



The concept of value targeting and city ‘busting’ in air power and nuclear strategy in the Cold War.

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1. Introduction

The idea of destroying a city and killing its entire population as a mean to coerce the enemy predates the invention of human flight and nuclear weapons. For instance, at the beginning of his invasion of Italy in 1494, Charles VIII slaughtered the population of the first city that did not surrender to him, to avoid further resistance¹. His logic was not qualitatively much different from the one behind the bombing of Dresden and Hiroshima^{2,3}. However, the immense destructive potential of nuclear weapons and the difficulty to conceive a tight defense against the strategic bomber and the ICBM confronted strategists in the Cold War with the problem of making sense of war in an epoch where the mutual and rapid destruction of the belligerent countries was one likely outcome.

2. The dilemma

While the theories of Douhet⁴ and other theoreticians of strategic bombing did not fully withstand the reality of WW2⁵, the invention of the atomic bomb vindicated them⁶. In fact, already in 1946 the American historian and strategist Bernard Brodie considered that the new weapon changed

¹ MALLETT, M. 2009. *Mercenaries and their masters: warfare in Renaissance Italy*, Pen and Sword.

² HEUSER, B. 2000. *The Bomb: Nuclear Weapons in their Historical, Strategic and Ethical Context*, Routeledge.

³ HEUSER, B. 2010. *The evolution of strategy: thinking war from antiquity to the present*, Cambridge University Press.

⁴ DOUHET, G. 1921. *Il dominio dell'aria: saggio sull'arte della guerra aerea*, L'Amministrazione Della Guerra.

⁵ PAPE, R. A. 2014. *Bombing to win: Air power and coercion in war*, Cornell University Press.

⁶ BRODIE, B. 2007. *Strategy in the Missile Age*.

war and strategy forever and that the future aim of armies would not be to win a war but to avoid it^{7, 8}.

In the first years of the Cold War, it was still possible to challenge Brodie's predicament and consider that nuclear weapons did not fundamentally alter the agenda for strategic thinking after WW2. This was the thesis expressed by William Borden, a Yale lawyer, in his rebuttal of Brodie's thesis^{9,10}. However, three developments made this position almost impossible to maintain. They were the accumulation of nuclear stockpiles beyond initial forecasts on both sides, the invention of the H-bomb and the development of the ICBM¹¹. Combined, they made clear that the working assumption should be that, for the foreseeable future, the offensive was able to hit cities in a devastating manner and, not less important, this capacity was reciprocal¹². As the economist and Nobel laureate Schelling noted¹³, technology made possible, for the first time, to coerce the adversary with the threat of annihilating his cities, without having first to shatter his armies. Moreover, he noted, the speed changed: the time frame was now tens of minutes, while in the past naval blockade or siege promised much inferior devastation and after months if not years. In summary, nuclear weapons presented strategy makers in the Cold War with a problem whose characteristics were nearly intractable. The scale of possible damage likely reached the extinction of human civilization. Potentially, it could be inflicted at a speed that defies human rationality. The two adversaries distrusted each other and the saw rival as having potentially aggressive intentions.

Conventional strategic air power played a role in the Cold War in Korea and Vietnam. While in Korea city-busting was adopted with a strategic rationale similar to that of WW2, in Vietnam, during Operation Rolling Thunder it was conceived in line with the theorizing of Schelling¹⁴. In this case, the strategic rationale was to signal resolve and 'deter by punishment'¹⁵.

⁷ BRODIE, B., DUNN, F. S., WOLFERS, A., CORBETT, P. E. & FOX, W. T. R. 1946. *The absolute weapon: Atomic power and world order*, New York, Harcourt.

⁸ BAYLIS, J. & GARNETT, J. 1991. *Makers of Nuclear Strategy*, Pinter Publishers.

⁹ BORDEN, W. L. 1946. *There will be no time: the revolution in strategy*, The Macmillan company.

¹⁰ BAYLIS, J. & GARNETT, J. 1991. *Makers of Nuclear Strategy*, Pinter Publishers.

¹¹ FREEDMAN, L. 2003. *The evolution of nuclear strategy*, Springer.

¹² Ibid.

¹³ SCHELLING, T. C. 2008. *Arms and Influence: With a New Preface and Afterword*, Yale University Press.

¹⁴ PAPE, R. A. 2014. *Bombing to win: Air power and coercion in war*, Cornell University Press.

¹⁵ Ibid.

Notwithstanding these two cases, the intellectual debate about the strategic use of air power was essentially carried on in relation to nuclear weapons^{16, 17}.

3. The debate

Soviet strategic thought, in a Marxist-Leninist tradition, officially posited massive and parallel counter-force and counter-city strikes in the first phase of the conflict¹⁸. For instance, this was the doctrine in the texts edited by Marshall Sokolovskii¹⁹.

Thinkers in the West, on the contrary, struggled with the dilemma posed by the possibility to hit the cities. Their debate on nuclear strategy in the Cold War started with the working assumption that cities were the most valued asset for the contenders. Some strategists ventured in the speculation of how many casualties were acceptable for the West in order to avoid the invasion by the Soviet Union²⁰. Others, like the RAND analyst Albert Wohlstetter,²¹ thought that the Soviet leadership could accept at least as many casualties as during WW2 in order to make communism triumph, or that they could value political control more than some cities²² (Gray, 1979), but in general it was accepted that the contenders would regard the destruction of cities as an extreme loss.

Two principles were formulated and constituted the underlying assumptions of the various proposed strategies. The first was that, from the point of view of an aggressor striking first, it made sense to initially spare the cities of the adversary and hit its strategic forces. This idea was originally proposed by Douhet^{23,24}. The second was that deterrence is assured by a resilient capacity to retaliate. As long as the attacker is reasonably sure that a preemptive attack directed on the strategic forces of the adversary was not able to annihilate his counter-city capability, he had to expect a retaliatory blow on his cities and therefore would be deterred. In the contest of

¹⁶ LAMBETH, B. S. 1999. Air power, space power and geography. *The Journal of Strategic Studies*, 22, 63-82.

¹⁷ SLOAN, E. C. 2016. *Modern military strategy: an introduction*, Routledge.

¹⁸ HEUSER, B. 1998b. Victory in a Nuclear War? A Comparison of NATO and WTO War Aims and Strategies. *Contemporary European History*, 7, 311-328.

¹⁹ SOKOLOVSKII, V. D., DINERSTEIN, H. S., GOURE, L. & WOLFE, T. W. 1963. Soviet military strategy.

²⁰ BEAUFRE, A. 1966. *Deterrence and Strategy*, FA Praeger.

²¹ BAYLIS, J. & GARNETT, J. 1991. *Makers of Nuclear Strategy*, Pinter Publishers.

²² GRAY, C. S. 1979. Nuclear strategy: The case for a theory of victory. *International Security*, 4, 54-87.

²³ HEUSER, B. 2010. *The evolution of strategy: thinking war from antiquity to the present*, Cambridge University Press.

²⁴ DOUHET, G. 1921. *Il dominio dell'aria: saggio sull'arte della guerra aerea*, L'Amministrazione Della Guerra.

nuclear strategy, this idea of achieving deterrence with a resilient second-strike capability appears first in the early writings of Bernard Brodie^{25,26}. Making one step further, if both contenders possess a survivable counter-city capability, mutual deterrence follows, at least at the nuclear level^{27,28}. This situation became a reality by the end of the '50 and the early '60s when the Soviets developed a sufficient stockpile, a fleet of strategic bombers and their first ICBM²⁹. It is worth noting that deterrence in this schematic reasoning is intended against a nuclear attack or a major conventional aggression. The RAND analyst Herman Khan defined it Type I deterrence³⁰, to distinguish it from deterrence against lesser forms of aggression (Type II and III), for instance against allies or of low intensity. French General André Beaufre defined it as deterrence at the nuclear level³¹, distinguishing it from deterrence at the conventional and cold war level.

Deterrence proved to be a problematic concept. All thinkers generally acknowledged this trait, and it can be said that the debate over nuclear strategy largely revolved around it. The positions tended to cluster into two camps, which, with some degree of oversimplification, will be defined as deterrence and warfighting schools. In adopting these definitions, it is important to note that the warfighting school never advocated nuclear war a desirable instrument of politics, but considered that a credible strategy, to deter nuclear war or to limit its consequences, was bound to consider how to fight and win it.

The first debated trait of deterrence was its stability.

Adherents to the deterrence school tended to see deterrence, at the nuclear level, as a stable condition. In their view, even a revisionist and risk-prone state should be deterred by the thought that even the most successful counter-force surprise attack could not reduce to zero the probability of a counter-city retaliation. For instance, Robert Jervis argued that that idea of losing just a few cities would be a sufficient deterrent. This view tended to lead to the consequence that once a sufficient (and resilient to a surprise attack) counter-city capability is reached, further

²⁵ BRODIE, B., DUNN, F. S., WOLFERS, A., CORBETT, P. E. & FOX, W. T. R. 1946. *The absolute weapon: Atomic power and world order*, New York, Harcourt.

²⁶ BRODIE, B. 2007. *Strategy in the Missile Age*.

²⁷ BRODIE, B., DUNN, F. S., WOLFERS, A., CORBETT, P. E. & FOX, W. T. R. 1946. *The absolute weapon: Atomic power and world order*, New York, Harcourt.

²⁸ BRODIE, B. 2007. *Strategy in the Missile Age*.

²⁹ FREEDMAN, L. 2003. *The evolution of nuclear strategy*, Springer.

³⁰ BAYLIS, J. & GARNETT, J. 1991. *Makers of Nuclear Strategy*, Pinter Publishers.

³¹ BEAUFRE, A. 1966. *Deterrence and Strategy*, FA Praeger.

additions to the stockpile are unnecessary. This tended to be the view of the physicist and Nobel laureate Blackett³², Jervis and Brodie. In their view, the quest for counter-force superiority would trigger a destabilizing arms race. Similar views were expressed by the political scientist Robert Jervis^{33, 34}. This line of reasoning, pushed to the extreme, led to the concept of existential deterrence, or the idea that the mere possession of nuclear weapons was sufficient to deter aggression, regardless of the underlying doctrines and strategies.

On the contrary, warfighters tended to see deterrence as fragile. An epitomical analysis of the fragility of deterrence and a critic of a strategy based on it, especially if declined in the version of massive retaliation as expressed by Secretary of State Dulles in 1954³⁵ was proposed by Albert Wohlstetter, in a seminal paper in 1958³⁶. His argument was based on his previous work at RAND on the vulnerability of SAC bases to a surprise attack and on the research of his wife, Roberta, on Pearl Harbor³⁷. In his view, under certain circumstances, the adversary may decide to attack even knowing that a counter-city riposte would follow. As for Japan before WW2, his cost-benefit analysis and his risk-taking attitude could convince him that certain costs and the uncertain prospects of victory are nevertheless preferable to a deteriorating present situation. Khan, on the other side, tended to consider the instability of nuclear deterrence based on retaliation against cities as a possible by-product of its lack of credibility, since it would lead to a miscalculation in crises³⁸.

The second problematic issue was extended deterrence. While it is credible that a strategic nuclear attack or a major aggression against a nuclear state would be met with a retaliatory counter-city blow, a massive nuclear riposte was not credible against lesser aggressions. In fact, since both parties have a counter-city capability, it would be irrational to incur mutual

³² BAYLIS, J. & GARNETT, J. 1991. *Makers of Nuclear Strategy*, Pinter Publishers.

³³ JERVIS, R. 1979. Why nuclear superiority doesn't matter. *Political Science Quarterly*, 94, 617-633.

³⁴ JERVIS, R. 1984. The illogic of American nuclear strategy.

³⁵ FREEDMAN, L. 2003. *The evolution of nuclear strategy*, Springer.

³⁶ WOHLSTETTER, A. 1958. The delicate balance of terror. *Foreign Aff.*, 37, 211.

³⁷ WOHLSTETTER, R. 1962. *Pearl Harbor: warning and decision*, Stanford University Press.

³⁸ BAYLIS, J. & GARNETT, J. 1991. *Makers of Nuclear Strategy*, Pinter Publishers.

annihilation when the stakes are not the highest^{39,40,41,42}. Yet, one desirable requisite for deterrence was to deter conventional aggression, especially against non-nuclear allies. This particular problem was exacerbated by the inferiority of NATO conventional forces in Europe^{43,44}. Another problem other was to deter subversion and implement, cheaply, containment. Kahn talked, respectively of Type II and Type III aggressions⁴⁵; Beaufre of aggressions at the conventional and cold war level⁴⁶. To simplify, while there tended to be agreement that a second strike counter-city capacity would not deter say, Type III aggressions (for instance Soviet support for the Vietcong), there was disagreement about intermediate cases (for instance, invasion of Western Europe).

Thinkers like Blackett and Jervis thought that the risk of a war entailing nuclear bombing of cities deterred such cases and forced restraint in crises. The thesis of Jervis was that, precisely for this reason, the bomb had a stabilizing and pacifying effect at least between nuclear states⁴⁷. On the other side, Beaufre considered that the only credible solution to protect allies was that they had their own nuclear forces. These forces, being the deterrence instrument of second-their players, would necessarily be small and inherently counter-city. He also considered that, in a bipolar setting, nuclear parity at the strategic level, defined as the existence of equivalent and resilient second strike capabilities, made war more probable at the other two levels⁴⁸. Essentially this was because an aggressed status-quo power would be self-deterred by the risk of nuclear escalation and a revisionist, risk-taking power, knowing it, would be invited towards cold-war level aggressions⁴⁹.

³⁹ FREEDMAN, L. 2003. *The evolution of nuclear strategy*, Springer.

⁴⁰ HEUSER, B. 2000. *The Bomb: Nuclear Weapons in their Historical, Strategic and Ethical Context*, Routeledge.

⁴¹ HEUSER, B. 2010. *The evolution of strategy: thinking war from antiquity to the present*, Cambridge University Press.

⁴² BAYLIS, J. & GARNETT, J. 1991. *Makers of Nuclear Strategy*, Pinter Publishers.

⁴³ HEUSER, B. 1997. *NATO, Britain, France, and the FRG*, Springer.

⁴⁴ HEUSER, B. 2000. *The Bomb: Nuclear Weapons in their Historical, Strategic and Ethical Context*, Routeledge. Routeledge

⁴⁵ KAHN, H. 2011. *On thermonuclear war*, Transaction publishers.

⁴⁶ BEAUFRE, A. 1966. *Deterrence and Strategy*, FA Praeger.

⁴⁷ JERVIS, R. 1989. *The meaning of the nuclear revolution: Statecraft and the prospect of Armageddon*, Cornell University Press.

⁴⁸ BEAUFRE, A. 1966. *Deterrence and Strategy*, FA Praeger.

⁴⁹ Ibid.

A sophisticated version of the doctrine of massive retaliation could be constructed capitalizing on the works of Thomas Schelling on probabilistic game theory^{50, 51} and his idea of “leaving something to chance.” In short, it is not strictly necessary to promise massive retaliation; it is sufficient to keep the adversary guessing that aggression could be met so, even because of an element of irrationality. Alternatively, one can implement a deliberate commitment to massive retaliation by denying ex-ante his freedom not to retaliate⁵². Kahn developed a Gedankenexperiment, the doomsday-in-a-hurry machine, to explain this concept⁵³.

Proponents of a strategy of nuclear warfighting, like Khan and Wohlstetter, simply rejected the idea that the risk of counter-city retaliation could deter smaller aggressions. Not only this type of deterrence was unstable and therefore dangerous, but it was vexed by the problem of self-deterrence and thus not credible. Kahn⁵⁴ argued that, albeit avoiding a nuclear war should be the first aim of any nuclear strategy, deterrence based on massive retaliation was not credible. Moreover, it could fail, and it was a moral duty and a sensible action to consider how a nuclear war could be fought avoiding the annihilation of cities.

Those who emphasized the risks and problematic traits of counter-city deterrence naturally needed to elaborate different and workable nuclear strategies. This gave rise to the idea of fighting a nuclear war while keeping it limited.

Wohlstetter proposed denying the adversary any prospect of victory by developing a flexible nuclear capability, which would grant superiority to the US independently on the development of the war⁵⁵. In this approach, cities were taken as a hostage as a last resort and superiority was intended as having a larger number of counter-force assets.

Khan’s main tenet was that, if preparations were made in advance, a nuclear war could be kept limited. Based on Schelling’s theorization of war as bargaining process, where exchanges essentially are signals sent to the other part in a contest of wills, Kahn theorized an escalation ladder (with more or fewer steps, depending on his writings), from a minor conventional

⁵⁰ SCHELLING, T. C. 1960. *The strategy of conflict*. Cambridge, Mass.

⁵¹ SCHELLING, T. C. 2008. *Arms and Influence: With a New Preface and Afterword*, Yale University Press.

⁵² Ibid.

⁵³ KAHN, H. 2011. *On thermonuclear war*, Transaction publishers. p. 145

⁵⁴ Ibid.

⁵⁵ BAYLIS, J. & GARNETT, J. 1991. *Makers of Nuclear Strategy*, Pinter Publishers.

engagement to an all out nuclear spasm⁵⁶. Among the most important thresholds, Kahn identified the transition to using nuclear weapons and that from their tactical use to the first strategic strike. The theorization of Kahn about how to keep a nuclear war limited is known for his widely criticized study of how civil defense could drop the casualties of a nuclear conflict. However, more related to city targeting is his idea that a resilient counter-value capability should keep cities hostage along the duration of the war to coerce the adversary to keep the war limited. In Kahn's view, nuclear war should be fought as a signaling game, and nuclear weapons used to demonstrate resolve and coerce the adversary to keep it limited and to accept a negotiated peace. The possibility to avoid escalation would be provided by several factors. One would be the availability for the US of "escalation dominance," or, in other words, nuclear superiority along each step of the ladder so that any incentive will be denied to the adversary to escalate. The other pillar of Kahn's strategy was to actively limit damage by counter-force strikes against the strategic forces of the enemy.

Kissinger⁵⁷ tried to elaborate a concept of the use of nuclear weapons at the tactical level in Europe.

Colin Gray made the point that to develop a capability for fighting a limited nuclear war is not only a moral imperative given the immoral nature of MAD but also the only credible deterrent⁵⁸⁵⁹. He advocated the need for a 'theory of victory,' for the perspective of defeat is the only credible deterrent.

It can be argued that the idea of targeting the city of the adversary, however, was not totally absent. Instead, it remained as fundamental, only in a more sophisticated way. In fact, the underlying assumption that it was possible to force the enemy, so to say, to play by the rules of limited nuclear exchanges. This, in in turn, was due to the latent threat of a survivable counter-city capability looming in the background.

Thinkers belonging to the deterrence school, like Brodie, Blackett, and Jervis pointed out that a theory of limited warfare was a false promise and a dangerous approach. A preliminary objection

⁵⁶ Ibid.

⁵⁷ KISSINGER, H. A. 1984. Nuclear weapons and foreign policy.

⁵⁸ GRAY, C. S. 1979. Nuclear strategy: The case for a theory of victory. *International Security*, 4, 54-87.

⁵⁹ GRAY, C. S. & PAYNE, K. 1980. Victory is possible. *Foreign Policy*, 14-27.

was of technical nature: nuclear wars are not weapons apt to keep war limited. Desmond Ball^{60, 61} observed the mere fact that cities, military and industrial facilities are often collocated, and a limited exchange was likely to cause tens of millions casualties. The other was that escalation was likely to occur because of the nature of war. Blackett, for instance, considered that the hope of keeping a nuclear war limited was simply the product of RAND's over-reliance on mathematical methods dangerously detached from reality.

Jervis noted that a limited war presupposed a common mentality between the adversaries (in a sense, they had to share the same grammar) and this, given the evidence about Soviet thought, was not the case⁶². On the other side, Jervis argued, if the idea that a nuclear war could be kept limited eventually had become the shared mentality of both parties (Kissinger went to propose communicating in advance the rulebook of war to the Soviets), nuclear war was to be perceived as a less dangerous endeavour and indeed to become more likely⁶³.

However, the acutest critique was made by Brodie, who, from the perspective of a historian, observed that in general men tend to be unable to predict ex-ante the development of a war they are about to start (WWI being the pristine example)⁶⁴. For this reason, peace is more predictable than war, and it does not make sense to reduce the chances of peace in exchange of limitation of damage in an unpredictable war⁶⁵.

4. Discussion and Conclusion

The possibility of destroying virtually all cities of the enemy and the impossibility of avoiding, in turn, a similar fate introduced a dilemma that strategists explored in depth, but were never fully able to solve.

With the benefit of hindsight, it is possible to assert that the proponents of limited nuclear war were right in criticizing the lack of credibility of nuclear deterrence for aggressions lesser than major. It did not ensure victory in Vietnam and did not deter, after the Cold War, a Saddam Hussein or a Slobodan Milosevic from adopting a collision course with the US. Whether it did

⁶⁰ BALL, D. 1981. *Can nuclear war be controlled?*, International Institute for Strategic Studies London.

⁶¹ BALL, D. 1983. *Targeting for strategic deterrence*, International institute for strategic studies London.

⁶² JERVIS, R. 1979. Why nuclear superiority doesn't matter. *Political Science Quarterly*, 94, 617-633.

⁶³ Ibid.

⁶⁴ BRODIE, B. 2007. Strategy in the Missile Age.

⁶⁵ Ibid.

deter a Soviet aggression against Western Europe heavily depends on the view one has on the aggressive aims of the Soviet Union and its perception of the balance of forces at the conventional level.

What the school of limited warfighting could not prove, was that their proposed alternative to mutual destruction was doable in reality. For instance, Gray and Paye advocated a theory of victory in the nuclear age, but they never positively said how this could be translated into practice⁶⁶. Even thinkers that went closer to an actual description of limited war, namely Wohlstetter and Khan, never offered a compelling theory. Setting aside debates about technicalities in their analyses, they were never able to solve three main weaknesses in their strategy.

One is that they neglected that war, even nuclear, as human activity, is a manifestation of human culture⁶⁷. Their strategy, for most of the Cold War, was incompatible with the declared Soviet mentality, at least if one presumes that the Soviet, in the case of war, would have acted like their texts prescribed⁶⁸.

Secondly, they never gave an answer to the question why, if the US searched for a counter-force superiority, which ultimately entailed the possibility of curtailing the riposte capability of the USSR, the Soviets should not have engaged in an arms race.

Third, they probably had too much confidence in their ability to forecast. While it is true that, in a Clausewitzian vein, war can be limited by political consideration, it is also true that this chameleon can escalate towards the absolute. In perspective, Brodie's point, based on the experience of WWI, that men in general perform poorly in predicting the evolution of the next war is, perhaps, the most relevant critique of the doctrine of limited nuclear war.

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⁶⁶ GLASER, C. L. 2014. *Analyzing strategic nuclear policy*, Princeton University Press.

⁶⁷ HEUSER, B. 1998a. *Nuclear mentalities?: strategies and beliefs in Britain, France and the FRG*, Springer.

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