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ANALYSIS

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## THE DANGERS OF DENIAL: NUCLEAR WEAPONS IN CHINA-INDIA RELATIONS

### EXECUTIVE SUMMARY

*The risk of nuclear confrontation between China and India is widely considered to be low, even though New Delhi cites China as a reason for its nuclear weapons and part of Beijing's arsenal is intended to deter India. This benign assessment needs to be revisited as the power and interests of Asia's rising giants expand and the potential grows for them to clash. China's unwillingness to recognise any Indian right to possess nuclear weapons is becoming unsustainable. So are assumptions that the two nations are in a state of stable, mutual deterrence. In fact, asymmetric capabilities and perceptions could prove destabilising. Denial of a problem is part of the problem.*

*A more competitive nuclear dynamic between China and India would bring multiple and underappreciated risks. Already the imperative by Beijing and New Delhi to improve their arsenals is an obstacle for nuclear arms control and disarmament. And without progress in nuclear dialogue and stability – embedded in a willingness to respect each other's interests – risks could grow that some future confrontation between these powers might involve nuclear threats and misjudgments.*

*Both powers now have an opportunity to begin talks on strategic stability and nuclear arms control, as part of more serious efforts to build understanding, predictability and transparency through strategic dialogue. This should lead to a bilateral pact not to be the first to threaten the other with nuclear weapons.*

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**THE DANGERS OF DENIAL****Introduction**

The nuclear dynamic between China and India – the world’s two most populous states armed with the world’s most dangerous weapons – has long been a strangely cold issue in international affairs: underexplored and underestimated. It is often assumed they have a stable relationship involving mutual deterrence that would function in a crisis and that this benign situation will endure.<sup>1</sup> But as their power and interests expand, such assumptions will need to be re-examined. It is striking that, despite their commonalities of restrained nuclear postures and disarmament rhetoric, China and India have failed to achieve reassurance and cooperation on nuclear issues. This is an unpropitious starting point for a relationship that is becoming more competitive.<sup>2</sup>

The more troubling conceivable futures for Sino-Indian nuclear relations are marked by questions about the effectiveness of deterrence and a lack of preparation for crisis management. In any case, the implications of nuclear competition between China and India extend beyond the possibilities – remote but not to be dismissed – of military confrontation, the exchange of nuclear threats or nuclear use. This dynamic is creating new uncertainties in relations between the two powers, as well as their relations with the United States and Pakistan. It is also obstructing global arms control and disarmament efforts.

In this Lowy Institute Analysis, we assess Sino-Indian nuclear dynamics including by examining the two countries’ nuclear capabilities and postures, drivers of security tensions and potential flashpoints. We conclude

by suggesting measures to restrain this nascent nuclear competition.

**Strategic tensions***Competition, coexistence and asymmetry*

Mistrust is an enduring feature of relations between India and China, and has worsened in the past five years. Certainly some substantial elements of cooperation have simultaneously grown and persisted, resulting in what might be termed competitive coexistence rather than full-blown rivalry.<sup>3</sup> China has become India’s largest trading partner, though economic competition could deepen as manufacturing expands in India. As huge developing nations, India and China have parallel interests in some global forums, such as on climate change, but this has not led to patterns of sustained cooperation, trust or mutual respect.

To be sure, security and political dialogues have improved. A rudimentary military relationship has developed, including operational-level measures to manage incidents on the disputed border and an annual defence dialogue. But strategic-level issues of military transparency, confidence-building or stable nuclear deterrence do not appear to feature in any of these discussions. And while both countries are involved in regional forums, neither shows interest in using them to stabilise bilateral relations.

The reasons for mistrust in the Sino-Indian strategic relationship include:

- The disputed Himalayan border and the legacy of the 1962 border war. The border remains a central thread of mistrust and has

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latent potential as a flashpoint. In recent years, both powers have renewed their focus on competing territorial claims and border deployments.<sup>4</sup>

- China's history of military, nuclear and missile assistance to Pakistan. India perceives this as having directly and deliberately worsened its strategic environment.
- Indian perceptions – however questionable – that China's growing diplomatic and commercial ties in South Asia and the Indian Ocean are aimed at keeping India off-balance in its own region, and are perhaps the kernel of a future encirclement strategy with a military aspect.
- Chinese concern that the US-India strategic partnership is meant to 'contain' or limit its power including through a potential blockade of energy imports traversing the Indian Ocean. A hardening of Beijing's stance towards India on many issues after about 2005 suggests that China saw the US-India civil nuclear deal as evidence that New Delhi was irredeemably tilting towards the United States.
- Chinese anxiety about Tibet, including the presence of a politically active Tibetan exile community and some significant Tibetan religious sites in India. In China's eyes, this could influence the succession of the Dalai Lama and Chinese political control in Tibet.
- Varying degrees of discomfort about each side's military modernisation and long-term strategic intentions.

- Degrees of rising nationalism, negative perceptions and hostile characterisations in public opinion and media.<sup>5</sup> Indian public opinion has become increasingly suspicious of China in recent years, while surveys of Chinese public opinion offer a more mixed picture on attitudes to India.<sup>6</sup>
- Actual or perceived competition for energy, water and other resources.
- Diplomatic and soft-power competition in third countries, including in Southeast Asia.
- And differences within multilateral forums, including some efforts to exclude one another entirely.

The threat perceptions are decidedly asymmetric. At present, China worries India much more than India worries China. Declarations of Indian mistrust of China are frequent, from the dire warnings of defence experts and media to more coded statements from the Indian leadership. Threat perceptions are an important driver of India's military modernisation, alongside security problems relating to Pakistan, terrorism and domestic insurgency.

Reciprocal expressions of Chinese mistrust are much harder to find, although it is difficult to square Chinese claims that all is well between China and India with the record of Beijing's diplomatic needling of New Delhi.<sup>7</sup> India does not rank high in current Chinese threat perceptions. China's immediate security anxieties are far more focused on its eastern maritime periphery, the United States, Taiwan, Japan, the South China Sea and internal stability. That said, the Sino-Indian border

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issue has a bearing on internal stability in China, specifically in Tibet. And India will likely rise in China's hierarchy of challenges as its dependence on energy exports across the Indian Ocean increases and as the power and global interests of both countries continue to expand, with the prospect of new frictions.

But India is not a primary driver of Chinese military modernisation. Beijing appears confident in its capabilities against India.<sup>8</sup> Overall, China has a substantial edge in both conventional and nuclear forces, despite some areas of more localised Indian superiority. India has a maritime edge in the Indian Ocean but its larger number of troops along the Himalayan border is offset by Chinese control of the high ground and more favourable infrastructure and geography for rapid reinforcement.<sup>9</sup>

***Nuclear mistrust***

This broad state of mistrust influences the nuclear dimension of China-India relations. In particular, India has cited a need to deter China as the primary reason for its 1998 nuclear tests. Still, the possession of nuclear weapons is not an automatic cause of tension between states. The Indian and Chinese nuclear programs are at least as much a symptom of mistrust as a cause.

Again, asymmetry is a feature of China and India's perceptions of each other as nuclear powers. This is a serious obstacle to constructive bilateral engagement on nuclear and wider security issues.<sup>10</sup> At present, India may see China as a limited rather than existential threat, and a more rational actor than Pakistan. But New Delhi nonetheless worries about its current inability to deter both that limited challenge and the more open-ended

threat that China might become were bilateral competition to turn to rivalry.<sup>11</sup> Meanwhile, China does not publicly proclaim Indian nuclear weapons to be a direct military threat.

There is also an asymmetry in the two powers' willingness to engage on stabilising their strategic relationship. India has at least once proposed to negotiate a nuclear no-first-use agreement with China, presumably believing that this would help legitimise its nuclear status and confer mutual security benefits. But China does not consider India's possession of nuclear weapons legitimate because it is not a recognised nuclear weapon state under the Nuclear Non-Proliferation Treaty (NPT). China has thus resisted any bilateral nuclear discussions.<sup>12</sup>

China's reluctance to thus acknowledge India as a nuclear peer rankles the Indian strategic community, in ways not helpful to a stable strategic relationship. There is a genuine, if not always rational, desire in New Delhi to be noticed and taken seriously by Beijing and other great powers. This helps explain some of the bombastic statements and assertions that emerge from some quarters in India about its nuclear and military prowess and ambitions, for instance around missile tests.

There have been assertions that China and India are engaged in a nuclear arms race.<sup>13</sup> But at this stage the restrained nature of the nuclear weapons programs and postures in both countries does not support such an assessment, especially if one defines an arms race as involving efforts by two countries to match and surpass the other's capabilities regardless of cost. Instead India, as the weaker nuclear power, appears to be working to refine the

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capabilities it deems necessary for stable deterrence. This does not mean the two powers can afford to be complacent about their current state of competitive coexistence and limited nuclear competition. Rather, now is the time to build patterns of dialogue, predictability and mutual understanding against the prospect of a future worsening of tensions.

### Capabilities and postures

To understand the nuclear dynamics and risks between China and India, it is essential to have a picture of their nuclear and wider military capabilities and postures. Reliable information is sketchy, particularly due to the opacity of both nations about their nuclear forces as well as Chinese opacity about conventional forces.

### China

#### *Nuclear doctrine*

China has historically viewed nuclear weapons as tools of coercion, with their value stemming from possession rather than use. Leaders have seen nuclear weapons as useful for deterring a nuclear attack and countering coercion, but not for fighting or winning wars.<sup>14</sup> This has impelled China towards a minimum deterrence posture,<sup>15</sup> underpinned by a small arsenal kept off alert, and a no-first-use (NFU) declaratory policy that relies on the threat of a retaliatory strike on an adversary's cities.<sup>16</sup>

Although China's doctrine and capabilities are primarily aimed at deterring the United States, these also affect the security dynamic with India. China's evolving nuclear strategy is influenced by concerns about US missile defences, conventional strike and superior

targeting capabilities, which the Chinese fear could combine to destroy their nuclear forces in a non-nuclear first strike. In turn, the deployment of technologies to defeat US systems, such as multiple warheads, could worry India because of their potential uses during a hypothetical Chinese first strike.<sup>17</sup> In addition, debate over force posture prompted by the prospect of a disabling US conventional strike has created some troubling ambiguity over what might constitute 'first use' as a trigger for Chinese retaliation, with some Chinese analysts arguing that conventional attacks on Chinese nuclear forces or even credible early warning of an attack should be treated as a nuclear attack.<sup>18</sup>

Another ambiguity in Chinese nuclear doctrine relates to whether China's no-first-use pledge excludes India. In 2010 China stated that it has 'adhered to the policy of no-first-use of nuclear weapons at any time and in any circumstances, and made the unequivocal commitment that under no circumstances will it use or threaten to use nuclear weapons against non-nuclear-weapon states or nuclear-weapon-free zones.'<sup>19</sup> Indian commentators have noted it is not clear if this promise applies to India, as a 1995 revision of Chinese declaratory policy made the NFU pledge applicable to members of the NPT or nuclear-weapon-free zones, effectively making it inapplicable to India.<sup>20</sup> Further, China's NFU does not rule out the use of nuclear weapons on 'Chinese territory', which presumably includes disputed territory.<sup>21</sup> Doubts about China's NFU pledge will grow as its nuclear forces improve and if dissatisfaction with the doctrine increases in the Chinese strategic community.

**THE DANGERS OF DENIAL***Capabilities*

China is estimated to have approximately 240 strategic nuclear warheads to arm its triad of missile forces, submarines and bomber aircraft.<sup>22</sup> It is improving its delivery systems in range, accuracy, mobility and survivability. While it may have the ability to arm its missiles with multiple, independently targeted warheads, it is not believed yet to have done so.<sup>23</sup>

Chinese delivery systems capable of reaching India include the DF-3, DF-3A, DF-4, DF-21, DF-21A and DF-21C ballistic missiles, JL-2 submarine-launched ballistic missiles and H-6 bombers,<sup>24</sup> and most of these systems are currently or due to be deployed within range of India.

China's missile delivery systems include three classes of intercontinental ballistic missiles, of which the shorter range DF-31 is expected to be used for 'regional' targeting – including India contingencies.<sup>25</sup> According to a 2010 Pentagon report, inferior liquid-fuelled missiles assigned to regional missions have been nearly completely replaced by a variant of road-mobile, solid-fuelled DF-21 medium-range ballistic missiles (MRBMs).<sup>26</sup>

A number of Chinese missile bases are reportedly within range of northern India: DF-3As and DF-21s are stationed in Kunming, Yunnan province and Delingha, Qinghai province; and DF-4s at Delingha, Huaihua area in Hunan province and Luoyang area of Henan province.<sup>27</sup> Nuclear-capable DF-21Cs are also reportedly deployed near Delingha.<sup>28</sup> The only plausible targets for DF-21 missiles at Delingha are cities in India. India is also the only nuclear power in range of the Kunming base.<sup>29</sup> Claims

by some India analysts that China has nuclear weapons in Tibet are denied by China and unconfirmed by independent sources.<sup>30</sup>

China's fleet of at least three JIN-class nuclear-powered ballistic missile submarines (SSBNs), stationed on Hainan island, has been estimated to become operational between 2012 and 2015, although recent doubts have surfaced about whether its missiles will be ready by then.<sup>31</sup> Each boat is intended to carry 12 JL-2 submarine-launched ballistic missiles (SLBMs) with an estimated range of 7400 kilometres.<sup>32</sup> This would constitute China's first operational sea-borne deterrent and would provide it with a truly survivable second-strike capability against India. Some analysts have concluded that the range of the JL-2 makes the JIN-class submarines more suited for regional missions than for deterring the United States.<sup>33</sup>

China is improving its nuclear forces to bypass US missile defences, and is reportedly exploring the technology for a rudimentary missile defence system. It tested an anti-satellite missile in 2007 and missile interception technology in 2010, which some Chinese analysts suggest is being developed with Indian missiles in mind.<sup>34</sup>

China is modernising and expanding its nuclear capabilities more slowly than its conventional military. But China's development of advanced conventional capabilities may encourage states with less sophisticated conventional forces such as India to rely more heavily upon nuclear weapons for deterrence.

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## India

*Nuclear doctrine*

Militarily, India's small arsenal of nuclear weapons is intended to deter both Pakistan and China.<sup>35</sup> India's nuclear doctrine is premised upon a 'credible minimum deterrent'. Like China, India claims a NFU policy, a pledge not to use nuclear weapons against non-nuclear armed states and a long-term commitment to disarmament.<sup>36</sup> Also like China, India sees nuclear deterrence as involving the declared threat of reprisal against an adversary's cities, rather than involving the option of a nuclear first strike against military targets.

India's stated policy is one of massive retaliation 'designed to inflict unacceptable damage'.<sup>37</sup> Indian and foreign experts have observed that India's minimum deterrence is a flexible position, depending upon the severity of the threat, and that there is the possibility India may come to adopt a more offensive doctrine.<sup>38</sup>

If India's strategy is based on the threat of assured retaliation – rather than an adversary simply having to factor in the risk of retaliation – then its force requirements amount to more than the symbolic possession of a small number of weapons. In particular, this doctrine calls for a secure second-strike capability: the ability of weapons and command and control systems to withstand an adversary's initial attack.<sup>39</sup>

*Capabilities*

India is estimated to have 80-100 assembled nuclear weapons,<sup>40</sup> perhaps 50 of them operational,<sup>41</sup> as well as both ballistic missiles and bomber aircraft. India has many planes suited for delivering nuclear weapons – an

important point, since there remains speculation that India's nuclear deterrent continues to rely on the highly vulnerable delivery system of aircraft-dropped bombs rather than nuclear warheads mounted on ballistic missiles.<sup>42</sup>

Based on the information available publicly, it is uncertain whether India has yet achieved credible minimum deterrence or assured retaliation against China. Doing so in the future will depend on whether India can deploy nuclear-tipped missiles able to reach Chinese cities – with a range of at least 3500 kilometres – and put nuclear-armed ballistic missile submarines to sea.

India has worked for many years to develop nuclear-capable ballistic missiles. Attention has been focused on the Agni-I and Agni-II intermediate-range ballistic missiles (IRBMs) and the Agni-III with a reported range of up to 3500 kilometres. This latter vehicle was reportedly cleared for 'induction' into the armed forces following its final test in February 2010 and could reach cities in China's south.<sup>43</sup>

The Agni-V ballistic missile, with a 5000 kilometre range, is scheduled for its first test soon – in December 2011.<sup>44</sup> Assuming it could be fitted with a nuclear warhead, it would bring major Chinese cities, including both Beijing and Shanghai, into Indian nuclear range. Indian sources explicitly describe the Agni III and V as designed to deter China.<sup>45</sup> Indian analysts have speculated that an effective retaliatory strike would require India to hit at least ten major Chinese cities.<sup>46</sup> The location of facilities from which Indian nuclear missiles would be launched is not publicly known.<sup>47</sup> India is also reported to be developing

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a cruise missile which may be nuclear-capable, and multiple-warhead technologies which might help overcome future Chinese missile defences.<sup>48</sup>

A submarine would be India's ideal choice for a survivable second-strike capability. India is currently developing two classes of ballistic missile for a sea-based platform, the Dhanush with a range of 350 kilometres and the Sagarika or K-15 SLBM with a range of 700 kilometres, which was test-launched in 2008 and is the current intended 'vehicle for the sea-borne deterrent.'<sup>49</sup>

The first Indian nuclear-powered submarine was launched in July 2009. But this may serve more as a 'technology demonstrator' than an operational capability, and will need to undergo much further testing and development.<sup>50</sup> In any case, the relatively short range of the Sagarika is a major handicap, requiring the submarine to operate close to Chinese shores. This would not only make it vulnerable to Chinese anti-submarine capabilities but also generate potential instabilities in peacetime – notably if Indian vessels needed to patrol in and survey waters close to China, prompting the kinds of maritime incidents that already trouble China-US relations. To effectively deter China with minimal risks of instability, Indian submarines would need to be armed with missiles able to reach Beijing and other critical Chinese cities from Indian-dominated waters such as the Bay of Bengal – in the order of 5000 kilometres.<sup>51</sup>

As well as improving its nuclear weapons, India is seeking missile defences to reduce its vulnerability to nuclear attack. There are reports that India is developing a two-tiered

ballistic missile defence system through indigenous efforts and collaboration with Israel, Russia, the United States and Europe.<sup>52</sup> The first tier is aimed at countering Pakistani missiles and the second tier to intercept Chinese missiles,<sup>53</sup> all without altering India's NFU policy. India is also reportedly exploring an anti-satellite capability.<sup>54</sup> But even if assigned high priority and funding, prospective Indian missile defences face a host of technological hurdles.

India's interest in missile defence is linked to its strategic ties with the United States. Some advocate a missile defence partnership with Washington as a way to enhance Indian security and check Chinese power in the region, as well as reflecting a new level of US support for India in tensions with Pakistan and any competition with China.<sup>55</sup> Close US-India missile defence cooperation is unlikely in the near term: India, in particular, seems unwilling to take the bilateral strategic partnership further at present. Still, if such collaboration were to develop, it could fill some reported gaps in US radar surveillance of Chinese territory.<sup>56</sup>

In time, Indian missile defences could affect strategic stability with both Pakistan and China. Some observers warn that Pakistan may respond by yet further efforts to increase its missile arsenal and deploying its missiles on a higher state of alert<sup>57</sup> – although Pakistan appears to be trying to expand its nuclear arsenal in any case, making India's interest in missile defences all the more understandable. And although missile defences might help India feel less vulnerable to Chinese nuclear weapons, any serious progress in this direction will likely be viewed in China as undermining the

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effectiveness of its nuclear deterrence against India.<sup>58</sup>

### Risks

#### *Nuclear instabilities*

The foregoing review of China and India's capabilities, doctrines and targeting suggest the deterrent relationship is neither stable nor even strictly mutual. A number of areas of actual or potential strategic instability are apparent:

- Asymmetric capabilities and perceptions make the strategic and nuclear dynamic between two powers less than stable. While India does not need to seek nuclear parity with China, its present lack even of a secure second-strike capability, combined with the overall conventional force imbalance and threat perceptions about China, will impel New Delhi towards enhancing its forces, including pursuing a submarine-launched deterrent and missile defences.
- Qualitative and quantitative improvements in Chinese and Indian nuclear forces, as well as more assertive or even offensive doctrines, could be prompted either by a perception that the threat from the other is intensifying, or in response to a threat posed by a third party, either of which could result in increased Sino-Indian nuclear competition. Credible assessments suggest that neither country would have great difficulty expanding its nuclear arsenal; each has a stockpile of fissile material.<sup>59</sup> Both countries are currently working to modernise their arsenals. Either country could abandon the NFU principle in future declaratory policy or in even practice during a crisis, but even now there is sufficient flexibility in both countries' existing doctrine to adopt a more offensive nuclear posture.<sup>60</sup>
- A secure Indian second-strike capability is crucial to stable deterrence and will remain uncertain for a number of years. The range of the nuclear-capable missile with which India might arm its future submarine fleet – combined with the conventional military balance at sea – will help determine whether that capability is stabilising or not. This problem demands further study.
- The opacity of both sides' nuclear capabilities makes the need for dialogue mechanisms and clear signaling during a crisis all the more important.
- The deployment of 'dual-capable' DF-21C missiles – which could be fitted with either conventional or nuclear warheads – within range of Indian cities is also potentially destabilising, as India would not be able to discern between the launch of a conventional and nuclear-tipped missile.
- Progress towards missile defences on either side could affect the other country's confidence in its existing nuclear capabilities. This might drive them towards further improvements or expansion of those forces or alternately discourage them from relying on nuclear threats in a future crisis, depending on the effectiveness of the technology and the clarity of military confidence-building and diplomatic signalling involved. United States missile defences add another complicating factor.

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Were China to expand its nuclear arsenal in response to US missile defences, this would deepen Indian concerns about Chinese forces. An Indian decision to pursue missile defences in close collaboration with the United States would complicate the picture further. It could increase New Delhi's confidence in the reliability of such defences – thus potentially reducing India's insecurity about the inferiority of its nuclear deterrent and moderating the need to expand its nuclear arsenal. But a US-India missile defence partnership would also increase Chinese perceptions of India as aligned with a US-led strategy to constrain its power. This could add to the potential destabilising effects of reducing Chinese confidence in its deterrent

***Geopolitical variables***

All of these areas of potential instability need to be examined in light of wider geopolitical dynamics and key possible flashpoints surrounding relations between India and China. Unlikely, though not inconceivable, is an eventual situation of genuine Sino-Indian rivalry where both powers have larger nuclear arsenals and conventional forces, with neither knowing how the other will use nuclear weapons in the event of a crisis. Another dangerous, though remote, possibility is of India and China becoming directly involved in a wider conflict involving either Pakistan or the United States.

To be sure, India's attitude of strategic restraint is likely to survive the current degree of limited competition with China.<sup>61</sup> But the instabilities identified above could interact with several sets of geopolitical variables to worsen the currently

limited Sino-Indian nuclear competition. These include: the expansion of power and interests in both countries, creating a wider range of circumstances in which their interests can clash; nationalism and rising pressure upon governments from public opinion or institutional interests; and developments in the critical relationships with Pakistan and the United States.

Sino-Indian relations are complicated by China's 'all weather friendship' with Pakistan and India's nascent partnership with the United States, while strategic rivalries exist between China and the United States as well as between Pakistan and India. Either has the potential to increase strategic competition between China and India. While China has avoided direct involvement in previous India-Pakistan conflicts and India remains wary of becoming so close to the United States as to be drawn into a US-China conflict, some observers have warned of 'an unmanaged, four-by-four competition'<sup>62</sup> which will need careful diplomatic management by all sides.

The Bush Administration's civil nuclear deal with India has underpinned a strengthened US-India relationship, after decades of estrangement. Certainly US-India relations show no sign of becoming an alliance; India remains fixated on strategic autonomy. Still, both India and the United States can be expected to use their partnership to maximise their interests against China where they see the need, for example through cooperation in maritime security. But however understandable and broadly defensive may be Indian and American intentions, the impact of their relationship upon China-India relations will be determined in large measure by China's

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perceptions of strategic balancing or even 'containment'.<sup>63</sup>

The Sino-Pakistani relationship has in some ways moderated from one of unequivocal Chinese diplomatic support for Pakistan to one where Beijing chose to take a relatively detached position during the 1999 Kargil conflict and the 2002 India-Pakistan confrontation. But there is no certainty such even-handedness will persist.<sup>64</sup> China will continue to use the relationship pragmatically to serve its interests.<sup>65</sup> There are currently mixed signals as to whether Beijing is deepening or tempering its relationship with Islamabad, with Beijing perhaps becoming more aware of Pakistan's potential as a strategic liability. Still, a continuing Chinese strategic relationship with Pakistan could well aggravate China-India relations, especially if unfavourable alterations to the strategic balance between Pakistan and India can be identified with Chinese assistance. As for India's longstanding nightmare of a two-front conflict with Pakistan and China, there are mixed reports. Indian strategists may have contingency plans for such a worst-case scenario, but it is difficult to imagine that such an uncontrollable war would be in Beijing's interests.

***Flashpoints?***

The potential for the India-China border dispute to spark a nuclear confrontation is often discounted.<sup>66</sup> That said, the border dispute cannot be examined in isolation. It is connected with Chinese sensitivities over Tibet, the China-Pakistan relationship and Indian sensitivities over Kashmir. And India appears to be beginning to link its stance on Tibet – and

even Taiwan – to its need for China to respect Indian sovereignty in Jammu and Kashmir, following apparent Chinese provocations over the issuing of visas to Indians living in that state.<sup>67</sup>

Some Chinese analysts consider the interaction of the Sino-Indian border dispute with Beijing's anxieties about Tibet to add up to the most plausible potential flashpoint.<sup>68</sup> Since 2006, Sino-Indian attitudes towards Tibet have diverged over such incidents as the Dalai Lama's visit to Arunachal Pradesh, India's condemnation of China's suppression of the 2008 Tibetan uprising and its refusal to suppress parallel Tibetan protests in India. The Tawang monastery, which is on Indian soil, is a particular irritant for China, due to its great significance to Tibetan Buddhism and possible role in the succession of the Dalai Lama.<sup>69</sup>

Another potential flashpoint may arise from clashes of Chinese and Indian power and interests further afield, notably in the Indo-Pacific maritime domain. China's port infrastructure investments in Myanmar, Sri Lanka, Bangladesh and Pakistan, and increasing naval presence in the Indian Ocean, have given rise to speculation about Sino-Indian maritime competition, although it is certainly premature to describe this as rivalry or a 'great game'.<sup>70</sup> While military confrontation between China and India over their activities in third countries or at sea is unlikely, an accumulation of incidents at sea could add to wider bilateral mistrust and tensions unless confidence-building measures improve.<sup>71</sup> A Chinese or Indian EP-3 or *USNS Impeccable*-style incident could occur if the two countries introduce surveillance and other naval activities closer to each other's shores,

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particularly once their nuclear-armed submarines become operational and patrol more widely. Recent media reports of an incident involving an Indian warship being challenged in the South China Sea may be exaggerated, but such encounters are likely a matter of time, as the Chinese and Indian navies begin to range further afield and as each power pursues its energy and other interests closer to the other's claimed spheres of influence.

*Short-circuiting global arms control*

Further, bilateral mistrust and the possibility of conflict discourage China and India from genuinely contributing to global and regional arms control and disarmament efforts; they will wish to preserve all options against a potential future nuclear competition. Because of the geopolitical chain reaction in which US arsenal developments affect China, which affects India and then Pakistan, Sino-Indian nuclear competition has the potential to short-circuit improvements in global nuclear arms control, notably a Comprehensive Nuclear-Test-Ban Treaty (CTBT), a Fissile Material Cut-off Treaty (FMCT) and potential further cuts in major nuclear arsenals. It also increases the intractability of the nuclear security dilemma in Asia by connecting South Asia's nuclear tensions to the North Asian nuclear tangle.

For as long as they fear nuclear coercion by the other, India and China will be wary of international legal constraints on their ability to deter. India is unlikely to lock itself into its current status of nuclear disadvantage. One of the main reasons cited for India's not joining the CTBT is its perilous security environment, including growing Chinese conventional and

nuclear capabilities. India is unlikely to ratify until confident in both its deterrent against China and ability to make further improvements without full-scale testing.<sup>72</sup> Future Chinese nuclear and conventional military assistance to Pakistan would also figure in any Indian decision to join the treaty. China's arms control and disarmament decisions in turn rely strongly on its security interests in East Asia and its threats perceptions of US nuclear posture, including extended deterrence covering US allies. But even if China were to consider cuts to its arsenal in the future, in response to further cuts by the United States and Russia, the imperative to retain nuclear options against India would discourage Beijing from constraining its medium-range and other 'regional' weapons.

The most current and concerning effect of China-India nuclear competition on arms control is its role in Pakistan's obstruction of negotiations on a global FMCT. Islamabad seems intent on building a large arsenal to offset India's conventional military superiority and to neutralise India's nuclear deterrent. In a cascading security dilemma, Pakistani threat perceptions in this regard could be expected to grow further if a nuclear competition between India and China were to intensify. For their part, India and China have both in the past held doubts about whether their fissile material stocks were sufficient to meet future defence needs, and even now neither is an ardent advocate of the treaty.

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**THE DANGERS OF DENIAL****Reducing risks: A Sino-Indian strategic stability dialogue**

In light of the emerging instabilities and risks in Sino-Indian nuclear relations, the two powers need to begin seriously engaging with one another in nuclear and strategic stability talks, as part of an improved strategic dialogue. Denial of a problem is part of the problem. The current silence on these issues in official discussions between the two countries is unsustainable and in the interests of neither.

Some Chinese security thinkers argue instead that the greater danger lies in discussing the potential for nuclear rivalry: too much attention to the issue may convince China that there is something to worry about and increase the chances of a self-fulfilling prophecy.<sup>73</sup> But this must be weighed against two risks. Such competition could well eventuate regardless of whether it is acknowledged, and if left ignored, opportunities to mitigate or prevent it will be lost. Second, New Delhi may view China's refusal to acknowledge its nuclear competition with India as a denial of India's status as a nuclear peer and a calculated act of disrespect, further reducing prospects for trust as well as encouraging India to strengthen its nuclear forces to ensure great-power status.

It may well take a strategic shock or crisis, or alternately some major progress in broader political trust, for China and India to become serious about dialogue on nuclear weapons and crisis management. But early efforts in this area are nonetheless worthwhile.

The unofficial or 'second track' level should be a relatively easy place to start, and a number of initial such discussions have been convened by

a Chinese university as well as one held this year by a US think tank.<sup>74</sup> Research and academic institutions in both countries need to pay closer attention to the other country's strategic affairs and challenges, to overcome the extraordinary paucity of expertise on both sides (with a handful of honourable exceptions). Better expertise would provide a basis for more regular and candid exchanges of views, including explicitly on nuclear issues.<sup>75</sup>

At the official level, a first step to building trust and effective strategic dialogue will be clearer indications of mutual respect for each other's interests in the broader relationship. From China's perspective, India will need to do more to accommodate China's legitimate Indian Ocean interests as a maritime trading and energy-importing nation. From India's perspective, China will need to recognise India as a nuclear peer and will need demonstrably to place its relationship with India ahead of or at least equal to its relationship with Pakistan. Ideally, Chinese support for India's aspiration to a permanent seat on the United Nations Security Council would also considerably reduce Indian suspicions of China.

Building on improved mutual respect, a dialogue on strategic stability and nuclear issues could commence within existing defence and strategic dialogues, in time evolving into a dedicated and regular mechanism of talks on these important subjects. Its purposes should be affirmed during leadership and ministerial visits. It is not in India's interests to suspend defence dialogues with China over political differences, as happened in 2010.

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Within such dialogue, the two powers should:

- Reassure of their strategic intentions, including in their relations with third countries. China would have an opportunity to explain the limits of its relations with Pakistan, and India to allay Chinese concerns about the nature of its partnership with the United States.
- Explain the nature and purpose of their nuclear weapons programs and doctrines, as well as of their missile defence efforts.
- Identify any bilateral clashes of interests where there was real risk of recourse to armed threats or conflict.
- Identify possible or perceived nuclear thresholds in such conflicts, and the ways in which those might be signaled.
- Pursue common understandings on ways to stabilise deterrence and workable crisis management and communication mechanisms. The telephone ‘hotline’ reported to be established between the Indian and Chinese prime ministers in 2010 is a welcome step in this regard, but serves little purpose unless both sides agree on the circumstances in which they need to use the hotline, and actually use it in those situations.
- And identify common ground and objectives in pursuit of nuclear arms control, non-proliferation and disarmament globally. This might include the conditions under which both would be prepared to ratify the CTBT, ideally at the same time.

The overall aim should be to reduce tensions and clarify the minimal role of nuclear weapons in the relationship, reducing risks of misperception and miscalculation. Steps toward this could include clarification of how each side’s declared no-first-use nuclear-weapons policy should apply to the other, including that the Chinese NFU applies to India and to disputed territory, as well as whether China considers anything other than the actual use of nuclear weapons to be equivalent to ‘first use’. Measures to stabilise the deterrence relationship should aim to eventually achieve a bilateral NFU agreement,<sup>76</sup> which ideally could serve as a building block towards a global norm or agreement on the non-first use of nuclear weapons. An essentially declaratory NFU agreement between China and India would have obvious limitations: ultimately there can of course be no guarantees about how a threatened state might behave in a crisis in which it feels its vital interests or its survival threatened. But, especially if linked to force postures suited for stable deterrence, efforts towards such a pact would be a tangible improvement on the current absence of strategic stability efforts.

### Conclusion

It is dangerous to assume indefinitely that there will be no substantial risk in the China-India nuclear relationship. Asymmetric threat perceptions, a history of conflict, unstable deterrence resulting from an imbalance in nuclear and conventional forces, drivers of further nuclear competition and some conceivable military flashpoints add up to a troubling set of problems. This is already negatively affecting disarmament and arms

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control efforts globally. Through their nuclear weapons programs and deployments both countries reveal an imperative to deter the other. India goes further and explicitly states that China is a target for its nuclear arsenal. But neither power currently seems to wish to take the next step and advocate dialogue with the other on how to ensure stable deterrence or how to cooperate on nuclear arms control. Beijing and New Delhi need to recognise the dangers of denial and start addressing the neglected but crucial nuclear dimension of their competitive coexistence.

## NOTES

<sup>1</sup> See, for example, David M Malone and Rohan Mukherjee, India and China: conflict and cooperation, *Survival* 51 (1) 2010, pp 137, 146; Jonathan Holslag, *China and India: prospects for peace*, Columbia University Press, 2010.

<sup>2</sup> The research and preparation of this paper were conducted under the Lowy Institute's partnership with the Nuclear Security Project of the Nuclear Threat Initiative [www.nuclearsecurityproject.org](http://www.nuclearsecurityproject.org). This publication is a precursor to a longer research article being prepared under an Australian National University project on Asian security supported by the MacArthur Foundation. This paper reflects the views of the authors only and not those of the Nuclear Security Project, the Nuclear Threat Initiative, or the MacArthur Foundation.

<sup>3</sup> See Jingdong Yuan, The dragon and the elephant: Chinese-Indian relations in the 21<sup>st</sup> century, *The Washington Quarterly* 30 (3) 2007, pp 131-144 for

a succinct overview of the progress and remaining challenges in the relationship.

<sup>4</sup> India has begun improving its previously deficient border defences and infrastructure. China has publicly renewed its claim to the Indian state of Arunachal Pradesh, including by attempting to block Asian Development Bank funding of infrastructure projects there. What has irked India even more is China's altered visa regime for Indian citizens of Jammu and Kashmir, including Indian military officers stationed there. This was perceived by India as a calculated rejection of its core interest in sovereignty there, leading New Delhi to suspend defence talks.

<sup>5</sup> See Mohan Malik, War talk: perceptual gaps in "Chindia" relations, *China Brief* 9 (20) October 2009.

<sup>6</sup> Indian attitudes towards China have changed considerably in the past five years, according to the Pew Global Attitudes Project, with only 34 per cent of Indians seeing China's rise in a favourable light in 2010, a steady decline from 56 per cent in 2005. Sujit Dutta, Managing and engaging rising China: India's evolving posture, *The Washington Quarterly* 34 (2) 2011, p 128. In a 2009 poll, only 37 per cent of Chinese respondents rated India as a major threat to China, far below the perceived threat from the United States or Japan. In addition, 34 per cent of respondents said they thought India would pose a threat within the next ten years. Fergus Hanson and Andrew Shearer, *China and the world: public opinion and foreign policy*, Lowy Institute for International Policy, 2009, pp 4, 5.

<sup>7</sup> For varying conclusions on this point, see Ashley J Tellis, The United States and Asia's rising giants, in Ashley J Tellis, Travis Tanner and Jessica Keough, *Strategic Asia 2011-12: Asia responds to its rising powers*, National Bureau of Asian Research, 2011, pp 3-34; M Taylor Fravel, China views India's rise: deepening cooperation, managing differences, in

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Ashley J Tellis, Travis Tanner and Jessica Keough, *Strategic Asia 2011-12: Asia responds to its rising powers*, pp 65-100; Harsh V Pant, India comes to terms with a rising China, in Ashley J Tellis, Travis Tanner and Jessica Keough, *Strategic Asia 2011-12: Asia responds to its rising powers*, pp 101-128.

<sup>8</sup> Chu Shulong and Rong Yu, China: dynamic minimum deterrence, in Muthiah Alagappa (ed), *The Long Shadow*, Stanford University Press, 2008, pp 161, 164.

<sup>9</sup> Taylor Fravel quoted in Erin Fried, China's response to a rising India: an interview with M. Taylor Fravel, National Bureau of Asian Research, 4 October 2011, <http://www.nbr.org/research/activity.aspx?id=177>.

<sup>10</sup> Lora Saalman, Divergence, similarity and symmetry in Sino-Indian threat perceptions, *Journal of International Affairs* 64 (2) 2011, p 185.

<sup>11</sup> Rajesh Rajagopalan, India: the logic of assured retaliation, in Muthiah Alagappa (ed), *The Long Shadow*, pp 188, 190, 195.

<sup>12</sup> Discussions with Chinese nuclear experts, Beijing, April 2009.

<sup>13</sup> Tim Sullivan and Michael Mazza, The next nuclear arms race, *Wall Street Journal*, 27 September 2010.

<sup>14</sup> M Taylor Fravel and Evan S Medeiros, China's search for assured retaliation: the evolution of Chinese nuclear strategy and force structure, *International Security* 35 (2) 2001, pp 48, 58.

<sup>15</sup> While both analysts and the Indian and Chinese governments tend to refer to their nuclear posture as one of 'minimum deterrence', which relies on the risk that a nuclear adversary might face nuclear retaliation, a good argument is made by some analysts that both of their postures are closer to that of 'assured retaliation', which relies instead on the certainty that an adversary will face nuclear retaliation. On China's posture, see Fravel and

Medeiros, p 41; on India's posture, see Rajagopalan, pp 197-8.

<sup>16</sup> Jeffrey Lewis, Chinese nuclear posture and force modernization, in Cristina Hansell and William C Potter (eds), *Engaging China and Russia on nuclear disarmament*, James Martin Center for Nonproliferation Studies Occasional Paper No. 15, 2009, p 38.

<sup>17</sup> Fravel and Medeiros, pp 83-4.

<sup>18</sup> Fravel and Medeiros, p 80.

<sup>19</sup> Office of the State Council (China), *White Paper on China's National Defense in 2010*, Beijing, 2011, Chapter X.

<sup>20</sup> See Brahma Chellaney, *The India-Pakistan-China strategic triangle and the role of nuclear weapons*, IFRI Proliferation Papers, Winter 2002, p 22.

<sup>21</sup> George Perkovich, The nuclear and security balance, in Francine R Frankel and Harry Harding (eds), *The China-India relationship: what the United States needs to know*, Columbia University Press, 2004, pp 178, 211-2.

<sup>22</sup> Stockholm International Peace Research Institute, *SIPRI Yearbook 2011*, Oxford University Press, 2011, p 342.

<sup>23</sup> Office of the Secretary of Defense (USA), *Annual report to Congress: military and security developments involving the People's Republic of China 2010*, p 34.

<sup>24</sup> Joseph Cirincione, *Indian missile deployments and the reaction from China*, Working paper, Conference on the Nuclearisation of South Asia: Problems and Solutions, Como, Italy, May 1999, <http://www.carnegieendowment.org/publications/index.cfm?fa=view&id=132>.

<sup>25</sup> Robert S Norris and Hans M Kristensen, Nuclear notebook: Chinese nuclear forces, 2010, *Bulletin of the Atomic Scientists* 66 (6) 2010, pp 134, 136.

<sup>26</sup> Office of the Secretary of Defense (USA), *Annual report to Congress: military and security*

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*developments involving the People's Republic of China 2010*, p 34.

<sup>27</sup> Robert S Norris and Hans M Kristensen, Estimated worldwide locations of nuclear weapons 2009, *Bulletin of the Atomic Scientists* 65 (6) 2009, pp 86, 90.

<sup>28</sup> Hans Kristensen, DF-21C missile deploys to central China. FAS Strategic Security Blog, 28 September 2010, [www.fas.org/blog/ssp/2010/09/df21c.php](http://www.fas.org/blog/ssp/2010/09/df21c.php).

<sup>29</sup> Nuclear Threat Initiative Research Library, Second Artillery Corps (SAC). NIT, 2007, <http://www.nti.org/db/china/sac.htm>.

<sup>30</sup> Cirincione, Indian missile deployments and the reaction from China; Tellis, *India's emerging nuclear posture*, pp 59-60.

<sup>31</sup> Office of the Secretary of Defense (USA), *Annual report to Congress: military and security developments involving the People's Republic of China 2010*, p 34; Norris and Kristensen, Nuclear notebook: Chinese nuclear forces, 2010, p 137; doubts are expressed in Office of the Secretary of Defense (USA), *Annual Report to Congress: military and security developments involving the People's Republic of China 2011*, p 34.

<sup>32</sup> Office of the Secretary of Defense (USA), *Annual Report to Congress: military and security developments involving the People's Republic of China 2011*, p 34.

<sup>33</sup> And the submarines would be vulnerable to US and Japanese anti-submarine warfare capabilities if operating far from China. Hans Kristensen, China's noisy nuclear submarines, FAS Strategic Security Blog, 21 November 2009, <http://www.fas.org/blog/ssp/2009/11/subnoise.php>.

<sup>34</sup> Russell Hsiao, Aims and motives of China's recent missile defense test, *China Brief* X (2), 21 January 2010, pp 1-2.

<sup>35</sup> Rajagopalan, India: the logic of assured retaliation, p 188.

<sup>36</sup> New Delhi has, however, modified its doctrine to allow itself the option of nuclear retaliation if an adversary conducts a 'major' chemical or biological attack.

<sup>37</sup> Ministry of External Affairs (India), The Cabinet Committee on security reviews operationalization of India's nuclear doctrine, Press Release, 4 January 2003.

<sup>38</sup> Rajesh M Basrur, India's escalation resistant nuclear posture, in Michael Krepon, Rodney W Jones and Ziad Haider (eds), *Escalation control and the nuclear option in South Asia*, Henry L. Stimson Center, Washington DC, 2004, pp 56, 64; Scott Sagan, The evolution of Pakistani and Indian nuclear doctrine, in Scott Sagan (ed), *Inside nuclear South Asia*, Stanford University Press, 2009, pp 219, 246.

<sup>39</sup> Rajagopalan, India: the logic of assured retaliation, p 199.

<sup>40</sup> Stockholm International Peace Research Institute, *SIPRI Yearbook 2011*, p 344.

<sup>41</sup> Stockholm International Peace Research Institute, *SIPRI Yearbook 2010*, p 356.

<sup>42</sup> 'Fighter bombers constitute the only fully operational leg' of India's nuclear deterrent according to Robert S Norris and Hans M Kristensen, Indian nuclear forces, 2010, *Bulletin of the Atomic Scientists* Vol. 66, 2010, p 76. India's 35 Mirage 2000H Vajra are reportedly certified to deliver nuclear bombs and some of its four squadrons of Jaguar IS Shamsheer aircraft may be similarly enabled; the Sukhoi-30, MiG-27 and MiG-29 aircraft would also be nuclear-capable: Stockholm International Peace Research Institute, *SIPRI Yearbook 2011*, p 344; Perkovich, The nuclear and security balance, p 193; Sumit Ganguly, Assessing potential Indian nuclear force postures, Centre d'Études et de Recherches Internationales, Sciences-Po, France, October 2000, p 6, <http://www.ceri-sciencespo.com/archive/octo00/artsg.pdf>.

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<sup>43</sup> Agni-III hits target, meets all objectives, *Economic Times* (India), 8 February 2010, <http://economictimes.indiatimes.com/news/politics/nation/Agni-III-hits-target-meets-all-objectives/articleshow/5546745.cms>.

<sup>44</sup> Rajat Pandit, With China in mind, Agni-V test scheduled for December, *The Times of India*, 4 June 2011, [http://articles.timesofindia.indiatimes.com/2011-06-04/india/29620558\\_1\\_agni-v-canister-launch-missile-system-dong-feng-31a](http://articles.timesofindia.indiatimes.com/2011-06-04/india/29620558_1_agni-v-canister-launch-missile-system-dong-feng-31a).

<sup>45</sup> Agni-III hits target, meets all objectives, *Economic Times* (India).

<sup>46</sup> Neha Kumar, Engaging China's nuclear and missile threat, *India Quarterly: A Journal of International Affairs*, 37 2009, p 50.

<sup>47</sup> Storage facilities are reportedly near Jodhpur, Rajasthan. Norris and Kristensen, Estimated worldwide locations of nuclear weapons, 2009, p 91.

<sup>48</sup> Jonathan Holslag, The persistent military and security dilemma between China and India, *Journal of Strategic Studies* 32 (6) 2009, pp 811, 834.

<sup>49</sup> C Raja Mohan, *India's nuclear navy: catching up with China*. ISAS Insights No 78, 20 July 2009, pp 5-6.

<sup>50</sup> Raja Mohan, *India's nuclear navy: catching up with China*, pp 5-6; India launches nuclear submarine, *BBC News*, 26 July 2009, <http://news.bbc.co.uk/2/hi/8169360.stm>.

<sup>51</sup> A similar point is made in an excellent study by Andrew C Winner, The future of India's undersea deterrent, in James Holmes and Toshi Yoshihara (eds), *Nuclear strategy in the second nuclear age*, Georgetown University Press, forthcoming in 2012.

<sup>52</sup> Taylor Dinerman, India's missile defense: changing the nature of the Indo-Pakistani conflict, *The Space Review*, 26 January 2009, <http://www.thespacereview.com/article/1292/1>.

<sup>53</sup> Peter J Brown, China can't stop India's missile system, *Asia Times Online*, 16 January 2009, [www.atimes.com/atimes/China/KA16Ad01.html](http://www.atimes.com/atimes/China/KA16Ad01.html).

<sup>54</sup> Peter J Brown, India targets China's satellites, *Asia Times Online*, 22 January 2010, [http://www.atimes.com/atimes/South\\_Asia/LA22Df01.html](http://www.atimes.com/atimes/South_Asia/LA22Df01.html).

<sup>55</sup> Bharath Gopalaswamy, Missile defense in India. *Bulletin of Atomic Scientists web edition*, 27 February 2009, <http://www.thebulletin.org/web-edition/features/missile-defense-india>.

<sup>56</sup> Eric Hagt quoted in Brown, China can't stop India's missile system.

<sup>57</sup> Brown, China can't stop India's missile system.

<sup>58</sup> Ibid.

<sup>59</sup> International Panel on Fissile Materials, *Global fissile material report 2010, IPFM*, 2010, pp 98, 117.

<sup>60</sup> Sagan, The evolution of Pakistani and Indian nuclear doctrine, p 250.

<sup>61</sup> Sunil Dasgupta and Stephen P Cohen, Is India ending its strategic restraint doctrine? *The Washington Quarterly* 34 (2) 2011, pp 163, 174.

<sup>62</sup> George Perkovich, *Toward realistic US-India relations*, Carnegie Endowment for International Peace, 2010, p 25.

<sup>63</sup> See, for example, Anil Joseph, Chinese expert cautions India against becoming US pawn, *Rediff.com*, 8 March 2007, <http://www.rediff.com/news/2007/mar/08china.htm>.

<sup>64</sup> See, for example, Sujit Dutta, Managing and engaging rising China: India's evolving posture, *The Washington Quarterly* 34 (2) 2011, pp 127, 135.

<sup>65</sup> Jingdong Yuan, Beijing's balancing act: courting New Delhi, reassuring Islamabad, *Journal of International Affairs* 64 (2) 2011, pp 37, 41.

<sup>66</sup> See, for example, Perkovich, The nuclear and security balance, pp 189-90; Rajagopalan, India: the logic of assured retaliation, p 195.

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<sup>67</sup> See Siddarth Varadarajan, India tells China: Kashmir is to us what Tibet, Taiwan are to you, *The Hindu*, 15 November 2010, <http://www.hindu.com/2010/11/15/stories/2010111562471200.htm>; Ministry of External Affairs (India), Address by foreign secretary on 'India-China relations' at ORF conference on China, 3 December 2010, <http://www.mea.gov.in/mystart.php?id=530116760>; Rajiv Sikri, The Tibet factor in India-China relations, *Journal of International Affairs* 64 (2) 2011, pp 55, 65-6.

<sup>68</sup> Discussions with Chinese analysts, Beijing, September 2010.

<sup>69</sup> Edward Wong, China and India dispute enclave on edge of Tibet, *New York Times*, 3 September 2009, <http://www.nytimes.com/2009/09/04/world/asia/04c-hinaindia.html?pagewanted=1>.

<sup>70</sup> See, for example, Robert Kaplan, *Monsoon: the Indian Ocean and the battle for supremacy in the 21<sup>st</sup> century*, Black Inc., 2010, pp 12-3.

<sup>71</sup> See Ashley Townshend, *Sino-Indian maritime relations: managing mistrust in the Indian Ocean*, Strategic Snapshot #6, Lowy Institute for International Policy, December 2010.

<sup>72</sup> Vinod Kumar, India and the CTBT: the debate in New Delhi, *Bulletin of the Atomic Scientists web edition*, 4 November 2009, <http://www.thebulletin.org/web-edition/features/india-and-the-ctbt-the-debate-new-delhi>.

<sup>73</sup> Discussion with Chinese analyst, Beijing, April 2009.

<sup>74</sup> See Carnegie Endowment for International Peace, China and India's nuclear posture and practice, 2 June 2011, Beijing, <http://carnegieendowment.org/2011/06/02/china-and-india-s-nuclear-posture-and-practice/4r2t> for a summary of the discussion and Carnegie Endowment for International Peace, Understanding Sino-Indian nuclear dynamics, 28 July 2011, Washington, DC,

<http://carnegieendowment.org/2011/07/28/understanding-sino-indian-nuclear-dynamics/3vmt> for a discussion of the event's outcomes.

<sup>75</sup> Lora Saalman has recommended a mix of official and track 2 initiatives to improve strategic stability, such as joint comparative studies on minimum deterrence, NFU and disarmament; a track 1.5 or 2 nuclear strategic dialogue to pave the way for official discussions; a bilingual glossary of nuclear terms agreed on by Indian and Chinese experts; negotiation simulations of border, sea, air, space and nuclear incidents; sharing of official military strategy documents. Saalman, Divergence, similarity and symmetry in Sino-Indian threat perceptions, pp 187-9.

<sup>76</sup> China previously rejected an Indian proposal for a bilateral or trilateral (with Pakistan) NFU agreement following its 1998 nuclear tests: Pranay Sharma, India: China 'concerned' over Singh's proposal for common nuclear doctrine, *The Telegraph (Calcutta)*, 6 June 2004, FBIS Doc No FBIS-NES-2004-0606.

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