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A Case of Asymmetric Nuclear Deterrence

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# **India and Pakistan: A Case of Asymmetric Nuclear Deterrence**

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Ever since decolonization and the partition of the former British colony of India into the states of India and Pakistan, there has been an enduring conflict between them, which has resulted in various crises. It has continued despite dramatic changes in the geopolitical environment. The conflict is over national identity, territory, the power position in the region and national identity. The Pakistani elite have been unable to accept the division of Jammu and Kashmir, and seek equal status with India, while India sees itself as a great power in the region. The conflict escalated into war at the very creation of the state of Pakistan in 1947-48, as well as in 1965 and 1971. The war in 1971 resulted in the division of Pakistan, a defeat that instilled a great sense of insecurity in Pakistan and a greater determination to find a way to overcome India's military superiority. In order to balance India's conventional military superiority, Pakistan acquired a small-scale nuclear weapons capability using bombers and medium-range missiles as delivery vehicles. Already in 1974, India had a significant nuclear industry and had demonstrated its capacity to explode nuclear devices. Whereas Pakistan's nuclear weapons doctrine is Indo-centric, India acquired a nuclear capability as part of an ambition to be recognized as a great power, and seeks to deter not only Pakistan but also China. The acquisition of nuclear weapons by both India and Pakistan raises the specter of a regional nuclear conflict with catastrophic consequences. However, there is a widespread view in the strategic studies community that nuclear weapons are likely to prevent armed conflict due to the effects of nuclear deterrence and the unacceptable risks that the protagonists face in the event of war. In the case of Indo-Pak relations, however, nuclearization seems to have had the opposite effect, as the frequency of the crises has increased since both countries became declared nuclear powers. This paper is concerned with the effect of nuclear weapons on the security crisis in South Asia. The literature on

the Indo-Pak conflict generally agrees that the stability of the strategic nuclear relationship is the key factor in explaining the phenomenon of the increasing frequency of crises since both countries have been acknowledged as nuclear powers. The majority of scholars claim that the strategic relationship is stable and that this stability creates a strategic space for Pakistan to initiate conflict at a conventional level. An alternative view expressed in the literature is that the strategic nuclear relationship between Pakistan and India is not stable and that the conflict is driven by this instability—in other words that the real risk of nuclear escalation gives Pakistan confidence that India will be deterred from employing its superiority at the conventional level. This paper argues that the endeavors by scholars to explain the Indo-Pak conflict on the basis of strategic stability or instability are unconvincing. The strategic studies literature asserts that strategic stability exists if two protagonists have a secure second-strike capability that is sufficiently large to inflict unacceptable damage on the opponent and thus can deter aggression. The paper argues that the strategic nuclear relationship between Pakistan and India is not stable and that deterrence of conflict between the two states is not stable. The behaviors of the protagonists cannot be explained on the basis of the balance of their nuclear and conventional capabilities, but instead are the products of strategic cognitive dissonance. This means that there is a serious risk of conflict escalating to the nuclear level.

### **Nuclear weapons, conflict and crisis management in South Asia**

South Asia is a crisis region because of the rivalry between Pakistan and India which began at the time of the founding of the state of Pakistan in 1947. Relations between India and Pakistan have been marked by a series of crises which escalated into war in 1947-48, 1965 and 1971, respectively. The 1971 war was not about Kashmir but resulted in the division of Pakistan, and this defeat intensified the sense of insecurity in Pakistan and the conflict between the two states. The defining characteristics of the strategic environment in the subcontinent were Pakistani irredentism over Kashmir and Indian military superiority. Conventional wisdom in strategic studies predicts that the acquisition

of nuclear arsenals by the two countries should deter armed conflict and therefore reduce the chance of military confrontation.

Scholars have identified between nine and eleven interstate crises on the Indian subcontinent since 1947. Four of these crises escalated to wars—namely, 1947-48, 1965, 1971 and 1999 (although the 1999 Kargil conflict involved a relatively low-level armed clash by comparison with the others). During the first three of these wars which involved high-intensity combat and in the case of 1971 resulted in the division of Pakistan into two states, neither India nor Pakistan had any nuclear weapons capability.

A comparison by Saira Khan of the pattern of crises between India and Pakistan between the pre-nuclear and the nuclear eras shows that the frequency of interstate crises declined gradually in the pre-nuclear era.<sup>1</sup> During the nuclear era, however, the frequency of crises increased significantly. Although the intensity of crises during the nuclear period has been high and the potential for escalation significant, they involved only low-level military engagements, proxy wars or terrorism. The use of insurgent fighters in particular is a hallmark of the nuclear period.

In the first 15 years of the enduring rivalry following decolonization (1947-62) there were four crises (Junagadh 1947-48; Kashmir I 1947-49; Hyderabad 1948; and the Punjab War Scare 1951). In the second 15-year period (1963-78) there were three crises (including the 1971 war) and in the third 15-year period (1979-86) there were none. However in the nuclear period, 1987-2008, there were five crises (the Brasstacks crisis 1987, the Kashmir crisis 1990, the Kargil conflict 1999, the Indian Parliament crisis of 2001 and the Mumbai crisis of 2008). Of these only the Kargil conflict involved a level of military engagement that could be characterized as a war.

This pattern suggests that while the traumatic war of 1971 that resulted in a massive Pakistani defeat and the carving up of the country into Pakistan and Bangladesh demonstrated India's conventional superiority and Pakistan's weakness, the acquisition of nuclear weapons and the employment of nuclear deterrence created a strategic space for Pakistan to engage in conflict with India

at a lower level, i.e. short of high-intensity conventional warfare that might have involved the risk of nuclear escalation.

There is a high level of consensus in the academic literature that this phenomenon of continuing low-level conflict in South Asia is explained by the stability/instability paradox.<sup>2</sup> Kenneth N. Waltz wrote in relation to India and Pakistan: “Yet because nuclear weapons limit escalation, they may tempt countries to fight small wars. Glenn Snyder long ago identified the stability/tactical instability paradox.”<sup>3</sup> Likewise Jeffrey Knopf, Scott Sagan, Lowell Dittmer and Šumit Ganguly attributed the continuing conflict in South Asia to the stability/instability paradox.<sup>4</sup> In order to understand the effect of strategic stability (or otherwise) on the conflict, we need to consider briefly the concepts of strategic stability and the stability/instability paradox and then examine the strategic situation in South Asia.

### **The stability/instability paradox**

One of the key concepts in deterrence theory is that of strategic stability. Strategic stability means that the balance of forces between two states is such that nuclear deterrence is effective, and consequently there is little incentive for the initiation of armed conflict. In his seminal article, *The Delicate Balance of Terror*, Alfred Wohlstetter posed the existence of a secure second strike capability as a condition for strategic stability.<sup>5</sup> The stability of strategic nuclear deterrence meant that escalation of any conflict to the nuclear level was very unlikely during the Cold War. The problem for NATO was that given the balance of conventional forces nuclear weapons had to deter not only a nuclear attack but also a conventional attack by Warsaw Pact forces. Throughout the Cold War period there was the perception of an imbalance to the disadvantage of NATO. The most obvious quantitative indicators of the imbalance were the number of troops (1.2 million versus NATO’s 900, 000) and the number of tanks and aircraft in which the Warsaw Pact enjoyed roughly a 3:1 advantage.<sup>6</sup> The perception of a conventional

imbalance endured until the early 1980s when emerging technologies shifted the balance from offensive forces in favor of defense (i.e. high-precision anti-tank weapons). The problem of how to maintain extended deterrence is known as the stability/instability paradox, a concept that was developed by Glenn Snyder.<sup>7</sup> The United States dealt with the stability/instability paradox by introducing a substantial number of nuclear weapons into the theatre, first as part of the “New Look” strategy<sup>8</sup> and later to support the strategy of flexible response. Although the strategic nuclear stability gave rise to a concept of a nuclear threshold and efforts to keep any conflict on a conventional level, a whole range of nuclear forces and operational guidelines with limited nuclear options were put in place to enable nuclear responses that fell short of attacking the vital centers of the Soviet Union and therefore retained some credibility as a response to conventional attacks. However, the absence of such capabilities in South Asia gives could give rise to a stability/instability paradox in South Asia.

### **Deterrence and Perception**

Deterrence is essentially a psychological phenomenon. The effectiveness of deterrence is not dependent on the military capabilities of one side or the other, but on the perception of these capabilities. The reason why conventional forces are less-effective as a deterrent is that beliefs about the outcome of a conventional conflict often differ. Not only do assessments of the military balance vary, but the outcome of a war may depend on the quality of armaments and training, the morale of the armed forces and the determination of the political leaders. Nuclear weapons are believed to be more effective in deterring conflict because of their enormous destructive power, the reduced uncertainty about the consequences of a nuclear war and the difficulty in defending against nuclear attack. Nuclear powers have an interest in declaring their capabilities and demonstrating to the other side that they have everything necessary to deliver nuclear strikes. Nevertheless, it is possible that both the intentions and the capabilities of nuclear powers are not perceived correctly by an adversary and that consequently nuclear deterrence is weakened or compromised. The misperception of a strategic situation might arise due to the fact that a state keeps its nuclear capabilities and intentions secret. Another source of misperception arises from *strategic cognitive dissonance*.

Strategic cognitive dissonance occurs when the reality of a strategic situation conflicts with deeply held beliefs by decision-makers.<sup>9</sup> Cognitive dissonance is a psychological phenomenon that arises when two mutually contradictory beliefs are held at the same time. If one of these beliefs is so strong that a person is unable to question or discard it, the second belief has to be questioned in order to reduce the dissonance. Cognitive dissonance as a source of misperception and its effect on decision-making has been analyzed by Robert Jervis.<sup>10</sup> There are many examples of strategic cognitive dissonance. As the author wishes to insert additional comments here and a footnote reference, this should be incorporated into the text of the article rather than as a comment in the margin.... and he seems to have omitted footnote 10 and skipped from footnote 9 straight to footnote 11. Robert Jervis, in his study on perceptions and misperceptions laid the foundation of the analysis of how the psychology of leaders affects decision-making under conditions of incomplete information, stress and cognitive bias.<sup>11</sup> According to Jervis, misperceptions can result in overestimating one's influence or capabilities. If strategic analysis does not yield a useful construct, an alternative approach to explain the failure of nuclear weapons to deter conflict is based on strategic cognitive dissonance. Deterrence fails because one side does not correctly perceive the strategic situation and consequently is willing to assume excessive risks. Any military action as a result of this level of strategic dissonance involves risks that could have catastrophic consequences.<sup>12</sup>

### **The sources of misperception: Cognitive dissonance in superpowers and small nuclear powers**

Threat perceptions are a factor of both capabilities and intentions. The assessment of intentions is generally based on observations of foreign policy behavior over a period of time as well as force postures and the development of military capabilities. But the articulation of threat perceptions has many different functions and sources. The interpretation of intelligence is influenced by ideological preconceptions and the political world view of different individuals. Threat perceptions are often used to justify policies which are adopted not because they address an external security threat, but because they suit the requirements of bureaucratic agencies and vested interests in society.

Conceptualizations of the objectives of Soviet foreign policy were located between two extremes that were termed the “Riga axioms” and “Yalta axioms,” respectively. The Riga axioms were based on:

an image of the Soviet Union as a world revolutionary state, denying the possibilities of coexistence, committed to unrelenting ideological warfare, powered by a messianic drive for world mastery.<sup>13</sup>

While the attitudes of conservatives with a traditional interpretation of the Cold War were close to the Riga axioms, the New Left and revisionist historians identified more with the Yalta axioms which:

downplayed the role of ideology and the foreign-policy consequences of authoritarian domestic practices, and instead saw the Soviet Union behaving like a traditional Great Power within the international system, rather than trying to overthrow it.<sup>14</sup>

By the mid-1960s it had become clear that the scale of strategic nuclear weapon deployments by the United States and the Soviet Union was such that a state of “mutually assured destruction” could be deemed to exist. This was codified in both the SALT Agreements and the ABM Treaty, respectively, which limited the expansion of strategic nuclear arsenals and restrained the deployment of strategic defenses. The problem of the “stability/instability paradox” was solved through the doctrine of “flexible response.” But misperceptions persisted between the superpowers over their strategic intentions. This was partly due to the deployment of ICBMs with multiple warheads, which increased the firepower of the arsenals dramatically on both sides, as the missiles became increasingly accurate and both sides acquired increasing time-urgent hard target kill capabilities. At a more fundamental level, beliefs about the nature of the Soviet state and the Cold War confrontation produced a high level of “cognitive dissonance” about Soviet strategic intentions. The fact of a strategic stalemate was incompatible with the deeply held belief among the conservative elite in the United States that the Soviet Union was seeking to defeat the West in pursuit of the goal of world socialism. This gave rise to the belief that the Soviet Union was determined to change the strategic nuclear balance in such a way that it would be

capable of inflicting a first strike on America's ICBM force. These ideas led to the debate about the basing of the MX missile and the so-called "window of vulnerability."<sup>15</sup> The strategic analysis underlying the proponents of the idea that the Soviet Union was looking to achieve victory in a nuclear war was faulty in that it incorrectly assessed the strategic balance between the two sides that were constrained by strategic arms control, and completely ignored as irrelevant the enormous invulnerable second strike capability based at sea.<sup>16</sup> The source of the cognitive dissonance in this case was the fundamental belief that the Soviet Union was aggressive and relentlessly sought to defeat the West. The notion that the Soviet Union might have been deterred by U.S. strategic forces and therefore accepted the need for peaceful coexistence is incompatible with this core belief and hence had to be rejected in order to reduce the dissonance.<sup>17</sup>

However, the strategic balance was robust precisely because under any conceivable first-strike scenario both sides retained a sizeable second-strike capability. Although political relations between the Soviet Union and the United States deteriorated markedly toward the end of the 1990s, the strategic nuclear balance remained largely unaffected. Another factor that contributed to strategic stability, even in the face of intense political rivalry, was the fact that the capabilities of both sides were reasonably well known. At the same time early warning capabilities had been developed to a point where both sides were confident that they would have sufficient strategic and tactical warning of an attack, thereby reducing the risk of pre-emptive strikes in the absence of clear information. Even so, the risk of accidental nuclear strikes was not eliminated entirely. For example, a large-scale NATO exercise in 1983 codenamed "Able Archer" was interpreted by Soviet planners as a prelude to nuclear strikes on Warsaw Pact territory and resulted in forces being put on the highest level of alert.

After the end of the Cold War and the end of the Soviet Union, the two erstwhile superpowers grappled with issues about the role of strategic nuclear forces in the new geopolitical environment. Changes in the force postures have lagged significantly behind the political changes. For both sides, the strategic nuclear confrontation and the "arms race" are considered to be things of the past.

This is explained by the fact that the persistent underlying conflict which had manifested itself in the military confrontation of the Cold War had come to an end. For Russia, the functions of its nuclear forces are firstly to ensure Russia's Great Power status in the face of dramatic economic decline, the dissolution of empire and the collapse of its global reach; secondly, to provide a residual deterrent vis-à-vis the United States and prevent political isolation from the West; and thirdly, to act as an assured last-resort defense capability in the face of a dramatic decline in conventional military capabilities and preparedness. Even though the alert levels of strategic nuclear forces on both sides are still higher than warranted by the strategic situation, the strategic relationship between the United States and Russia is very stable, as both sides have been drastically reducing the number of deployed strategic warheads.<sup>18</sup>

### **Nuclear deterrence and the small nuclear powers**

During the Cold War, South Asia remained outside the sphere of influence of the superpowers, and neither India nor Pakistan could be said to be in one or the other camp, even though Pakistan had a close security relationship with China; and India with the Soviet Union. But China did not provide a security guarantee for Pakistan and India, which received substantial economic and military aid from both the United States and the Soviet Union, resulting in increasing Indian dominance in the region. Pakistan was unable to counter the shifting balance of capabilities in India's favor and eventually suffered a severe and humiliating defeat in 1971 which led to the loss of the eastern part of its territory. Whereas the superpowers devoted a great deal of their political influence to preventing the development of independent nuclear arsenals in their spheres of influence (not entirely successfully), Pakistan and India were not part of the global strategic confrontation of the Cold War, at least until the Soviet invasion of Afghanistan. India rejected the nuclear non-proliferation regime instituted by the great powers as discriminatory and claimed the right to equality as a great power herself. For Pakistan, on the other hand, the need to be able to balance India's conventional superiority and resolve the Kashmir issue in its favor and escape the humiliation of 1971 became the supreme national security objective that could, in the

perception of its leaders, only be achieved with the acquisition of a nuclear capability.

In contrast to the superpowers and the European medium-sized nuclear powers, small regional nuclear powers tended to adopt a policy of minimum deterrence. This was the case with China, which was clearly constrained by lack of resources and was unable to compete with the Soviet Union, with which it was engaged in major political and military confrontation. But China's views on deterrence did not change after the Cold War, when its resource-base had significantly improved and its potential strategic adversary had become the United States instead of Russia. The development of its strategic forces remained very restrained (contrary to the expectations of analysts) and China did not consider the precise configuration or readiness of forces to have any impact on its deterrence posture. Instead China's leaders seem to believe in "existential deterrence" where the mere possession of a nuclear capability is adequate as a security guarantee of last resort.<sup>19</sup> North Korea likewise seems to be content with an existential deterrent, as indicated by the apparent willingness to cease the production of fissile materials. The DPRK has no hope of competing with its potential adversary, the United States. North Korea's nuclear program has seemingly three functions—a deterrent against U.S. nuclear attack, a symbol of prestige, and a means of engaging the United States and obtaining security guarantees and economic support. Those functions are not wholly compatible and account for some of the contradictions in North Korea's behavior.<sup>20</sup> Israel was confronted not with other nuclear states, but with the Arab states that launched conventional wars with the purpose of the destruction of the state of Israel. The purpose of the arsenal was to provide for a military capability of last resort in the event that its conventional forces were unable to prevent the country's extinction. Israel did not practice overt deterrence, and as it never confirmed the existence of the arsenal, the number of devices and the delivery vehicles could only be estimated, as Israel was concerned not to provoke efforts by Arab states to develop their own nuclear arsenals.<sup>21</sup>

The case of India and Pakistan is unique—in the sense that these two states are the only small regional nuclear powers that have comparable nuclear arsenals and that are locked in an enduring conflict. This means that this

relationship is susceptible to the same risks as the U.S.-Soviet nuclear confrontation, such as arms-racing and the “stability-instability paradox,” but lacking some of the stabilizing features (mature command-and-control and early warning capabilities and secure second-strike capabilities). It is necessary to look at the features of this strategic relationship more closely to understand the implications.

### **Nuclear Weapons and Strategic Stability in South Asia**

To assess the nuclear balance in South Asia it is necessary to consider the size of the nuclear forces, the scale and capability of means of delivery and the geographical situation in relation to threat perceptions and likely adversaries. India’s and Pakistan’s nuclear programs are quite distinct from a technical point of view. India’s nuclear program is technologically more mature. India conducted a so-called “peaceful” nuclear explosion in 1974 and tested a number of thermonuclear devices in 1998 with alleged yields of 43 kt (seismic evidence suggest that the yields were somewhat lower). The size of the nuclear stockpile is classified, but the capacity of India’s nuclear reactors is well known. The Canadian-designed CIRUS 40MW heavy-water reactor (HWR) and the Dhruva 100 MW heavy-water reactor of Indian design can produce up to 35 kg of plutonium every year. Estimating the size of the stockpile of fissile material is problematic because of the extensive scope of India’s civilian nuclear program. In 1992, experts estimated that India had accumulated in excess of 300 kg of weapons-grade plutonium, sufficient for 40-50 nuclear warheads, which means that by 2009 the stockpile could be as high 1,200 kg. India has accumulated several tons of reactor grade plutonium, and would be able to increase its stockpile of weapons-grade plutonium quite rapidly. By 1998 India was estimated to have about 70 nuclear weapons. In 2001, on the basis of India’s plutonium output, Rodney Jones estimates that India could have up to 100 warheads and more recently some sources referred to figures of 200. Even though the precise stockpiles of materials and warheads are unknown, the Indian government tries to

play down its capacities and it is highly likely that India's stockpiles are considerably higher than public estimates would seem to indicate. Moreover, the recent nuclear deal between the United States and India will give India more access to nuclear materials for its civilian nuclear program, freeing up other resources for the military program.<sup>22</sup>

Pakistan acquired the capability to produce atomic warheads in the 1980s, although the precise date of an initial operation capability remains unknown. The nuclear devices are fission weapons using a Chinese implosion design with a core of highly-enriched uranium (HEU). Each warhead requires 10-15 kg of highly enriched uranium. Estimates contained in a recent report to Congress state that Pakistan may have enriched enough uranium for about 60 warheads. Estimates of the Pakistani weapons-stockpile in open literature sources vary between 20-60 devices. In response to the Indian nuclear tests in 1998, Pakistan tested six devices May 28-30, 1998 with yields between five and 10 kilotons (according to seismic data). The production capacity of HEU is estimated at 100 kg annually. Pakistan is also establishing the infrastructure to manufacture plutonium and may well decide to produce plutonium-based warheads in the future.

Neither Pakistan nor India appears to be in an all-out race to stockpile as many weapons as possible, but India clearly has the edge as its designs are more advanced. They produce either boosted-fission or thermonuclear weapons (India's claims to possess the latter have been questioned by specialists) with a considerably higher yield, and India's production-capacity, as well as stockpiles of nuclear materials and nuclear devices outstrip those of Pakistan.

#### *Nuclear delivery vehicles*

India has about 310 nuclear-capable ground-attack aircraft that can deliver nuclear weapons to targets everywhere in industrialized Pakistan. These include highly advanced Russian aircraft, such as the 40 Su-30MK (Flanker) and the 64 MiG-29 (Fulcrum). It also has the 4 TU-22M Backfire, which were designed for long-range nuclear missions in Europe. India also has 147 MiG-27 (Flogger) and 88 Jaguar S (I) strike aircraft. Pakistan has the 46 F-16A/B purchased from the United States and modified to carry nuclear weapons with a radius of 850 km. It's

Mirage II/5 and A-5 aircraft can be modified to carry nuclear weapons but they have a short range and cannot reach the Indian capital.

India and Pakistan have also developed ballistic missiles as nuclear delivery vehicles. In the late 1970s India initiated its own military ballistic missile development program, based on cooperation with the Soviet Union/Russia, adapting air-defense missile technology and space-launch vehicles to develop surface-to-surface missiles. These programs have permitted India to deploy a range of missiles suitable for nuclear missions. These include the shorter range *Prithvi I* (range 150 km, at least 75 deployed) which was first tested in 1988 and the *Prithvi II* (range 250 km, at least 25 deployed) and the longer-range *Agni*. The *Agni I* (about 90 deployed) has a range of 1, 500 km and the *Agni II* (about 20 deployed) a range of 2, 500 km. The *Agni* has a payload of 1, 000 kg. The *Agni III* with a range of 4,500 km has been successfully tested.

Pakistan's missile program is based on Chinese and North Korean technology. Its nuclear-capable missiles include 50 solid-fuelled *Hatf-III (Ghaznavi)* with a range of 100-290 km, six solid-fuelled *Hatf-IV (Shaheen I)* missiles with a range of 200-650 km and 20 of the medium *Hatf-V (Ghauri I)* missiles with a range of 1, 200 km. The *Ghaznavi* is based on the Chinese M-11, while the *Shaheen-I* is essentially the Chinese M-9. The liquid-fuelled *Ghauri I* is the North Korean *Rodong* missile which was based on the Soviet *Scud*. It is not very accurate and requires a long preparation time, making it vulnerable to a pre-emptive attack. Only the *Ghauri I* can be used for an attack on New Delhi and much of India's territory is out of range of all of Pakistan's missiles. The future of Pakistan's missile program is uncertain because China has now accepted the restrictions of the Missile Technology Control Regime (MTCR) and therefore will no longer supply missiles to Pakistan. Pakistan was expecting to receive a longer-range missile from North Korea based on the *Taepodong* program. The North Koreans themselves cancelled the *Taepodong I* and did not conduct a successful launch of the *Taepodong 2* until April 2009. Given the current sanctions against North Korea and efforts to intercept North Korean missile exports through the Proliferation Security Initiative (PSI) in the aftermath of North Korea's second

nuclear test in 2009 it may be difficult for Pakistan to upgrade its missile systems using North Korean technology.<sup>23</sup>

Overall, both countries have the capacity to target each other's vital centers with a significant nuclear arsenal. India enjoys both a technical advantage and benefits from the strategic geography. Pakistan's nuclear first-strike capability is less than robust, as the aircraft are vulnerable to air defenses and the longer-range missiles are vulnerable to a first strike due to the time required to prepare their launch. At the same time, India has no guaranteed first-strike option. In the event of a Pakistani first strike a full-scale nuclear response from India would not only destroy Pakistan's industrial heartland, but the degree of destruction and the ensuing chaos would mean that the possibility of launching a second strike cannot be guaranteed.

Indeed, India is pursuing ballistic missile defense very vigorously. It is developing a two-tier system with an exoatmospheric, high-altitude interceptor missile (*Prithvi* Air Defense – PAD) and an endoatmospheric low-altitude interceptor (Advanced Air Defense – AAD). On November 27, 2006 the PAD was tested and destroyed a *Prithvi* missile in flight. On December 6, 2007 there was a successful test of the endoatmospheric interceptor, and another PAD test took place in March 2009. Precise details of the development of the interceptors are not known. India developed extensive collaboration with Israel and the United States permitted the transfer of three Green Pine radars, but not Arrow II interceptors. There has also been collaboration with Russia and France. Indian officials claim that the AAD is 30 percent more capable than the American Patriot PAC III. As the system is still in the development stage, future deployment could significantly impact Pakistan's capability to target India cities with nuclear-armed missiles.<sup>24</sup>

### **India's Nuclear Doctrine**

Although India has had a nuclear weapons capability since its “peaceful nuclear explosion” in 1974, it did not become an overt nuclear power until the nuclear

tests in May 1998. Prime Minister Vajpayee cited a deteriorating international environment as the reason when addressing parliament on May 27, 1998. India needed a nuclear capability to protect itself against blackmail or coercion. Although the official position is that India's nuclear deterrent is not directed against any specific country, Vajpayee indicated in a letter to President Clinton that India's action was motivated by the threat from China. This is puzzling, given that bilateral relations between India and China were no longer particularly adversarial.<sup>25</sup>

The basic elements of India's nuclear defense doctrine as they subsequently emerged in public statements can be summarized as follows:<sup>26</sup>

- Concept of a credible minimum nuclear deterrence.
- Triad of forces—mobile land based missiles, aircraft and sea-based assets.
- The fundamental purpose of the Indian nuclear weapons is to deter the use and any threat of use of nuclear weapons against India and its forces by any state or entity. India will use nuclear weapons even if its territory been attacked with chemical and/or biological weapons.
- The political leadership will decide about any retaliatory attack.
- India will not use nuclear weapons first (no-first-use policy).
- India will not use nuclear weapons against a non-nuclear state.
- India will pursue the policy of strict control over the export of sensitive technologies and material.
- The basic requirements for credible minimum deterrence are defined as:
  1. Sufficient, survivable and operationally deployable forces
  2. A reliable intact command and control system
  3. Effective intelligence and early warning system
  4. Credibility, which means the will to employ nuclear forces and weapons.
  5. Comprehensive training and planning for the operations in line with the strategy.

In 2003 there was a further expansion in the Indian nuclear defense doctrine.<sup>27</sup> In the draft nuclear defense doctrine it was stated that there would be no use of nuclear weapons against a non-nuclear state but in this announcement India has

expanded the operational parameters for its nuclear defense doctrine. It says that it will not only use nuclear weapons when its territory been attacked but even if Indian forces would be attacked “anywhere.” This could be taken to mean that even if the Indian forces would be on some other state’s territory—let’s say occupying the territory of some other state—nuclear weapons might be used.<sup>28</sup>

Indian official pronouncements are clearly designed to reassure the international community with regard to India’s intentions. They emphasize that India is aware of the risks inherent in nuclear weapons; its intentions are peaceful (i.e. not to change the territorial status quo); it is committed to a minimum deterrent and avoiding an arms race; and it does not want to adopt the kind of nuclear war-fighting doctrines that were adopted by the protagonists in the Cold War.<sup>29</sup>

The Indian nuclear program was initially not directed at Pakistan, but was motivated rather by India’s ambitions to be a Great Power, to counter the discrimination by the major nuclear powers which came to be enshrined in the NPT, and (to a lesser extent) by its conflict with China.<sup>30</sup> The Indian political elite did not take Pakistani nuclear ambitions very seriously until the nuclear tests in 1998, and even then China remained the greater concern in terms of the strategic balance.

Indian official pronouncements have not clarified the meaning of the concept of “minimum deterrent.”<sup>31</sup> India’s nuclear arsenal is clearly still in the process of development and the acquisition of more and longer-range missiles is likely. India is also developing a two-tier missile defense system for destroying hostile missiles inside (advanced air defense) and outside the atmosphere (*Prithvi* air defense) (although Pakistani missiles would not come from outside the atmosphere. This will clearly degrade Pakistan’s missile capabilities as the *Rodong* can in principle be intercepted by U.S. theater missile defenses.<sup>32</sup>

### **Pakistan’s nuclear strategy and doctrine**

Pakistan's strategic doctrine has not been formally declared, but there are important clues in public statements.<sup>33</sup> The force posture is based on the principle of "credible minimum deterrence."<sup>34</sup> Nuclear weapons combined with Pakistan's conventional forces have the purpose to deter any kind of external aggression. Pakistan seeks to deter attacks on its strategic assets by securing them and threatening nuclear retaliation. In particular Pakistani officials have indicated that their nuclear posture is designed to preserve Pakistan's territorial integrity against an attack from India, prevent military escalation and balance India's conventional superiority.<sup>35</sup> Survivability of a second strike capability has been enhanced by hardened and deeply buried storage facilities, road-mobile missiles and air defense around strategic sites. To prevent unauthorized use, nuclear warheads are not assembled and the different components are stored at different sites. Pakistan has a "no-first-use" policy against non-nuclear states, but has deliberately left open the possibility of a nuclear first strike against a nuclear-armed aggressor such as India.<sup>36</sup>

The most elaborate statement on the nuclear threshold was made by the head of Pakistan's Strategic Plans Division Khalid Kidwai in 2001. He defined four different kinds of thresholds as follows:

1. *The spatial threshold*

This is defined by significant penetration of Indian forces into Pakistani territory and the capture of key objectives (especially in Punjab and Kashmir).

2. *The military threshold*

The destruction of much of the Pakistani army, to the point where Pakistani armed forces would begin to lose cohesion and defeat was imminent, might trigger a nuclear attack.

3. *The economic threshold*

The most intriguing part of Kidwai's statement was that economic strangulation (e.g. by a naval blockade of Karachi port) could trigger a nuclear strike.

4. *The political threshold*

If India were to foment unrest in Pakistan and destabilize the country, to the point where one or several provinces were encouraged to break away, could also escalate to nuclear war.

The last two scenarios are particularly disturbing because they are non-military forms of pressure and Pakistan is already facing serious internal instability which could be and sometimes is falsely attributed to India.<sup>37</sup>

### **The strategic balance and strategic stability**

The most fundamental feature of the strategic balance is the significant imbalance in India's favor. Although the precise levels of nuclear warheads held by India and Pakistan have not been declared, there is little doubt that India's stockpile is superior both qualitatively and quantitatively. India is believed to have a thermonuclear capability, whereas Pakistan relies on fission designs using HEU. India's capacity to produce fissile materials is significantly greater. The asymmetry in capabilities also favors India with regard to all kinds of delivery systems. India has a geographic depth that Pakistan lacks and a significant proportion of India's territory is out of reach of Pakistan's nuclear arsenal, whereas India can target every location in Pakistan. India is far in advance in space reconnaissance assets. It launched its first observation satellite using Soviet launch capabilities in 1988 and now is able to launch its satellites using its own launchers. India's long-range airborne reconnaissance capabilities are considerable compared to Pakistan's limited early warning assets.

It is commonly asserted in the literature on nuclear deterrence that nuclear weapons are an equalizer that permits weaker states to negate the conventional superiority of much stronger states, and this principle is frequently used to characterize the purpose of Pakistan's nuclear arsenal. However, that does not reflect the complexities of Pakistan's defense doctrine. For Pakistani defense planners, their conventional forces constitute the primary means of defense against Indian conventional attack. Indeed Pakistani military leaders confidently express the view that their conventional armed forces have been developed to the point that they can defeat the Indians in any attempts to encroach on Pakistani territory.<sup>38</sup> It is true that Pakistan has demonstrated recently, as for example in the 2001-2002 crisis, that with a rapid mobilization they could thwart India's military

plans. This does not refute the fact that India could overwhelm Pakistani forces in a large-scale determined offensive.

As we have seen, the declared purpose of the Pakistani nuclear arsenal is to deter an Indian conventional attack.<sup>39</sup> *This embodies the assumption that it is not necessary to deter a nuclear attack from India.* There are superficial similarities to the situation of NATO during the Cold War. The doctrine of flexible response incorporated the notion of a nuclear threshold (which was deliberately not specified) and appropriate conventional responses to any attack. The purpose was to persuade the aggressor from halting the attack, and if that failed then a nuclear response could occur. The political guidelines for the initial use of tactical nuclear weapons envisaged a nuclear strike whose purpose was to convince the aggressor that NATO was prepared to escalate to the nuclear level. The underlying assumption was that the Warsaw Pact would only attack if it believed that NATO would not risk using nuclear weapons, counting on its presumed conventional superiority.<sup>40</sup>

The use of tactical weapons will not make up for Pakistan's conventional inferiority if India can respond with tactical nuclear strikes on a greater scale. Moreover, Ashley Tellis from the Rand Corporation has argued that in the event of a first tactical nuclear strike by Pakistan, India could still prevail without the use of nuclear weapons by continuing to draw out the conflict, eventually massing its forces and destroying Pakistani military capabilities.<sup>41</sup>

It remains unclear whether Pakistan envisages the tactical use of nuclear weapons on the battlefield. While NATO had deployed a large arsenal of dedicated short-range nuclear delivery systems, Pakistan is oriented in its weapons systems and its nuclear doctrine toward the strategic use of such weapons in the form of massive retaliation against Indian cities. In principle, F-16 aircraft could be used to deliver tactical strikes against Indian battle formations, but this is not their declared role.

The problem that Pakistan faces is that the correlation of forces between India and Pakistan is much more disadvantageous for Pakistan than it was for NATO during the Cold War. NATO's deterrent was more credible in that the United

States possessed a strategic nuclear force that could have annihilated the Warsaw Pact countries in a time-urgent fashion and the imbalance in nuclear forces was a regional imbalance only. Pakistan on the other hand faces not only a much greater imbalance in conventional forces, but also a much more significant asymmetry in nuclear forces. In other words, if Pakistan were to use nuclear weapons, then India could literally destroy the country completely. This means that there are no credible options for Pakistan if deterrence fails.

Another way of expressing this dilemma is that Pakistan's military strategy is predicated on maintaining escalation dominance on all points of the military ladder. Such a strategy is problematic because Pakistan lacks the means to implement it. At every step along the ladder the risks are much greater for Pakistan than for India. If we compare this situation with NATO's strategy of flexible response, it is apparent that NATO's approach to escalation in a conflict in Europe was designed to prevent the escalation to the strategic level without being defeated.<sup>42</sup> But Pakistan does not have the range of forces available to conceive such an approach; in fact its whole nuclear arsenal is configured to escalation to the strategic level as the first-use option.<sup>43</sup>

The situation is even worse if we consider Pakistan's strategic objectives. One of the differences between the Cold War and the crisis in South Asia is that in Europe both sides became committed to the principle of not changing the territorial status quo with the use of force. Pakistan's irredentist goals with regard to Kashmir however mean that it is pursuing an offensive strategy toward India. Generally speaking the strategic studies literature affirms the principle that a strategy of compellence is far more demanding than deterrence.<sup>44</sup> It is clear that there are problems about Pakistan's ability to pursue deterrence, but a strategy of compellence on the basis of such military imbalances involves enormous risks.

This analysis shows that the application of the stability/instability paradox to the Indo-Pak conflict is flawed because the structure of conflict in South Asia differs in significant ways from the situation in Cold War Europe on which the concept is based. In Europe, it was the Warsaw Pact that enjoyed conventional superiority, and this gave rise to the fear on the part of NATO that deterrence at

the strategic level would make Europe “safe” for conventional war; i.e. create a strategic space in which the Warsaw Pact could engage in conflict without having to fear a nuclear response. However the situation in South Asia is reversed; i.e. Pakistan is the conventionally weaker side. The stability/instability paradox presumes that the possibility of low-level conflict exists because there is no likelihood of nuclear weapons being used. In South Asia, however, Pakistan is prepared to incur the risks in low-level conflict on the basis that its nuclear weapons will deter escalation, which is completely the reverse of the stability/instability paradox. S. Paul Kapur has offered a different explanation.<sup>45</sup> He also criticizes the application of Snyder’s concept to South Asia on the basis that there is no strategic stability at the nuclear level in South Asia. Instead he posits a correlation between strategic instability and the likelihood of sub-nuclear violence. According to this argument, nuclear risks embolden Pakistan. Part of Pakistan’s calculus evidently is that if the risk of nuclear war were to rise, other international actors would intervene in order to restrain India and avert a nuclear conflict. By implication, Kapur argues that in a situation of strategic stability Pakistan would be deterred by India’s conventional superiority.<sup>46</sup>

Kapur is right to assert that the nuclear relationship between India and Pakistan is unstable, but the conclusions he draws are incorrect. This is because the instability does not arise primarily from deficiencies in the Indian nuclear capabilities, but from those of Pakistan. In other words, the paradox of this situation is that Pakistani leaders appear to believe that they have a strategic space to pursue low-level conflict against India despite both conventional and nuclear inferiority. In the event of nuclear use by Pakistan there could well be an Indian response that would obliterate Pakistan entirely.

A critical element in Kapur’s analysis is that as the danger of a nuclear confrontation grows there is a likelihood that outside powers will intervene to prevent a nuclear conflict.<sup>47</sup> There is a belief that the United States in particular would get involved in such an eventuality to prevent a nuclear war. There are analytical and empirical objections to the notion that Pakistan’s tactical approach can rely on outside intervention to prevent nuclear war and therefore create the strategic space for the initiation of low-level conflict. In the first place, Kapur’s

argument involves a profound contradiction. The argument is based on the notion that the realistic possibility of nuclear escalation deters India from employing its conventional superiority to defeat Pakistani military actions and launch major offensives into Pakistani territory. But if outside intervention could be relied upon to prevent a nuclear war, then there would be no realistic possibility of nuclear escalation, and hence Kapur can no longer explain why India should be deterred. In the second place, outside intervention is unlikely to favor Pakistan. The Pakistani military and political leaders believe (correctly) that the United States considers the Indian nuclear arsenal, although outside the NPT, semi-legitimate.<sup>48</sup> The same does not apply to the Pakistani arsenal which Washington considers to be dangerous and unacceptable. This asymmetry in the view of the two countries became apparent in the nuclear deal between the United States and India which involves considerable cooperation in relation to civil nuclear technology. Moreover, the United States also strongly opposes Pakistan's use of armed force or proxies to pursue its irredentist goals with respect to India. Any U.S. intervention therefore is likely to constrain Pakistan, rather than India. It is hard to imagine that if India had occupied significant parts of Pakistani territory and Pakistan were to threaten the use of nuclear weapons that the United States would be able or willing to force India to give up all of its territorial gains. A skeptical view of the notion that U.S. intervention could serve Pakistan's strategic goals is confirmed by the 1999 Kargil conflict when President Clinton prevailed on Pakistan's President Sharif to end the operations of the Pakistani army and any proxies. From an empirical perspective, it is quite clear, as Kapur himself demonstrates, that the Pakistani political elite do believe that Pakistan's nuclear arsenal is capable of deterring India from employing its conventional superiority without reliance on outside powers.<sup>49</sup>

In other words, strategic models designed to understand the working of deterrence completely fail to explain Pakistan's behavior. This leads to the hypothesis that Pakistan's leaders are not deterred by India's nuclear force as a result of strategic miscalculation. Judging by the available evidence from public statements and interviews, Pakistani leaders believe that India is more risk averse and therefore more reluctant to risk a nuclear strike. This is the case despite the

disadvantages in geography, population size and capabilities that Pakistan is faced with. The greater risks that Pakistan is facing are matched by the political will to assume greater risks.<sup>50</sup>

This attitude may have been encouraged by India's reluctance to emphasize a nuclear threat, its no-first-use policy and its behavior during recent crises. As Scott Sagan has argued, one significant explanatory factor may be the structure of decision-making.<sup>51</sup> In India there is a sustained tradition of civilian-military relations whereby nuclear weapons doctrine and operations are strictly under civilian control. Indeed the military has been largely excluded from nuclear decision-making, from being denied any influence over the nuclear program, to command and control. In Pakistan, by contrast, the nuclear program is run and owned by the military, to the extent that civilian leaders have not denied full information about the program and have had to accept military decisions over nuclear developments and control over the arsenal. Further research could show the extent to which, if any, perceptions of risks and crisis behavior are influenced by these differences in organizational behavior; but prima facie there is a case that civilian leaders in a democratic country are likely to be more cautious and risk-averse.

The misperceptions of the strategic situation in South Asia can be described as a form of *strategic cognitive dissonance*. In the case of the Pakistani political and military elite, the cognitive dissonance arises from the unshakeable belief that Pakistan can achieve equal status with India politically and militarily, in contradiction to the strategic realities. Nuclear weapons are the instrument that is supposed to achieve the impossible. This fundamental belief leads Pakistan's elite to ignore the weakness and contradictions in their analysis of the strategic situation.

With regard to Pakistani perceptions, important clues could be gained from a close analysis of the interstate crises that occurred since Pakistan developed a nuclear capability. There was a high level of concern in India about Pakistan's nuclear capability and the possibility of preventive strikes. In the early 1980s

Prime Minister Indira Gandhi's government considered an attack on the Kahuta nuclear facilities in Pakistan (possibly with Israeli assistance), but this plan was rejected. The first serious crisis in the nuclear period was the 1986-87 "Brasstacks crisis," which began as a result of a large-scale Indian military exercise involving about 250,000 troops and 1,500 tanks in Rajasthan. The troops were issued with live ammunition and practiced a simulated "counter-offensive" into Pakistan. These exercises gave rise to fears in Pakistan that a large-scale attack might be in preparation and resulted in the deployment of troops for maneuvers in the border area. The Indian response was to move its forces closer to the border area and put the air force on high alert. High-level intervention eventually defused the crisis and a military clash was avoided. At the time a commonly accepted interpretation was that this was an accidental crisis provoked by India's military exercises which were misinterpreted by the Pakistani side.<sup>52</sup> But evidence has since come to light that the then chief of the Army Staff, General Krishnaswami Sundarji, was planning a preventive war. The concept was that the Brasstacks exercise would provoke the Pakistani military to react by initiating hostilities and provide a pretext for India to move into Pakistani territory and implement contingency plans to take out the Pakistani nuclear program.<sup>53</sup> Pakistani military commanders became alarmed when there was no full notification about the plans for the Indian exercises and requests for clarification via the special hotline were not provided. These plans for a preventive attack were not known to India's Prime Minister Rajiv Gandhi. Plans to attack the Pakistani Army Reserve South and Pakistani nuclear facilities were finally rejected by Gandhi after consultations with senior officials and General Sundarji who continued to lobby for an attack, arguing that India's cities could be protected from a Pakistani counterattack.<sup>54</sup>

The Kargil crisis in 1999 occurred one year after India and Pakistan conducted nuclear tests and thereby became overt nuclear powers outside the framework of the nuclear non-proliferation treaty (NPT). In May Indian forces discovered Pakistan regular forces on the Indian side of the line of control (LOC) in the mountains of Kashmir. For about two months Indian armed forces engaged the Pakistani units, including air attacks on their hideouts high in the mountains, but

Indian forces did not cross the LOC into Pakistani territory. Tanks and heavy artillery were amassed for a counteroffensive in Rajasthan, and Indian Prime Minister Atal Bihari Vajpayee informed President Clinton that India might have to launch a counterattack. This was a serious conflict that resulted in the deaths of over 1,000 Pakistani and Indian soldiers. Pakistani Prime Minister Nawaz Sharif announced the withdrawal of Pakistani forces from the Indian side of the LOC after receiving a face-saving assurance from President Clinton that the United States would support a resolution of the Kashmir crisis.<sup>55</sup>

The Kargil crisis yields important clues about Pakistani and Indian crisis behavior.<sup>56</sup> The available information indicates that Pakistan was convinced that it or its proxies could launch a limited conventional attack against India without risking full-scale conventional retaliation due to the prospect that the situation could get out of control and involve the use of nuclear weapons.<sup>57</sup> Due to the risk of nuclear strikes the international community would get involved in the event of dramatic escalation.

While there was clearly some restraint on the Indian side, which did not send troops into Pakistani territory, Pakistan nevertheless failed to achieve its objectives and incurred international condemnation. Moreover, there were heavy losses and severe internal repercussions. Moreover, the crisis instilled greater confidence in Indian commanders that the Pakistani threat of nuclear escalation was a bluff. Indian policymakers concluded that given the strategic asymmetry favoring India, they could engage in a limited conventional war with India to end Pakistan's provocations in Kashmir. In other words, India adopted a strategy of conventional compellence to counter Pakistani irredentism, the opposite of what Pakistan's military planners expected. This strategy has met with mixed results, but the key point is that crisis behavior during the nuclear period seems to demonstrate that the assumptions of Pakistani military planners about the effectiveness of the threat of escalation and the reduced willingness of Indian leaders to rely on their conventional superiority are misconceived.<sup>58</sup>

## **Conclusion**

Although some scholars like Kenneth Waltz have seen nuclear proliferation as a positive development that will reduce conflict, most experts in international relations perceive the greater proliferation of nuclear weapons as a dangerous phenomenon—because even in a stable relationship of nuclear deterrence there remains a risk of unintended escalation. Some scholars such as Scott Sagan, Graham Allison, Ashton Carter and Steve Miller have been more vocal in opposing proliferation, especially to countries with less-developed military technologies—because of the risks involved in managing small arsenals with less capable means of delivery, command and control and virtually non-existent early warning systems. Further risks are posed by states that are in conflict with a neighboring state and where central government control may be compromised or other factors affect rational decision-making. The case of Pakistan and India is a good case in point, because the conflict between the two countries has intensified since both countries became overt nuclear powers. It defies conventional strategic analysis as the side weaker in both conventional and nuclear capabilities is assuming much greater risks. If indeed this asymmetric risk-taking is the result of strategic cognitive dissonance, then it poses great dangers for the region. It may turn out that the relationship between tactical and strategic stability is different for small, new nuclear powers, compared to relations between the nuclear superpowers during the Cold War. This means that the assumptions guiding political actors in relation to new or emerging nuclear powers may not be valid and that the risk of conflict may be substantially greater than is often assumed.

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<sup>2</sup> “The Stability-Instability Paradox: Nuclear Weapons and Brinkmanship in South Asia,” ed. Michael Krepon and Chris Gagne, *The Henry L. Stimson Center*, June 2001, Report no. 38, <http://www.stimson.org/pub.cfm?id=1>.

<sup>3</sup> Scott D. Sagan and Kenneth N. Waltz, *The Spread of Nuclear Weapons – A Debate Renewed* (New York, NY: W.W. Norton & Co. 2003), 122.

<sup>4</sup> Sumit Ganguly, “India Pakistan Nuclear Issues and Stability /Instability Paradox, *Studies in Conflict and Terrorism*, 18, no. 4 (1995).

<sup>5</sup> Albert Wohlstetter, “The Delicate Balance of Terror,” *Foreign Affairs* 37, no. 2. (January 1959).

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<sup>6</sup> These figures approximate the military balance at the beginning of the MBFR Talks in 1973 and the relative capabilities of the two sides varied over the Cold War period. For more detail, including assessments based on previously highly classified Soviet sources, see Christoph Bluth, *The Two Germanies and Military Power in Europe*, (Basingstoke, UK: Palgrave, 2003).

<sup>7</sup> Glenn H. Snyder, *Deterrence and Defense* (Princeton, NJ: Princeton University Press, 1961); Glenn H. Snyder, "Crisis Bargaining", in *International Crises: Insights from Behavioral Research*, ed. C.F. Hermann (New York, NY: Free Press, 1972), 232.

<sup>8</sup> The 'New Look' strategy was introduced by the Eisenhower administration. In essence, it was based on the concept of making up for the conventional asymmetry vis-à-vis the Soviet Union by introducing tactical weapons in Europe on a significant scale.

<sup>9</sup> This concept was first introduced by John Steinbruner to explain President Kennedy's decision to sell Britain's Prime Minister Macmillan the Polaris system, but has not been used much in the strategic studies literature since then. See John D. Steinbruner, *The Cybernetic Theory of Decision*, (Princeton, NJ: Princeton University Press, 1974).

<sup>10</sup> Robert Jervis, *Perception and Misperception in International Politics*, (Princeton, NJ: Princeton University Press, 1976), Chapter 11.

<sup>11</sup> Jervis, *Perception and Misperception*. Robert Jervis, Richard Ned Lebow and Janice Gross Stein, *Psychology and Deterrence*, (Baltimore, MD: Johns Hopkins University Press, 1989).

<sup>12</sup> Ken Booth and Nicholas Wheeler have introduced the concept of "unresolvable uncertainty" in relation to assessing the intentions and capabilities of other states that give rise to dangerous misperceptions. See Ken Booth and Nicholas J. Wheeler, *The Security Dilemma*, (Basingstoke, UK: Palgrave, 2008), 5.

<sup>13</sup> Daniel Yergin, *Shattered Peace*, (Harmondsworth, UK: Penguin, 1977), 11.

<sup>14</sup> Ibid.

<sup>15</sup> David H. Dunn, *The Politics of Threat: Minuteman Vulnerability in American National Security Policy*, (Southampton, UK: Southampton Studies in International Policy: 1997).

<sup>16</sup> David H. Dunn, *The Politics of Threat: Minuteman Vulnerability in American National Security Policy*, (Southampton, UK: Southampton Studies in International Policy, 1997).

<sup>17</sup> Jean-François Revel, *How Democracies Perish*, (London: Weidenfeld & Nicolson, 1985).

<sup>18</sup> Stephen J. Cimbala and Peter Jacob Rainow, *Russia and Postmodern Deterrence*, (Washington, D.C.: Potomac Books, 2007); Christoph Bluth, *The Nuclear Challenge*, (Aldershot, UK: Ashgate, 2000).

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<sup>20</sup> Christoph Bluth, *Korea*, (Cambridge, UK: Polity Press, 2008).

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- <sup>25</sup> For an original and detailed analysis of the Indian decision to test nuclear weapons, see Jacques E. C. Hymans, *The Psychology of Nuclear Proliferation*, (Cambridge, UK: Cambridge University Press, 2006), 171–203.
- <sup>26</sup> “Draft Report of the National Security Advisory Board on Indian Nuclear Doctrine”, New Delhi, August 17, 1999, reproduced in Rodney Jones, *Minimum Nuclear Deterrence*, Appendix B; Ashley Tellis, *India's Emerging Nuclear Posture: Between Recessed Deterrent and Read Arsenal*, (Santa Monica, CA: RAND 2001).
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