

# Ticking Time Bomb or Fizzle? Exploding Five Myths about the North Korean Nuclear Crisis<sup>1</sup>

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# 1 Introduction

The North Koreans aren't worth negotiating with. Like other rogue states, they don't act rationally [1], and have an irrational fear of an attack from the US [2]. They cheated on the 1994 deal the Clinton Administration made with North Korea from day one, receiving significant help from the A.Q. Khan network [3] and now they have nuclear weapons that could strike the US [4]. They will sell these weapons to other states and terrorist networks like Al Qaeda [5]. The right approach to the North Korean nuclear crisis is to get China to use its leverage to constrain the North Koreans and only meet with the DPRK (Democratic People's Republic of Korea) in multi-party talks.

While the above paragraph isn't a quote from a single source, taken together these five myths about the North Korean nuclear crisis form a coherent perspective that appears to be the driving force behind current US policy. It combines two elements together. The first is a myopic view of the relationships between the policies of the US and other states' actions that discounts both the threat that the US poses to other states and the potential for diplomatic overtures. The second is the belief that rogue states' nuclear programs will move inevitably towards success, variously termed proliferation determinism or fatalism.<sup>1</sup> Both are wrong; drawing on the past history of the crisis, in this paper I debunk each of these five myths and present an alternative policy recommendation of talking to the North Koreans bilaterally and offering them what they seek: prestige and diplomatic recognition.

North Korea internationally has consistently acted rationally, playing tit-for-tat in response to both threats and incentives. Their fear of US attack is well-founded, given the consistent targeting of North Korea's regime over the last six years. While North Korea probably did cheat after a

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<sup>1</sup>On determinism, see Montgomery 2005a; on fatalism, see Sagan 2006.

few years on the 1994 Agreed Framework by developing a highly-enriched uranium program with assistance from the A.Q. Khan network, the program has most likely not gotten very far; the US's major concern should be with its plutonium program instead. The DPRK has little or no capability to strike the US with a nuclear device, given its problems with both ballistic missiles and nuclear devices. Their past record of transferring nuclear-related technologies and materials is in doubt; with the October 9th tests determined to be a fizzle, North Korea is much more likely to want to hold on to their technology and plutonium, especially considering that US retribution would be swift and terrible. Instead of hiding behind an ineffective China and irrationally refusing to meet with the North Koreans bilaterally, the US should take the initiative.

Given the correct balance of incentives and restraint from the United States, North Korea can be persuaded to give up their nuclear weapons program. Moreover, the incentives needed are not solely material in nature, as conventional international relations theory holds; rather, social incentives, including diplomatic recognition from the US and gaining prestige from maintaining a nuclear power program are crucial to convincing the North Koreans to give up their weapons program. In the remainder of the paper, I outline all five myths, argue why each is wrong, then offer policy recommendations.

## **2 Five Myths about the North Korean Crisis**

### **2.1 North Korea doesn't act rationally**

North Korea's belligerent behavior, brinkmanship diplomacy, and frequent threats have led some to conclude that the regime does not act rationally. Additionally, rumors about Kim Jong Il's personal

behavior or nonsensical domestic policies have often been used as a warning that his regime may be unpredictable internationally. Scholars who have seriously studied the North Korean government and their responses to international actions have uniformly found that North Korea follows consistent strategies; while the DPRK often uses brinkmanship and can make outrageous demands, they act rationally and can make deals.<sup>2</sup> Quantitative and qualitative studies of North Korea's behavior generally have found that they broadly follow a tit-for-tat policy; positive overtures (offers of aid, diplomatic gestures, withdrawal of military forces or cancellation of exercises) to the DPRK are received with positive responses, while negative overtures (threats of force or economic sanctions) are responded to in kind.<sup>3</sup> This is not to argue that threats are never effective against the DPRK; the implicit threat of military action and the explicit (and credible) threat of economic sanctions in 1994 led to North Korea agreeing to freeze its plutonium program in exchange for significant symbolic benefits. Yet these threats were effective because they were specified well in advance, clearly communicated, and credibly backed up by the United States and China. By contrast, even the wake of the North Korean test on October 9th, the United States has yet to specify clearly and credibly what will occur if North Korea spreads nuclear technology to other states or non-state actors.

The DPRK makes announcements of its actions in advance, then carries out the actions accordingly. This even applies to its nuclear test; unlike most states, which attempt to conceal upcoming nuclear tests in an effort to prevent steps from being taken to stop the tests, North Korea announced in advance that it was going to test a nuclear device. While the North Korean government has little or no accountability at home and can therefore pursue a wide range of irrational domestic policies,

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<sup>2</sup>Snyder 1997, 1998, 1999; Sigal 1998, 2002; Moltz and Quinones 2004.

<sup>3</sup>Montgomery 2005b.

internationally the DPRK has much less of a free hand, and so behavior can be moderated.

This is not to say that North Korea's policies are always consistent. Being an autocratic regime does not mean that actions are taken uniformly, or even with good information. The DPRK nuclear program has taken two and a half decades to move from constructing a nuclear power plant to exploding a nuclear device (although eight years of this was due to the Clinton administration's 1994 deal with North Korea); some argue that, like other autocracies, this is due in part to an incompatibility between rule through fear and large-scale scientific enterprises.<sup>4</sup>

Like any government, different pieces of the government argue for different policies. Many observers argue that there are clear splits between military proponents of a nuclear weapons program and members of the foreign ministry who want to use it as a bargaining chip.<sup>5</sup> Exceptions to this include a few neoconservatives, who argue that North Korea is monolithic and implacable; for example, some have argued unconditionally for military coercion in the form of regime change.<sup>6</sup> The nuclear test on October 9th suggests that the particular timing for the test (and perhaps even a major rationale for the test) was influenced by domestic politics (or at least what passes for domestic politics in the DPRK) and was intended primarily to solidify Kim Jong Il's rule at home rather than speaking to an international audience; October 8 is the anniversary of the 'Dear Leader' becoming General Secretary of the Workers Party of Korea. North Korea's recent decision to return to the six-party talks may have been part of an overall compromise within the government; the military got its test, so the foreign ministry can have its talks.

North Korea may seem at first glance to act irrationally; yet at least internationally, it behaves quite consistently. Any additional inconsistencies can be explained as a result of different factions

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<sup>4</sup>Hymans 2006.

<sup>5</sup>Quinones 2004; Harrison 2004; Snyder 2004.

<sup>6</sup>Eberstadt 2004.

battling for control, rather than a schizophrenic government.

## **2.2 North Korea has an irrational fear of an attack from the United States**

North Korea has often cited the fear of being attacked by the United States as a reason for their nuclear weapons program. US officials discount this rationale, arguing that the United States does not pose a threat to North Korea; a demonstration of US benign intentions, according to the current administration, is demonstrated by the US willingness to take part in the six-party talks with China, North Korea, South Korea, Russia, and Japan.

Yet the United States has a long history of threatening North Korea, implicitly or explicitly, and has ramped up both rhetoric and actions in the last five years. North Korea is in the rare position of being one of a few states that have been threatened with nuclear weapons (albeit indirectly) during an armed conflict. Korea was partitioned into two states at the end of the Second World War; on 25 June 1950, North Korea crossed the 38th parallel, starting the Korean War. General Douglas MacArthur requested nuclear weapons in 1950 to prevent an invasion by China; B-29 bombers were deployed to Guam in 1951 for three months with nuclear weapons. Although Eisenhower has been reported to have employed nuclear weapons in order to bring about an armistice, the authorization of transfer of nuclear weapons to military control in 1953 was not intended as a part of atomic diplomacy, although it may have had that effect.<sup>7</sup> The Korean War armistice was signed on 27 July 1953 without South Korea's signature. The US deployed nuclear weapons to South Korea starting in early 1958, and had such weapons deployed there until 1991.

More recently, the United States has repeatedly cited North Korea specifically as a threat and has implied not only the use of force against North Korea, but the use of nuclear weapons. This has

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<sup>7</sup>See Dingman 1988-1989 on US nuclear strategy during the Korean War.

come in two forms: statements made by Administration officials and publicly published strategy documents that single out North Korea.

On January 29, 2002, President Bush grouped together Iran, Iraq, and North Korea in his State of the Union speech: “North Korea is a regime arming with missiles and weapons of mass destruction, while starving its citizens.... States like these, and their terrorist allies, constitute an axis of evil, arming to threaten the peace of the world. By seeking weapons of mass destruction, these regimes pose a grave and growing danger.”<sup>8</sup> Other members of the administration, including Rice<sup>9</sup> and Undersecretary of State for Arms Control and International Security John Bolton,<sup>10</sup> also criticized North Korea around the same time for conducting covert programs for weapons of mass destruction and missile proliferation. Powell, when testifying before the Senate Foreign Relations Committee, said that Bush’s reference to Iran, Iraq and North Korea as an “axis of evil” was “not a rhetorical flourish—he meant it,” although Powell also stated that the US was not going to invade and was willing to engage in dialogue. Members of the House wrote to President Bush soon afterwards,<sup>11</sup> calling upon him to reconsider implementing the Agreed Framework and later praising him for including North Korea as part of an “axis of evil.”<sup>12</sup> At the end of August 2002, Bolton reinvoked the “axis of evil” trope during visits to Tokyo and Seoul: “President Bush’s use of the term ‘Axis of evil’ to describe Iran, Iraq, and North Korea was more than a rhetorical flourish—it was factually correct.”<sup>13</sup> While the administration has turned down its rhetoric more recently, it is difficult to overcome the solid impressions formed by the North Koreans.

Numerous official documents have also targeted North Korea. An implied nuclear threat was

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<sup>8</sup>Bush 2002.

<sup>9</sup>Rice 2002.

<sup>10</sup>Olson 2002.

<sup>11</sup>Agence France Presse 2002.

<sup>12</sup>Deutsche Presse-Agentur 2002.

<sup>13</sup>Bolton 2002.

made in the 2001 Nuclear Posture Review, leaked on January 8, 2002 to the press; among other “immediate contingencies” it considered was a “North Korean attack on South Korea.” It also noted that “North Korea, Iraq, Iran, Syria, and Libya are among the countries that could be involved in immediate, potential, or unexpected contingencies. All have longstanding hostility toward the United States and its security partners; North Korea and Iraq in particular have been chronic military concerns. All sponsor or harbor terrorists, and all have active WMD and missile programs.”<sup>14</sup> The National Security Strategy, released in September 2002, devoted an entire section to “rogue states,” mentioning explicitly Iraq and North Korea (but Iran only as a victim of aggression from Iraq), and enshrined the doctrine of preventive (called “preemptive”) action.<sup>15</sup> The 2004 National Military Strategy discussed policies towards ‘rogue states,’ arguing that “Should they acquire WMD/E or dangerous asymmetric capabilities, or demonstrate the intent to mount a surprise attack, the United States must be prepared to prevent them from striking.”<sup>16</sup> The updated version of the National Security Strategy released in March of 2006 singled out North Korea as a tyrannical state and a proliferation danger.<sup>17</sup> The 2006 Quadrennial Defense Review singled out North Korea and Iran as WMD proliferators, and warned that “all elements of national power” must be used if the US fails to prevent other states from acquiring WMD.<sup>18</sup> Such documents provide a compelling case for the arguments made by North Korea’s military.

Actions taken towards other members of the “axis of evil” indirectly threaten North Korea as well; the invasion of Iraq was intended to have a chilling effect on other states that were pursuing weapons of mass destruction, although it seems instead to have accelerated the Iranian and North

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<sup>14</sup>Department of Defense 2001.

<sup>15</sup>National Security Council 2002.

<sup>16</sup>WMD/E refers to Weapons of Mass Destruction or Effect. Joint Chiefs of Staff 2004, 5

<sup>17</sup>National Security Council 2006.

<sup>18</sup>Department of Defense 2006, 34.



Korean programs. The refusal to take nuclear strike options “off the table” against Iran, a non-proliferation treaty member, is likely to further threaten North Korea. It is said that the paranoid simply have all the relevant information; given the information that North Korea has been receiving from history, from senior Administration officials, and from official US documents and actions, it is far from paranoid to feel threatened by the United States.

### **2.3 North Korea cheated on the Agreed Framework**

The Agreed Framework, signed on October 21, 1994, required North Korea to freeze its plutonium production and reprocessing facilities in exchange for light water reactors, diplomatic recognition, and improved economic relations with the United States;<sup>19</sup> it also required the DPRK to adhere to its other treaties, including the 1992 North-South nuclear pact, which prohibited the possession of facilities for nuclear reprocessing and uranium enrichment.<sup>20</sup> The charges that North Korea cheated on the Agreed Framework are primarily related to its clandestine pursuit of uranium enrichment. Yet an actual agreement between the DPRK and the A.Q. Khan network happened at the earliest in 1996, and not until 1998 did transfers seem to begin in earnest. Moreover, the program itself appears to have been small-scale at best until at least 2000.

Real cooperation does not appear to have started between North Korea and the A.Q. Khan network in Pakistan until at least two years after the signing of the Agreed Framework; moreover, from a legal perspective, research does not appear to violate the North-South pact (and therefore the Agreed Framework), only facilities do. It appears that cooperation with Pakistan on the HEU program started in the early 1990s. The full story is only beginning to partially emerge, although

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<sup>19</sup>US 1994.

<sup>20</sup>Democratic People’s Republic of Korea and Republic of Korea 1992.

some dates and details are known. During the 1990s, A.Q. Khan visited North Korea a dozen times or more.<sup>21</sup> When these visits occurred is not documented. Joseph Bermudez reports that cooperation began with Prime Minister Benazir Bhuttos trip to North Korea in December 1993.<sup>22</sup> However, an agreement was not formalized until later; the Congressional Research Service (CRS) claims that an agreement was reached between North Korea and Pakistan in the summer of 1996. This date is in accordance with recent testimony of defectors.<sup>23</sup> Actual cooperation is reported to have started in 1997,<sup>24</sup> although direct transfers of parts between Pakistan and North Korea tend to be dated to 1998. Transfer of missile technology from North Korea to Pakistan are known to have taken place in 1998; the Nuclear Threat Initiative (NTI) reports that an ‘Unknown number of Nodong missiles’ and ‘Several shipments of warhead canisters and missile production components’ were sent to Pakistan.<sup>25</sup>

How significant was the program? Until around 2000 or 2001, the program was very small-scale. The Clinton administration reportedly learned of these transfers in 1998 or 1999, according to the Congressional Research Service (CRS).<sup>26</sup> CRS cites as evidence a 1999 DOE report, likely the same one reported on in the Washington Times.<sup>27</sup> However, the only actual components that were cited in the Times article were two frequency converters. This would seem to indicate that North Korea at this point was still in the first stage of their HEU program. CIA reports from the first half of 1999 through the first half of 2001 indicate renewed interest in dual-use technologies by North Korea; all reports repeated the same phrase “[North Korea] sought to procure technology

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<sup>21</sup>Hersh 2003.

<sup>22</sup>Bermudez Jr. 2002.

<sup>23</sup>Agence France Presse 2004.

<sup>24</sup>Bermudez Jr. 2002; Hersh 2003.

<sup>25</sup>Nuclear Threat Initiative 2005.

<sup>26</sup>Niksich 2005.

<sup>27</sup>Gertz 1999.

worldwide that could have applications in its nuclear program, but we do not know of any procurement directly linked to the nuclear weapons program.”<sup>28</sup> The CIA didn’t mention seeking components for uranium enrichment specifically until the latter half of 2001, when the it reported that “The North has been seeking centrifuge-related materials in large quantities to support a uranium enrichment program. It also obtained equipment suitable for use in uranium feed and withdrawal systems.”<sup>29</sup>

However, it is possible, but unlikely, that the uranium program began earlier. A special, untitled report by the CIA, released on November 19, 2002, stated “we assess that North Korea embarked on the effort to develop a centrifuge-based uranium enrichment program about two years ago.”<sup>30</sup> This makes it difficult to determine whether the program actually started during the Clinton administration. According to Seymour Hersh, a classified report argues that in “2001 North Korean scientists began to enrich uranium in significant quantities.”<sup>31</sup> However, this latter piece of evidence is at odds with the remainder of the evidence, and has not been supported by any other open sources. The last well-known transfer between Pakistan and North Korea occurred in July of 2002,<sup>32</sup> although additional transfers may have been made. It is also unclear what was on each shipment and in which direction a transfer was taking place; for example, the last shipment was claimed by President Musharraf to have been surface-to-air missiles being transferred to Pakistan.<sup>33</sup> Musharraf verified in 2005 that A.Q. Khan had passed “probably a dozen” centrifuges to North Korea.<sup>34</sup> This assistance pales compared to the parts for 500 centrifuges sold to Iran in the

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<sup>28</sup>Central Intelligence Agency Nonproliferation Center 1999.

<sup>29</sup>Central Intelligence Agency Nonproliferation Center 2001.

<sup>30</sup>Central Intelligence Agency Nonproliferation Center 2002.

<sup>31</sup>Hersh 2003.

<sup>32</sup>Sanger 2002.

<sup>33</sup>Rohde and Waldman 2004.

<sup>34</sup>Agence France Presse 2005.

mid-1990s; assistance may have occurred, but it may have only been small-scale.

The first indication that North Korea was genuinely working on a uranium enrichment program came long after it withdrew from the NPT. A shipment of 214 6000-grade aluminum tubes that were intercepted on April 12, 2003, as a French ship sailed through the Suez Canal on their way to North Korea via China, seem to fit more closely dimensions of known centrifuges;<sup>35</sup> in particular, if cut in half, the tubes are well-suited to be used as vacuum housings for the G2/P2 centrifuge design that Pakistan is known to have stolen from Urenco. Reports indicate that the North Koreans had sought as many as 2000 tubes in 2002. Still, these quantities indicated pilot-scale facilities, not the type of facilities that could actually be used to create significant quantities of fissile materials at a rate faster than the DPRK's existing nuclear reactor/reprocessing plant combination.

No further evidence of a uranium enrichment has emerged publicly since this 2003 interception; nor has there been any changes to the periodic CIA reports referenced above. The latest report that has been released to the public (January 1-December 31, 2004, released in May 2006) made no mention of DPRK acquisition efforts related to its uranium program.<sup>36</sup> Given this evidence, it seems doubtful that north Korea's uranium enrichment program has progressed very far. From a pragmatic perspective, it is much more important for the United States to focus on the plutonium program rather than a program that has shown no signs of progressing. Considering that the Iranian centrifuge program, which benefited from the shipment of parts for 500 P1 centrifuges, has taken over twenty years for the first cascade to enrich a small amount of uranium to a few percent, it is doubtful that the North Korean program has progressed to the point where it could contribute to a nuclear weapons effort. The conclusion that the October 9, 2006 test was of a plutonium design

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<sup>35</sup>Warrick 2003.

<sup>36</sup>Central Intelligence Agency Nonproliferation Center 2004.

further underlines this point, since it has been widely speculated that North Korea received the same HEU-based nuclear weapon design that Libya did.

While North Korea may have crossed the line to cheating on the Agreed Framework by proxy (through cheating on the North-South pact), it certainly did not do so immediately after the agreement was signed, and it did not pursue a large-scale program until several years after the agreement was signed. Yet even if it did, the program is most likely small and far behind the more important plutonium effort.

## **2.4 The DPRK has nuclear weapons that could strike the US**

A major rationalization for the largely expensive—and largely ineffective—missile defense shield that the US has built was the scare of North Korean nuclear weapons.<sup>37</sup> The October 9th, 2006 test of a nuclear device has further fanned the flames. But does North Korea actually possess a nuclear device that is deliverable? Between the plans for a crude HEU-based warhead likely given to North Korea, North Korea's failed test of a plutonium weapon, and its difficulties with producing ballistic missiles, the evidence doesn't look good.

The bomb design that North Korea probably received from the A.Q. Khan network (the same one Libya received) was too large to fit on any of its ballistic missiles<sup>38</sup>—or, indeed, possibly on any missile in development by North Korea or Iran. Accounts describe the design as “crude” and incomplete.<sup>39</sup> Some sources note that the warhead has a mass of about 500 kg;<sup>40</sup> most attribute the warhead in question to the fourth Chinese nuclear test in 1966.<sup>41</sup> Yet China did not have a

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<sup>37</sup>See, for example, Rumsfeld 1998

<sup>38</sup>Crawford 2004.

<sup>39</sup>Sanger 2004.

<sup>40</sup>Albright and Hinderstein 2004, 70

<sup>41</sup>Sanger and Broad 2004.

500-kg warhead in the 1960s; the warhead that most closely fits this description is the one on the Chinese DF-2A, a 32-ton, 21-m long, 1.65-m wide missile deployed from 1966 to 1979. This warhead, a 12 kiloton device, weighs 1,290 kg; with a 200 kg re-entry vehicle, the total payload would be almost 1,500 kg.<sup>42</sup> By contrast, all of the missiles currently owned or in development by Libya, Iran, and North Korea are designed with a maximum intended payload of at most 1,000 kg.<sup>43</sup> Although range can be traded off with payload, whether the warhead is small enough to fit on the missiles is unclear; Scud-based missiles have a diameter of 0.88 m, and the missile with the largest diameter available to these new proliferants, North Korea's No-Dong-A, is a 1.32-m wide, 16-m long, 16.25-ton missile, a third of a meter narrower and half the mass of the DF-2A.<sup>44</sup> South Korea's National Intelligence Service reported in 2005 that North Korea lacked the technology to put warheads on missiles.<sup>45</sup> Even though other methods could still be used for delivery (e.g., from an aircraft, in a shipping container, in a truck), all of these methods are much less desirable for North Korea and other 'rogue states.' For example, if Iran wishes to deter a state with advanced air defenses such as Israel, a ballistic missile is much more likely to get through than these other methods of transport and has significant command-and-control advantages as well.

North Korea's home-grown bomb design has problems as well; the October 9th test, by most accounts, was a fizzle. North Korea informed China 20 minutes before the test that they were going to test a device with an expected yield of 4 kt; unless our understanding of North Korea's geography is fundamentally flawed, the actual yield of the device was under 1 kt in size. This is not the first time that a new proliferator has had a botched test; both the Indian and Pakistani tests in 1998 were thought to have produced yields far below the declared yields. This casts further doubt

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<sup>42</sup>Lewis and Di 1992, 15

<sup>43</sup>Kimball 2002.

<sup>44</sup>Bermudez Jr. 1999, 27

<sup>45</sup>Yun 2005.

on the amount of knowledge that was effectively transferred from China to Pakistan, never mind from Pakistan to North Korea, as well as the effectiveness of North Korea's domestically-produced design.

As if problems with bomb designs were not enough, North Korea has also had little success with its long-range missiles. Both the Taepo Dong 1 and 2 were tested a single time; both failed, although the former failed less catastrophically than the latter. The No-Dong-A had been tested only once by North Korea until the July 5, 2006 tests, which may have included 2-4 No-Dong-As; the possible successor No-Dong-B, apparently derived from SS-N-6 technology, has only been tested once by Iran.

In summary, North Korea has tested a plutonium warhead that doesn't work; has an HEU design that may or may not work well that may not fit on its missiles; and has no successfully tested long-range multi-stage missiles, the only type that might credibly threaten the United States (on the other hand, the United States has a ballistic missile defense system that doesn't work, either). This is not to say that there are no states that might be concerned about DPRK nuclear devices. The most frequently-tested DPRK missile, the No-Dong-A, could hit Japan; until Japan's ban on all DPRK ships, North Korea could have delivered a nuclear device to Japan in that fashion.

## **2.5 The DPRK will sell these weapons to other states and terrorists**

Much of the concern over the DPRK's test was directed not at the dangers of North Korea's possession of nuclear explosives, but rather whether they may transfer them to third parties. The Quadrennial Defense Review warned before the tests that "Even when they do not pose a direct military threat to the United States, these states may threaten the United States or its allies indi-

rectly by transferring weapons or expertise to terrorists.”<sup>46</sup> After the tests, President Bush warned that “The transfer of nuclear weapons or material by North Korea to states or non-state entities would be considered a grave threat to the United States, and we would hold North Korea fully accountable of the consequences of such action.”<sup>47</sup>

Concerns about North Korean transfers seem to be based on their highly successful missile sales to Libya, Iran, Syria, Iraq, Egypt, and Pakistan in the past.<sup>48</sup> Whether the recipients have been wise in their purchases is another question, considering the DPRK’s problems with advanced missile technology. Their drug smuggling, fake cigarette manufacturing, and counterfeiting operations make some conclude that North Korea may next attempt to smuggle nuclear technology.<sup>49</sup> Yet past claims that North Korea smuggled uranium hexafluoride to Libya, the basis for many of these concerned statements, are overexaggerated.

In February 2005, the U.S. government contended that North Korea had sold uranium hexafluoride to Libya. The “alarming intelligence” that North Korea was “actively exporting nuclear material” was deduced “not on a murky intelligence assessment but on hard data.”<sup>50</sup> The data that led U.S. “government scientists to conclude with near certainty”<sup>51</sup> that the uranium was from North Korea was either from uranium isotopic ratios or from plutonium contaminating the three cylinders of uranium hexafluoride that Libya had received in 2000 and 2001.<sup>52</sup> One recently retired Pentagon official described the trades as “huge, because it changes the whole equation with the North It suggests we don’t have time to sit around and wait for the outcome of negotiations.”<sup>53</sup>

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<sup>46</sup>Department of Defense 2006, 32.

<sup>47</sup>Bush 2006.

<sup>48</sup>Montgomery 2005a.

<sup>49</sup>Chestnut 2005.

<sup>50</sup>Kessler 2005.

<sup>51</sup>Sanger and Broad 2005a.

<sup>52</sup>Sanger and Broad reported isotopic ratios; Kessler reported plutonium. Sanger and Broad 2005a; Kessler 2005

<sup>53</sup>Sanger and Broad 2005a.



Additional evidence was distributed by the U.S. government in March regarding large financial transfers from Libya, which the United States claimed implicated North Korea.<sup>54</sup>

Contrary to U.S. claims, the plutonium, uranium, and financial evidence are far from conclusive. The IAEA performed similar analyses and found no plutonium traces on the cylinders.<sup>55</sup> The precision of the method used to determine the potential source of uranium has also been called into question, since the isotopic ratio measured (U234 to U238) can vary up to 10 percent.<sup>56</sup> Yet the United States contention that the uranium must be from North Korea “with a certainty of 90 percent or better,” is belied by the admission that the U.S. team had no sample of North Korean uranium.<sup>57</sup> Additionally, these concentrations can vary greatly even within a single mine, making it difficult to identify a distinctive fingerprint.<sup>58</sup> The uranium in two of the three cylinders was natural uranium, while the other held depleted uranium; the latter is generally useless for creating either nuclear weapons or fuel, while the total extractable uranium content of the former was about 7 kg, far too little for a nuclear weapon.<sup>59</sup> Since the DPRK had hardly even started attempting to acquire enrichment capabilities in 2000,<sup>60</sup> the depleted uranium is most likely the by-product of Pakistani enrichment. This is additional evidence that the uranium must have at least passed through Pakistan on its way to Libya. One of A.Q. Khan’s middlemen, B.S.A. Tahir, reported

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<sup>54</sup>Sanger and Broad 2005b.

<sup>55</sup>Kessler and Linzer 2005.

<sup>56</sup>Fetter 1993.

<sup>57</sup>Sanger and Broad 2005a.

<sup>58</sup>Wolfsthal 2005.

<sup>59</sup>Two of the three cylinders delivered to Libya (one small and one large) contained natural uranium hexafluoride (UF<sub>6</sub>); the other small cylinder contained depleted UF<sub>6</sub> at 0.3 percent enrichment. The large one had 1,600 kg of UF<sub>6</sub>; the small ones had 25 kg each. Libya received the large cylinder in February 2001, and the small ones in September 2000. See Annex 1, IAEA Board of Governors 2004a, 3; and IAEA Board of Governors 2004b, 4 Based on a natural uranium percentage of 0.71 percent, this would give a total of 11.6 kg U235; assuming a standard tails assay of 0.3 percent and an HEU enrichment of 93 percent, 7.2 kg of HEU could be extracted, about a third of the amount necessary for a small first-generation implosion weapon. Depleted uranium can be put in a blanket around a reactor core to produce plutonium or as a tamper in a nuclear weapon, but cannot be usefully enriched.

<sup>60</sup>Central Intelligence Agency Nonproliferation Center, “Unclassified Report to Congress on the Acquisition of Technology Relating to Weapons of Mass Destruction and Advanced Conventional Munitions,” July 1 - December 31, 2001.

that the cylinders had been flown to Libya aboard a Pakistani airplane in 2001. With respect to the financial evidence, American and foreign officials who had seen the documents in question said that they did not demonstrate that payments went directly to North Korea.<sup>61</sup> Neither were the payments necessarily for nuclear materials; they could equally have been for missile transfers.<sup>62</sup> The suppression of information by the United States that Pakistan was the likely intermediary in the deal and the high probability that the container originated in Pakistan upset U.S. allies,<sup>63</sup> since it appeared that the U.S. government was manipulating intelligence information to put pressure on North Korea.<sup>64</sup>

The risk that North Korea would be running if it were to transfer nuclear technology to other states or non-state actors is likely to be small relative to the payoffs. If a nuclear device were to be detonated against the United States and it were to be traced back to North Korea, the results would unquestionably be fatal for the regime in power. Having already used some of its extremely limited plutonium supply, the value to North Korea of the remainder of the plutonium has undoubtedly increased, making it less likely that any part of the remainder would be transferred to other parties. Since their nuclear test was generally considered to be a failure by the international community, the value of a North Korean nuclear device to third parties has probably subsequently dropped significantly. North Korea may have used their 'best plutonium' for the test in any case; the plutonium from the 8000-some rods thought to have been reprocessed in 2003 has been estimated to have around 92 percent Pu-239, while the rods that may have been reprocessed in 2005 could have provided them with much higher-quality plutonium (one to two bombs'-worth with lower burnup and consequently a higher percentage of Pu-239) .

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<sup>61</sup>Sanger and Broad 2005b.

<sup>62</sup>I thank Paul Kerr for pointing this out. See Lewis and Kerr 2005

<sup>63</sup>Kessler and Linzer 2005.

<sup>64</sup>Linzer 2005.

In sum, the evidence that North Korea has in the past smuggled nuclear materials is quite sketchy, casting some doubt as to whether they would do so in the future. Additionally, the risks they would be running if they transferred devices or material are immense, and the value of the weapons or plutonium to outside markets has decreased in the aftermath of their failed nuclear test, while the value of both to North Korea has increased.

### **3 Analysis**

Taken together, these five myths support a policy of trying to convince China to use its apparent leverage against North Korea, only meeting with the North Koreans through multilateral talks, building up missile defense at home, and seeking to choke off North Korea through sanctions and embargoes. If North Korea is irrational, only their ally and neighbor has any chance of convincing them; if the US does not threaten North Korea, there is no need to deal with North Korea's security concerns; if they cheated on the Agreed Framework, we should not attempt to strike a similar bargain with them; if North Korea has deliverable weapons, then we should seek to bolster our missile defenses; if they are likely to sell weapons or materials to others, then we should quarantine their country.

Debunking these five myths points towards a very different policy. North Korea is a rational adversary with a rational fear of the United States who can stick by agreements if given incentives to do so. If they do not have deliverable weapons and are not going to transfer devices or materials to third parties, it is possible to give diplomacy enough time to work rather than try to strangle North Korea. But what kind of diplomacy should we attempt?

Threats of military or economic sanctions have historically not been terribly effective with

North Korea, who responds belligerently to them. Ineffective threats are even worse; without China's acquiescence, no threats of sanctions will ever be effective, since the United States has layered on so many levels of sanctions that it has effectively sanctioned itself out of the threat game. Military threats are likely to feed into the North Korean military's contention that the United States simply seeks to take over the country.

So what is effective with North Korea? Package deals that allow the North Koreans to save face, maintain a nuclear power program so that it can reap the prestige benefits of being a 'nuclear state' even without weapons, recognize them diplomatically, and include long-term confidence-building measures that help convince the North Koreans that the US no longer is a threat to their regime. Indeed, the incentive of direct talks with the US has historically been a very effective bargaining tool; North Korea has agreed to halt undesired behavior when faced with the option of bilateral talks. A few examples serve to demonstrate this point. In June of 1991, North Korea announced that they would finalize the text of a safeguards agreement with the IAEA, since the prospect of bilateral talks with the United States had emerged.<sup>65</sup> During the 1993 crisis in which North Korea gave its 90-day notice required before leaving the NPT, other states (such as Japan) offered bilateral talks, but North Korea refused, insisting upon bilateral talks with the United States.<sup>66</sup> In the end, the only concessions made by the United States in exchange for the suspension of North Korea's withdrawal were an agreement to high-level talks and a (non-binding) military agreement to the principle of "assurances against the threat and use of force, including nuclear weapons,"<sup>67</sup> against North Korea.

The resolution of the 1994 crisis strongly supports the notion that symbolic and diplomatic ben-

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<sup>65</sup>Yonhap News Agency (Seoul) 1991.

<sup>66</sup>Japan Economic Newswire 1993.

<sup>67</sup>DPRK/USA 1993.

efits are in large part what North Korea is seeking in exchange for its nuclear weapons program. At first glance, the Agreed Framework would seem to be primarily about exchanges of economic goods: two light water reactors and monthly supplies of fuel oil in exchange for a nuclear weapons program. Yet each of the elements of the Agreed Framework vindicates the perspective that social benefits such as prestige and recognition were just as, if not more important than, the economic benefits.<sup>68</sup> During the negotiations, the Clinton administration repeatedly offered fossil-fuel based energy plants of equivalent or greater power that could be built more quickly and would be more compatible with North Korea's shaky electric grid, yet North Korea insisted upon nuclear technology, since they wanted to be seen as a modern nuclear state. The fuel oil was more symbolic than anything else; it provided about 2.5% of North Korea's total energy consumption.<sup>69</sup> Instead, North Korea used the frequency of deliveries of fuel oil as a symbolic measurement of the US commitment to the Agreed Framework. Frequent complaints about the lateness of deliveries were due to this symbolic nature; since North Korea buffered the supply of fuel oil, late deliveries did not actually affect power generation, but rather just relations between the United States and the DPRK (North Korea has storage approximately equal to the amount shipped every year; at the end of 2001, this reserve was nearly full).<sup>70</sup> The prospective lifting of economic sanctions would have been worth little, at least initially; the sanctions had existed for so long that North Korea had structurally adapted to these sanctions. Moreover, North Korea had little to offer the United States in terms of trade. The normalization of political relations had been important to North Korea throughout the crisis, and in fact constituted North Korea's major short-term demand; North Korea attached intrinsic value to being treated as an equal by the United States, and formalizing such so-

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<sup>68</sup>Interviews with Bill Perry and John Lewis confirmed the symbolic nature of many of the provisions of the Agreed Framework. Lewis 2004; Perry 2004.

<sup>69</sup>Manyin and Jun 2003.

<sup>70</sup>Korean Peninsula Energy Development Organization 2001.

cial relations had become a major goal. Finally, the Agreed Framework held that the United States would provide “formal assurances to the DPRK against the threat or use of nuclear weapons by the United States.”<sup>71</sup> While this is a stronger statement than the nuclear guarantee given the year before, it still falls short of a formalized treaty; furthermore, without any kind of confidence-building measures that increase transparency, it fails to make military conquest any more difficult.

The return of the DPRK to the six-party talks should be used as an opportunity for the US to talk bilaterally with the North Koreans, offering social benefits in exchange for the freezing, verification, and eventual dismantlement of North Korea’s nuclear program. Although some observers are pessimistic about North Korean disarmament, this deterministic stance assumes that North Korea’s concerns about US intentions cannot be altered. Despite historic animosity, North Korea previously signed an agreement with the US in 1994 that significantly improved relations. Whether the same can be done again is a matter of political will.

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<sup>71</sup>US 1994.

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