to think so, but the lessons of history and the impact of emotion on crisis behavior provide no assurance. Nevertheless, the predictability achieved through strategic arms control, along with certain unilateral actions, offers an important tool for stopping conflicts short of all-out nuclear war.

Other arms control measures might also provide effective firebreaks. These include:

- Intermediate-range nuclear arms control measures in Europe to reduce tension and ensure a balance of shorter-range nuclear forces
- Regional arms control measures to reduce tension, ensure a balance of conventional forces, and reduce the incentive to initiate conventional conflict
- Controls on conventional arms sales to countries to lessen hostility and tensions between adversaries and reduce the likelihood of Third World conventional conflict.

An important firebreak for several of the nuclear war scenarios is halting the spread of nuclear weapons to nations that do not yet have them (sometimes referred to as “restricting membership in the Nuclear Club”). The more countries that have nuclear weapons, the greater the danger that such weapons may be used in the midst of a conventional war, especially if one country is about to suffer a disastrous defeat.

A major part of the effort to halt the spread of nuclear weapons is the need to prevent the spread of certain technologies and weapons-grade “fissionable” (explosive) material—the uranium or plutonium used in first-generation nuclear weapons. Measures such as strict export controls on “sensitive” technologies and facilities can help prevent other countries from developing a nuclear weapons capability. Tight monitoring of all nuclear reactors that contain or produce fissionable material can also help ensure that none of the material is diverted to military use.

Another important firebreak is improved conflict resolution; that is, those techniques or mechanisms that prevent differences or disputes from reaching the stage of military conflict. Once ordinary bombs and bullets start flying, the possibility of escalation to the use of nuclear weapons becomes much greater. However, it is clear that military conflicts will occur and that finding methods of controlling or de-escalating these conflicts short of a final military solution presents an extraordinary challenge.

Within the last year, both the Falkland Islands and Lebanese crises vividly illustrated the ineffectiveness of current conflict resolution techniques. In the Falkland crisis, mediation efforts by (1) a superpower (the U.S.), (2) the U.N., (3) a Latin American U.N. Secretary General, (4) the Organization of American States, and (5) the Pope, failed to keep the crisis from going all the way to a military solution. These failures led U.N. Secretary General Perez de Cuellar to remark, “We are perilously near to a new international anarchy,” and he’s right.

Another firebreak, crisis communication, refers to efforts to maximize highly personal leadership-to-leadership communications in the midst of an escalating crisis. This is particularly relevant with respect to the superpowers—and the basic rationale for the current (but somewhat antiquated) U.S.-Soviet Hot Line.

Crisis communications are particularly important in situations where there is the possibility of a tragic miscalculation or misunderstanding. This would be the case, for example, if there were a

nuclear explosion of uncertain origin or purpose—as could be the case in at least two of the six scenarios for general nuclear war.

Crisis communications also constitute the “last ditch” firebreak when all else has failed and there remains the possibility that personal communication between the leaders of the two superpowers might still avert a nuclear war. It seems unlikely that the current Hot Line, a slow teletype machine requiring translation at both ends, is adequate.

Forging a Political Solution

The arguments over who is number one in the numbers game, over which weapon system is destabilizing and which is not, over which arms control proposal is balanced and which seeks unilateral advantage, over which technologies should run free and which should not are the complicated business of arms control negotiators and weapons systems experts. For 20 years they have sought a technical solution to the problem and have failed.

We must accept this failure and recognize the need for forging a political solution to the nuclear war problem—a solution in changed international relationships. Such a solution cannot be achieved without public consensus. And no such consensus can be found in the absence of clear public understanding of the problem.

The challenge to teachers is simple and straightforward. Reducing the threat of nuclear war must be our number one national priority, and introducing the subject into the curriculum of our schools is essential.

The approach we have laid out—examining how a nuclear war might start and how one might be prevented—provides the best framework for exploring this critical problem and participating in the quest for an end to the threat of nuclear war. It also reveals that the challenge we face is to learn how to live with nuclear weapons, not without them, because the nuclear genie is out of the bottle forever. □

¹This question is a good way to involve students in discussions that seem very abstract.

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