Bruce Blair's Nuclear Column

The Folly of Nuclear War-Gaming for Korea and South Asia
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The brewing nuclear crises in South Asia and the Korean Peninsula have brought post-Cold War nuclear war-gamers back from the brink of extinction.

The loss of the defining threat of a U.S.-Soviet apocalypse had all but ended speculation on the course of a thermonuclear war between the Cold War adversaries, and the South and Northeast Asia cases were considered side-shows. In the early to mid-1990s, the conventional wisdom was that India and Pakistan would keep their bombs in their basements, relying for the indefinite future on small, non-deployed and untested arsenals to keep each other at bay. And, of course, North Korea's program did not surface until 1993 — then fairly quickly sank from view when the United States cut a deal to end the plutonium program.

The world's bubble of nuclear complacency burst when the South Asians conducted multiple tests in 1998. It became quickly evident that the new nuclear powers in South Asia were viewing their weapons as instruments of war and diplomacy. Accordingly, their security establishments traced the same footsteps as the United States and Russia during their early stage of nuclear war preparations (circa 1950s). South Asian war planners are working out strategy, war aims, target lists and command-control arrangements. During the past several years, I have spent long hours in conversation with some of these planners, and it is clear that they have embarked down the same path as the Cold War rivals in all areas of doomsday planning.

But the war planners in New Delhi and Islamabad are a long way from figuring out how to direct nuclear forces to coherent national purposes. They are still sorting out virtually all of the key issues, particularly the vexing challenge of ensuring tight central control over nuclear forces that may be placed on launch-ready alert during peacetime or a crisis. The acute dangers of a breakdown of control, or faulty intelligence leading to a mistaken or unauthorized launch, are far from solved. They are still trying to assess whether they can create command posts that are invulnerable enough to sudden destruction that they would enable the nuclear decision-makers to ride out an attack, or whether they need to delegate nuclear authority to subordinate commanders in order to underwrite retaliation. They are investigating the options of launch on warning (launching as soon as early warning radars or satellites report an incoming enemy missile strike) and first strike (preemptive attack in the Pentagon's lexicon). They are still trying to devise locking and other safeguards to prevent an unauthorized launch, and to set standards for security clearances for nuclear weapons handlers. In my conversations with South Asian military officers responsible for creating effective personnel reliability programs, I found their questions to be at the beginner to intermediate level.

Western observers generally assume far greater sophistication and capability than actually exists in the programs of the emerging nuclear states, especially regarding North Korea. It is commonplace for war-gamers to lay out, for instance, tit-for-tat attacks conducted by rational decision-makers to gain a military advantage, or to gain an exploitable upper hand in the escalation of violence, *a la* the strategic logic of escalation ladders and coercive nuclear diplomacy invented during the Cold War for U.S.-Soviet confrontation by the likes of Herman Kahn and Thomas Schelling. Accompanying computer simulation of the unfolding nuclear exchanges keeps running tabs on the forces destroyed and the casualties inflicted at each stage of the chess game.

For example, a composite scenario drawing on various think tank studies and my own rough estimates, envisions an opening move by a Pakistani F-16 (one of 40 acquired from the United States) against Indian troops massing at the border with the apparent intention of invading Pakistan.

Dropping a 10-kiloton fission bomb (similar to the Hiroshima bomb) on the Indian Army would kill or severely wound about 3,500 civilians in the vicinity along with about 5,000 troops. If India responded in kind, and dropped a 12-kiloton bomb on Pakistani troops, some 6,000 of them would be killed or severely wounded.

Or India might raise the stakes dramatically by switching war plans to destroy a city. One Heritage Foundation study, for instance, posits that the Indians retaliate to the initial Pakistani nuclear strike by hitting the Pakistani border city of Lahore with a 12-kilolton nuclear bomb, inflicting immediate civilian casualties exceeding 100,000. This scenario plays out with Pakistani retaliation against Amristar, India, with a 10-kiloton bomb that leaves more than 100,000 dead or dying, and culminates in an exchange of nuclear weapons against the respective capitals — a mutual holocaust involving a single "small" nuclear explosion in Islamabad and New Delhi. Civilian casualties are huge: Islamabad 115,000 from blast and 200,000 from radiation poisoning (fall-out), and New Delhi 125,000 from blast and 365,000 from fall-out.

Despite the horrific devastation, the escalation of violence in this scenario does not end in all-out nuclear war. It is a "limited" exchange that keeps the bulk of each side's arsenal in reserve in order to deter and coerce the other side until some kind of intra-war bargain is struck that averts an all-out exchange.

However, there are a host of reasons why this sort of war-gaming lacks plausibility, mostly having to do with the unrealistic assumptions made about the cool logic of decision-making, the accuracy of intelligence on the nuclear strikes and their consequences, and the ability of both side to maintain command and control under conditions of nuclear attack.

A multitude of reasons could be cited why a nuclear conflict would likely veer quickly into chaos and nuclear spasm. The main reason is that command and control would quickly be degraded. Also, the means of intra-war negotiation and termination would collapse. Another reason is that a "limited" attack would be unlikely to be recognized as such. The fine distinctions drawn by war-gamers often exist only in the abstract. For example, the notion that a nuclear exchange would stay limited if the attackers restricted their nuclear strikes to military targets and nuclear facilities is not grounded in reality. A close look at these supposedly military targets on the map often shows them to lie in near large cities — for example, the main Pakistani nuclear lab (Khan Research Laboratory) on the outskirts of Islamabad.

An equally plausible scenario would begin not with a surgical strike but with a full-scale first strike by Pakistan against Indian cities and military targets alike. If India anticipated the incentives and pressures that could induce this indiscriminant nuclear assault by Pakistan, then India would itself have cause to mount a preemptive attack against Pakistan's nuclear forces. Although India's superior conventional force of precision weapons permits India greater flexibility than Pakistan, the nuclear stand-off there is so unstable that any conflict would raise the pressure on both sides to consider striking preemptively at both military and urban targets. The chilling fanaticism on both sides only fans these flames.

It might be supposed that the adversaries in this dispute have gamed this volatile dynamic (perhaps more diligently than their Pentagon planners in view of their insider knowledge of plans and capabilities, and also because India and Pakistan have not been branded as U.S. adversaries requiring the Pentagon's close scrutiny, unlike North Korea and over a dozen other countries) and concluded that because an escalating confrontation would almost certainly go nuclear and end badly, it must be avoided or at least de-fused before, say, nuclear warheads are loaded onto planes and missiles. (Pakistan and India reportedly normally keep the nuclear charges off the missiles and aircraft as a safeguard against inadvertent nuclear use.)

Once the nuclear Rubicon is crossed, however, all bets are off because of the difficulties of command

and control. The American experience is instructive. During the Cold War, American civilian and military nuclear strategists made egregious errors of omission in their nuclear simulations by ignoring the vulnerability of command and control. The notorious "window of vulnerability" during the Reagan presidency in which the Soviets were credited with having superior nuclear forces capable of blackmailing the United States into surrender was the artificial result of computer simulations of a large-scale nuclear exchange in which the command and control systems on both sides worked perfectly during "limited" strikes against many thousands of "military" targets in each country. The incredible scale of devastation and death in urban areas that would occur in the event of a "limited" counterforce exchange was also ignored. [The United States as late as the mid-1980s planned to attack 16,000 discrete targets in the Soviet Union in an all-out war; over 10,000 of these targets were "military" targets. As late as the 1990s, the United States aimed 69 high-yield strategic weapons (each more than 10 times more powerful than the bombs used in the South Asia game above) at a single "military" target that happened to be located on the outskirts of Moscow (the Pushkino anti-ballistic missile radar site). Today the American nuclear war plan still requires U.S. strategic forces to destroy nearly 2,000 military targets in Russia in the event of nuclear war with that country.]

I wrote a book debunking these assumptions (*Strategic Command and Control*, Brookings, 1985), and showing why both the United States and the Soviet Union would quickly lose control over their nuclear arsenals in wartime, rendering all the notions of exploitable intra-war blackmail totally academic.

There is no reason to believe that other nuclear powers would be any better than the United States at controlling their arsenals during a nuclear war. There is every reason to believe that no nuclear war-fighter would begin to anticipate the major surprises in store if such a war ever happens. The history of the nuclear arms race is chock full of surprises and discoveries that would have drastically altered the course of a nuclear war from the expectations existing prior to the discoveries. For example, the United States learned in the early 1970s that a single nuclear explosion detonated at high altitude above the United States might so severely disrupt communications that coherent control could no longer be exercised. And we learned in the early 1990s that the Soviet Union had built a doomsday device (akin to the device in Doctor Strangelove; see *New York Times*, Oct. 8, 1993) designed to ensure quasi-automatic retaliation to a U.S. nuclear first strike that decapitated the top Soviet leadership. And we learned that U.S. nuclear operators had rigged the command system to drive the U.S. president inevitably to authorize retaliation before the arrival of the first enemy nuclear warhead. Launch on warning, not second-strike retaliation after riding out an attack, was America's main operational strategy. (As it turned out, the Soviets and Russians also relied heavily on this option.) And we learned that the United States extensively pre-delegated nuclear authority down the military chain of command to compensate for acute vulnerabilities at the highest political levels and to expedite the unleashing of the U.S. strategic arsenal during a Soviet attack.

Try to find any war game or nuclear exchange simulation in the entire history of the Cold War that captured very many of these awkward facts. You will not find it, and similarly the nuclear scenarios postulated for South Asia would undoubtedly be relegated to the scrap heap of faulty conjecture if a nuclear war there ever broke out. Considering the manifold problems of control not to mention the human emotion involved, it is highly questionable whether any war simulation could be devised that would adequately predict the unfolding events and their consequences.

So what, in the end, can we confidently say about nuclear war in these regions? Practically, only that the arsenals could cause a holocaust — a single 15-kiloton plutonium bomb exploded by North Korea about one-quarter mile above Seoul would almost certainly kill 150,000, severely injure another 80,000, and inflict significant injuries to another 200,000 city-dwellers. If North Korea has one or two assembled weapons, it's a threat of apocalyptic proportions to South Korea, or for that matter any country that found itself on the receiving end. If North Korea harvests another six or eight plutonium bombs during the next six months, it could soon put a million or so South Korean and Japanese

inhabitants in peril. South Korea's three million civil defense personnel would be overwhelmed.

Regarding Pakistan and India, each estimated to possess many scores of nuclear weapons, the death toll could be much higher. These arsenals have put 10 million or so South Asian inhabitants in peril. The United States and Russia, of course, eclipse this specter of a second Holocaust by imperiling many hundreds of millions of people and civilization itself.

Prudence dictates that we should assume that any use of nuclear weapons in anger would run a high risk of escalating to full-scale war that inflicts the maximum possible casualties in each of the theaters — a million in Korea, 10 million in South Asia, and hundreds of millions in a U.S.-Russia exchange. These sobering statistics imply that prevention is the only way to limit the adverse consequences of a nuclear conflict.