THE INDIA FORUM
A JOURNAL-MAGAZINE ON CONTEMPORARY ISSUES

May 15, 2025

# Strategic Thinking and the Nuclear Garden Path

**By: Jean Drèze**

*The recent conflagration between India and Pakistan urges us to reflect once again on the logic of nuclear deterrence and its false assurances of safety. Taking off from the movie "Dr. Strangelove", this essay discusses some loose ends in conventional strategic thinking.*

"Gentlemen, you can't fight here - this is the War Room!" This is just one of the iconic lines for which the 1964 film *Dr. Strangelove or: How I Learnt to Stop Worrying and Love the Bomb* is fondly remembered. The scene takes place in the War Room where the President of the United States and his advisors are desperately trying to avert the outbreak of nuclear war. As they meet, nuclear bombers unleashed by a deranged commander are heading towards the Soviet Union. It is when two participants nearly come to blows that the President (masterfully played by Peter Sellers) admonishes them in those words.

The film, directed by Stanley Kubrick, is a satirical comedy. It exposes the recklessness of nuclear games and of the ageing men who play or plan them. The subject is grim and may be regarded as unfit for a parody. But the genre is quite effective in conveying the enormities that surround it.

*Red Alert*, the book that inspired the film, is dead serious. So was Kubrick's purpose. He read a lot of nuclear-strategy literature before making the film, apparently concluding from it that "nobody really knew anything and the whole situation was absurd". He expected the film to cause an uproar and to prompt some rethinking about nuclear strategy. That seemed all the more likely as the film was released soon after the 1962 Cuban missile crisis, when nuclear war was narrowly averted. Alas, no decisive rethinking happened and the sinister games continued.

One of the central characters in *Dr. Strangelove* is - you guessed it - Dr. Strangelove, also played by Peter Sellers. He is the brain in the room - a former Nazi scientist conversant with nuclear technology and strategy. When the Russian ambassador reveals that Russia has put in place a "doomsday machine" (a device that triggers worldwide nuclear war *automatically* in the event of an attack), he points out that the device has no deterrence value if it is kept secret. Around the end of the film, when nuclear war seems inevitable, he suggests that the US leadership takes refuge in deep mines with a good number of young women and prepares to repopulate the earth with them - a proposal that creates some euphoria in the War Room and makes everyone forget the crisis.

According to Stanley Kubrick, the character of Dr. Strangelove was chiefly inspired by rocket scientist Wernher von Braun, himself a former Nazi. But there must have been other influences as well. Speculative influences include strategist Herman Kahn of the RAND Corporation (BLAND Corporation in the film), mathematician John von Neumann (one of the founders of game theory) and, less plausibly, Henry Kissinger. Quite likely, Dr. Strangelove's logic also drew some inspiration from the work of Thomas Schelling, the brilliant economist and game theorist who later became a Nobel Laureate. In a 2013 interview for the Harvard Kennedy School Oral History Project, Thomas Schelling asserts that Kubrick had not only been influenced by an article of his but also roped him in as a consultant for the film. Some of Dr. Strangelove's lines, like his analysis of the doomsday machine, do ring a Schelling bell.

## Flashback

The 20th century was a period of hallucinating development in the technology of war and mass murder. As it began, Polish economist Ivan Bloch had just published his monumental study *The Future of War*. The book's predictions, considered extravagant at the time (e.g. "the day of the bayonet is over"), often turned out to be correct. Bloch's main thesis was that new developments in the technology of war, such as "the introduction of the magazine rifle", had made war "impossible, now that it is clear that war means suicide". However, he added that "until mankind has made experience of the deadliness of its weapons, there will be terrible bloodshed."

> If there is a lesson from both world wars, it is that when big powers come to a point where each side is fixated on winning at all cost, violence knows no bounds.

Prescient as he was, Bloch had no idea that war technology would leap within 50 years from the magazine rifle to the nuclear bomb. As soon as it was invented, the nuclear bomb was used, that too on a civilian target - the city of Hiroshima. Tens of thousands of people were incinerated in one go, and the survivors must have envied the dead. There has been much debate on whether or not the act was justified, but that question misses the point: no particular justification was required at that time. Hiroshima was just a continuation by other means of the relentless fire-bombing of Japanese cities in 1945. According to Robert McNamara, who was involved in these operations, 50 to 90 per cent of 67 major Japanese cities had already been obliterated before Hiroshima (McNamara 2003). The fire-bombing of Tokyo alone, on 10 March 1945, is estimated to have killed a 100,000 people or so - possibly the biggest single-day mass murder in history. Hiroshima was promptly followed by Nagasaki, and in all likelihood, the orgy of bombings would have continued had Japan not surrendered a few days later. It did continue later in Korea, Vietnam, Cambodia and so on.

Today, we live under the sweet illusion that this sort of savagery is a thing of the past. But how do we know? If there is a lesson from both world wars, it is that when big powers come to a point where each side is fixated on winning at all cost, violence knows no bounds. The worst barbarity becomes amenable to justification, for instance by claiming that it is necessary to shorten the war. The casualties of the ongoing genocide in Gaza, incidentally, are of the same order as those of the Hiroshima blast. They are supplemented with the prolonged denial of essential food, humanitarian aid and medical care to more than two million people, mostly civilians. If such monstrosities are possible, anything is possible.

Soon after World War II came to an end, contingency plans were made for World War III, with expected casualties in hundreds of millions instead of tens of millions. For some time, under President Eisenhower in particular, the US had a policy of "massive retaliation": in the event of a provocation, it would rain nuclear bombs. For instance, in the event of a conflict with the Soviet Union over Iran, thousands of nuclear bombs would be dropped not only on the Soviet Union but also on China and other communist countries (even Albania) - all their major cities would be targeted. The number of expected casualties was a closely guarded secret, but according to Daniel Ellsberg, who was a nuclear-war planner in those days, 600 million was one of the ballpark figures. Unprovoked first strikes were also considered. John von Neumann, for one, "seriously and persistently advocated a preventive war against the Soviet Union".

As the Soviet Union developed its own nuclear-strike capability, the threat of a massive first strike lost credibility. This posed a problem for nuclear strategists: how can nuclear weapons be used for purposes of threat (alias "deterrence"), when their actual use leads to mutual destruction?

## Deterrence and credibility

Thomas Schelling gave one influential answer to this question in a confidential 1959 paper for the RAND corporation, called "The threat that leaves something to chance". He pointed out that in a situation where nuclear war leads to mutual destruction, the threat of a nuclear strike is not credible, but what is still credible is a threat to create a situation where things might "get out of hand" and lead to nuclear war. This credible threat can be used to get one's way.

The idea can be conveyed with a simple analogy from Schelling's paper:

> "Rocking the boat" is a good example. If I say, "Row, or I'll tip the boat over and drown us both," you'll say you don't believe me. But if I rock the boat so that it *may* tip over, you'll be more impressed. (Schelling (1959), p. 13; also in Schelling (1960), p. 196. )

For the analogy to apply, we must imagine the boat being full of men, women and children who have nothing to do with the conflict. "Rocking the boat" might mean something like "a demonstration drop on a Hiroshima-sized Soviet city", as Schelling was to suggest later in the context of a possible conflict with the Soviet Union over Berlin (May and Zelikow 1997, 30).

Illuminating as it was, Schelling's discussion of the threat that leaves something to chance ignored a number of concerns. First, how ethical is it to rock the nuclear boat when it puts millions of innocent people at risk of a horrifying death? Ethical considerations were set aside. Second, if this strategy is good for one player, it must be good for the other one too. Schelling admitted in passing that this might lead to a dangerous "war of nerves", but quickly changed the subject. Third, if you keep rocking the boat in successive conflicts, it is bound to tip over (nuclear war!) sooner or later. Fourth, how is one supposed to calculate the risks and evaluate the consequences of this strategy? This can be especially hard to do in a crisis, and a miscalculation could be fatal.

It did not take long for real-world events to highlight these issues.

## Cut to Cuba

The idea of "rocking the boat" with nuclear weapons may sound reckless, but it has been applied more than once, not least during the Cuban missile crisis of October 1962.

The crisis began, so the story goes, when the US discovered that the Soviet Union had placed nuclear missiles in Cuba. President Kennedy demanded their removal, initiating a series of tensions, threats, counter-threats, incidents and accidents that took the world closer to nuclear war than it has ever been. The crisis was defused in extremis through mutual concessions: the Soviet Union agreed to remove the missiles and the US promised not to invade Cuba.

Ironically, it is not Kennedy but Khrushchev who made effective use of the "strategy that leaves something to chance" in 1962. Remember, the US had tried to invade Cuba *before* the crisis began, and plans were afoot for covert operations to overthrown Fidel Castro's regime. Khrushchev successfully deterred further moves on Cuba by "rocking the boat". Schelling, for his part, unwittingly demonstrated the hazards of this strategy. I am not sure whether he supported military intervention, recommended by Kennedy's army chiefs (including Curtis LeMay, the belligerent genius behind the 1945 bombings in Japan), but he did help their case by arguing that nuclear warheads were unlikely to be in place in Cuba. In fact, as was learnt later, many nuclear warheads were right there, ready for launch. Fidel Castro was very keen on a first strike, however suicidal, in the event where the United States attacked Cuba. Had Kennedy gone along with his advisors, all hell might have broken loose.

> Robert McNamara felt that the events of that period had brought the world "within a hairbreadth of nuclear war", not just during the Cuban missile crisis but three times within his seven-year tenure as Secretary of Defense.

The crisis, like the movie *Dr. Strangelove*, was an opportunity to wake up to the insane danger of nuclear threats. Instead, many strategists saw the crisis as a vindication of the possibility of using nuclear weapons for bargaining purposes. Schelling himself considered that "the Cuban missile crisis was the best thing to happen to us since the Second World War", because it reduced the risk of future conflicts at the cost of a minor risk of immediate conflict (quoted in Lukas 1987). This view was based on the assumption that the risk of nuclear war had been small, but the historical record today belies that assumption. According to George Lee Butler, former commander in chief of the US Strategic Command, nuclear war was averted "only by the grace of God". Similarly, Robert McNamara felt that the events of that period had brought the world "within a hairbreadth of nuclear war", not just during the Cuban missile crisis but three times within his seven-year tenure as Secretary of Defense (McNamara 2003).

Interestingly, the crisis very nearly ended in catastrophe in spite of the fact that "both President Kennedy and Nikita Khrushchev were determined not to carry out the threats they were making of armed conflict" (Ellsberg 2017a). It is doubtful that the same clarity can be attributed to leaders like Donald Trump and Vladimir Putin today. In fact, it is hard to be sure that Trump is always clear about the difference between nuclear commands and a video game. As it happens, one of the titles Kubrick had initially considered for his film was "*How to Start World War III Without Even Trying*".

## The perils of escalation

We are all familiar with real-life stories of tragic escalation, from media reports as well as personal experience. For instance, two neighbours have a quarrel about the use of a common water tap. Tempers rise, insults are traded, a fist fight follows, and finally one of the two protagonists pulls out a knife and stabs his opponent to death. It makes no sense to kill someone over a bucket of water, but incidents of this kind happen all the time. At each step in this "escalation game," taking the next step may not seem irrational, yet the final outcome is absurd.

The perils of escalation games are clear from game theory. Martin Shubik's "Dollar Auction Game" is a particularly useful illustration of their tendency to have irrational outcomes. In this game, two players bid for a dollar in fixed increments of, say, ten cents. The highest bidder gets the dollar, and both pay their bids. Experiments with the dollar auction game show that people often bid way beyond one dollar: at each stage, it seems worth bidding a little more to get the dollar (the money already committed is, by then, "water under the bridge"). The basic problem arises because escalation proceeds in steps, and the narrow logic of each move leads to an irrational outcome for the game as a whole.

The First World War can plausibly be interpreted as a particularly tragic escalation game. As Herman Kahn, a leading advocate of "rational" nuclear strategy, wrote in one of his influential books: "The detailed 'outbreak scenario' of World War I would probably have been rejected as the plot for a third-rate comedy of errors as simply too outrageous. But the bizarre series of events did occur and brought with it enormous suffering" (Kahn 1984, 19). Nothing prevents a similar "outbreak scenario" from triggering World War III.

The perils of escalation greatly magnify the dangers of nuclear gambles. In this respect, the rocking-boat analogy is a little deceptive. When you rock the boat, you have some idea of the risks. In an escalation game, the course of events can be very hard to anticipate.

## Enters irrationality

Escalation games illustrate an important insight of game theory: in many "games" (that is, situations where the decisions of players are interdependent), strategic reasoning on its own does not tell us what to do. Schelling himself was well aware of this point: "One cannot, without empirical evidence, deduce what understandings can be perceived in a non-zero sum game of maneuver any more than one can prove, by purely formal deduction, that a particular joke is bound to be funny" (Schelling 1960, 164).

In the concluding lines of his magisterial textbook on two-person game theory, Anatol Rapoport made a similar point in a particularly insightful way: "The great philosophical value of game theory is in its power to reveal its own incompleteness. Game-theoretical analysis, if pursued to its completion, perforce leads us to consider other than strategic modes of thought." As this statement conveys, the fact that strategic reasoning is often an incomplete guide to action is not a defeat. On the contrary, it makes life more interesting. It makes room for other "modes of thought", based for instance on psychology, ethics, emotions, habits of thought, social norms and codes of conduct. These modes of thought are not, or at least need not be, irrational. Strategic thinking, often confused with "rationality" in game theory, is only one form of rational thinking.

Irrationality, however, is also a pervasive factor in human affairs. The point was well put by game theorist Robert Aumann, who shared the 2005 Nobel Prize with Schelling:

> Homo rationalis is a mythical species, like the unicorn and the mermaid. His real-life cousin, Homo sapiens, is often guided by subconscious psychological drives, or even by conscious ones, that are totally irrational; herd instincts play a large role in his behavior; even when his goals are well-defined, which isn't often, his motivation to achieve them may be less than complete; far from possessing infinite calculating ability, he is often downright stupid; and even when intelligent, he may be tired or hungry or distracted or cross or drunk or stoned, unable to think under pressure, able to think only under pressure, or guided more by his emotions than his brains. And this is only a very partial list of departures from the rational paradigm (Aumann (1987), pp. 35-36).

*Dr. Strangelove* harps on the irrational factor with abandon. For instance, military decisions in the movie are often driven by the rich possibilities of sexual fantasy around nuclear weapons. It begins with aerial refuelling with a hint of love-making, and ends with an equally metaphorical nuclear spasm. This is fiction, but anyone familiar with the strategic literature would know that it is far from free of sexual innuendos. In the public imagination, too, nuclear weapons often have sexual connotations. After India conducted a nuclear test in 1998, for instance, Bal Thackeray (an icon of Hindu nationalism) proudly declared that "we are not eunuchs any longer." One wonders how far this sort of mentality actually influences public decisions on nuclear weapons.

The irrational factor in human behaviour poses a serious problem for nuclear strategy. One can, of course, try to make virtue of it, as in the "madman theory" which holds that cultivating a reputation for irrationality enhances the power of nuclear threats, and generally helps to create fear in the mind of opponents. As with "rocking the boat", however, the problem with this theory is that if it is good for one player it must be good for the others too. If they all make a show of irrationality, we descend further and further down the hole of nuclear madness.

## Beyond strategic thinking

Thirty-odd years after Stanley Kubrick, the eminent historian Lawrence Freedman also reviewed the literature on nuclear strategy. Like Kubrick, he was unimpressed. In his authoritative book on the subject, *The Evolution of Nuclear Strategy*, he concludes that strategic thought "may have reached a dead end… one where stability depends on something that is more the antithesis of strategy than its apotheosis - on threats that things will get out of hand, that we might act irrationally, that possibly through inadvertence we could set

in motion a process that in its development and conclusion would be beyond human control and comprehension" (Freedman 1989, 433). It is doubtful that nuclear games are safer today, even as tensions rise around North Korea, Ukraine, Taiwan, Kashmir, West Asia and other hotspots.

A few years ago, film-maker Oliver Stone spent some time with Vladimir Putin and interviewed him at length. They watched *Dr. Strangelove* together. After that, Putin tersely commented that little had changed, and that "the inability to control such weapon systems still holds true to this day." This did not prevent him from resorting to veiled nuclear threats a few years later, during and after the invasion of Ukraine. He is now accused of "nuclear blackmail" - rightly so, but that is what "nuclear deterrence" really was all along.

It is not just Putin that we have reason to fear, or hawkish men for that matter. Three years ago, when she was running for prime minister in the UK, Liz Truss was asked by a show host whether she was prepared to "unleash nuclear weapons" even if it meant "global annihilation". She immediately said yes, adding that this was "an important duty of the Prime Minister." Perhaps she had no choice other than to say yes, but did the audience really have to clap enthusiastically?

> Strategists pride themselves on their "realism", based on the self-fulfilling assumption that international relations are driven by the quest for power. Their realism, however, is driving the world to collective suicide.

One problem with nuclear games is that their consequences are so hard to fathom. The person who sits down, sandwich in hand, to work out the details of a war plan involving 600 million casualties is surely disconnected from reality in some fashion. Ironically, a thoughtful fiction movie can help us to reconnect. That is one good reason for watching *Dr. Strangelove* again today.

*Dr. Strangelove* is also a useful memento for future generations of the insanity of the times when world leaders were playing with the fire of nuclear war. The risks of nuclear gambles are hidden from the public with deceptive claims that "mutual assured destruction" (MAD) is a guarantee of safety. Game theorists are better placed than most to understand and expose these risks. Some of them, like Daniel Ellsberg and Anatol Rapoport, have made sterling contributions to the peace movement, but there is room for more.

Advocates of nuclear disarmament are often dismissed as idealist peaceniks, out of touch with world realities. Strategists pride themselves on their "realism", based on the self-fulfilling assumption that international relations are driven by the quest for power. Their realism, however, is driving the world to collective suicide. The call for nuclear disarmament is not a departure from rationality; on the contrary, it is a plea for cultivating a higher form of rationality - collective rationality.

## Postscript

This article was written before the recent conflict between India and Pakistan (7-10 May 2025). This armed conflict - the third since both countries conducted nuclear tests in 1998 -reinforces the need to reflect on the logic of nuclear deterrence and its false assurances of safety. A dangerous illusion is developing that India has "exposed Pakistan's nuclear bluff", and has a free hand from now. Pakistan, so the story goes, will never dare to use nuclear weapons, since that would lead to a devastating second strike. Therefore, India can safely conduct conventional strikes on Pakistan anywhere at any time. Operation Sindoor is held as a proof of this pudding. There is much loose talk of a more decisive conflict if Pakistan does not mend its ways.

India, however, cannot have it both ways: claim that Pakistan's bluff can safely be called, and also that nuclear weapons are unsafe in Pakistan's "irresponsible" hands, as Defence Minister Rajnath Singh recently argued.

In any case it should be clear from the preceding discussion that all this is this quite ominous. Mutual nuclear deterrence is inherently risky. In a given crisis, the risk of things getting out of hand may be small. But if the "game" keeps being played, doomsday is bound to arrive sooner or later. And its consequences would be horrific.

*This article is adapted from a contribution to "Filmonomics", edited by André de Palma and Luc Leruth (Routledge, 2025).*

*Jean Dreze is a visiting professor at the Department of Economics, Ranchi University.*

**References:**

Aumann, R.J. (1987), "What is Game Theory Trying to Accomplish?", in Arrow, K., and Honkapohja, S. (eds.) (1987), *Frontiers of Economics* (Oxford: Basil Blackwell).

Bloch, I.S. (1899), *The Future of War*, translated by R.C. Long (Boston: Ginn).

Cohn, Carol (1987), "Sex and Death in the Rational World of Defense Intellectuals", *Signs*, 12.

Drèze, Jean (2016), "The Real Insights of Game Theory", *Economic and Political Weekly*, 2 April.

Ellsberg, Daniel (2017a), interview with *Democracy Now* (available at www.democracynow.org/2017/12/6/doomsday_machine_daniel_ellsberg_reveals_he).

Ellsberg, Daniel (2017b), *The Doomsday Machine: Confessions of a Nuclear Planner* (Bloomsbury).

Freedman, Lawrence (1989), *The Evolution of Nuclear Strategy*, second edition (London: Macmillan).

Institute for World History (2015), "Cuban Missile Crisis: Khrushchev/Castro Letters, October 1962" (available at wp.stu.ca/worldhistory/wp-content/uploads/sites/4/2015/08/Khrushchev-Castro-Letters-Cuban-Missile-Crisis.pdf).

Kahn, Herman (1984), *Thinking about the Unthinkable in the 1980s* (New York: Simon & Schuster).

Kaplan, Fred (1983), *The Wizards of Armageddon* (New York: Simon & Schuster).

Kolkowicz, R. (1987), "Intellectuals and the Nuclear Deterrence System", in Kolkowicz, R. (ed.) (1987), *The Logic of Nuclear Terror* (Boston: Allen & Unwin).

Lukas, J. Anthony (1987), "Class Reunion: Kennedy's Men Relive the Cuban Missile Crisis", *New York Times Magazine*, 30 August (available at nytimes.com).

May, E. R., and Zelikow, P.D. (1997), *The Kennedy Tapes: Inside the White House During the Cuban Missile Crisis* (Cambridge, MA: Harvard University Press).

McNamara, Robert (2003), extended interview presented in *The Fog of War*, a documentary directed by Errol Morris (available at https://watchdocumentaries.com/the-fog-of-war/).

Osborne, M.J., and Rubinstein, A. (1994), *A Course in Game Theory* (Cambridge, MA: MIT Press).

Rapoport, Anatol (1966), *Two-Person Game Theory* (Ann Arbor: University of Michigan Press).

Rapoport, Anatol (2000), *Certainties and Doubts: A Philosophy of Life* (Montréal: Black Rose).

Schelling, Thomas (1959), "The Threat that Leaves Something to Chance", confidential mimeo, The RAND Corporation; released in 2021 as RAND historical document HD-A1631-1.

Schelling, Thomas (1960), *The Strategy of Conflict* (Cambridge, MA: Harvard University Press).

United States Strategic Command (1995), "Essentials of Post-Cold War Deterrence", note prepared by the Policy Subcommittee of USSTRATCOM's Strategic Advisory Group.