Why Serious Nuclear War Must Be Global in Scope

by

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It is certainly possible that an angry terrorist might deliver a "suitcase bomb" to a single city, and that the destruction of the targeted city would be the end result of the attack. Also, it is conceivable that a "rogue nation" or "small" nuclear power might target several cities in an enemy nation, in which case the result might include only damage to the attacked nation, or possibly a counterattack with damage to both nations. In either of these cases, it is quite conceivable that the damage would be limited to the two combatant nations. Furthermore, the world balance of power (industrial capacity of major nations) is not altered very much by the exchange. If a large nation is attacked, most cities survive, and the attacked nation remains powerful. If medium-sized or small nations are involved in the attack, then the larger industrial nations are unaffected.

In the case of large-scale nuclear war between two nations, however, the situation is quite different. Because of the large amount of damage to the industrial capacity of the two nations, the result of the attack is a very substantial change in the balance of power of the world's nations. The two combatants would "take each other out," and no longer be powers at all. The world balance of power would shift from the two combatant nations (assumed to be leading industrial powers) to the other large industrial nations of the world, who could easily take over whatever remains of the combatant nations.

If nuclear war were not survivable, then the postattack situation would be of little concern to the two combatants, and the attack might rationally be limited to the two combatant nations. But nuclear war is, or at least may be, survivable, depending on the level of damage. Previously, it was assumed that large-scale nuclear war was not survivable -- that was the basis for the Mutual Assured Destruction (MAD) strategy. With the advent of national missile defense (NMD) systems, however, the situation changes dramatically. Even large-scale nuclear war might be survivable, depending on the effectiveness of the missile defense system. If one of the two combatants, say the US, has an effective national missile defense system, then that nation may be still very much "alive" after the attack, albeit substantially damaged.

Given this situation, what are the two combatants likely to do? It is rather obvious what they will do. If there were no chance of survival, then there would be no point to targeting nations other than the other combatant. If there is any chance of survival, however, then both sides must target all other potential enemies, in addition to the principal opponent. Then, after the war, only allies will survive (if anyone survives), and the damaged nation will have a significant chance of recovery and freedom. Since both combatants will do this (the optimal strategy will be similar for both), what happens is that, in the event of war between two major nations, all of the world's industrial nations will be attacked. So large-scale nuclear war will never be a two-nation affair, if survival is likely or possible. It will surely be global in scope. All industrial nations will likely be targeted. If no nation has an effective missile defense system, all industrial nations will be destroyed. If either of the two combatants has an effective missile defense system, however, it may retain some of its industrial capacity and prevail after the war.

So how much damage will result to industrial nations as a result of global nuclear war? A medium-size war (1,000 nuclear bombs) will destroy approximately 75 percent of the world's

industrial capacity (see *Can America Survive?* at Internet web site http://www.foundationwebsite.org for details). If most of the world's stockpile of over 10,000 strategic nuclear weapons is deployed, destruction of most of the world's industrial capacity will result. Most nations have cities large enough to make them "lucrative" targets. The only untargeted nations would be small undeveloped nations or small islands with no large cities.

A number of interesting cases may be considered. For example, if the two combatant nations possess a credible national missile defense system, then how should they allocate their missiles between the principal enemy and the other (undefended) nations? This problem has been analyzed, and the solution is known.

Another issue that arises is, how large should the attack be? Under MAD, it needed to be only sufficiently large to assure the destruction of a single enemy nation. It does not take many weapons to destroy a single nation, so arms reduction was feasible under MAD (e.g., SALT, START). Under national missile defense, however, the situation changes radically. The attack must be sufficiently large that, after the war is over, the remaining industrial capacity of an attacking nation is larger than that of any enemy nation (or, in fact, of all enemy nations combined). How much industrial capacity will remain after an attack? That depends on the size of the attack and on the effectiveness of the national missile defense system. The solution to this problem is also known. The solution implies that the less effective the NMD, the larger the attack must be for the attacking nation to prevail (since less of the attacking nation remains after the war, more of the enemy industrial capacity must be destroyed). This implies that (1) if an NMD is built, it should be as effective as possible (large number of interceptors / space-based lasers) and (2) if an attack is made, it should be very large indeed (so that no surviving enemy nation or nations will be more powerful than the attacking nation, after the war). Since a nation that builds an NMD will wish to accomplish both objectives (large, reliable NMD, survival of only a small enemy industrial capacity), it follows that, under NMD, large industrial nations will opt for large missile defense systems and large weapon stockpiles. The nuclear-disarmament era of shrinking global nuclear stockpiles, which was enabled (rational) under MAD, is essentially over (under NMD). The future will be one of large missile defense systems and large weapon stockpiles.

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