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The Reality and the Limitations of Nuclear Deterrence

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By Christoph Bluth

The concept of nuclear deterrence gained widespread acceptance during the Cold War period and gave rise to a large academic literature. More recently the effectiveness of nuclear deterrence has been questioned by, among others, Ward Wilson who has cast doubt on the reality of nuclear deterrence by an examination of the effectiveness of threatening large-scale attacks on enemy cities. Ann Herrington de Santana has identified nuclear weapons as the “mature expression of the fetishism of force”. She perceives the power of nuclear weapons is socially constructed, leaving the possibility open for a different construction of relations of power in which nuclear weapons do not play a role. This paper will argue that both of these approaches are flawed and remain rooted in anachronistic perceptions of the international system. It will show that the arguments advanced by Ward that nuclear deterrence does not work are both logically inconsistent and contrary to the empirical evidence. It will contest de Santana’s conceptualization of the ‘nuclear fetish’ and show that the path to diminishing the role of nuclear weapons in the international system is not based on the denial of the power of nuclear weapons but on the emergence of a different normative basis of international relations.

The development of nuclear weapons which resulted in the acquisition of large strategic nuclear arsenals by the superpowers during the Cold War has resulted in an enormous literature elaborating the nature of nuclear deterrence. A significant consensus developed that during the Cold War nuclear deterrence was effective in preventing direct military conflict between the United States and the Soviet Union, prevented a large war in Europe and reduced military conflict between the Great Powers to proxy conflicts in what was then called the

third world.¹ One of the most prominent advocates of the war-preventing effect of nuclear arsenals is Kenneth Waltz who has advocated the proliferation of nuclear weapons in order to reduce international conflict.² Opponents of nuclear weapons have frequently cast doubt on the concept of nuclear deterrence. The absence of direct armed conflict between the superpowers is said not to constitute proof that such conflict would have occurred in the absence of nuclear weapons. Conservative critics of US arms policies have argued that the Soviet Union did not believe in deterrence and therefore deterrence was an illusion. The literature on nuclear deterrence largely focuses on the various modalities of deterrence rather than a systematic analysis of the evidence of whether and how deterrence operates. More recently, there have been renewed attempts to confront the claims about the efficacy of nuclear deterrence. Thus Ann Harrington de Santana has identified nuclear weapons as the “mature expression of the fetishism of force. As such nuclear weapons function as the currency of power in the international system”.³ But in her view “nuclear weapons are powerful because we treat them as powerful”. In other words, the power of nuclear weapons is socially constructed, leaving the possibility open for a different construction of relations of power in which nuclear weapons do not play a role. Ward Wilson has adopted an even more radical approach. In a paper entitled “The Myth of Nuclear Deterrence”, Ward Wilson casts doubt on the reality of nuclear deterrence.⁴ Wilson’s argument is based on the presumption that nuclear deterrence rests on the threat to destroy cities with nuclear weapons. He then goes on to argue that attacks on cities rarely decide the outcome of wars, that attacks against civilians are usually counterproductive and that there is no direct evidence that nuclear deterrence works at all. Consequently there is no utility for nuclear weapons in international relations. This argument was refined in a more recent publication by the Monterey Institute of International Studies that questioned the validity of nuclear deterrence as a basis for delegitimizing nuclear weapons.⁵

This paper will argue that both of these approaches are flawed and remain rooted in anachronistic perceptions of the international system. It will show that the arguments advanced by Ward that nuclear deterrence does not work are both logically inconsistent and contrary to the empirical evidence. It will contest de Santana's conceptualization of the 'nuclear fetish' and show that the path to diminishing the role of nuclear weapons in the international system is not based on the denial of the power of nuclear weapons but on the emergence of a different normative basis of international relations.

The meaning of deterrence

Strangely, Wilson makes no effort to define the concept of deterrence.⁶ Moreover, he makes no effort to provide any analysis of the circumstances under which leaders choose not to go to war during a period of confrontation. He is therefore unable to reach any conclusions as to how deterrence and compellence operate in the international system (even in the absence of nuclear weapons). Presumably if nuclear weapons cannot provide reliable deterrence, the same must be true even *a fortiori* for conventional forces. This means that if states cannot deter attacks by other states, their only choice is to develop armed forces that are capable of decisively defeating any likely adversary. The most effective way of doing this is to develop substantial nuclear arsenals. Perversely, Wilson's argument about the inefficacy of nuclear deterrence becomes an argument for larger and more effective nuclear arsenals and the use of nuclear weapons in armed conflict.

For the purposes of this paper, the concept of deterrence is taken to mean the prevention by state A of an undesirable action by state B by threatening an action that would be unacceptable to B. This is often described as threatening "unacceptable damage" or deterrence by the threat of retaliation. For deterrence to be effective, two conditions have to

be satisfied. One is that B believes that A has the capacity and the will to carry out the threat, the other is that the action threatened is so unacceptable that B will alter its behavior.⁷

During the Cold War the United States and the Soviet Union deployed sophisticated arsenals of tactical and strategic nuclear systems, eventually configured to be capable to be launched on warning with a network of early-warning systems (including satellites) and command and control systems designed to prevent unauthorised use but enable the rapid launch of the bulk of strategic nuclear weapons. By July 1989 both sides had deployed about 10,000 nuclear warheads on strategic delivery systems.⁸

Strategic nuclear forces were designed to ensure that the other side would be convinced of the capacity and the will to respond to an attack with massive nuclear strikes. There were obvious caveats. The most obvious is self-deterrence. The use of nuclear weapons would also invite retaliation that would inflict unacceptable damage. Thus Enoch Powell, a British politician, argued that nuclear weapons were useless because any decision to use them would be irrational. But Powell did not understand the central paradox underlying nuclear deterrence, which is that according to the evidence we have, the threat of nuclear use under certain circumstances was believable (i.e. it was believed) and therefore it can be demonstrated that nuclear deterrence did operate. Contrary to Wilson's assertion, we do have direct evidence that nuclear weapons affected the thinking and planning of states in relation to armed conflict. This will be discussed in more detail below. The other caveat is whether there was really a will to kill so many people and cause such catastrophic damage. It is clear that for the most part the answer to this question was no, and indeed over the decades since World War II the trend in modern warfare has been away from mass destruction and to more and more discriminate targeting. But this does not negate the argument that under very

specific circumstances the threat of the use of nuclear weapons was plausible enough for the purposes of deterrence.

Deterrence and strategic bombing

The crux of Wilson's argument is that the supposed efficacy of nuclear deterrence is based on city bombing. It is true that in the 1950s the destruction of Soviet cities, industrial capacity and its leadership was central to US targeting philosophy. But this changed as weapons became more accurate. Wilson cites former Defense Secretary Robert McNamara's 1962 speech which announced that in future the principal military objectives would be the destruction of the enemy's military forces and not the population. Wilson raises doubts that declaratory policy would necessarily be matched by actual military planning, without providing any evidence for such doubts. He then goes on to say that even if military targets are attacked in the early phase of a war, the war would be widened to cities in the later stages. He also claims that this entire argument is irrelevant for countries with smaller arsenals for which cities would be the main target. Then he goes on to argue that history seems to show that attacks on cities are not militarily decisive and therefore the threat to attack cities has no deterrent effect.

The central confusion in Wilson's argument is that he conflates decisions made during war, in particular the decision whether to surrender or not, with the decision of whether to go to war or not in the first place. Deterrence is designed to prevent armed conflict. It does not matter what happens when conflict starts, because then deterrence has already failed.

Therefore it does not matter whether the war plans accord with declaratory policy or not, because deterrence can only be based on information available prior to the war (unless the war plans become public knowledge and form part of the information flow that is designed to achieve a deterrent effect). Whether the actions taken during the war are militarily decisive or

not is also irrelevant; the only thing that matters is what the adversary believes about the actions that would be taken in the course of war.

Wilson's scepticism about US declaratory policy is misplaced. Much information is available about US and Soviet military planning for nuclear conflict in Europe and at a strategic level. There is no doubt that the dominant philosophy in US and Soviet operational plans emphasized military targets and nuclear weapons as instruments of war-fighting. Indeed, this became one of the major bones of contention between the US and its European NATO allies who wanted to emphasize deterrence rather than war-fighting.⁹ It is true, of course, that the terror of the threat of nuclear attack stems in significant part from the sheer scale of civilian casualties. But here is another important confusion in Wilson's argument. Nuclear weapons essentially blur the distinction between military and civilian targets. For example, US strategic planners targeted 40 military objects in the city of Kiev.¹⁰ In fact, one weapon would have taken out all of these targets and destroyed the population of the city. Forty warheads clearly is overkill. But the point is that all of these attacks would have been militarily effective, irrespective of the level of civilian casualties. In other words, if you make the argument, as Wilson does, that attacks on civilians are not militarily decisive, the corollary is that in order to achieve a military victory one has to destroy the armed forces of the enemy. This objective can be more readily achieved with nuclear weapons. Once again, the core of Wilson's argument produces a rationale in favour of nuclear war-fighting. A force posture designed for nuclear war-fighting gives rise to the concept of deterrence by denial, i.e. the prevention of war by convincing the opponent that he cannot under any circumstances achieve his objectives. There is no doubt that both the Soviet and US force postures increasingly moved towards deterrence by denial. This reached its culmination in Defense Secretary Rumsfeld *Nuclear Posture Review* in which there is no longer any distinction between conventional and nuclear strategic weapons.¹¹ Moreover, as will be

discussed in more detail below, Soviet military planners saw the destruction of the enemy's military capabilities as a principal goal in the planning for the use of nuclear weapons. The contention that nuclear deterrence relies on the destruction of cities which is at the basis of Wilson's argument is therefore not correct in the way in which it is presented.

In order to elaborate his thesis, Wilson focuses on strategic bombing during the second world war and presents a critique of the "the traditional" interpretation of the effect of the atomic bomb attacks on the cities of Nagasaki and Hiroshima. But it has to be said that there is not much new in this argument. In 1981 Lawrence Freedman wrote about the "Strategy of Hiroshima" in which he made very similar points, namely that the decisiveness of the atomic bomb attacks was exaggerated, that the Soviet entry into the war against Japan was a significant factor and that the movement towards the Japanese surrender was a process that came to completion at this time. As interesting as this discussion might be, it has little relevance for the debate about nuclear deterrence, nor does the more general discussion on strategic bombing and the killing of civilians in Wilson's paper have any import on nuclear deterrence. This is the case for two reasons. The first is that as stated above, deterrence is about the decision to go to war, not about resistance against invaders or actions in the course of war. During a war, decisions are incremental and not based on the final outcome of a war. The illusion that more fighting or resistance will alter the outcome of the war therefore persists. This latter point relates to the second reason why the historical examples cited by Wilson are irrelevant, namely that there is much less uncertainty about the outcome of a nuclear attack. In the 1960s US Defense Secretary Robert McNamara calculated that the United States could destroy 50% of the Soviet population and nearly 80% of its industrial capacity using 400 nuclear warheads. In the following decades the number of warheads deployed on strategic delivery systems increased to 10,000, and the cumulative nuclear arsenal of the Soviet Union amounted to a staggering total of 45,000 warheads. If it is

universally believed that one country possesses the capacity to destroy 90% of the inhabitants, industry and military assets of another within 30 minutes of the start of the war, then it stands to reason that the other country would go to very great lengths to avoid such an attack. This level of certainty does not exist in the case of conventional military threats where the military balance is more difficult to assess and the outcome of a conflict less certain. Obvious examples of gross strategic miscalculations of this kind are the German attack on the Soviet Union in World War II, Iraq-Iran war, the Gulf War 1990-91, or the Chinese intervention in the Korean War.

The failure to appreciate the conception of nuclear weapons as 'absolute weapons' is revealed in Wilson's counterfactual examples with regard to chemical and biological weapons. Biological and chemical weapons might have had a deterrent effect, but we did not see the emergence of large arsenals of chemical weapons designed to deter potential enemies in the years from 1918-1925, nor have biological weapons been used in this way. The fact remains that major powers believed they could withstand a chemical attack or biological attack and there were and are countermeasures against such weapons. Indeed, nowadays chemical weapons are not considered to be effective weapons of war, and during the Gulf War every Israeli citizen was issued with defensive equipment against a chemical attack. Nuclear weapons, on the other hand, are believed to be capable of literally destroying everything without the target being able to prevent or significantly mitigate the consequences of such an attack. It is because of this level of certainty that major powers developed substantial arsenals of these weapons for the purposes of deterrence.

Similar strictures apply to the analogy that Wilson draws to terrorism. The reason why terrorism exists in the first place is because terrorists do not have the capacity to confront the armed forces of a state and impose their will. Consequently they resort to acts of terror in

order to frighten a population into accepting their demands. As Ward points out, this fails most of the time, but he does not fully explain the reason. The reason is that governments, with the support of the societies they govern, have much greater resources and terrorists can neither obliterate a country, defeat its armed forces or coerce its population. Indeed, most terrorist attacks even fail to materialise, so terrorists cannot even guarantee a repeat of any previous action, as the failure of Al-Qaida to mount a repeat of the 9-11 attacks vividly demonstrates. In other words, no matter how great the atrocity perpetrated by a terrorist group, there is total lack of certainty of the extent to which they can follow through on their threats. Exactly the opposite is the case with respect to nuclear weapons. Countries with sufficient nuclear arsenals can totally destroy the military capabilities of another, they can with great certainty kill a very high percentage of the population and totally destroy all industry and effectively reduce a country to an anarchic stone age society. Moreover, there is nothing the target can do to prevent it except to threaten retaliation (if it has the capability). This is why nuclear deterrence is fundamentally different from terrorism.

Direct evidence that nuclear weapons have influenced the way in which political leaders have considered the role of war shows that nuclear deterrence did indeed operate during the Cold War and this will be discussed in more detail below. Following that we will look at how nuclear deterrence was relevant to the outcome to some specific crises and then consider cases that Wilson claims demonstrate the failure of nuclear deterrence.

Deterrence and the Soviet Union

Contrary to the view expressed by Ward Wilson and also by Berry et al., there is very direct evidence that nuclear weapons changed the way in which political leaders viewed the utility of war as an instrument of policy and we do not need to rely on the mere absence of

armed conflict as the sole evidence for the effectiveness of nuclear deterrence. We start from point that the Marxist-Leninist ideology which was at the foundation of the Soviet system was predicated on the belief of the inevitability of world socialism. Although socialists were considered to be inherently peaceful, as long as capitalism existed in the world war was inevitable. The Leninist doctrine of the ‘inevitability of war’ was based on the notion that capitalism develops unevenly. This resulted in the upsetting of the economic balance as one capitalist country develops more than another; the restoration of the balance is impossible without crises, conflicts and war. From 1916 onwards there were more explicit statements of the inevitability of conflicts between capitalism and socialism. One of the best-known statements was made by Lenin to the 8th Party Congress in 1919:

“We are living not only in a state but a system of states, and the existence of the Soviet republic side by side with imperialist states for a prolonged period is unthinkable. At the end, either one or the other will win. And before this happens a series of the most frightful collisions between the Soviet republic and bourgeois states is inevitable.”¹²

The notion of a violent confrontation with capitalist states culminating in the ultimate destruction of capitalism and the establishment of world socialism appears to be inherent in Lenin’s thinking. It was frequently reasserted by Stalin who stated quite explicitly in 1952:

“The fate of the world will ultimately be decided by the outcome of inevitable conflict between the worlds.”¹³

However after Stalin’s death the doctrine of the ‘inevitability of war’ came to be challenged. An article by M.Gus in the Leningrad Journal *Zvezda* in November 1953 expounded the Leninist doctrine of the inevitability of war stated:

“Experience has shown and proved that we are in a position to prevent war, and to paralyse the action of this law”¹⁴

This article drew responses by military authors reasserting the ‘inevitability of war’, but this was the beginning of a debate which ultimately led the Soviet leadership to abandon the idea of the ‘inevitability of war’. There is no doubt that this was related to the advent of nuclear weapons and long-range means of delivery. While Stalin ignored the significance of atomic weapons in his public statements (although he pulled out all the stops for the Soviet Union to acquire such weapons), the post-Stalin debate reveals a struggle to come to terms with the significance of these developments. The realization by Malenkov and his supporters that atomic weapons meant that no country was invulnerable to attack and that a war might now mean the end of the whole of civilisation (including the Soviet Union itself) was a profound shock and raised doubts about the belief in the inevitable progress of history to world socialism. Thus Malenkov declared that a thermonuclear war would mean the ‘destruction of world civilization’ and it was no longer to be taken for granted that socialist countries would prevail in a war with capitalist countries. He vigorously condemned the Cold War and emphasized the threat of devastation posed by a nuclear war both to the Soviet Union and the United States. After the fall of Malenkov in 1955 Khrushchev and Bulganin began to adopt their opponents’ views on these matters, positing ‘mutual destruction’ as the only alternative to ‘coexistence’. The principle of the ‘inevitability of war’ was finally rejected by the 20th Congress of the CPSU in 1956. Instead Soviet leaders believed that mutual deterrence would restrain the United States from attacking the Soviet Union even in the long term, and by implication the Soviet Union would be restrained. Soviet foreign policy would be guided by the principle of ‘peaceful coexistence’.

The principle of peaceful coexistence did not imply a renunciation of the general goal of world revolution, but it did imply that Soviet foreign policy would be predicated on avoiding war with the West for a long time to come. It did not eliminate the class struggle, nor did it amount to a renunciation of the ideological struggle with the West; on the contrary it implied a strengthening of the ideological struggle and opposition to capitalism. It did however clearly mean that war with imperialist states could not serve as a means to promote world revolution and the ideological struggle with imperialism. At the 21st Party Congress in 1959 the principle of ‘peaceful coexistence’ was strengthened, that the victory of socialism in the Soviet Union was final and it was now possible to avoid world war. V. Pechorkin justified the revision of Leninist doctrine on the basis that now there were a number of powerful socialist states and the socialist camp was strong enough to make the avoidance of war possible. The central reason for the revision of the doctrine of the ‘inevitability of war’ was pointed out by Beliakov and Burlatskii in the party journal *Kommunist*:

“A world war with the employment of thermonuclear weapons would make no distinctions between front and rear. It would lead to the complete destruction of the main centres of civilisation and the wiping out of whole nations, and would bring immeasurable disaster to the whole of humanity. Only madmen could wish for such a catastrophe... It is obvious therefore, that modern nuclear war of itself could in no way be a factor which would hasten revolution or bring nearer the victory of socialism. On the contrary, it would throw back humanity, the world revolutionary workers’ movement and the cause of building socialism and Communism for many dozens of years.”¹⁵

At the 22nd Party Congress in October 1961 it was confirmed that peaceful coexistence was now the general line of Soviet foreign policy, the thesis that war was no longer inevitable was strengthened to state that war was not even desirable or permissible to advance the

movement towards world socialism and that the peaceful transition from Capitalism to Communism was possible and to be preferred to armed revolution. However, the concept of 'peaceful coexistence' did not imply that the transition from capitalism to socialism in individual countries would necessarily take place without violence, or that the Soviet Union would not support violent revolution. Moreover the Soviet Union was still pledged to support wars of national liberation. But nuclear wars and regional wars were to be avoided.

It is therefore abundantly clear that threat of nuclear war fundamentally changed the Soviet attitude to war as an instrument of policy. The impact of nuclear weapons was also evident in the internal debates about military doctrine.

This manifested itself in the debate about the role of surprise in war. Stalin considered surprise to be a transitory factor and saw war as a contest between two societies in which the stronger one would ultimately emerge as victor. The outcome would be determined by the so-called permanently operating factors such as the stability of the rear, the morale of the army, the quantity and quality of divisions, the armament of the army and the organizing ability of the command personnel. No concession was made for the role of atomic weapons. This began to change very soon after Stalin's death. At the end of 1953 the study of nuclear weapons and combat under conditions of nuclear use was ordered by the Ministry of Defense. A series of articles in the military newspaper *Krasnaia Zvezda* (Red Star) in early 1954 on the significance of nuclear weapons was a further sign that the role of nuclear weapons in a future war was becoming a major and central issue in Soviet military thought. In February 1955 Marshal of the Tank Troops Rotmistrov published an article in the classified military journal *Voennaia Mysl'* (Military Thought) entitled 'On the Role of Surprise in Contemporary War'. The editors of the journal initially refused to publish the article but then reversed their decision, most likely at the behest of the Minister of Defense, Marshal Zhukov,

because of its controversial content. The impact of nuclear weapons was explained by Rotmistrov as follows:

“Surprise attack with the employment of atomic and hydrogen weapons and other contemporary weapons now assumes new forms, and is capable of leading to significantly greater results than in the past war. One may frankly say that under the circumstances of the use of atomic and hydrogen weapons surprise is one of the decisive conditions for achievement of success, not only in battles and operations, but even in wars as a whole. In certain cases surprise attack with the mass use of new weapons can provoke the quick collapse of a state whose capability for resistance is low as a consequence of the basic failures of its social and economic structure, and also of an unfavorable geographic location.”¹⁶

The impact of nuclear weapons on future warfare was elaborated by internal studies that resulted in the ‘Special Collection’ of articles which were published in *Voennaia Mysl*’ in 1960. The view of the nuclear revolution in military affairs was articulated in more detail in the book *Voennaia Strategiia* (military strategy) edited by Marshal Sokolovskii. Here it was made clear that decisive results in a war with nuclear weapons could be achieved in a very short period of time. On the question as to whether the objective of a war should be to destroy cities or defeat the enemies armed forces, the Sokolovskii authors argued clearly for counterforce and countervalue strikes:

“The basic method of waging war will be massed nuclear-rocket attacks inflicted for the purpose of destroying the aggressor’s means of nuclear attack and for the simultaneous mass destruction and devastation of the vitally important objectives comprising the enemy’s military, political and economic might ...”¹⁷

The Soviet military strategists seemed to advocate a policy of launch-on-warning, but it took the Strategic Rocket Forces until the 1980s to have the basic infrastructure, including early-warning systems and an ICBM force with the ability to target US missile silos that made launch-on-warning look at least remotely plausible. In the meantime the only possible strategy was pre-emption, which also presented serious challenges. Nevertheless the conviction was that any war between the Soviet Union and the West would be a nuclear war. However in the mid-1960s Soviet military strategists recognized the possibility of a conventional phase in a war with the West. By 1969 there was the recognition of the state of mutual assured destruction, even though Soviet military strategists would never use this expression. An article by General S. Ivanov which appeared in *Voennaia Mysl'* in 1969 reiterated that a new world war would be a strategic nuclear war. He then went on to assert that because strategic nuclear weapons were deployed underground and under water it would be practically impossible to destroy them completely and therefore there would always be the possibility of a 'annihilatory retaliatory attack'. Moreover, he stated:

“The availability of a tremendous nuclear missile potential by the Soviet Union and the United States has had great influence on changing the views relative to the possible character of a war between the two coalitions. There is too great a risk of the destruction of one's own government and the responsibility to humanity for the fatal consequences of the nuclear war is too heavy for an aggressor to make an easy decision on the immediate employment of nuclear weapons from the very beginning of a war without having used all other means for the attainment of its objectives.”¹⁸

This is a clear recognition that the nuclear powers were deterring each other from nuclear use and that effectively there was a principle of superpower sanctuarization, i.e. the superpowers would strive to contain any conflict to prevent escalation to attacks on the

territory of either superpower. Ivanov cites the NATO doctrine of 'flexible response' to show that the United States envisaged

“the conduct of other types of wars – with the use of only conventional means of destruction or with the limited employment of nuclear weapons... In other words in the conduct of a limited nuclear war the territory of the United States does not suffer. Therefore such a concept of the U.S. Government and military leaders is advantageous to them and they are advocating it.”¹⁹

The Soviet/Warsaw Pact view on 'flexible response' can now be analysed on the basis of a significant body of archival material from East Germany. These include formerly top secret military documents. The most revealing documents are confidential assessments of NATO military exercises and detailed accounts of Warsaw Pact exercises. They show that Warsaw Pact military planners understood the meaning of NATO's *flexible response* doctrine and in particular the provisional political guidelines for the initial use of tactical nuclear weapons. They firmly assumed that NATO would initiate nuclear use after a conventional phase (lasting a number of days, depending on the exercise, up to 12 days). There was an established set of criteria whereby NATO preparations of the use of theatre nuclear weapons were judged to be in progress:

- troop withdrawals and decentralisation of troop concentrations
- isolation of systems destined for nuclear use from groups of artillery pieces, and their protection by special forces
- a sudden upsurge in the intensity of radio transmissions
- special activities at nuclear weapons storage sites, associated with the installation of warheads on delivery systems.²⁰

On the basis of such warning, Soviet nuclear forces deployed in the European theatre would be made ready for a so-called 'meeting strike' (*vstrechnyi udar*).²¹

The Warsaw Plan exercises were based on plans of limited and selective strikes. For example, in the exercise YUG-78 the 13th Army launched 30 operational-tactical and tactical nuclear missiles while the NATO forces used 27 weapons against the 13th Army.²² In SEVER-79 there were two consecutive salvos. The first salvo consisted of the release of nine nuclear-armed missiles with a yield of 590 kt. and 21 missiles with a yield of 736 kt. This release coincided with a NATO nuclear strike and was initiated on the basis of strategic warning. The second salvo, launched after initial damage assessment, involved another seven missiles.²³ In other exercises a much larger number of weapons was used; for example in *Bratsvo po oruzhiuu-80*, 249 weapons were launched as part of the first strike.²⁴ During *Soiuz-83*, on the other hand, the *front* was supposed to use only 35 nuclear weapons (18 operational tactical and 17 tactical missiles).²⁵

Two specific conclusions emerge from an analysis of these exercises as described in the previously secret East German documents. The first is that Soviet and Warsaw Pact military planning was designed to avoid escalation to the nuclear level. Thus NATO nuclear forces were the principal targets of Warsaw Pact forces. If it proved impossible to eliminate NATO nuclear forces prior to their use, then the WTO forces were prepared to use nuclear weapons. Again NATO nuclear weapons and associated facilities (including command and control) were priority targets. It is not a contradiction of these strategic priorities that the development of nuclear and conventional war-fighting capabilities continued, along with naval deployments which resulted in capabilities for global power projection. Nikolai Ogarkov who was promoted to Chief of the General Staff in 1977 (almost one year after Dmitri Ustinov became Defense Minister) advocated a nuclear war-fighting strategy (despite the declaratory

policy of the political leadership) and defended the 'objective possibility to achieve victory' in such a war. In 1981 Brezhnev renewed his re-assertion of the principle of mutual assured destruction (MAD) and went as far as denying the possibility of victory in nuclear war:

... it is dangerous madness to try to defeat each other in an arms race, to count on victory in nuclear war ... I will add that only he who has decided to commit suicide can start a nuclear war in the hope of emerging victorious from it. Whatever strength the attacker may have and whatever means of starting a nuclear war he may choose, he will not achieve his aims. Retaliation is unavoidable. That is our essential view.²⁶

In the 1980s President Gorbachev's 'New Political Thinking' characterised the threat of nuclear war as a threat to all humanity. It is known that the Chernobyl accident in 1986 had a dramatic impact on the debate and injected new urgency in the process of rethinking the Soviet view of possible future conflict in Europe. A previously classified East German protocol of military consultations at the General Staff in Moscow on 4 July 1986 for example contains lengthy and detailed descriptions of the contamination caused by the Chernobyl accident and the actions necessary to deal with it. Interestingly, this was preceded by a statement about the 'possibility of conducting a nuclear war' which stated that a nuclear war had lost all meaning and would put the existence of humanity at risk. It was followed by a discussion of the extent of a possible nuclear-free corridor in Central Europe which was the topic of discussions between the East German Socialist Unity Party (SED) and the West German Social Democratic Party.²⁷ The Chernobyl disaster provided a vivid illustration of the fact that any form of large-scale conflict, conventional, or nuclear, would be a complete catastrophe in view of the fragility of modern civilization. Thus, the concepts of reasonable sufficiency and the defensive nature of military doctrine became part of the new Warsaw Pact military doctrine proclaimed in May 1987.

In conclusion, we can say that we do not have to rely on the absence of major war in Europe or between the US and the Soviet Union to demonstrate the reality of nuclear deterrence during the Cold War. There is no doubt that the nuclear balance had a profound impact on how both sides thought about the use of force.

In this context it has to be emphasized that the confrontation between East and West called the Cold War was a serious and persistent conflict with a real potential to escalate to a military level. Soviet hostility towards the West was the consequence of a peculiar mixture of great power megalomania, inspired by a messianic ideology, and the requirements for the perpetuation of the Soviet power elite. The idea of an external threat played a crucial role in this configuration since the political identity of the Soviet Union as a state was defined in opposition to the “capitalist world”. The element of military confrontation was important because it provided a sense of objective reality to the conflict with capitalism. The military element was important for two other reasons. One is that the armed forces were the ultimate instrument of power for the political elite. They were clearly essential in keeping the outer empire of the Eastern Bloc together. Although the military played a less important role in the control of the Soviet Union itself, its mere existence was a source of enormous strength for Soviet political leaders. Second, the fact that the Soviet Union was one of the world’s two great military powers with a large strategic nuclear arsenal enabled Soviet leaders to conduct foreign policy as a global power.

The threat to the Soviet Union was not a military threat *per se*. The threat consisted in the continuous challenge to the legitimacy of the Soviet power elite. This challenge came from the West; it also came from domestic opposition in Eastern Europe and it came from inside the Soviet Union itself. It was a challenge to the political value-system that governed Soviet society and externalised itself in Soviet foreign policy behaviour.

Although the strategic nuclear competition between the superpowers was dangerous in itself and posed serious risks, the strategic nuclear stalemate that began to establish itself at the end of the 1950s stabilised the Cold War regime and allowed it to endure. The West could not militarily challenge the Soviet sphere of influence and vice-versa. At the same time, the threat of nuclear conflict moderated the Soviet attitude to war as an instrument of policy. However, while settling down to a more stable relationship with the West, the Soviet Union continued to maintain its control – backed by military force – over Central Europe, and sought to expand its influence globally by supporting national liberation movements and insurgencies in the developing world. The fact remains that the Cold War cannot be explained without nuclear deterrence which was one of the main driving factors of the dynamics of international security in this time period.

The limits of deterrence

Of course the argument with regard to effectiveness of nuclear deterrence during the Cold War needs to be refined to explain in greater detail how deterrence operated and what kind of conflicts could not be deterred by nuclear weapons. As a general rule, the evidence seems to suggest that nuclear weapons deterred any conflict in which their use was at least implicitly threatened and appeared plausible to the other side. The mere possession of nuclear arsenals is not enough. Indeed, it has come to be generally accepted now that nuclear powers cannot deter non-nuclear powers except if the latter were to threaten the core interests (i.e. national survival) of the former. There are several reasons for this. First of all, there are legal constraints; most non-nuclear states are members of the NPT and it is illegal for a nuclear power to threaten the use of nuclear weapons against a non-nuclear power. Then there are normative constraints; the international consensus on the rules governing the use of force is that it must be used with discrimination and that civilian targets must not be attacked. Nuclear

powers are constrained from using their indiscriminate weapons in any but the most extreme circumstances. The political costs of breaching these normative restraints, otherwise referred to as the nuclear taboo, are considered to be too high. Finally the five nuclear powers recognized by the NPT have sufficient military resources to deal with any likely contingency with conventional forces and therefore the use of nuclear weapons in conflicts involving smaller non-nuclear powers is considered to be unnecessary.

The so-called failures of deterrence that Wilson cites can be explained by these limitations of deterrence. For example, deterrence did not operate during the Falklands War because the Argentine Junta simply did not believe that it faced a nuclear threat. The use of nuclear weapons against a non-nuclear Argentina to defend a population of 1,800 would clearly appear to be disproportionate. Moreover, the Argentine government had good reasons to believe that Britain would not defend the Falklands at all. This was based on the fact that British government first tried to negotiate a deal that would transfer sovereignty to Argentina in return for a lease-back arrangement that would allow the population (which had just been deprived of its right of residence in mainland Britain) to preserve its way of life. Even though this failed due to opposition in the Westminster parliament, the UK government withdrew the HMS *Endurance*. This was interpreted in Buenos Aires as a signal that Britain would do nothing to defend the islands. Just to be sure, the Junta tested the water with the US government and came away with impression (wrongly, as it turned out), that Washington had no objections to its occupying the islands. Thus looking carefully at the history of this conflict, it is clear that nuclear deterrence was not relevant because the UK government had no intention to use nuclear weapons and the Argentines did not believe that it would do anything to defend the Falkland Islands.²⁸

Another example cited by Wilson is the Yom Kippur war. Here there is a *prima facie* case that nuclear deterrence should be effective given that the existential threat posed to Israel's national survival by the attack from Egypt and Syria would have given credence to a nuclear threat. But Wilson himself supplies the reasons why the nuclear threat was ineffective.²⁹ In the first place, there was no nuclear threat. Israel had not acknowledged the possession of nuclear weapons nor had it explicitly or implicitly threatened nuclear use. Although there had been reports about Israel's nuclear program, there was no definite information, not even from US intelligence that Israel did in fact have nuclear weapons. Wilson suggests that the Israeli government passed word to Egyptian and Syrian intelligence about its capabilities, but there is no evidence of this and it is unlikely, because the main reason for Israel's silence about its nuclear programs is that it does not want to stimulate nuclear developments in Arab countries. Clearly Egypt and Syria did not take the Israeli nuclear threat seriously, because of the lack of evidence of any operational capability, just as they overestimated their own conventional forces. What if Israel had conducted an overt nuclear test and given information about the numbers of weapons, delivery vehicles and possible targets? It is hard to believe that under such circumstances the calculations in Cairo and Damascus would not have been very different.

Other examples likewise are simply a confirmation of the limits of nuclear deterrence as defined above, rather than evidence that nuclear deterrence does not work. Historical research has shown that Stalin only gave Kim Il Sung permission to launch the Korean War because he and Mao Zedong were convinced that the United States would stay out of the war. This case does not demonstrate that deterrence is ineffective. A threat can only be effective if it is made and if it is believed. Neither of these applied in this case. That does not mean that if the United States had not withdrawn its forces from Korea, and made it clear from the outset that

any aggression would risk nuclear retaliation, that such a threat would not have been believed and effective in deterring the conflict in the first place.³⁰

It is also true that nuclear weapons are not relevant in peace-keeping, counterinsurgency or sub-state conflicts. This again is due to the fact that these are limited military engagements in which the use of weapons of mass destruction would be considered disproportionate under any circumstances, and in which there are for the most part no plausible targets. This, however, does not mean that nuclear weapons are not relevant in other types of conflict.

Nuclear Fetish or Nuclear Taboo?

Anne Harrington de Santana, in her paper on 'Nuclear Weapons as the Currency of Power', identifies "nuclear weapons as the ultimate expression of the fetishism of force". This characterization obscures essential features of the role of nuclear weapons in international politics and ignores the fundamental changes of the role of the use of force (including nuclear weapons) since the end of World War II. First of all the destructive power of nuclear weapons is based on physical reality and is not dependent on what people believe about them. For the first time in history, one country had the capacity to literally completely wipe out its opponent within 30 minutes of the beginning of hostilities. As Harrington de Santana points out, nuclear weapons were created in the context of a global power struggle which led to another global power struggle. Harrington de Santana acknowledges that the threat perceptions that gave rise to nuclear deterrence had a solid basis. But the key point about nuclear deterrence is that its fundamental purpose was to prevent the use of force. In other words, nuclear weapons turned into the precise opposite of what Harrington de Santana posits in her paper. They marked the decline of the use of force as an instrument of foreign policy. The paradox of nuclear deterrence is its effectiveness, despite the internal contradictions of

mutual assured destruction. Harrington de Santana states correctly that there was “no decisive resolution to the policy debate over the military requirements of deterrence”³¹, but this is because the threats to deterrence were imagined rather than real. The whole debate about the “window of vulnerability” in the late 70s/early 80s was based on the presumption that the Soviet Union was preparing to initiate a nuclear war under certain conditions of the nuclear balance, despite the enormous risks that such an endeavor would entail. However, it turned out that nuclear deterrence was relatively elastic with respect to the strategic balance and was effective even at relatively low levels of capabilities. Thus the whole debate about the ‘stability-instability’ paradox was based on a false presumption, namely that the Soviet Union was willing to take some degree of risk of nuclear escalation by initiating small scale military operations against Western Europe. Extended deterrence turned out to be very robust, despite the doubts expressed by strategists and policymakers. The only example where nuclear states have ever used force against each other is that of India and Pakistan, but even there the reduction of the potential for armed conflict is evident, and the prospect of a large-scale conventional campaign by India against Pakistan, such as we have seen in the past, has now become unthinkable due to the presence of nuclear weapons.³²

During the Cold War period the lack of military utility of nuclear weapons was accompanied by developments in the norms relating to the use of force and the emergence of a ‘nuclear taboo’.³³ In other words, contrary to Harrington de Santana’s assertions, the power conferred to nuclear weapons diminished over time. What had been the ‘decisive’ weapon in the 1950s was relegated to a purely political instrument of power by the 1980s and virtually irrelevant from 1990 onwards. This is not because the destructive power of nuclear weapons was illusory, but because its use had become increasingly socially unacceptable. If nuclear weapons are such a fetish, how do we explain that 184 states joined the nuclear non-proliferation treaty (NPT) as non-nuclear states? Part of the explanation is, as Harrington de

Santana points out, that the NPT established a global nuclear hierarchy. But this is not a sufficient explanation for the universality of the NPT regime, given that the instruments to establish such a hierarchy were limited, as the manner in which some states such as France and India defied it only clearly demonstrates. The answer must be that nuclear weapons are not the currency of power that Harrington de Santana makes them out to be.

The end of the Cold War was the beginning of a transformation of the international system. The military contingencies that the nuclear powers are likely to face do not involve nuclear weapons either as a deterrent or as a useful military tool. For example, in the conflicts in the Balkans four nuclear powers were engaged with armed forces, but this had no relevance for their conduct or the course of the conflict.

International norms in relation to the use of force have changed fundamentally. It is no longer considered legitimate to use force to support national interests (including the resolution of territorial disputes). Rather, the use of force is only permissible under very specific conditions, such as self-defense, or the enforcement of international law and security as mandated by the UN Security Council (which may include humanitarian intervention). Moreover, the use of force is subject to very stringent conditions, among which proportionality and the avoidance of civilian casualties are paramount. While the possession of nuclear weapons is not against international law, their use would be illegal in almost all conceivable circumstances. Although one may question how strictly these norms are being adhered to, they demonstrably restrain the use of force by states. Many former practices in the conduct of warfare are no longer acceptable, such as the kind of strategic bombing practiced during World War II, the annexation of foreign territories or the execution of prisoners of war. Even the kind of planning for the use of tactical nuclear weapons in Europe during the Cold War now looks bizarre and beyond all moral bounds.

There is a substantial recent body of literature which argues that major war is becoming obsolete as an instrument of foreign policy or as an activity of states. For example, the work of Michael Mandelbaum and John Mueller, is based on the observation that the costs of war have dramatically increased while its benefits have become marginal.³⁴ The sources of wealth for knowledge-based economies in a world of global trade are no longer to be found in armed conquest. In the past, at the end of the 19th century, war was a normal, legitimate and necessary activity of states. But the norms governing international relations have changed. Now the use of force is no longer considered acceptable except under very exceptional and restricted circumstances, and war is considered to be akin to a form of criminal activity. Thus interstate armed conflict has become quite rare, and most contemporary conflicts are substate conflicts such as ethnic wars and international terrorism.

Contemporary attitudes to nuclear weapons can hardly be characterised as a 'fetish' as the major nuclear powers reduce their arsenals and the 'nuclear taboo' seems to have become firmly established. Nuclear weapons are no longer the currency of power. This is not because they could not be used to exercise power, but because this use of power has been delegitimized.

This does not mean that nuclear deterrence is an illusion or that the time is right for the abolition of nuclear weapons. During the time of the Cold War, when there was a persistent conflict between two major powers, nuclear deterrence was essential to limit this conflict. It is true that progress towards nuclear disarmament has been slow, even though the United States and Russia have very substantially reduced their strategic nuclear warheads (and are set to reduce further), Britain has reduced the size of its nuclear deterrent and China maintains an ageing minimum deterrent force. Disarmament by the nuclear powers is clearly on the international agenda and is now supported by many who previously were ardent

advocates of US nuclear power, such as Henry Kissinger. Indeed President Obama has now declared global nuclear disarmament to be a national policy goal of the United States. But the desirability of a rapid move towards nuclear disarmament is questionable.³⁵ The fact is that for the time being the stability of the NPT regime and global security depends on the NNW maintaining their nuclear arsenals. Without the extended deterrence provided by the United States to Japan and the Republic of Korea, those states would have no choice but consider their responses to a nuclear armed North Korea. Likewise American security guarantees will play a critical role in preventing break-outs from the NPT in response to the Iranian nuclear program. Russia needs a nuclear arsenal in order to satisfy the political ambitions to be a Great Power, which in its absence would force the Russian government to rebuild major conventional forces. It can be argued that the fact that China and the United States are nuclear powers has a restraining effect on the situation vis-à-vis Taiwan. Although global cooperative denuclearization is worthy goal, the NPT regime with the P5 nuclear weapons state as its core seems the least worst alternative until it becomes possible to eliminate nuclear weapons on a global basis.

Conclusion

Ward Wilson considers the argument that 'nuclear deterrence works' to be wholly speculative. Thus he states:

“It is possible that nuclear deterrence works. It is also possible that the garlic around my neck really does ward off vampires.”³⁶

But there is no evidence that vampires exist or that garlic repels anything other than people who don't like the smell. On the other hand the destructive power of nuclear weapons has

been fully demonstrated and is universally accepted. As has been demonstrated above, there is considerable evidence for effectiveness of nuclear deterrence under circumstances when the threat to use nuclear weapons is considered credible by the other side.

It is however a valid question as to whether nuclear weapons are still relevant in the international system after the Cold War. There is a school of thought which suggests that the era of great power confrontation is over and that high intensity wars are a thing of the past. Instead, the dominant issues in international security are the so-called new wars and international terrorism. The new wars are not state-based, nor are they traditional national liberation wars, but rather regional or internal conflicts in less developed area fought to pursue ethnic, sectarian economic or ideological (religious) purposes. In fact interstate wars have become rare. Assuming that the protagonists in the new wars do not acquire nuclear weapons, nuclear deterrence is not relevant to the new wars.

It may be the case that at some stage it will be possible to eliminate nuclear weapons from the international system. For the present, this remains an unrealistic prospect. Although the strategic nuclear competition between the United States and Russia has abated, and the number of strategic warheads deployed has fallen dramatically, nuclear weapons continue to provide a degree of residual deterrence between the two erstwhile superpowers. In addition there are crisis regions, such as South Asia and the Korean peninsula where the relevance of nuclear weapons can be explained at least to some extent by the sources of insecurity in the region. It is a remarkable paradox that a time when the relevance of nuclear weapons for international security has declined so substantially that the proliferation of nuclear weapons has become one of the major global international security concerns. This is a consequence of the fact that there are states which are relatively isolated in the international community such as Syria, Iran and North Korea that perceive an advantage in pursuing nuclear programs. It

could not be a prudent policy recommendation that ‘rogue states’ should be the only ones to possess nuclear weapons. Wilson’s call to abandon ‘extended deterrence’ seems particularly problematic if it were interpreted to mean that the US should completely forswear the threat of nuclear use against a nuclear armed North Korea (in defense of South Korea), a nuclear armed PRC in the defense of Taiwan or against a nuclear armed Iran with long-range missiles (if this eventuality should arise). Despite the doubts about the efficacy of ‘extended deterrence’, the fact remains that it was essential in containing the spread of nuclear weapons. Without ‘extended deterrence’, West Germany and South Korea would most likely have acquired nuclear weapons during the Cold War period. If the ‘nuclear umbrella’ were to be withdrawn in North East Asia, South Korea would have to rethink about how to counter North Korean nuclear capabilities, and Japan might likewise be pushed towards nuclearization.

It could be argued that the strategic nuclear confrontation during the Cold War involved unacceptable risks of a global catastrophe. The decline of inter-state conflict and the decreasing utility of nuclear weapons even for deterrence could be used to support an argument for banning nuclear weapons. Until the sources of international insecurity have been addressed to the point where such a ban becomes plausible, some reliance on nuclear deterrence will remain part of the national security policy of nuclear weapons states.

Notes

¹ See for example Michael Howard, “Lessons of the Cold War”, *Survival*, 36, Winter 1994/95, pp.161-64; John Lewis Gaddis, Philip H. Gordon, Ernest R. May and Jonathan

Rosenberg, *Cold War Statesmen Confront the Bomb: Nuclear Diplomacy Since 1945*
(Oxford, Oxford University Press 1999)

² Scott D. Sagan and Kenneth L. Waltz, *The Spread of Nuclear Weapons – A Debate Renewed* (New York, NY: W.W. Norton 2001)

³ Anne Harrington de Santana, “Nuclear Weapons as the Currency of Power – Deconstructing the Fetishism of Force”, *Nonproliferation Review*, 16:3, 2009, 325-345

⁴ Ward Wilson, “The Myth of Nuclear Deterrence”, *The Nonproliferation Review*, 15: 3, 2008, pp. 421 — 439, 2008

⁵ Ken Berry, Patricia Lewis, Benoit Pélpidas, Nikolai Soko and Ward Wilson, *Delegitimizing Nuclear Weapons: Examining the Validity of Nuclear Deterrence*, (Monterey, CA, MIIS 2010)

⁶ It should be added that Ward ignores almost all of the voluminous scholarly literature on deterrence. For a useful summary of the academic debate, see Lawrence Freedman, *Deterrence*, (Cambridge, Polity Press 2004)

⁷ Patrick Morgan, *Deterrence: A Conceptual Analysis* (Beverly Hills, CA, Sage Publications 1977)

⁸ For more detail see Christoph Bluth, *The Nuclear Challenge*, (Aldershot, Ashgate 2000)

⁹ Christoph Bluth, *Britain, Germany and Western Nuclear Strategy* (Oxford, Oxford University Press 1995)

¹⁰ Janne. E. Nolan, *An Elusive Consensus*, Washington, DC:Brookings Institution 1999, p.30

¹¹The 2002 Nuclear Posture Review remained classified, but excerpts came into the public domain; see <http://www.globalsecurity.org/wmd/library/policy/dod/npr.htm> (accessed 22 August 2010)

¹² V.I. Lenin, *Sochineniia*, Vol.30, 1929, p.149

¹³Raymond Garthoff, *Soviet Military Policy*, (London, Faber&Faber 1966), p.75

¹⁴M.Gus, “General’naia liniia sovetskoi vneshnei politiki”, *Zvezda* (Leningrad), No.11, November 1953, pp.106-25

¹⁵*Kommunist*, No.13, 1960

¹⁶P.A. Rotmistrov, “O roli vnezapnosti v sovremmenoi voine”, *Voennaia Mysl’*”, No.2, February 1955, pp.14-25

¹⁷V.D. Sokolovskiy, *Soviet Military Strategy*, English language edition edited by Harriet Fast Scott, (New York, NY, Crane, Russell & Company 1968), p.209

¹⁸S. Ivanov, “Soviet Military Doctrine and Strategy”, *Voennaia Mysl’*, No.5, May 1969, pp.40-51; p.48

¹⁹Ivanov, “Soviet Military Doctrine and Strategy”, p.48

²⁰See for example the account of the Yug-78 exercise, VA-Straußberg 29371, p.22.

²¹On a strategic level, a 'meeting strike' would be what in Western terminology is called “launch-on-warning” (see Bruce Blair, *The Logic of Accidental Nuclear War*, (Washington, DC, Brookings 1993) p. 196). In the theatre, there can be no such thing as launch-on-warning because the flight times are too short. A meeting strike would be either a preemptive strike on

strategic warning, or a response after the first detonation. Given the selective use of a small number of weapons in NATO planning, there was no reason to suppose that all WTO nuclear capabilities would be destroyed as a result of a NATO strike.

²²From the East German Military Archives in Freiburg, Germany, Bundesarchiv VA-Straußberg 29371, Vol. 1, p.24.

²³Bundesarchiv, VA-Straußberg 29371, Vol. 1, pp. 94-95.

²⁴Bundesarchiv, VA-Straußberg 29555. Vol. 1, p.226.

²⁵Bundesarchiv, VA-01/39528, p.581.

²⁶*Pravda*, 21 October 1981.

²⁷Bundesarchiv, VA-Straußberg 32808, pp.104-107.

²⁸Christoph Bluth, “The British Resort to Force in the Falklands/Malvinas Conflict 1982: An analysis from the perspective of Just War Theory and International Law”, *Journal for Peace Research*, Vol. 24, No.1, 1987, pp.5-20

²⁹Wilson, “The Myth of Nuclear Deterrence”, p.434

³⁰Christoph Bluth, *Korea*, (Cambridge, Polity Press 2008), pp.14-18

³¹Harrington de Santana, “Nuclear Weapons as the Currency of Power”, p.327

³²Christoph Bluth, “India and Pakistan: A Case of Asymmetric Nuclear Deterrence, *Korean Journal of Defense Analysis*, 1941-4641, Volume 22, Issue 3, 2010, Pages 387 – 406

³³Nina Tannenwald, *The Nuclear Taboo*, (Cambridge: Cambridge University Press, 2007)

³⁴ John Mueller, *Retreat from Doomsday: The obsolescence of modern war*, New York, NY: Basic Books 1989; Michael Mandelbaum, 'Is Major War Obsolete', *Survival*, 40:4, 1998, pp.20-38

³⁵ John Mueller, "Nuclear Weapons", *Foreign Policy*, January/February (2010), pp.38-44

³⁶ Wilson, "The Myth of Nuclear Deterrence", p.435