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## Forging a Diplomatic Shield for American Satellites: The Case for Reevaluating the 2006 National Space Policy in Light of a Chinese Anti-Satellite System

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**FORGING A DIPLOMATIC SHIELD FOR AMERICAN  
SATELLITES: THE CASE FOR REEVALUATING THE 2006  
NATIONAL SPACE POLICY IN LIGHT OF A CHINESE  
ANTI-SATELLITE SYSTEM**

FRANK M. WALSH\*

**ABSTRACT**

**T**HE JANUARY 11, 2007 Chinese anti-satellite (ASAT) test harkened the dawn of a new era in space law and international relations, as hundreds of satellites upon which both the United States and China rely, are now vulnerable to attack. While the United States' 2006 National Space Policy rejects any international space regime, this Article argues that the United States should pursue a comprehensive ASAT test ban treaty to protect the vulnerable satellites that coordinate all of America's military assets. When viewed through a game theory lens, China and the United States might militarize space, even though it is in both of their interests not to do so, because the two countries do not trust each other. The best way to break out of this collective action problem is to pursue an international treaty regime banning the testing, deployment, and use of ASAT systems. Additionally, an ASAT treaty might also break the impasse in the United Nations Conference on Disarmament, where disagreement on space disarmament has stymied talks on terrestrial strategic arms.

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## ARTICLE

*"This is the first real escalation in the weaponization of space that we've seen in 20 years. It ends a long period of restraint."*

—Jonathan McDowell, Harvard Astronomer<sup>1</sup>

Early in the evening of January 11, 2007, the Chinese military ushered in an explosive new chapter in the space age when it launched a single ballistic missile from a mobile launcher near the Xichang Space Center.<sup>2</sup> The missile raced upward on an intercept course with the aging Feng Yun 1C (FY-1C) weather satellite.<sup>3</sup> A roughly cube shaped satellite measuring 1.5 meters a side,<sup>4</sup> the FY-1C had neared the end of its operational life after being launched in 1999<sup>5</sup>—but it would end its career in an explosive flourish. The ASAT warhead atop the ballistic missile fired from Xichang slammed into the FY-1C five hundred miles above the Sichuan province, and the kinetic energy from the warhead ripped the FY-1C apart.<sup>6</sup> While the Chinese ASAT missile, dubbed the SC-19 by American intelligence, had been flight tested at least twice before, the January 11 test was the first to actually hit an orbiting satellite.<sup>7</sup> As the shards of what was once the FY-1C began to drift down to Earth, a shocked world prepared to deal with a China capable of weaponizing space.<sup>8</sup>

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<sup>1</sup> William J. Broad & David E. Sanger, *Flexing Muscle, China Destroys Satellite in Test*, N.Y. TIMES, Jan. 19, 2007, at A1.

<sup>2</sup> See Craig Covault, *Chinese Test Anti-Satellite Weapon*, AVIATION WK. & SPACE TECH., Jan. 17, 2007, <http://www.spaceref.com/news/viewnews.html?id=1188>.

<sup>3</sup> *Id.* The perceived invulnerability of American space satellites stemmed from the fact that no country had conducted an anti-satellite test in over twenty years; the Soviet Union had conducted roughly a dozen anti-satellite tests from 1968 to 1982, and the United States had conducted experiments between 1985 and 1986. See Broad & Sanger, *supra* note 1, at 1.

<sup>4</sup> Yujie Liu et al., *Fy-1c Polar Orbiting Meteorological Satellite of China: Satellite, Ground System, and Preliminary Applications*, Address at the 20th Asian Conference in Remote Sensing (Nov. 22–25, 1999), <http://www.gisdevelopment.net/aars/acrs/1999/p6/ps6211pf.htm>.

<sup>5</sup> Theresa Hitchens et al., *Chinese Anti-Satellite Weapons Test in Space is Provocative and Irresponsible*, CTR. FOR DEF. INFO., Jan. 22, 2007, [http://www.cdi.org/program/document.cfm?DocumentID=3800&StartRow=1&ListRows=10&appendURL=&Orderby=D.DateLastUpdated&ProgramID=68&from\\_page=index.cfm](http://www.cdi.org/program/document.cfm?DocumentID=3800&StartRow=1&ListRows=10&appendURL=&Orderby=D.DateLastUpdated&ProgramID=68&from_page=index.cfm).

<sup>6</sup> Covault, *supra* note 2.

<sup>7</sup> Michael R. Gordon & David S. Cloud, *U.S. Knew of China's Missile Test, But Kept Silent*, N.Y. TIMES, Apr. 23, 2007, at A1.

<sup>8</sup> David E. Sanger & Joseph Kahn, *U.S. Officials Try to Interpret China's Silence Over Satellite*, N.Y. TIMES, Jan. 22, 2007, at A3 (reporting that the United States, Canada, Japan, and Australia filed protests against the test within days); Joseph Kahn, *A New Player at Star Wars: China Shows Assertiveness in Reported Weapons Test*, N.Y. TIMES, Jan. 20, 2007, at A7 ("This is the other face of China, the hard power

The Chinese kill vehicle demonstrated its ability to hit 300 of the 845 active satellites in space, including low-orbiting American reconnaissance satellites.<sup>9</sup> The destruction of the FY-1C was the first ASAT test since the Soviet Union<sup>10</sup> and the United States discontinued their ASAT programs in the 1980s.<sup>11</sup> The onus is now on the United States, with its previously secure space assets suddenly in jeopardy, to develop a space policy that maintains its military dominance and effectively counters China's new capabilities.

Ironically, the policy-changing Chinese ASAT test came only five months after the United States issued its first National Space Policy in over ten.<sup>12</sup> The new National Space Policy stressed the importance of independence in space policy, arguing that the United States should "preserve its rights, capabilities, and freedom of action in space"<sup>13</sup> and "oppose the development of new legal regimes or other restrictions that seek to prohibit or limit U.S. access to or use of space."<sup>14</sup> The administration's main reason for rejecting the international regulation of space weapons was that there simply was no need to do so: since there was no space arms race, then there was no need to engage in space arms control.<sup>15</sup> The Chinese ASAT test has fundamentally changed the implications of unfettered space activities; by demanding that the United States have absolute freedom to pursue weapons platforms in space, the National Space Policy also

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side that they usually keep well hidden,' said Chong-Pin Lin, an expert on China's military in Taiwan. They talk more about peace and diplomacy, but the push to develop lethal high-tech capabilities has not slowed down at all.").

<sup>9</sup> See William J. Broad, *Look Up! It's No Meteor, It's an Arms Race*, N.Y. TIMES, Jan. 21, 2007, at WK3; David Constantine, *Moving Targets*, N.Y. TIMES, Jan. 21, 2007, at WK3.

<sup>10</sup> Fed. of Am. Scientists, Co-Orbital ASAT, <http://www.fas.org/spp/guide/russia/military/asat/coorb.htm> (last visited Nov. 5, 2007).

<sup>11</sup> ALLAN S. KRASS, VERIFICATION: HOW MUCH IS ENOUGH? 103 (1985). The United States flight tested a "direct-ascent" ASAT system which used a small missile launched from fighter aircraft approximately thirty times before the program was discontinued. *Id.*; see also Jurgen Scheffran, *Verification and Risk for an Anti-Satellite Weapons Ban*, 17 BULL. OF PEACE PROPOSALS 165, 167 (1986).

<sup>12</sup> U.S. OFFICE OF SCI. & TECH. COUNCIL, UNITED STATES NATIONAL SPACE POLICY 1 (2006), available at <http://www.ostp.gov/html/us%20National%20Space%20Policy.pdf> [hereinafter NATIONAL SPACE POLICY].

<sup>13</sup> *Id.* at 1-2.

<sup>14</sup> *Id.* at 2.

<sup>15</sup> See Broad & Sanger, *supra* note 1, at 1. Michael Krepon notes that the Bush administration had long argued that the world needed no space-weapons treaty because no such arms existed and because the last tests were two decades ago; however, "that argument is no longer operative." *Id.*

limits the United States' ability to deny China the absolute freedom to pursue the same weapons.<sup>16</sup> Space policy is no longer as easy as maximizing options. The United States must now diagnose those areas where its national security interests are best served by limiting military options.

This Article argues that the United States' primary goal must be to protect its vast satellite assets. The significance of the United States' satellites was showcased during the 1992 Persian Gulf War, where they helped American troops dismantle the fourth largest army in the world with less than 148 combat deaths.<sup>17</sup> Satellites and the information they provide have only grown in importance since 1992. In 2001, the United States implemented a comprehensive reform initiative to incorporate new information technologies into all facets of its military operations.<sup>18</sup> This initiative has used information technologies to vertically and horizontally network America's armed forces,<sup>19</sup> giving the United States an unmatched advantage in any large-scale conventional conflict.<sup>20</sup>

Protecting American satellites should take precedence over preserving freedom of action in space, which the current National Space Policy reveres.<sup>21</sup> Unfettered action in space is only a means to the end of national security. A networked military, relying on real time satellite information, is a superior means of pursuing national security because the United States' "dependence on satellites for communications and the use of satellites for intelligence gathering far outweigh any potential benefits of placing power-projection systems in space."<sup>22</sup> A deployable Chi-

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<sup>16</sup> See Eric Hagt, *China's ASAT Test: Strategic Response*, CHINA SEC., Winter 2007, at 31 [hereinafter *China's ASAT Test*]. Eric Hagt argues that Chinese participation in a space arms race is a fait accompli. *Id.*

<sup>17</sup> *Casualties in Principal Wars of the U.S.*, in WORLD ALMANAC & BOOK OF FACTS 166 (2003).

<sup>18</sup> See generally DEP'T OF DEF., TRANSFORMATION PLANNING GUIDANCE (2003), available at [http://www.oft.osd.mil/library/library\\_files/document\\_129\\_Transformation\\_Planning\\_Guidance\\_April\\_2003\\_1.pdf](http://www.oft.osd.mil/library/library_files/document_129_Transformation_Planning_Guidance_April_2003_1.pdf).

<sup>19</sup> See *infra* notes 61 to 65 and accompanying discussion on the integration of information technologies into the American military.

<sup>20</sup> See Walter P. Fairbanks, *Implementing the Transformation Vision*, JOINT FORCE Q., Summer 2006, at 36–42; see also John Keller, *FLIR Systems Multisensor Device to Help Army Soldiers with Urban Warfare*, MIL. & AEROSPACE ELECS., Nov. 2006, at 24–26.

<sup>21</sup> See NATIONAL SPACE POLICY, *supra* note 12, at 1.

<sup>22</sup> John Pike, *The Paradox of Space Weapons*, in STOCKHOLM INTERNATIONAL PEACE RESEARCH INSTITUTE YEARBOOK 2003: ARMAMENTS, DISARMAMENT AND INTERNATIONAL SECURITY 433, 438 (2003) ("While in the future the loss of communica-

nese ASAT system threatens the United States' decided space advantage and thereby threatens its dominance in conventional military capability. On a more fundamental level, the Chinese ASAT test could stand as the ominous beginning of a space arms race where the United States and China vie for military supremacy in space. This eventuality is also a destabilizing scenario that would undermine the United States' terrestrial military dominance. By allowing all space assets to become viable targets, the United States would be forced to engage in the costly<sup>23</sup> and technologically-daunting task of developing counter-ASAT weapons. Consequently, this Article argues that an ASAT treaty would best safeguard the United States' national security interests by diplomatically securing its satellites.

This Article approaches the issue of an ASAT treaty from a conservative perspective in order to show why an ASAT treaty should appeal to liberals and conservatives alike. While liberal beliefs have historically been more receptive to comprehensive treaty regimes,<sup>24</sup> traditional conservative thought questions the value of treaties and resists attempts to restrict national freedom.<sup>25</sup> For example, Hank Cooper, the former director of President Ronald Reagan's Strategic Defense Initiative and current chairman of the missile defense advocacy group High Frontier, said, "I hope the Chinese test will be a wake up call to people . . . . I'd like to see us begin a serious anti-satellite program. We've been leaning on this administration. This argument to prevent the weaponization of space is really silly."<sup>26</sup> An ASAT system also advances the conservative, and especially neo-conservative, goal of maintaining the United States conventional military dominance.<sup>27</sup> Thus, for conservatives, the issue is not

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tions and intelligence systems would be devastating, the absence of power projection from space would not significantly inhibit U.S. Policy.").

<sup>23</sup> See Broad & Sanger, *supra* note 1, at A3.

<sup>24</sup> See, e.g., NAT'L SCI. & TECH. COUNCIL, FACT SHEET: NATIONAL SPACE POLICY 4-9 (1996) available at <http://history.nasa.gov/appf2.pdf> [hereinafter NATIONAL SPACE POLICY 1996] (endorsing diplomatic solutions to international problems).

<sup>25</sup> See Victoria Samson, *The Skies Just Got More Dangerous*, MINUTEMAN.ORG, Nov. 29, 2006, reprinted at Ctr. for Def. Info. Online, Dec. 11, 2006, [http://www.cdi.org/program/document.cfm?DocumentID=3749&StartRow=1&ListRows=10&appendURL=&Orderby=D.DateLastUpdated&ProgramID=68&from\\_page=index.cfm](http://www.cdi.org/program/document.cfm?DocumentID=3749&StartRow=1&ListRows=10&appendURL=&Orderby=D.DateLastUpdated&ProgramID=68&from_page=index.cfm) (arguing that the 2006 Space Policy "contains a unilateralist and militaristic bent that could prove quite dangerous").

<sup>26</sup> See Teresa Hitchens, *US-Sino Relations in Space: From "War of Words" to Cold War in Space?*, CHINA SEC., Winter 2007, at 20.

<sup>27</sup> See Gordon & Cloud, *supra* note 7, at A1 (suggesting that the administration chose not to protest the Chinese ASAT test in order to maximize its military space

simply resisting treaties; rather, the issue is whether resisting treaties is as important as protecting the United States' satellite assets. This Article argues that, even when approached from a purely conservative national security perspective, an ASAT treaty best safeguards the United States' national security.

Part I of this Article will place the January 11, 2007 ASAT test within the context of China's grand strategy. The Article will argue that the decision to launch an ASAT was the product of numerous factors, including a desire for greater regional power, a fear of possible exclusion from space, and a response to the United States' missile defense policy.<sup>28</sup> Part II discusses the need to revise the 2006 National Space Policy in order to properly prioritize the United States' space interests so that satellite protection takes precedence over operational freedom in space. Part III describes the difficulties of a non-diplomatic solution to the Chinese ASAT threat. It is difficult to hit an incoming ASAT weapon before it hits the satellite because of the ASAT's quick flight path and rapid speed.<sup>29</sup> Also, the constraints of current technology make it difficult to "harden" satellites against attack.<sup>30</sup> Consequently, all non-diplomatic solutions to the Chinese ASAT problem fail to secure the United States' satellites. Part IV argues that a diplomatic solution to the Chinese ASAT threat best safeguards the United States' interests in space. The United States and China stand at the brink of a space arms race where each side may develop space weapons because it fears the other country might develop such weapons.<sup>31</sup> A space weapons

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options after the test); see also Ernest A. Young, *Judicial Activism and Conservative Politics*, 73 U. COLO. L. REV. 1139, 1194 (2002) (citing IRVING KRISTOL, REFLECTIONS OF A NEOCONSERVATIVE 75-77 (1983) (discussing the neo-conservative affinity for proactive military action)). Neo-conservatives embrace a more proactive foreign policy that does not accept the status quo of aggressive states acting against the United States' interests. See STEFAN HALPER & JONATHAN CLARKE, AMERICA ALONE: THE NEO-CONSERVATIVES AND THE GLOBAL ORDER II (2005). Proponents of a neo-conservative foreign policy, like Paul Wolfowitz and Richard Perle, argue that the United States should use its military to expand the rule of democracy as a way to safeguard American interests. See Frank Walsh, Note, *Synchronizing Colombian Narcoterrorism Policy with the War on Terror: The Legality of Military Deployment by the United States and the Organization of American States*, 4 GEO. J. L. & PUB. POL'Y 453, 454 (2006); see also Winston P. Nagan & Craig Hammer, *The New Bush National Security Doctrine and the Rule of Law*, 22 BERKELEY J. INT'L L. 375, 431-32 (2004) (discussing the neo-conservative desire to militarily change the status quo when that state of affairs does not advance American interests).

<sup>28</sup> See *infra* text accompanying notes 37-60.

<sup>29</sup> See *infra* text accompanying notes 90-97.

<sup>30</sup> See *infra* text accompanying notes 78-105.

<sup>31</sup> See *infra* Part IV.

race would further destabilize space policy as other space powers, like Russia, might feel the need to deploy their own space weapons.<sup>32</sup> To break out of this cycle, both the United States and China should sign a treaty that satisfies both of their foreign policy goals. Such an ASAT treaty would not only safeguard the United States' satellite assets but also preclude a looming arms race.<sup>33</sup>

# I. CHINA'S DECISION TO TEST AN ASAT SYSTEM WAS MOTIVATED BY A DESIRE TO ASYMMETRICALLY THREATEN THE UNITED STATES MILITARY'S DEPENDENCE ON SATELLITES AND INTEGRATED INFORMATION TECHNOLOGIES

In order to understand what the ASAT system means for Sino-American relations, the system must be considered within the greater context of Chinese foreign policy. While Chinese officials have vehemently argued the peaceful intent of the Chinese space program,<sup>34</sup> the ASAT test vindicated the Department of Defense's 2003 skepticism of China's sincerity:

Publicly, China opposes the militarization of space and seeks to prevent or slow the development of U.S. anti-satellite ("ASAT") systems and space-based missile defenses. Privately, however, China's leaders probably view ASATs—and offensive counter-space systems, in general—as well as space-based missile defense as inevitabilities.<sup>35</sup>

This Article now examines why China would pursue a public policy of condemning space weapons while secretly pursuing ASAT technologies.

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<sup>32</sup> See Pike, *supra* note 22, at 438–41 (discussing how a space arms race is inherently destabilizing).

<sup>33</sup> Contra Jeff Kueter, *The War in Space Has Already Begun*, MARSHALL INST. POL'Y OUTLOOK, Oct. 2006, at 1–2, available at <http://www.marshall.org/pdf/materials/459.pdf> (arguing that the space arms race has already begun).

<sup>34</sup> See, e.g., Major General Chang Xianqi & Sui Junquin, *Active Exploration and Peaceful Use of Outer Space*, CHINA SEC., Spring 2006.

<sup>35</sup> DEP'T OF DEF., ANNUAL REPORT ON THE MILITARY POWER OF THE PEOPLE'S REPUBLIC OF CHINA 36 (2003), available at <http://www.globalsecurity.org/military/library/report/2003/20030730chinaex.pdf>. This idea stems from the often quoted "24 Character" strategy of Deng Xiaoping: "observe calmly; secure our position; cope with affairs calmly; hide our capacities and bide our time; be good at maintaining a low profile; and never claim leadership." See DEP'T OF DEF., ANNUAL REPORT TO CONGRESS: MILITARY POWER OF THE PEOPLE'S REPUBLIC OF CHINA 9 (2006) (stating that China's foreign policy "strategy suggests both a short-term desire to downplay China's ambitions and a long-term strategy to build up China's power to maximize options for the future").



### A. CHINA'S MOTIVATION TO PURSUE AN ASAT SYSTEM

The reason for China's decision to test an ASAT system is likely an amalgam of domestic and international forces that ultimately led Beijing to find that the political calculus weighed in favor of carrying out the test. Dissecting major policy decisions like this is inherently difficult even in more transparent governments like the United States. For a closed society like China, comprehensively divining the complex policy motivations behind the ASAT launch is nearly impossible.<sup>36</sup> There are, however, several individual factors that can be identified as leading to China's decision to test its ASAT system.

First, China's decision to test an ASAT stemmed from its desire to exert greater influence within East Asia generally<sup>37</sup> and over Taiwan specifically.<sup>38</sup> American military dominance vis-à-vis the Chinese military represents a challenge to both of these goals. While Beijing was unwilling to accept the status quo of

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<sup>36</sup> See Joan Johnson-Freese, *Strategic Communication with China: What Message About Space?*, CHINA SEC., Spring 2006, at 39 (discussing the lack of transparency in Chinese political processes); Eric Hagt, *Mutually Assured Vulnerabilities in Space*, CHINA SEC., Spring 2006, at 97.

<sup>37</sup> See Pavel Kamennov, *China's Military Policy: Where Taiwan Fits In*, 34 FAR E. AFF. 62, 62, 67 (2006) (stating that China's "national development strategy . . . is aimed at making China a great power by the middle of the 21st century that will occupy a dominant position in the Asia-Pacific Region"); DEP'T OF DEF., ANNUAL REPORT TO CONGRESS: MILITARY POWER OF THE PEOPLE'S REPUBLIC OF CHINA 7 (2006) (citing China's "global aspirations"); Charles Snyder, *CIA Director Warns US of China Threat*, TAIPEI TIMES, Feb. 8, 2002, at 1.

<sup>38</sup> See INFO. OFFICE OF THE STATE COUNCIL (P.R.C.), CHINA'S NATIONAL DEFENSE IN 2006 § I, ¶ 8 (2006), <http://english.people.com.cn/whitepaper/defense2006.html> (stating that any suggestion of a movement towards Taiwanese independence represents "a grave threat to China's sovereignty and territorial integrity, as well as to peace and stability across the Taiwan Straits and in the Asia-Pacific region as a whole"); Jim Yardley, *China Denies "Taiwan" Law On Secession is a "War Bill,"* N.Y. TIMES, Mar. 14, 2005, at A12 (describing China's 2005 law forbidding the secession of Taiwan); INFO. OFFICE OF THE STATE COUNCIL (P.R.C.), CHINA'S NATIONAL DEFENSE IN 2004 § II, ¶ 4 (2004), [http://english.gov.cn/official/2005-07/28/content\\_18078.htm](http://english.gov.cn/official/2005-07/28/content_18078.htm) ("Should the Taiwan authorities go so far as to make a reckless attempt that constitutes a major incident of 'Taiwan independence,' the Chinese people and armed forces will resolutely and thoroughly crush it at any cost."); James H. Hughes, *China's Ballistic Missile Threat*, 27 J. SOC. POL. ECON. STUD. 3, 6 (2002). Hughes quoted Chinese President Jiang Zemin as saying that China had to:

disclose, when appropriate, some information on strategic weaponry so that the U.S. will exercise some caution in decision making, and be aware that it would have to pay a price if it decided to intervene in a military conflict . . . [t]he purpose is to prevent the U.S. from being deeply involved [in] Taiwan.

*Id.*

American military hegemony<sup>39</sup> after the American military's effectiveness was showcased in Operation Desert Storm,<sup>40</sup> China knew that it could not militarily challenge the United States force-on-force.<sup>41</sup> Instead, Beijing sought out weaknesses in the American military so China could fight an asymmetrical war. In 1998, China's Central Committee gave its highest priority to the development of an ASAT<sup>42</sup> and pursued several ASAT programs, including the use of lasers to blind satellites,<sup>43</sup> jamming and electromagnetic pulses to disable electronics,<sup>44</sup> and a "parasitic satellite" kinetic-energy vehicle.<sup>45</sup> In the end, China succeeded in using a ballistic missile to hit a low-flying satellite.<sup>46</sup> The test of an ASAT system was thus partly a demonstration that China had gained a new asymmetrical capability against America's military.

Second, the ASAT test was a response to the perceived threat that the United States might someday attempt to deny China access to space.<sup>47</sup> While space dominance, and by implication the denial of space access to others, was implied in American military publications in the late 1990s and early 2000s,<sup>48</sup> the

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<sup>39</sup> See DEP'T OF DEF., ANNUAL REPORT TO CONGRESS: MILITARY POWER OF THE PEOPLE'S REPUBLIC OF CHINA 10 (2006) (quoting Deputy Political Commissar of the People's Liberation Army Air Force Liu Yazhou as saying: "[W]hen a nation grows strong enough, it practices hegemony. The sole purpose of power is to pursue even greater power . . . when a country begins to rise, it should first set itself in an invincible position").

<sup>40</sup> MATTHEW MOWTHORPE, *THE MILITARIZATION AND WEAPONIZATION OF SPACE* 167 (2004).

<sup>41</sup> See Johnson-Freese, *supra* note 36, at 51.

<sup>42</sup> See Paul Beaver, *China Develops Anti-satellite Laser System*, JANE'S DEF. WKLY., Dec. 2, 1998, at 18; Paul Richter, *China May Seek Satellite Laser, Pentagon Warns*, L.A. TIMES, Nov. 28, 1998.

<sup>43</sup> *Stormy Weather: China and Space*, ECONOMIST, Jan. 27, 2007, at 42.

<sup>44</sup> Hughes, *supra* note 38, at 4.

<sup>45</sup> James H. Hughes, *The Current Status of China's Military Space Program*, 27 J. SOC. POL. ECON. STUD. 393, 405 (2002).

<sup>46</sup> MOWTHORPE, *supra* note 40, at 104. The direct ascent missile technology in the Chinese ASAT could have its roots in the Soviet Union's "co-orbital" method of interception. *Id.*

<sup>47</sup> Interview with Eric Hagt, Dir. of China Program at the World Sec. Inst., in Arlington, Va. (Mar. 23, 2007) (notes on file with author).

<sup>48</sup> See Johnson-Freese, *supra* note 36, at 48 (discussing Chinese perceptions of American actions) (quoting U.S. AIR FORCE, DOCTRINE DOC. 2-2.1, COUNTERSPACE OPERATIONS 9 (2004), available at [http://www.dtic.mil/doctrine/jel/service\\_pubs/afdd2\\_2\\_1.pdf](http://www.dtic.mil/doctrine/jel/service_pubs/afdd2_2_1.pdf)); U.S. SPACE COMMAND, VISION FOR 2020 5 (1997), available at <http://www.fas.org/spp/military/docops/usspac/visbook.pdf> ("The emerging synergy of space superiority with land, sea, and air superiority, will lead to Full Spectrum Dominance."); U.S. AIR FORCE, TRANSFORMATION FLIGHT PLAN

2006 National Space Policy explicitly made space access denial a goal.<sup>49</sup> The Policy demands that the Secretary of Defense “[d]evelop capabilities, plans, and options to . . . , if directed, deny . . . freedom of action [in space] to adversaries.”<sup>50</sup> China has invested heavily into satellite technologies over the past decade, launching thirty-nine satellites<sup>51</sup> and spending between \$1.4 and \$2.2 billion on its space program.<sup>52</sup> With this greater Chinese investment in space, the American threat of space denial carries even more weight. The ASAT test, then, was partly a result of Beijing’s desire to tell Washington that China would not accept American space hegemony.<sup>53</sup> As Michael Krepon, President Emeritus of the Henry L. Stimson Center, stated: “[t]he Chinese are telling the Pentagon that the United States does not own space. China’s message was that ‘two could play the space weapons game, and we can play it dirtier than you.’”<sup>54</sup>

Finally, the Chinese ASAT test was also an attempt to show the United States that Beijing could target any space-based components of an American national ballistic missile defense (BMD) system.<sup>55</sup> Cooperation between the United States, Japan, and

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**D-4 (2003)**, available at [http://www.af.mil/library/posture/AF\\_TRANS\\_FLIGHT\\_PLAN-2003.pdf](http://www.af.mil/library/posture/AF_TRANS_FLIGHT_PLAN-2003.pdf) (calling for the deployment of conventional weapons in space).

<sup>49</sup> NATIONAL SPACE POLICY, *supra* note 12, at 2, 4.

<sup>50</sup> *Id.* In addition to the 2006 Space Policy, China was also concerned by (1) the 2001 Rumsfeld Space Commission’s conclusion that space would inevitably become a battlefield and (2) the Schreiver war games conducted by the Air Force in 2001, 2003, and 2005, where the United States fought a space war against a fictional country threatening a small island neighbor about the size of Taiwan. See Johnson-Freese, *supra* note 36, at 52. The thinly-veiled reference to China in the Schreiver games was not lost on Beijing. *Id.* To China, these actions made it seem that the United States was preparing for an inevitable space arms race against China. *Id.* If space weaponization was inevitable, then it would be in China’s best interests to develop its own space weapons. *Id.*

<sup>51</sup> See Hagt, *supra* note 36, at 87–92 (discussing China’s increasing stake in satellites).

<sup>52</sup> See MARCIA S. SMITH, CONG. RESEARCH SERV., DOC. NO. RS21641, CHINA’S SPACE PROGRAM: AN OVERVIEW 4 (2005).

<sup>53</sup> Interview with Eric Hagt, *supra* note 47.

<sup>54</sup> Interview with Michael Krepon, Co-Founder, Henry L. Stimson Ctr., in Washington, D.C. (Mar. 20, 2007) (notes on file with author); see also *Stormy Weather: China and Space*, *supra* note 43, at 7 (“China’s aim is to signal to America and its protégés in Asia—Taiwan and Japan especially—that it has ways of countering the space-based technology on which America’s armed forces rely so heavily.”).

<sup>55</sup> Interview with Eric Hagt, *supra* note 47; see also Zhang Hui, *Space Weaponization and Space Security: A Chinese Perspective*, CHINA SEC., Spring 2006, at 26 (“China is even more concerned about space-based BMD systems . . .”).

India on missile defense threatens China because an integrated regional missile defense system could neutralize China's nuclear deterrent.<sup>56</sup> But BMD does more than threaten China's strategic concerns—China has incorporated short-range and intermediate-range ballistic missiles into its operational plans for a conventional conflict to accomplish many of the goals that the United States accomplishes with fighters, bombers, and cruise missiles.<sup>57</sup> As a relatively cheap and effective means of attacking over-the-horizon targets, ballistic missiles are China's "preferred method of power projection in the twenty-first century."<sup>58</sup> When viewed from this perspective, an American BMD system is not just neutralizing China's strategic assets, but also its conventional strike assets.

Regardless of the actual reason for the pursuit of an ASAT, China's research into the system outpaced almost all estimates. In early 2003, the Director of the Defense Intelligence Agency testified that ASAT systems would not be available for ten years.<sup>59</sup> In 2004, political scientist Michael E. O'Hanlon underestimated the Chinese ASAT program when he posited that "China might also have means to attack U.S. space assets, partic-

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<sup>56</sup> See Hagt, *supra* note 36, at 86; Hui, *supra* note 55, at 26 ("Even a limited missile defense system could neutralize China's fewer than two dozen single-warhead Inter-Continental Ballistic Missiles that are capable of reaching the United States.").

<sup>57</sup> Hughes, *supra* note 38, at 1.

<sup>58</sup> Paul Dodge, *Circumventing Sea Power: Chinese Strategies to Deter U.S. Intervention in Taiwan*, 23 COMP. STRATEGY 391, 401 (2004). The People's Liberation Army's (PLA) Second Artillery, in charge of China's ballistic missiles, views its ballistic missiles as a "pocket of excellence." *Id.*; see also Hughes, *supra* note 38, at 4 ("[China's] missiles can help achieve a form of blitzkrieg or lightning warfare, striking faster and deeper than tanks of aircraft."); NAT'L INTELLIGENCE COUNCIL, FOREIGN MISSILE DEVELOPMENTS AND THE BALLISTIC MISSILE THREAT TO THE UNITED STATES THROUGH 2015 9 (2001), available at <http://www.fas.org/irp/nic/bmthreat-2015.htm>.

"Beijing's growing short-range ballistic missile (SRBM) force provides China with a military capability that avoids the political and practical constraints associated with the use of nuclear-armed missiles. The latest Chinese SRBMs provide a survivable and effective conventional strike force and expand conventional ballistic missile coverage." [Furthermore], China's leaders calculate that conventionally armed ballistic missiles add a potent new dimension to Chinese military capabilities, and they are committed to continue fielding them at a rapid pace."

*Id.*

<sup>59</sup> *Current and Projected National Security Threats to the United States*, 108th Cong. 64 (2003) (statement of Vice Admiral Lowell E. Jacoby, Director, Defense Intelligence Agency).

ularly lower-flying reconnaissance satellites, by 2010 or 2015.”<sup>60</sup> The rapid rate of Chinese research, underestimated by the American intelligence community, should serve as a warning to American policy-makers: China has set its sights on asymmetrical systems that can target vulnerabilities in the American military.

B. THE THREAT OF BALLISTIC MISSILES AND OTHER ASAT  
SYSTEMS IS AN ESPECIALLY DANGEROUS ASYMMETRICAL WEAPON  
AGAINST AMERICA’S CONVENTIONAL MILITARY SUPREMACY

Over the last twenty years, the American armed forces have undergone a Revolution in Military Affairs (RMA) by incorporating new technologies into the traditional methods of warfare.<sup>61</sup> The use of these new technologies has facilitated unprecedented coordination at all levels by allowing for greater vertical integration, allowing superior officers to communicate with subordinates, and horizontal integration, allowing units to communicate with other units across the battlefield.<sup>62</sup> With better coordination, each American unit is more versatile, more effective, and more deadly.<sup>63</sup> It was this new way of fighting wars that allowed for the spectacular successes of the American military in Operation Desert Storm, Operation Enduring Freedom,

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<sup>60</sup> MICHAEL E. O’HANLON, NEITHER STAR WARS NOR SANCTUARY: CONSTRAINING THE MILITARY USES OF SPACE 103 (2004).

<sup>61</sup> WILLIAM S. COHEN, DEP’T OF DEF., ANNUAL REPORT TO THE PRESIDENT AND THE CONGRESS 122 (1999) (“A Revolution in Military Affairs (RMA) occurs when a nation’s military seizes an opportunity to transform its strategy, military doctrine, training, education, organization, equipment, operations, and tactics to achieve decisive military results in fundamentally new ways.”). Andrew Marshall, head of the Net Assessment in the Pentagon, coined the term “RMA” in 1993 to emphasize the importance of operational concepts and organizational adaptations in turning technological advances into greater military effectiveness. See James G. Lee, *Counterspace Operations for Information Dominance*, in BEYOND THE PATHS OF HEAVEN: THE EMERGENCE OF SPACE POWER THOUGHT 249, 252–53 (Bruce M. DeBlois ed., 1999) (arguing that the origin of information dominance began in the Soviet Union in the 1970’s); Barry Watts, Book Review, JOINT FORCE Q., Summer 2005, at 110.

<sup>62</sup> Eugene Gholz, Patterson Sch. of Diplomacy & Int’l Commerce, Univ. of Ky., Paper Presented at the Meeting of the American Political Science Association: America’s Innovative Advantage: Systems Integration in the U.S. Defense Industry (Aug. 2002).

<sup>63</sup> MOWTHORPE, *supra* note 40, at 171.

Advances in a nation’s technical capability mean that] you can go after the targets that are the strategic center of gravity in the battlefield, and you will win. It means that you do not have to have as many tanks, ships or airplanes. It means that you can put together a whole new theory of the way you fight wars.

and the first few months of Operation Iraqi Freedom,<sup>64</sup> and it is this new way of fighting that has allowed the modern military to largely dissipate Clausewitz's ubiquitous "fog of war."<sup>65</sup>

Satellites serve as the foundation upon which the modern networked American military stands.<sup>66</sup> Communication between different elements of the military is relayed by satellites, enabling the United States to "essentially fuse[ ] its land-based conventional power projection capabilities with its space-based communications, navigation and reconnaissance capabilities."<sup>67</sup> The beginning of Operation Iraqi Freedom is illustrative of the central role satellites play in modern military operations. Satellite communications permitted fewer friendly-fire deaths, rapid precision air strikes, "unprecedented command and control" of forces, and a tour de force from Special Operations Forces who controlled large areas with limited resources.<sup>68</sup> Additionally, 68 percent of munitions used in the twenty-nine-day battle were precision-guided weapons using satellite targeting—a stark change in ordinance from the unguided "dumb" bombs that had dominated the Air Force's arsenal for close to fifty years.<sup>69</sup> Low-level targeting satellites allowed for an unprecedented 80 percent accuracy in air strikes.<sup>70</sup>

The Chinese ASAT threatens to destroy the critical links between American operational units. Coordination is so ingrained in modern American tactics that a sudden loss of communication could leave the American military fighting a battle for which it has not been trained. Because the United States no longer maintains comprehensive backup land lines, a Chinese

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<sup>64</sup> See *id.* at 172; Peter N. Spotts, *Alarm Over China's Arms Pursuit—In Space*, CHRISTIAN SCI. MONITOR, Nov. 20, 2006, at 2 ("U.S. military successes in the first Iraq war, the Balkans, and the early stage of the current war in Iraq were not lost on Chinese military planners, who noted the key role of U.S. spy and navigation satellites in planning and precision bombing.").

<sup>65</sup> CARL VON CLAUSEWITZ, ON WAR 120 (Michael E. Howard & Peter Paret eds., 1976) (1873) (referring to the "fog and friction" of war).

<sup>66</sup> See DONALD RUMSFELD, DEP'T OF DEF., ANNUAL REPORT TO THE PRESIDENT AND THE CONGRESS 60–62 (2005); MOWTHORPE, *supra* note 40, at 172.

<sup>67</sup> See Kueter, *supra* note 33, at 1.

<sup>68</sup> See TRANSFORMATION FLIGHT PLAN, *supra* note 48, at 71–72.

<sup>69</sup> See Kueter, *supra* note 33, at 1.

<sup>70</sup> *Bombs over Baghdad*, NEWSWEEK: COMMEMORATIVE WAR EDITION, Spring/Summer 1991, at 66 ("The first wave of attacks on Iraq exhibited a phenomenon virtually unheard of in modern warfare: almost nothing went wrong. The targets, including communications centers, military headquarters, air-defense installations, Scud missile launchers and military air bases, were struck with accuracy that military officials put as high as 80 percent.").

ASAT could potentially sever the link between American conventional forces and leave the American military disoriented, uncoordinated, and fighting a war without real-time intelligence.<sup>71</sup> Not only are satellites the crucial link in sustaining America's RMA, but they are also extremely vulnerable to attack.<sup>72</sup> As described in Part III, *infra*, no technology exists to make satellites durable enough to withstand an attack like the kinetic energy kill vehicle that destroyed the FY-1C. The satellites that have allowed for unprecedented American military effectiveness are also America's Achilles' heel: they are vulnerable and, if attacked, threaten to bring down a seemingly unstoppable warrior.

## II. THE 2006 NATIONAL SPACE POLICY DOES NOT ADEQUATELY DEAL WITH THE CHINESE ASAT SYSTEM BECAUSE IT VALUES OPERATIONAL FREEDOM OVER PROTECTING AMERICA'S NETWORKED SATELLITE SYSTEM

In August 2006, President George W. Bush authorized a new National Space Policy (2006 Space Policy).<sup>73</sup> The new Space Policy, the first update since President William Clinton issued his Presidential Decision Directive/NSC-49 on September 14, 1996, unambiguously identifies America's primary objective in space policy as the need to maintain operational autonomy: "[f]reedom of action in space is as important to the United States as air power and sea power."<sup>74</sup> The emphasis on freedom of action is primarily expressed in the belief that the United States "will oppose the development of new legal regimes or other restrictions that seek to prohibit or limit U.S. access to or use of space."<sup>75</sup> The 2006 Space Policy thus categorically rejects diplomatic instruments in favor of the use of force (or threat of the use of force) as the mechanism for change.<sup>76</sup>

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<sup>71</sup> See O'HANLON, *supra* note 60, at 99 ("China will also surely focus on trying to neutralize U.S. space assets in any future such conflict; no prudent military planner could do anything else.").

<sup>72</sup> See *infra*, Part III.

<sup>73</sup> NATIONAL SPACE POLICY, *supra* note 12, at 1.

<sup>74</sup> *Id.* at 1.

<sup>75</sup> *Id.* at 1-2.

<sup>76</sup> See Michael Krepon & Michael Katz-Hyman, *The Responsibilities of Space Faring Nations*, HENRY L. STIMSON CTR., <http://www.stimson.org/pub.cfm?id=340> (last visited Nov. 9, 2007). The same authors also wrote that "[d]iplomacy certainly has its limits, and is no substitute for military preparedness, but complete freedom of action can turn space into a shooting gallery to every nation's detriment."

This rejection of international legal regimes contrasts starkly with the Clinton administration's tempered pursuit of "freedom of action in space."<sup>77</sup> While the 2006 National Space Policy "oppose[s] the development of new legal regimes,"<sup>78</sup> the 1996 National Space Policy mandated international legal cooperation: "[t]he United States *will pursue* and conduct international cooperative space-related activities that achieve scientific, foreign policy, economic, or national security benefits for the Nation."<sup>79</sup> On a more fundamental level, the Clinton administration conceptualized international space law in a completely different way from the Bush administration. In the 1996 National Space Policy, freedom of action and legal regimes were not part of a zero-sum game but rather could work together to advance national security:

Consistent with treaty obligations, the United States will develop, operate, and maintain space control capabilities to ensure freedom of action in space and, if directed, deny such freedom of action to adversaries. These capabilities may also be enhanced by diplomatic, legal, or military measures to preclude an adversary's hostile use of space systems and services. The United States will maintain and modernize space surveillance and associated battle management command, control, communications, computers, and intelligence to effectively detect, track, categorize, monitor, and characterize threats to U.S. and friendly space systems and contribute to the protection of U.S. military activities.<sup>80</sup>

For the Clinton administration, then, international treaties could secure freedom of action, such as continued satellite integrity and use.

The inherent flaw in the 2006 Space Policy is that it values a means to an end more than the end. The need for operational freedom in space as a means to safeguard national security has become so institutionalized that other paths to national security are rejected if they restrict operational freedom. The institutionalization of a policy occurs when an organization fails to keep its ultimate goal in mind, but rather only thinks of the near-term, and in so doing, loses the forest for the trees. The

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Michael Krepon & Michael Katz-Hyman, *Irresponsible in Space*, HENRY L. STIMSON CTR., <http://www.stimson.org/pub.cfm?ID=390> (last visited Nov. 9, 2007).

<sup>77</sup> NATIONAL SPACE POLICY 1996, *supra* note 24, at 4.

<sup>78</sup> NATIONAL SPACE POLICY, *supra* note 12, at 2.

<sup>79</sup> NATIONAL SPACE POLICY 1996, *supra* note 24, at 4 (emphasis added).

<sup>80</sup> *Id.* at 4.



United States is correct when it says it will “take those actions necessary to protect its space capabilities; respond to interference; and deny, if necessary, adversaries the use of space capabilities hostile to U.S. national interests.”<sup>81</sup> But there are many paths to protecting space capabilities, and denying adversaries the use of hostile space capabilities, including the diplomatic measures that the 2006 Space Policy categorically rejects. The danger in conflating a nation’s goal and a possible means to that goal is that the means may become an institutionalized goal in itself, whereby policy makers may begin to adopt strategies that advance freedom of space action, but may not necessarily improve national security.

In assessing how to craft a policy response to a potential Chinese ASAT system, the United States should first decide on its goal. Given the importance of satellites to the networked, systems-oriented American military, Washington’s paramount goal should be to protect America’s satellite assets. Despite America’s unchallenged superiority in air and space, America’s satellites remain vulnerable to a variety of weapons.<sup>82</sup> The best way to achieve the goal of space security is to draft a National Space Policy that permits the most effective defense of American satellites, whether it is by military, technological, diplomatic, or a combination of means.<sup>83</sup> American national security is safeguarded just as well if the United States stops a Chinese ASAT system at the negotiating table rather than on the battlefield.

### III. NON-DIPLOMATIC SOLUTIONS: THE SHORTCOMINGS OF DEVELOPING COUNTER-ASAT WEAPONS AND “HARDENING” SATELLITES

There is little chance of adequately defending America’s satellites in the near-term by relying on technological innovations

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<sup>81</sup> NATIONAL SPACE POLICY, *supra* note 12, at 1; *see also* BENJAMIN S. LAMBETH, MASTERING THE ULTIMATE HIGH GROUND: NEXT STEPS IN THE MILITARY USES OF SPACE 105–06 (2003) (noting that each National Space Policy since 1958 has “acknowledged that the nation’s space capabilities will routinely support U.S. military operations as feasible and appropriate”).

<sup>82</sup> Jon Howland, *Foes See U.S. Satellite Dependence as Vulnerable Asymmetric Target*, JEWISH INST. FOR NAT’L SEC. AFFAIRS, Dec. 4, 2003, <http://www.jinsa.org/articles/articles.html/function/view/categoryid/1333/documentid/2304/history/3,2360,656,1333,2304>.

<sup>83</sup> *See Responsibilities of Space Faring Nations*, *supra* note 76, at 2 (“Since vulnerability in space is so pervasive, we undermine space security whenever we close off avenues that can help prevent actions damaging to our satellites.”).

that would either allow satellites to withstand an ASAT strike<sup>84</sup> or that could intercept incoming ASAT weapons before they hit American satellites.<sup>85</sup> Even though many in the United States would prefer a technological response to the Chinese ASAT because such a system would not rely on Chinese candor on arms control,<sup>86</sup> the technological reality is that the United States cannot practically “hedge” against Chinese ASAT systems.<sup>87</sup> This Article will now explore the shortcomings of a non-diplomatic solution. First, this Article will discuss the inability to deploy counter-ASAT weapons that destroy incoming ASAT weapons.<sup>88</sup> Second, this article will discuss military plans to “harden” satellites by making them more maneuverable, better armored, and more replaceable.<sup>89</sup>

#### A. A BMD COULD NOT LIKELY STOP BALLISTIC MISSILE ASAT SYSTEMS

A BMD could not likely be used to neutralize a ballistic missile ASAT system in the near-term.<sup>90</sup> As Richard Lehner of the Missile Defense Agency (MDA) describes, the inherent problem “[I]s really the timing . . . [I]f a missile is launched to destroy a satellite there is an incredibly short response time with which to try to intercept that missile.”<sup>91</sup> The current national missile defense systems target missiles with trajectories stretching tens-of-thousands of kilometers long, and reaching from Asia to North America.<sup>92</sup> An anti-ASAT interceptor must hit targets with trajectories that are only several hundred kilometers long.<sup>93</sup> The

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<sup>84</sup> See Sanger & Kahn, *supra* note 8, at A3.

<sup>85</sup> E-mail from Richard Lehner, Missile Def. Agency/Pub. Affairs, to Frank M. Walsh (Mar. 19, 2007, 2:30 EST) (on file with author) (stating that current BMD technologies could not likely stop a ballistic missile ASAT).

<sup>86</sup> See, e.g., Keuter, *supra* note 33, at 1; THE NATIONAL SECURITY STRATEGY OF THE UNITED STATES OF AMERICA 40–42 (2006), available at <http://www.whitehouse.gov/nsc/nss/2006/nss2006.pdf> [hereinafter NATIONAL SECURITY STRATEGY].

<sup>87</sup> See NATIONAL SECURITY STRATEGY, *supra* note 86, at 42 (stating that the United States “seeks to encourage China to make the right strategic choices for its people, while we hedge against other possibilities”).

<sup>88</sup> See CONG. BUDGET OFFICE, ALTERNATIVE FOR BOOST-PHASE MISSILE DEFENSE xi (2004) available at <http://www.cbo.gov/ftpdocs/56xx/doc5679/07-22-MissileDefense.pdf>.

<sup>89</sup> See Sanger & Kahn, *supra* note 8, at A3.

<sup>90</sup> See Lehner, *supra* note 85.

<sup>91</sup> *Id.*

<sup>92</sup> CONG. BUDGET OFFICE, *supra* note 88, at 1.

<sup>93</sup> See Lehner, *supra* note 85.

most promising BMD technologies being pursued by the MDA intercept the ballistic missile at either the boost phase, during the ballistic missile's initial ascent, or the terminal phase, immediately before the missile hits its target.<sup>94</sup> Terminal phase defenses would not work against ASAT weapons because an ASAT has no terminal phase—it ends its flight in space.<sup>95</sup> Boost phase technologies like the Airborne Laser, which fires a concentrated beam of light at ballistic missiles at altitudes below three hundred miles,<sup>96</sup> are limited by the need to have defensive assets in position to respond to a launch within seconds. As Mr. Lehner describes, boost phase defenses could potentially work if they are “in exactly the right place at exactly the right time.”<sup>97</sup> Given these narrow constraints, it is highly unlikely that current BMD technologies could neutralize a Chinese ASAT.

B. “HARDENING” SATELLITES AND BUILDING SATELLITES WITH  
GREATER DEFENSIVE CAPABILITIES WILL GIVE ONLY  
MODERATE PROTECTION AGAINST  
ASAT WEAPONS

The United States could research and develop technologies that would “harden” satellites to the point where they could evade or survive attacks.<sup>98</sup> This approach requires a variety of different mechanisms to be incorporated into new satellite designs. First, satellites could be equipped with sensors to detect incoming ballistic weapons and rockets so they can maneuver out of the way of a kinetic kill vehicle.<sup>99</sup> While this option would likely require too much fuel to be practical for bigger satellites, increased maneuverability could work against a rudimentary ballistic missile system like the current Chinese design.<sup>100</sup> Better ASAT guidance and tracking systems, however, could neutralize satellite maneuvering efforts by allowing an ASAT weapon to change course as it approaches the targeted satellite.

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<sup>94</sup> *Id.*

<sup>95</sup> *See id.*

<sup>96</sup> Missile Def. Agency, Boost Phase Defense, <http://www.mda.mil/mdalink/html/boost.html> (last visited Nov. 9, 2007).

<sup>97</sup> Lehner, *supra* note 85.

<sup>98</sup> *See* Sanger & Kahn, *supra* note 8, at A3.

<sup>99</sup> *See id.*

<sup>100</sup> *See* O'HANLON, *supra* note 60, at 128; The Henry L. Stimson Ctr., Adopting Defensive Measures, <http://www.stimson.org/space/?SN=WS20040412657> (last visited Nov. 9, 2007).

Alternatively, a backup system of replacement of satellites could help the United States reestablish its network in the case of a first strike. The capability to relaunch satellites is a unique goal because it is more of a logistical problem of rapidly launching satellites and less of a technological problem of hardening satellites against potentially awesome destructive power.<sup>101</sup> Because it is virtually "impossible to harden satellites against direct assaults by kinetic energy ASATs"<sup>102</sup> like the one China tested, a replacement program may be the only way to guarantee continued satellite operations. This system would also provide additional benefits since it would allow the United States to deploy replacements when the original satellites fail because of normal maintenance failure.

Nevertheless, all of these hardening approaches are only marginal defenses against a determined ASAT attack. A more complex ASAT, with better guidance and greater maneuverability, could defeat these systems and once again expose American satellites. But a non-diplomatic approach to the ASAT threat fails on a more fundamental level: it ushers in a space arms race.<sup>103</sup> If the United States deploys counter-ASAT weapons, then China will develop better ASATs, and the United States will in turn pursue better countermeasures.<sup>104</sup> According to H. Baker Spring of the Heritage Foundation, a conservative policy institute, a potential space arms race would most likely run to "billions or tens of billions of dollars a year, pretty much year in and year out."<sup>105</sup> The result of this expensive endeavor, even if the United States is successful, would ultimately be the status quo of American satellite safety. A better policy would be to pursue the goal of American satellite safety via a less expensive and less risky path.

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<sup>101</sup> See Sanger & Kahn, *supra* note 8, at A3.

<sup>102</sup> The Henry L. Stimson Ctr., *supra* note 100.

<sup>103</sup> Stephanie C. Lieggi, *Space Arms Race: China's ASAT Test a Wake-Up Call*, JAMES MARTIN CTR. FOR NONPROLIFERATION STUDIES, Jan. 24, 2007, <http://cns.miis.edu/pubs/week/070124.htm>.

<sup>104</sup> See Hui, *supra* note 55, at 26 (discussing the possibility of a space arms race between China and the United States).

<sup>105</sup> Broad, *supra* note 9, at WK3.

#### IV. BREAKING OUT OF THE SECURITY DILEMMA: AN ASAT TREATY BEST SAFEGUARDS AMERICAN NATIONAL SECURITY BY PROTECTING AMERICAN SATELLITES

Given the importance of satellites to the American military and the shortcomings of a military approach to the ASAT problem, the necessity for a diplomatic solution to the Chinese ASAT is clear. Simply put, there is no other viable option for defending American satellites. A diplomatic solution to a Chinese ASAT threat would serve American interests because it prevents the deployment of an ASAT, avoids a costly space arms race,<sup>106</sup> and preserves international political capital.<sup>107</sup> The benefits of an ASAT treaty would extend beyond protecting American satellites; with a successful ASAT treaty, the United States could set important space law precedent that would help institutionalize America's terrestrial military dominance. As the 2001 Rumsfeld Space Commission reported: "[i]n order to extend its deterrence concepts and defense capabilities to space, the U.S. will require . . . engaging U.S. allies and friends, and the international community, in a sustained effort to fashion appropriate

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<sup>106</sup> See CONG. BUDGET OFFICE, *supra* note 88, at ix; *China's Anti-Satellite Test: A New Arms Race in Space?*, ECONOMIST, Jan. 27, 2007, at 51 (discussing how a space arms race would be an inefficient outcome for all parties involved); Broad, *supra* note 9, at WK3.

<sup>107</sup> See Andreas Paulus, *The War Against Iraq and the Future of International Law: Hegemony or Pluralism?*, 25 MICH. J. INT'L L. 691, 732 (2004). The political costs associated with unilateralism reflect a growing recognition that international institutions could play an important role in defending democracies worldwide:

[T]he use of force without the clear and unequivocal support of international law and institutions is costly in terms of so-called political capital, for example, the costs of maintaining fragile "coalitions of the willing" and enlisting international support. Thus, the legitimacy bestowed on military action by international institutions is everything but negligible . . . . A United States abandoning multilateralism will have a much harder time in winning support for the implementation of anti-terrorism measures.

*Id.* Scholars like William Shawcross and John Norton Moore, both advocates of the traditional neo-conservative goal of military action to support foreign democracies, acknowledge the utility of working through the international system to achieve its goals. See generally; WILLIAM SHAWCROSS, *ALLIES: THE U.S., BRITAIN, AND EUROPE IN THE WAR IN IRAQ* (2004); John Norton Moore, *Ending Terrorism in Colombia*, submitted in 148 CONG. REC. 56,860 (daily ed. July 12, 2002); Frank Walsh, *Synchronizing Colombian Narcoterrorism Policy with the War on Terror: The Legality of Military Deployment by the United States and the Organization of American States*, 4 GEO. J.L. PUB. POL'Y 453, 453-54 (2006) (discussing the neo-conservative approach to foreign policy).

'rules of the road' for space."<sup>108</sup> The "rules of the road" encompassed in an ASAT treaty would help protect America's national security by preventing the use of asymmetric attacks on America's space infrastructure and by forcing potential enemies to fight the hardened American terrestrial military instead of America's vulnerable satellites.

This Article will now discuss the diplomatic response to the Chinese ASAT threat by (1) showing how the potential space arms race constitutes a "security dilemma" that could lead to a sub-optimal policy if no ASAT treaty is brokered; (2) arguing that an ASAT treaty banning the testing, deployment, and use of ASATs could be reasonably verified; and (3) discussing provisions that could safeguard America's operational space freedom within an ASAT treaty.

#### A. THE "SECURITY DILEMMA" OF INCREASED RELIANCE ON SATELLITE ASSETS AND POTENTIAL ASAT SYSTEMS

The ASAT problem is such a difficult policy problem because both the United States and China have vested national security interests in satellites, but neither side is ready to forego deployment of ASAT weaponry. Both nations would best be served by preserving the status quo: no space weaponry, no ASATs, and free access to space. However, because each nation does not trust the other, both countries may start down the road to a space arms race. This situation, where two nations pursue a sub-optimal policy because they cannot cooperate on pursuing the optimal policy, is known as a security dilemma.<sup>109</sup>

##### 1. *An ASAT Treaty and Preserving the Status Quo is the Optimal Policy Because Both China and the United States Have a Vested Interest in Protecting Satellites*

For the United States, maintaining the status quo condition of having no ASATs deployed is the optimal space policy. As described *supra*, the United States has a vested interest in protecting its satellites, and non-diplomatic solutions cannot protect America's space assets. An ASAT treaty, on the other hand, could prevent unrestricted space warfare and the indiscriminate targeting of American satellites. The benefits to the United

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<sup>108</sup> REPORT OF THE COMMISSION TO ASSESS UNITED STATES NATIONAL SECURITY SPACE POLICY 6, 12 (2001), available at <http://globalsecurity.org/space/library/report/2001/nssmo/fullreport.pdf>.

<sup>109</sup> See Hagt, *supra* note 36, at 94–96.

States are not only military but economic as well, because the United States has invested hundreds of millions of dollars into its civilian and commercial satellites.<sup>110</sup> These benefits, when obtained via an ASAT treaty, would secure America's conventional dominance at a fraction of the cost of a space arms race.<sup>111</sup> Thus, a policy of no ASAT deployment is America's optimal policy because it is the cheapest way to achieve the most beneficial space policy.<sup>112</sup>

China's optimal space policy is also the status quo because the current situation: (1) contains no deployed ASATs, and (2) space access is not challenged. The lack of an operational American ASAT benefits China because Beijing has invested heavily in satellites over the past fifteen years.<sup>113</sup> In November 2000, China issued a White Paper on space policy saying: "[t]he Chinese government attaches great importance to the significant role of space activities in implementing the strategy of revitalizing the country . . . . The development of space activities is encouraged and supported by the government as an integral part of the state's comprehensive development strategy."<sup>114</sup> The Chinese government followed up on this pledge with an ambitious plan that launched thirty-nine satellites in the past eleven years to give China the world's fourth largest satellite space program.<sup>115</sup> With such an extensive investment in space, China stands to lose billions of dollars if it ever engaged in satellite warfare with the United States.<sup>116</sup>

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<sup>110</sup> See Major Elizabeth Seebode Waldrop, *Integration of Military and Civilian Space Assets: Legal and National Security Implications*, 55 A.F. L. REV. 157, 163 (2004) (discussing the growing civilian and commercial investment in satellites). Recognizing the importance of commercial satellites, Congress has passed several laws encouraging private firms to invest in satellites. See Department of Defense Appropriations Act 2003, Pub. L. 107-248, § 903, 115 Stat. 1519 (creating a loan-guarantee program for commercial space transportation systems); SMITH, *supra* note 52, at 7.

<sup>111</sup> See Broad & Sanger, *supra* note 1, at 3.

<sup>112</sup> See JOAN JOHNSON-FREESE, U.S. AIR FORCE INST. FOR NAT'L SEC. STUDIES, OCCASIONAL PAPER NO. 30, THE VIABILITY OF U.S. ANTI-SATELLITE (ASAT) POLICY: MOVING TOWARD SPACE CONTROL 30 (2000), available at <http://www.usafa.af.mil/df/inss/OCP/ocp30.pdf>.

<sup>113</sup> See Hagt, *supra* note 36, at 86-88.

<sup>114</sup> THE STATE COUNCIL INFO. OFFICE (P.R.C.), CHINA'S SPACE ACTIVITIES § I, ¶ 3 [http://www.gov.cn/english/official/2005-07/27/content\\_17656.htm](http://www.gov.cn/english/official/2005-07/27/content_17656.htm).

<sup>115</sup> See Hagt, *supra* note 36, at 87.

<sup>116</sup> See *id.* at 87-88 (discussing China's rapid rate of satellite launches and the recent investments in the world's largest micro-satellite industry park).

Additionally, China should prefer the current policy situation because China still has full access to space. The nightmare scenario for China, in assessing the dangers of American advances in space weaponry, would be a state of affairs where the United States could deny China access to space.<sup>117</sup> Eric Hagt, Director of the China Program at the Center for Defense Information, argues that "China has no conceivable interest in blindly pursuing an all-out space weapons program . . . . Such a move would . . . launch China into a costly space race with the United States."<sup>118</sup> By adopting a treaty regime that protects satellites from destruction, Beijing could cement its presence in space by immunizing its satellites from attack.

For both the United States and China, a space policy free of ASATs and space weapons best satisfies each nation's goals. In practice, however, Washington and Beijing are both moving down the path towards ASAT systems and the weaponization of space. The failure to cooperate on a mutually-beneficial space policy is the result of a disconnect between the Chinese and American governments: each country is distrustful of the other and has consequently shut down meaningful negotiations.

2. *Miscommunication and a "Dialogue of the Deaf" Has Impaired Cooperative Action in Sino-American Space Policy*

The lack of communication on arms control between the United States and China is a product of a fundamental lack of trust between the two countries on space policy. The distrust has two major causes: (1) the inherently dual-use nature of satellites and (2) a series of controversies in the past two decades. First, many satellites are neither definitively military nor civilian, but can serve both purposes simultaneously—approximately ninety-five percent of space technology has both civil and military applications.<sup>119</sup> This "dual-use" nature of satellites complicates negotiations on space policy because it is very difficult to determine whether a satellite launch is part of a military or civilian endeavor.<sup>120</sup> In a cognate of the perennial glass half-full or half-empty question, American and Chinese policy makers are often called upon to classify a satellite that could be either mili-

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<sup>117</sup> Interview with Eric Hagt, *supra* note 47.

<sup>118</sup> *China's ASAT Test*, *supra* note 16, at 38 (stating that the ASAT test was a result of "China's observations and subsequent conclusions [that] have engendered a fundamental response: we cannot accept this state of affairs").

<sup>119</sup> See Johnson-Freese, *supra* note 36, at 39.

<sup>120</sup> *Id.*



tary or civilian and divine the intent behind the satellite's deployment. Since the nature of a given satellite is difficult to determine without intrusive inspections, both sides have assumed that the other's use of satellites has some sinister military use.<sup>121</sup>

The second reason for the lack of Sino-American communication on space policy stems from a series of controversies beginning in the 1990s. In April 1998, the *New York Times* published a story alleging that two companies, Loral Space and Communications and Hughes Electronics, had given China confidential technical information on how to improve Chinese nuclear missiles.<sup>122</sup> After a Justice Department investigation, Loral and Hughes agreed to settle the case after accepting fines of \$6 million and \$20 million, respectively.<sup>123</sup> Following the Department of Justice investigation, the House of Representatives established the Select Committee on U.S. National Security and Military/Commercial Concerns with the People's Republic of China (Cox Commission), which recommended a number of additional regulations to prevent another intentional transfer of technical space knowledge to foreign powers.<sup>124</sup> The Cox Commission's report engendered much mistrust of China,<sup>125</sup> and since the report's publication, the Department of State has not granted any export licenses for China-bound satellite launch vehicles.<sup>126</sup> As a result of these two factors and general reservations about China for its opaque government<sup>127</sup> and questionable human rights record,<sup>128</sup> the United States has been reluctant to trust China.<sup>129</sup> For its own part, China does not

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<sup>121</sup> *Id.* at 39–40.

<sup>122</sup> Jeff Gerth & Raymond Bonner, *Companies Are Investigated for Aid to China on Rockets*, N.Y. TIMES, Apr. 4, 1998, at A1.

<sup>123</sup> CARL E. BEHRENS, CONG. RESEARCH SERV., H.R. DOC. NO. IB93062, SPACE LAUNCH VEHICLES: GOVERNMENT ACTIVITIES, COMMERCIAL COMPETITION, AND SATELLITE EXPORTS 12–13 (2006).

<sup>124</sup> *See id.*

<sup>125</sup> *See* Johnson-Freese, *supra* note 36, at 44.

<sup>126</sup> *See* SMITH, *supra* note 52, at 5; *see also*, Guo Xiaobing, *Blockade on China or the United States? U.S. Regulatory Policies on Space Technology Exports to China*, CHINA SEC., Winter 2006, at 73 (discussing the adverse economic consequences American businesses have suffered from not being able to trade with China).

<sup>127</sup> *See* Johnson-Freese, *supra* note 36, at 39.

<sup>128</sup> *See* BEHRENS, *supra* note 123, at 11. After the Tianamen Square uprising, Congress prohibited the export of U.S. built satellites to China unless the President reported that either (1) China's human rights record had improved or (2) it was in the national interest of the United States. *Id.*

<sup>129</sup> Interview with Eric Hagt, *supra* note 47.

trust the United States to maintain a peaceful posture in space.<sup>130</sup>

As a result of this mistrust, there has been no real communication on disarmament or arms control in the last decade. The United Nations Conference on Disarmament (CD) has been deadlocked for close to a decade,<sup>131</sup> partially because the United States has opposed any negotiations on Prevention of an Arms Race in Outer Space (PAROS)<sup>132</sup> and China has opposed any negotiation on a fissile material cut-off treaty in the absence of negotiations on PAROS.<sup>133</sup> In 1998, the CD appointed special ad hoc committees to try and break this deadlock in talks, but to date these committees have made no progress.<sup>134</sup> There is currently no real likelihood that either China or the United States will change its entrenched bargaining position without a major new policy initiative.<sup>135</sup> Neither side trusts the other, and, as a result, neither side is willing to engage in strategic communications over how to resolve the Chinese ASAT threat.

### 3. *Breaking Out of the Security Dilemma*

Simple game theory provides an adequate model of the Sino-American ASAT treaty policy problem.<sup>136</sup> In what has been

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<sup>130</sup> See *supra* note 47 and accompanying discussion. China places particular emphasis on public statements from the American government. Interview with Eric Hagt, *supra* note 47. The 2006 National Space Policy's emphasis on possible "space denial" limits Beijing's faith in America's peaceful aspirations.

<sup>131</sup> See Michael Krepon, *The Conference on Disarmament: Means of Rejuvenation*, ARMS CONTROL TODAY, Dec. 2006, at 18.

<sup>132</sup> The Bush administration has argued against any international treaties limiting space weapons on the grounds that the current legal environment is sufficient and now there is no space arms race so a treaty would be premature. See Marc Kaufman & Dafna Linzer, *China Criticized for Anti-Satellite Missile Test*, WASH. POST, Jan. 19, 2007, at A1.

<sup>133</sup> SHARON SQUASSONI, ANDREW DEMKEE & JILL MARIE PARILLO, CONG. RESEARCH SERV., BANNING FISSILE MATERIAL PRODUCTION FOR NUCLEAR WEAPONS: PROSPECTS FOR A TREATY (FMCI) 4 (2006), available at <http://www.fas.org/sgp/crs/nuke/RS22474.pdf>.

<sup>134</sup> *Id.*

<sup>135</sup> See Interview with Eric Hagt, *supra* note 47.

<sup>136</sup> See James McConvill, *Executive Compensation and Corporate Governance: Rising Above the "Pay-for-Performance" Principle*, 43 AM. BUS. L.J. 413, 413 (2006) ("Game theory encompasses an interdisciplinary approach . . . to the study of the behavior of humans. A 'game' in this context is a scientific metaphor for a wide range of human interactions between two, or more than two, persons, such persons possessing opposing (or at least mixed) motives.").

called the Prisoner's Dilemma,<sup>137</sup> self-interested actors have been shown to choose mutually disadvantageous policies because they could not effectively collaborate with the other actors in the scenario.<sup>138</sup> Figure 1 applies the Prisoner's Dilemma to the decision to deploy an ASAT. In this "security dilemma,"<sup>139</sup> the United States' choices are listed on the x-axis and China's choices are listed along the y-axis. The "payoffs" for each country are thus a function of both countries' choices; the payoffs for each combination of policy choices are given in the grid.

Choices for the United States			
Choices for China		No ASAT/ Space Weapons	Deploying an ASAT/Space Weapons
	No ASAT/ Space Weapons	China: 5 USA: 5	China: -10 USA: 10
	Deploying an ASAT/Space Weapons	China: 10 USA: -10	China: -5 USA: -5

The numbers given in the grid represent the author's approximate quantitative valuations of the resulting policy situation. The top-left square, where both the United States and China refrain from deploying ASATs, is the optimal choice<sup>140</sup> in the game because the United States and China would both benefit from protected satellites and continued space access. The utility of this outcome is arbitrarily assigned as five. The bottom-right square represents a space arms race where both countries deploy ASAT system. This game assumes that the space weapons race ends in a stalemate where both countries develop ASATs. The expensive endeavor accounts for the negative five utility for both sides: each side is worse off than the status quo because,

<sup>137</sup> See *id.* at 427 n.44 ("The prisoner's dilemma is defined as a situation in which the noncooperative pursuit of self-interest by two parties makes them both worse off."); see generally WILLIAM POUNDSTONE, PRISONERS' DILEMMA (1992); ALBERT W. TUCKER, CONTRIBUTIONS TO THE THEORIES OF GAMES (1950).

<sup>138</sup> See McConvill, *supra* note 136, at 47 n.44.

<sup>139</sup> Hagt, *supra* note 36, at 94.

<sup>140</sup> See David D. Haddock et. al., *An Ordinary Economic Rationale for Extraordinary Legal Sanctions*, 78 CALIF. L. REV. 1, 15 n.42 (1990). The top left policy is the optimal choice because it represents best outcome that both sides would likely agree upon. The top-left square is also Pareto efficient, that is, no party can be made better off without making another party worse off. *Id.*

after a billion dollar expenditure,<sup>141</sup> each country's satellites are still in danger of being attacked. Finally, the top-right and bottom-left squares represent situations where one country deploys an ASAT and the other country does not. The country that deployed the ASAT has uncontested space control and derives a utility of positive ten. The country that is caught without an ASAT derives a utility of negative ten because that country is at the mercy of the ASAT-deploying country.

This security dilemma paradigm is, like all models, an oversimplification of Sino-American space relations. For example, the United States and China do not engage in a single policy confrontation but rather make hundreds of policy decisions each day. That is, the United States and China play the "game" every day. This repeated play can affect the decision-making process in the game by making cooperative play either more or less likely.<sup>142</sup> Also, there are countless externalities involved in the policy-making process that could never be adequately integrated into a model. Nevertheless, the security dilemma is a useful paradigm because it isolates the fundamental policy options for Sino-American space policy. Additionally, the values attributed to each payoff can be altered and the security dilemma still functions as long as the structure of the game remains unchanged. Uncontested space control is valued highest, cooperative action is valued second, a space arms race is valued third, and being at the mercy of an ASAT-wielding power is last.<sup>143</sup> Thus, the security dilemma is a simplified yet effective approach for policy-makers attempting to craft America's response to the Chinese ASAT.

This set-up is called a dilemma because, even though the United States and China would be better off refraining from

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<sup>141</sup> See Broad & Sanger, *supra* note 1, at 3.

<sup>142</sup> See Annapurna Valluri, *Learning and Cooperation in Sequential Games*, 14 ADAPTIVE BEHAVIOR 195, 202–203 (2006) (discussing how players learn cooperative behavior in sequential play of Prisoner's Dilemma-type games). Cooperative play may become more likely because a failure to cooperate carries with it the extra cost of undermining future cooperation. *Id.* Incorporating this cost of future diplomatic tension into the Prisoner's Dilemma game would mean lowering the payoff for the ASAT-deployer in situations where one player deploys and one does not. Cooperative play may become less likely if a previous iteration of the game had one party not cooperate while the other did. *Id.* at 205. For example, if the United States sees the Chinese ASAT test as an untrustworthy violation of its calls for space disarmament then the United States would be less likely to cooperate in the future.

<sup>143</sup> This "sensitivity analysis" lies at the core of the Prisoner's Dilemma's utility. The actual values attributed to each policy decision are arbitrary, but their relative desirability is well-founded.

starting an arms race, pictured in the top-left square, both countries will likely choose to begin the arms race when acting out of self-interest. The decision-making process, for the United States, proceeds as follows: (1) if China were to deploy an ASAT, then it would be in America's best interest to also deploy an ASAT (moving its utility from negative 10 to negative 5); (2) if China were to refrain from deploying an ASAT, then it would again be in America's best interest to deploy an ASAT (moving utility from five to ten). The decision-making process for China is identical: in every situation, both countries choose to deploy ASAT systems.

The key to breaking out of this security dilemma is cooperative play. If both the United States and China could cooperate in making their decisions, they could agree to follow policies that would give them each utilities of positive five instead of negative five. In the real world, this cooperative play means that both countries could reliably agree to refrain from engaging in a costly arms race. This kind of cooperation is difficult, however, for the reasons discussed earlier in Part IV(A) (2)—specifically, that the United States and China have not engaged in meaningful space policy talks in years. Neither Washington nor Beijing will likely unilaterally refrain from deploying an ASAT; rather, any hope for cooperation lies in an ASAT treaty that bans signatories from aggressively targeting satellites.

China has actively advocated for a comprehensive treaty regime that limits the weaponization of space,<sup>144</sup> and Chinese officials have routinely suggested space weapons bans at the United Nations Conference on Disarmament.<sup>145</sup> Beijing would likely be willing to engage the United States if Washington was to seriously address the issue of banning ASAT weapons. The onus is thus on the United States to take China up on its offer to negotiate. The 2006 National Security Strategy correctly argues that the United States “seeks to encourage China to make the right strategic choices for its people[.]”<sup>146</sup> With respect to American space policy, this means that Washington should encourage Beijing to refrain from deploying ASAT weapons and to avoid a costly space arms race. The best way to do this is through a

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<sup>144</sup> See Hui, *supra* note 55, at 28 (discussing China's desire for a space weapons ban); Spotts, *supra* note 64, at 2; Broad & Sanger, *supra* note 1, at 1.

<sup>145</sup> See BEHRENS, *supra* note 123, at 5; James Martin Ctr. For Nonproliferation Studies, China: Arms Control Proposals and Statements, <http://www.cns.miis.edu/research/space/china/arms.htm> (last visited Nov. 10, 2007).

<sup>146</sup> NATIONAL SECURITY STRATEGY, *supra* note 86, at 42.

treaty that allows both China and the United States to cooperatively break out of the space weapons security dilemma.<sup>147</sup>

#### B. SOLVING THE VERIFICATION DILEMMA: AN ASAT TREATY COULD BE VERIFIED IF ESTABLISHED BEFORE FURTHER ASAT TESTING

The biggest policy hurdle for an ASAT treaty is the issue of verification: that is, whether verification provisions could give “timely warning, with appropriate confidence, of violations of formal provisions of a treaty limiting ASAT acts, capabilities and preparations.”<sup>148</sup> Critics of an ASAT treaty uniformly claim that such an instrument would be an unverifiable leap of faith that rogue nations could covertly ignore with impunity.<sup>149</sup> Satellites are inherently “dual-use” because the same satellite can be used for both peaceful and military purposes without any detectable alteration.<sup>150</sup> Dating back to the Reagan administration, critics

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<sup>147</sup> See John J. Klein, *Space Power: An Ill-Suited Space Strategy*, AIR & SPACE POWER J., Fall 2006, at 79.

<sup>148</sup> RICHARD L. GARWIN, ASAT TREATY VERIFICATION, ARMS CONTROL VERIFICATION: THE TECHNOLOGIES THAT MAKE IT POSSIBLE 208 (Kosta Tsipis et al. eds., 1986).

<sup>149</sup> *Stormy Weather: China and Space*, *supra* note 43, at 7 (expressing concern about the ability to verify a Chinese weapons program); *accord* Baker Spring, *Assessing “Rights” Under the Nuclear Non-Proliferation Treaty*, HERITAGE FOUND., Mar. 23, 2006, at 2, available at <http://www.heritage.org/Research/NationalSecurity/hl930.cfm> (discussing North Korea’s withdrawal from the Non-Proliferation Treaty and Iran’s defiance of the Treaty).

<sup>150</sup> See O’HANLON, *supra* note 60, at 121 (“[B]ans on space weaponry . . . would be generally unverifiable . . . . This is a fact of physics, not of policy, and cannot be changed.”). Additionally, non-ASAT technologies can be covertly retrofitted to serve in an ASAT role. The issue of converting treaty-compliant assets into treaty-banned material has been a central issue in nuclear proliferation. See Globalization 101.org, The Carnegie Endowment for Int’l Peace, Nuclear Non-proliferation, <http://www.globalization101.org/index.php?file=issue&pass1=subs&id=339H5> (last visited Nov. 10, 2007). For example, the two “proliferation-resistant” light-water nuclear reactors produce material that can be easily enriched into weapons grade plutonium at small, covert enrichment plants. HARMON W. HUBBARD, PLUTONIUM FROM LIGHT WATER REACTORS AS NUCLEAR WEAPON MATERIAL 1, 6–10 (2003), <http://www.npec-web.org/Essays/2003-04-01Hubbard.pdf>. Similarly, in the ASAT field, ballistic missile interceptors and radio jamming systems could both be converted into an ASAT role at covert plants. See O’HANLON, *supra* note 60, at 120–21. Another type of verification problem involves the difficulties in observing mobile or small facilities. Ert C. Toth, *Soviet Radar Sile-Arms Issue Symbol Facility Dramatizes Problems of Verifying Treaty Compliance*, L.A. TIMES, Mar. 11, 1985, at 1. This type of verification problem was central to growing dissatisfaction with the Biological Weapons Convention (BWC). See, e.g., Brian Heap, *Scientists Against Biological Weapons*, SCI., Nov. 16, 2001, at 1417. Iraq was able to conceal the extent of its biological weapons programs in the face

have uniformly dismissed ASAT treaties as "effectively unverifiable" and therefore not worth pursuing.<sup>151</sup> A renewed push for an ASAT treaty in response to the Chinese test must thus address how party-states could verify compliance with the treaty.

An ASAT verification regime would break new ground in space law because none of the existing space treaties contain the type of formalized verification procedures codified in other arms control treaties.<sup>152</sup> For example, the Outer Space Treaty, which bans nuclear weapons in space and restricts the use of celestial bodies to "peaceful purposes,"<sup>153</sup> has no real verification procedure.<sup>154</sup> Articles X and XII of the Outer Space Treaty allow a party-state that suspects a violation of the treaty to request a "consultation," but there is no duty on the accused state to take any action.<sup>155</sup> Article 15 of the Moon Treaty contains a

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of intrusive UN investigations, and rumors persist about a continued Russian program. See KRASS, *supra* note 11, at 226.

<sup>151</sup> See THOMAS A. SUMMERS, AIR UNIV., AU/ACSC/172/2000-04, HOW IS U.S. SPACE POWER JEOPARDIZED BY AN ADVERSARY'S EXPLOITATION, TECHNOLOGICAL DEVELOPMENTS, EMPLOYMENT AND ENGAGEMENT OF LASER ANTISATELLITE WEAPONS? 20 (2000), available at <http://www.au.af.mil/au/awc/awcgate/acsc/00-172.pdf>.

<sup>152</sup> Thomas Graham, Jr., *The Essentiality of Effective Verification: From Sputnik to the Space Station*, PROBLEMS OF POST-COMMUNISM, Mar./Apr. 2006, at 19.

<sup>153</sup> Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and other Celestial Bodies art. IV, Jan. 27, 1967, T.I.A.S. No. 6347, 610 U.N.T.S. 205 [hereinafter Outer Space Treaty].

<sup>154</sup> Du Shuhua, *The Outer Space and the Moon Treaties (1976, 1979)*, in VERIFICATION OF CURRENT DISARMAMENT AND ARMS LIMITATIONS AGREEMENTS: WAYS, MEANS, AND PRACTICES 123, 123 (Serge Sur ed., 1991).

<sup>155</sup> Outer Space Treaty, *supra* note 153, arts. X, XII. Article X reads:

In order to promote international co-operation in the exploration and use of outer space, including the moon and other celestial bodies, in conformity with the purposes of this Treaty, the States Parties to the Treaty shall consider on a basis of equality any requests by other States Parties to the Treaty to be afforded an opportunity to observe the flight of space objects launched by those States. The nature of such an opportunity for observation and the conditions under which it could be afforded shall be determined by agreement between the States concerned.

*Id.* art. X.

Article XII reads:

All stations, installations, equipment and space vehicles on the moon and other celestial bodies shall be open to representatives of other States Parties to the Treaty on a basis of reciprocity. Such representatives shall give reasonable advance notice of a projected visit, in order that appropriate consultations may be held and that maximum precautions may be taken to assure safety and to avoid interference with normal operations in the facility to be visited.

similar empty verification provision where state parties “may request consultations” if they believe there has been a treaty violation.<sup>156</sup> This type of toothless verification offers little guidance to those who desire effective ASAT verification. Consequently, there is a virtual blank slate in devising how an ASAT treaty’s verification procedures would effectively advance the cause of arms control. This Article approaches the issue of drafting verification procedures with a two-step approach: (1) first, identifying verifiable and effective treaty goals that would build confidence in an ASAT ban, and (2) arguing that a treaty should be negotiated as soon as possible because the verifiability of an ASAT treaty diminishes with time.

*1. Banning the Testing, Deployment, and Use of ASATs: A Verifiable and Effective Way to Protect American Satellites*

The first step in creating a verifiable treaty is setting up verifiable and effective treaty goals. For an ASAT treaty, this means identifying verifiable treaty provisions that effectively preclude the targeting of satellites.<sup>157</sup> There is an inherent tension in this process: provisions that are more effective in precluding the deployment of ASATs tend to be more difficult to verify. For example, a total ban on any research, development, testing, deployment, or use of ASAT technologies would effectively stop an ASAT system. Such a comprehensive ban, however, would be virtually impossible to verify because the United States could not reasonably monitor all research and development in all Chinese laboratories, nor is it likely that Beijing would allow such comprehensive investigations by American investigators. The difficulty in constructing an arms control treaty is deciding at which point in the production chain of a new weapon the treaty should stop a nation’s actions: at the initial research stages, when a country starts to develop prototypes; when a country begins testing the weapons system; when a country deploys a new weapons system; or when a country uses a weapon against an enemy. A treaty that stops action too early in this chain is unver-

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*Id.* art. XII.

<sup>156</sup> Agreement Governing the Activities of States on the Moon and Other Celestial Bodies, *opened for signature* Dec. 18, 1979, 1363 U.N.T.S. 3 [hereinafter *Moon Treaty*].

<sup>157</sup> For a detailed statistical analysis of various verification regimes, see generally RUDOLF AVENHAUS & MORTON JOHN CANTY, *COMPLIANCE QUANTIFIED: INTRODUCTION TO DATA VERIFICATION* (1996).



ifiable, while a treaty that stops action too late in the chain is not effective in precluding destabilizing weapons systems.

A realistic ASAT ban would prohibit the testing, deployment, and use of ASATs because this type of ban would effectively stop the development of ASATs in a way that party-states could verify. The three major draft ASAT treaties<sup>158</sup> all agree that a treaty regime should stop the creation of an ASAT at the testing stage because it is at that "crucial point" where ASAT systems can be stopped in an effective and verifiable manner.<sup>159</sup> Stopping ASATs at the testing stage is effective because, without field tests, an ASAT system cannot be relied upon as a weapons system.<sup>160</sup> Theoretical simulations can only moderately model the real world, and in order to deploy an effective ASAT system, a country must test the weapon against satellites.<sup>161</sup> If an ASAT treaty bans the testing of ASATs, then it interdicts the creation of an ASAT system long before that ASAT is deployed or used.<sup>162</sup> This kind of advanced notice of a country's progress in the field of ASAT weaponry will allow non-violating countries to respond to the diplomatic transgression.<sup>163</sup> Thus, this type of ASAT ban would effectively prevent an ASAT system.<sup>164</sup>

Banning ASAT activity at the testing, deployment, and use stages is verifiable. Using satellites and other remote monitor-

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<sup>158</sup> The three major draft ASAT treaties, the 1983 Union of Concerned Scientists draft, the 1983 Soviet Treaty Banning the Use of Force in Space, and the 1984 Göttingen treaty, all ban the testing, deployment, and use of ASATs. See Dr. Kurt Gottfried et al., Union of Concerned Scientists, A Draft Treaty Limiting Anti-Satellite Weapons arts. I–II, [http://www.ucsusa.org/global\\_security/space\\_weapons/a-draft-treaty-limiting-asat-weapons.html](http://www.ucsusa.org/global_security/space_weapons/a-draft-treaty-limiting-asat-weapons.html) (last visited Nov. 10, 2007) (stating, "[e]ach Party undertakes not to test such weapons in space or against space objects"); Draft Treaty on the Prohibition of the Use of Force in Outer Space and from Space Against the Earth, art. 2, U.N. GAOR, 38th Sess., U.N. Doc. A/38/194 (Aug. 23, 1983); Horst Fischer, *The Military Use of Space and the International Legal System*, in STRATEGIC DEFENSES AND THE FUTURE OF THE ARMS RACE 204, 210 (John Holdren & Joseph Rotblat eds., 1987) (discussing the 1984 Göttingen draft treaty requiring signatories "not to develop and test or to deploy in outer space, in the atmosphere or on earth any weapons or weapon systems which serve this purpose").

<sup>159</sup> See Scheffran, *supra* note 11, at 168.

<sup>160</sup> See *id.*

<sup>161</sup> See, e.g., *Missile Defense Test Fails*, N.Y. TIMES, Dec. 12, 2002, at A34 (describing the difficulties testing American missile defense interceptors based on computer simulations).

<sup>162</sup> See Schreffran, *supra* note 11, at 167–68.

<sup>163</sup> See *id.*

<sup>164</sup> See *id.* at 168.

ing devices known as national technical means (NTM),<sup>165</sup> it would be “relatively easy” to detect the testing, deployment, or actual use of ASAT technologies.<sup>166</sup> NTM was the mainstay of arms control verification during much of the Cold War<sup>167</sup> and was fundamental to the verification regimes in the Anti-Ballistic Missile (ABM) Treaty,<sup>168</sup> the Intermediate-Range Nuclear Forces (INF),<sup>169</sup> and the Strategic Arms Reduction Treaty (START).<sup>170</sup> The immediate detection of the January 11, 2007 Chinese ASAT test showcased how effectively American intelligence could detect ASAT tests; indeed, the United States also detected the two previous tests of the Chinese SC-19 ASAT weapon.<sup>171</sup> The United States can also likely detect any deployments of ASAT weapons by using reconnaissance satellites.<sup>172</sup> In fact, America’s ability to track China’s deployment of SC-19 mobile launchers before the January test is a testament to the prowess of American reconnaissance efforts.<sup>173</sup> Finally, the United States can detect the actual use of ASATs by identifying the destruction of a known satellite.<sup>174</sup> In sum, the United States currently has the NTM to reliably detect when other countries test, deploy, or use ASAT technologies.

An ASAT treaty could rely on other verification mechanisms aside from NTM. First, on-site inspections could give investigating countries valuable information on facilities not observable

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<sup>165</sup> See Waldrop, *supra* 110, at 160.

<sup>166</sup> KRASS, *supra* note 11, at 103 (describing how the testing of ASAT missiles “is observable by Soviet national technical means, so a ban on the testing of such devices would be relatively easy to verify”).

<sup>167</sup> See Captain Michael R. Hoversten, *U.S. National Security and Government Regulation of Commercial Remote Sensing From Outer Space*, 50 A.F. L. REV. 253, 258 (2001); Major Robert A. Ramey, *Armed Conflict on the Final Frontier: The Law of War in Space*, 48 A.F. L. REV. 1, 102 (2000).

<sup>168</sup> Treaty Between the United States of American and the Union of Soviet Socialist Republics on the Limitation of Anti-Ballistic Missile Systems, U.S.-U.S.S.R., art. XII, May 26, 1972, 23 U.S.T. 3435, 944 U.N.T.S. 13 [hereinafter ABM Treaty].

<sup>169</sup> Treaty on Elimination of their Intermediate-Range and Shorter-Range Missiles, U.S.-U.S.S.R., art. XII, Dec. 8, 1987, S. Treaty Doc. No. 100-11.

<sup>170</sup> Treaty on the Reduction and Limitation of Strategic Offensive Arms, U.S.-U.S.S.R., July 31, 1991, S. Treaty Doc. No. 102-20; Graham, *supra* note 152, at 18.

<sup>171</sup> See Gordon & Cloud, *supra* note 7, at A1.

<sup>172</sup> See generally VERIFICATION OF CURRENT DISARMAMENT AND ARMS LIMITATION AGREEMENTS: WAYS, MEANS AND PRACTICES (Serge Sur ed., 1991) (describing the use of satellite reconnaissance to verify various arms control agreements).

<sup>173</sup> See Gordon & Cloud, *supra* note 7, at A1.

<sup>174</sup> See *id.* (describing the tracing of space debris resulting from the January 11, 2007 destruction of the SC-19 satellite).

by NTM.<sup>175</sup> While countries may be reluctant to allow intrusive on-site inspections of classified space-research laboratories, inspection concerns may be alleviated if an ASAT treaty established a formalized inspection regime similar to the regime set up in the 1987 INF Treaty.<sup>176</sup> The Soviet Union proposed this kind of an independent ASAT inspectorate in March 1987.<sup>177</sup> Under the Soviet plan, the international inspectorate would station permanent observers at all space launch facilities.<sup>178</sup> The utility of on-site inspections in the ASAT context is questionable, however, because ASATs can be launched from mobile launchers that can evade inspectors.<sup>179</sup> But even if on-site inspections might be better suited to large-scale weapons systems that are stationary in nature, the inspections might nevertheless have a place in ASAT verification as a guard against new ASAT technologies like highly-concentrated lasers that require substantial energy.<sup>180</sup> Alternatively, countries could supplement NTM with a less intrusive consultation regime. Similar to the mechanisms described in the Outer Space Treaty<sup>181</sup> and the Moon Treaty,<sup>182</sup> party-states to an ASAT treaty could agree to discuss any perceived violations of the treaty. Consultation adds little confidence to a verification procedure, however, because consultations are largely dependent on the good will of the party-states to the treaty.<sup>183</sup> With this in mind, NTM remains the best means for verifying potential violations of an ASAT treaty.

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<sup>175</sup> See Graham, *supra* note 152, at 18–20.

<sup>176</sup> *Id.* at 19. The intrusive on-site inspection mechanism was used in the INF, the START, the Conventional Forces in Europe (CFE) treaty, and the Chemical Weapons Convention (CWC). See *id.*

<sup>177</sup> Shuhua, *supra* note 154, at 129.

<sup>178</sup> See *id.*

<sup>179</sup> See Walter Pincus, *Panel Seeks Intelligence Culpability*, WASH. POST, Apr. 2, 2005, at A8 (discussing the difficulties on-site inspectors had in disproving the rumor of mobile biological weapons labs in Iraq).

<sup>180</sup> *Stormy Weather: China and Space*, *supra* note 43, at 7 (discussing the use of lasers to “blind” satellites); GARWIN, *supra* note 148, at 214 (describing how on-site inspections could hedge against new ASAT technologies).

<sup>181</sup> See Outer Space Treaty, *supra* note 153, arts. X, XII.

<sup>182</sup> See Moon Treaty, *supra* note 156, art. XV.

<sup>183</sup> See Shuhua, *supra* note 154, at 126. The consultation procedure is so “insufficient, incomplete, and ineffective” because it relies on good will between countries who mistrust each other so much that they are devising a formalized verification procedure. *Id.* Put another way, proponents of consultation argue the solution to helping two countries who do not trust each other is to rely on a verification mechanism that requires them to trust each other.

2. *Time Is of the Essence: Operationalizing the ASAT Verification Regime*

The ability to verify ASAT technology deteriorates with every successful ASAT test because ASAT technology is most observable at the testing stage.<sup>184</sup> NTM can detect missile tests that hit or pass near satellites, so monitoring ASAT development at this point is relatively easy.<sup>185</sup> However, once an ASAT “weapon is developed and deployed[,] its small size and non-distinctive deployment mode” would make verification of a ban impossible.<sup>186</sup> The need for an ASAT treaty is time sensitive: the longer the United States and China wait to negotiate a treaty, the less reliable the treaty will be.<sup>187</sup> The January 11, 2007 Chinese test, the Soviet tests in the 1970s, and the American ASAT tests in the 1980s have all shown a rudimentary ability to use ASATs.<sup>188</sup> An ASAT treaty is needed now before any further ASAT tests move weapons development from the testing to deployment stage.

An ASAT treaty can be reasonably verified.<sup>189</sup> The United States should not categorically reject an ASAT treaty simply because Washington cannot monitor all aspects of the Chinese satellite program. Instead, given the potential value of a diplomatic solution to the Chinese ASAT threat, the United States should consider what measures could be taken to provide reasonable assurances of Chinese treaty compliance. During the Cold War, President Ronald Reagan announced that the United States would “trust, but verify” Russian arms control compliance.<sup>190</sup> In the ASAT context, trust seems to be hard to come by.<sup>191</sup> Luckily, NTM can verify compliance in the meantime.

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<sup>184</sup> KRASS, *supra* note 11, at 103.

<sup>185</sup> *Id.*

<sup>186</sup> *Id.*

<sup>187</sup> *See id.*

<sup>188</sup> *See Broad & Sanger, supra* note 1, at A1.

<sup>189</sup> *See Scheffran, supra* note 11, at 167. Scheffran argues that the level of appropriate verification should be a function of the “importance of a treaty provision and the risk of undetected cheating.” *Id.* In the ASAT context, this means that the importance of protecting American satellites and the likelihood of China covertly violating the treaty are the relevant criteria for determining the appropriate level. As discussed earlier, the protection of American satellites should take paramount importance, and the Chinese have repeatedly expressed their good faith desire to limit space weapons.

<sup>190</sup> *Arms Control Verification: Don't Trust, Don't Verify*, *ECONOMIST*, Sept. 4, 2004, at 77.

<sup>191</sup> *See supra* notes 119–135 and accompanying discussion.

C. OVERCOMING THE RESTRICTIONS ON OPERATIONAL FREEDOM: AN ASAT/SPACE WEAPONS TREATY COULD PRESERVE FUTURE POLICY OPTIONS BY INCORPORATING A 25-YEAR REVIEW DATE AND A UNILATERAL WITHDRAWAL PROVISION

A common argument against signing an ASAT/Space Weapons Treaty is that doing so would hamstring possible American responses to unforeseen future threats.<sup>192</sup> This argument has merit since the United States cannot with certainty predict what threats it will face in fifty or a hundred years.<sup>193</sup> For example, China is currently deploying space observation satellites that give it a new "significant reconnaissance capability."<sup>194</sup> Despite these common criticisms, an ASAT treaty could be crafted in a way that would allow for future operational freedom.<sup>195</sup>

First, an ASAT treaty could follow the example of the 1970 Treaty on the Non-Proliferation of Nuclear Weapons (NPT) and include a self-review clause that would allow for a reevaluation of the treaty in twenty-five years.<sup>196</sup> Under the NPT:

Twenty-five years after the entry into force of the Treaty, a conference shall be convened to decide whether the Treaty shall continue in force indefinitely, or shall be extended for an additional fixed period or periods. This decision shall be taken by a majority of the Parties to the Treaty.<sup>197</sup>

The decision to subject the Non-Proliferation treaty to a comprehensive review was a result of a compromise at the negotiating table<sup>198</sup> and the realization that "the treaty was not perfect and that its provisions might not stand the test of time."<sup>199</sup>

Similarly, a potential ASAT treaty should incorporate a twenty-five year review so the signatories could reassess whether the

<sup>192</sup> See O'HANLON, *supra* note 60, at 121; LAMBETH, *supra* note 81, at 119–20.

<sup>193</sup> See *Current and Projected National Security Threats*, *supra* note 59, at 17.

<sup>194</sup> MOWTHORPE, *supra* note 40, at 95.

<sup>195</sup> See discussion *supra* Part III.a.ii.

<sup>196</sup> Treaty on the Non-Proliferation of Nuclear Weapons art. 10, ¶ 2, July 1, 1968, 21 U.S.T. 483, 729 U.N.T.S. 161 (hereinafter NPT).

<sup>197</sup> *Id.*

<sup>198</sup> GLENN T. SEABORG & BENJAMIN S. LOEB, *STEMMING THE TIDE: ARMS CONTROL IN THE JOHNSON YEARS 355–58* (1987); Burrus M. Carnahan, Note, *Protecting Nuclear Facilities from Military Attack: Prospects After the Gulf War*, 86 AM. J. INT'L L. 524, 537–38 (1992).

<sup>199</sup> Jean du Preez, *Half Full or Half Empty? Realizing the Promise of the Nuclear Nonproliferation Treaty*, ARMS CONTROL TODAY, Dec. 2006, [http://www.armscontrol.org/act/2006\\_12/DuPreez.asp](http://www.armscontrol.org/act/2006_12/DuPreez.asp); accord SEABORG & LOEB, *supra* note 198, at 381 (arguing that the twenty-five year bar was a result of the smaller nations' reluctance to sign a long-term treaty).

treaty had fulfilled its goals.<sup>200</sup> For the United States, this means that in twenty-five years, Washington could determine whether its interests were best being served by safeguarding its satellites and resisting the weaponization of space. If no other country had deployed space assets threatening America's terrestrial military hegemony, then continued reliance on the treaty would be appropriate. If, however, other nations had begun to field innovative and potentially destabilizing weapons, then the United States could find that withdrawal from an ASAT treaty would be in its best interests.<sup>201</sup> With the inclusion of a twenty-five year horizon, an ASAT/Space Weapons ban effectively codifies the status quo in space power for review at a future date. For the United States, the current terrestrial and space superpower, preserving the status quo power balance equates to preserving American dominance.<sup>202</sup>

A second way to preserve future operational freedom would be to incorporate a standard withdrawal provision into the treaty. Generally, withdrawal provisions allow party-states to withdraw in response to "extraordinary events related to the subject matter" after giving other members notice of their intent to withdraw.<sup>203</sup> For example, the NPT allows for withdrawal with three months notice<sup>204</sup> and the ABM treaty allows for withdrawal with six months notice.<sup>205</sup> Functionally, an ASAT treaty with a withdrawal provision would preserve the status quo of no ASAT weapons while giving party-states the ability to respond to changes in circumstances that threaten the status quo. More importantly, the chances that China could covertly test and deploy an effective ASAT are slim because of America's intelligence ca-

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<sup>200</sup> See SEABORG & LOEB, *supra* note 198, at 381.

<sup>201</sup> O'HANLON, *supra* note 60, at 112. O'Hanlon argues that some limited ASAT accords or treaty bans would help preserve American interests. *Id.* at 111-12.

<sup>202</sup> See Pike, *supra* note 22, at 438 (discussing how America's strategic goals are best advanced without the potentially destabilizing deployment of space weapons).

<sup>203</sup> E.g., ABM Treaty, *supra* note 168, art. XV.

<sup>204</sup> NPT, *supra* note 196, art. X.

<sup>205</sup> ABM treaty, *supra* note 168, art. XV. Only two countries have withdrawn from international arms control treaties: North Korea withdrew from the NPT and the United States from the ABM treaty. See *Three Decades of North Korea's Nuclear Program; Promises, Promises (While Building the Bomb)*, N.Y. TIMES, Mar. 20 1994, at 44 (describing North Korea's withdrawal from the NPT); David E. Sanger, *Bush Issues Directive Describing Policy on Antimissile Defenses*, N.Y. TIMES, May 21, 2003, at A21 (describing the United States' withdrawal from the ABM treaty).

capacity.<sup>206</sup> The United States detected the SC-19's previous launches and knew about the January 11, 2007 test before the launch.<sup>207</sup> America's verification capability would only improve under a treaty regime that allowed for greater access.

## V. CONCLUSION: AN ASAT/SPACE WEAPONS BAN SERVES AS A MICROCOSM FOR SINO-AMERICAN RELATIONS

The policy problems associated with the Chinese ASAT test are symptomatic of more systemic problems in Sino-American relations.<sup>208</sup> Samuel P. Huntington, a noted international relations scholar, has argued that the "increasingly antagonistic relations" between the United States, the current superpower, and China, the world's rising superpower, are part of the inherent friction in the shifting of global power.<sup>209</sup> Other political scientists have argued that the state of Sino-American relations is part of inevitable real politik<sup>210</sup> or the beginning of a new Cold War.<sup>211</sup> Regardless of the cause of the rift between the United States and China, American policy-makers must now decide how to respond to the Chinese ASAT test amidst poor relations. There are two basic possibilities: (1) the United States could assume that relations will continue to deteriorate so America should pursue military technologies to confront an inevitable enemy, or (2) the United States could decide that a new Cold War is not a *fait accompli* and that it should attempt to find cooperative solutions where possible. An ASAT treaty that serves

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<sup>206</sup> See *supra* text accompanying notes 171–74.

<sup>207</sup> Gordon & Cloud, *supra* note 7, at A1.

<sup>208</sup> Interview with Eric Hagt, *supra* note 47.

<sup>209</sup> SAMUEL P. HUNTINGTON, *THE CLASH OF CIVILIZATIONS AND THE REMAKING OF WORLD ORDER* 218–38 (1996) (predicting the rise of "Chinese hegemony").

<sup>210</sup> Randall Peerenboom, *The Fire-Breathing Dragon and the Cute, Cuddly Panda: The Implication of China's Rise for Developing Countries, Human Rights, and Geopolitical Stability*, 7 CHI. J. INT'L L. 17, 44 (2006).

The Cold War is over. At least, the first Cold War is over. If there is going to be a new Cold War with China, political ideology and cultural issues are not going to be the main sources of contention. The conflict will be due to realpolitik concerns over national security and economic interests.

*Id.*

<sup>211</sup> See DANIEL A. SHARP, *LIVING WITH CHINA: U.S.-CHINA RELATIONS IN THE TWENTY-FIRST CENTURY* 9, 10 (Ezra F. Vogel ed., 1997) (warning that in the next century the United States "might well find itself in a new and destructive cold war, but this time with China as adversary").

the strategic needs of both the United States and China could be the first step in following the latter option.

The ASAT security dilemma is a microcosm of Sino-American relations as a whole. Just as the United States and China would be better off pursuing a cooperative ASAT treaty instead of a costly arms race, the two countries would also be better off pursuing cooperative national security policies instead of an antagonistic zero-sum game.<sup>212</sup> The major impediments to breaking out of this bigger security dilemma are the same impediments to cooperative action in the ASAT context: the United States and China must communicate and trust each other.<sup>213</sup> Both are difficult. But maybe the first steps in a fundamental change in Sino-American relations could begin with a single space treaty—perhaps protecting the satellites that are vital to both countries could be the beginning of a recognition of Beijing's and Washington's similarities.

Reengaging China on the issue of ASAT weapons would represent a breakthrough in Sino-American relations. This kind of diplomatic coup is not unlike President Ronald Reagan's call for nuclear abolition at the 1985 Reykjavik Summit with Soviet General Secretary Mikhail Gorbachev,<sup>214</sup> an unprecedented move that shocked the world and a number of Reagan's advisors.<sup>215</sup> While negotiations on nuclear abolition broke down after Reagan refused to concede on BMD, Reagan's maverick diplomacy set the stage for future diplomatic engagement with the Soviet Union.<sup>216</sup> As Reagan's Secretary of State, George P. Shultz, explained, "the world was not ready for Ronald Reagan's boldness. What happened at Reykjavik seemed almost too much

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<sup>212</sup> Interview with Eric Hagt, *supra* note 47. Cooperative action would also allow for greater economic integration and freer markets. See Peter K. Yu et al., *China and the WTO: Progress, Perils, and Prospects*, 17 COLUM. J. ASIAN L. 1, 2 (2003) (describing the potential benefits of incorporating China's billion person population into the global economy).

<sup>213</sup> Interview with Eric Hagt, *supra* note 47.

<sup>214</sup> Richard N. Lebow & Janice Grosstein, *Reagan and the Russians: Foreign Policy*, THE ATL. MONTHLY, Feb. 1994, at 35 (describing Gorbachev's engagement at Reykjavik).

<sup>215</sup> See George P. Shultz, *The Ultimate Summit*, TIME, May 10, 1993, at 50; e.g., Ken Adelman, *The Real Reagan*, WALL ST. J., Oct. 5, 1999, at A26 (discussing the significance of the Reykjavik summit).

<sup>216</sup> Daniel Deudney & G. John Ikenberry, *Who Won the Cold War?*, FOREIGN POL'Y, Summer 1992, at 123 ("But Reagan's anomalous anti-nuclearism provided the crucial signal to Gorbachev that bold initiatives would be reciprocated rather than exploited. Reagan's anti-nuclearism was more important than his administration's military buildup in catalyzing the end of the Cold War.").



for people to absorb, precisely because it was outside the bounds of conventional wisdom. . . . We were . . . contemplating the notion of a world without nuclear weapons.”<sup>217</sup> The time for “boldness” and thinking “outside the bounds of conventional wisdom” in the field of arms control may have come once again, but this time in the context of ASAT abolition.

The 2006 National Space Policy’s valuation of unfettered space freedom as paramount must be reconsidered. By demanding that the United States have absolute freedom to pursue weapons platforms in space, the President is undermining his ability to stop China from pursuing these same weapons. National security demands that we structure the militarization of space into the paradigm that most favors the United States; in essence, we must limit those weapons systems that hurt us the most.

An ASAT system is such a weapon. The United States should neutralize that threat, even if it means signing a treaty that limits “its rights, capabilities, and freedom of action in space.”<sup>218</sup> There are numerous domestic political hurdles that must be cleared before an ASAT weapons ban could ever be presented,<sup>219</sup> and there is a very real possibility that China would not agree to any treaty the United States would put forward,<sup>220</sup> but the benefits from such an accord warrant at least trying the diplomatic route. America’s armed forces will continue to rely upon a heavily integrated information infrastructure, and it is our government’s duty to protect that infrastructure. To that

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<sup>217</sup> *Id.*

<sup>218</sup> NATIONAL SPACE POLICY, *supra* note 12, ¶ 2.

<sup>219</sup> The reality is that actually getting such a treaty passed would be a daunting endeavor. As Michael Krepon explains, “it will take awhile for there to be a political environment where 65-68 senators will agree to something that limits American flexibility in space.” Interview with Michael Krepon, *supra* note 54. For this reason, Krepon has proposed a “Code of Conduct” to set the “rules of the road” with respect to each nation’s space activities. See The Henry L. Stimson Ctr., Code of Conduct for Space (Feb. 2007), <http://www.stimson.org/?SN=WS200702131214>; *A new arms race in space? China’s anti-satellite test*, ECONOMIST, Jan. 27, 2007, at 5 (endorsing Krepon’s Code of Conduct).

<sup>220</sup> See Gordon & Cloud, *supra* note 7, at A1.

It is a bit of arms-control mythology that there is always a deal to be made . . . . For years, the Chinese military has been writing about how to cripple a superpower that relies on high-tech capabilities like satellites. They have been patiently developing this capability. I don’t see why they would trade it away.

*Id.* (quoting Peter A. Rodman, former assistant in the Department of Defense Office of the Assistant Secretary of Defense).

end, the United States must attempt to neutralize the Chinese ASAT by both diplomatic and military means. America should at least attempt to forge a diplomatic shield to complement the military armor upon which the nation currently relies.



## **Comments**

