On February 4, 2004, Dr. Abdul Qadeer Khan, self-styled father of the Pakistani nuclear bomb, appeared on Pakistani television to apologize to his nation. Revealing few details, Khan stated that a government investigation, which followed “disturbing disclosures and evidence by some countries to international agencies” (read “Iran and Libya to the International Atomic Energy Agency [IAEA]”), confirmed “alleged proliferation activities by certain Pakistanis and foreigners over the last two decades.” Khan admitted the allegations were true and said “there was never ever any kind of authorization for these activities by any government official.” Pakistani officials a few days earlier claimed that Khan provided technology to Iran, Libya, and North Korea.[1]

On February 5, Khan was pardoned by Pakistani President Gen. Pervez Musharraf, with no mention of confiscating the millions of dollars he had acquired in more than 20 years of nuclear moonlighting. When asked about Khan’s pardon, U.S. Department of State spokesperson Richard Boucher replied, “I don’t think it’s a matter for the United States to sit in judgment on.”

In fact, it is critically important for the United States to judge whether Pakistan has adequately addressed Khan’s proliferation behavior. The administration’s failure to do so may be symptomatic of a deeper problem in its nonproliferation strategy. By focusing on “hostile states and terrorists”[2] as the main proliferation threat, the Bush strategy ignores friendly countries, such as Pakistan, that host terrorists, place insufficient controls on weapons of mass destruction (WMD), and are threatened with political destabilization. Ironically, the threat of terrorist access to weapons of mass destruction is probably greater in Pakistan than in Iraq, Libya, North Korea, or Iran—all targets of Bush counterproliferation policy. Even more, Pakistan has remained locked in a nuclear confrontation with India, which has several times escalated to the point of all-out war.

The Khan case illustrates a practical reality: separating “good guys” and “bad guys” in this fashion will not work over the long term. The reason is the phenomenon of secondary proliferation. Whereas 20 years ago we worried about single states acquiring the bomb, Khan has raised the stakes. Although some may argue that Khan acted independently and that his role is unlikely ever to be replicated, Pakistan’s continuing struggle with Islamic fundamentalism makes the prospect of rogue nuclear-weapon scientists even more problematic than government-directed proliferation. If Khan is not unique, how effective is the Bush administration’s targeted counterproliferation policy? Can tweaking supplier controls, as President George W. Bush recently suggested, stop this kind of proliferation? What practical routes are left for slowing nuclear proliferation?

### Is Khan’s Role Unique?

The press has focused on the sexier aspects of Khan’s story: money launderers in Dubai, Swiss and British intermediaries, plants in Kuala Lumpur, and shipments intercepted in Mediterranean ports. Yet, nuclear proliferation is no stranger to intrigue, spies, and foreign travel. What may be most shocking about the unfolding tale of Khan’s nuclear weapons marketing is how utterly familiar it sounds. To be sure, leaks of high technology used to emanate mostly from North America, Europe, and Russia.[3] Sources now have expanded to Asia and Eurasia, despite attempts to strengthen supplier controls and nuclear safeguards in the wake of Iraq’s embarrassing nuclear shopping spree before the 1991 Persian Gulf War.
If the modes of covert nuclear commerce appear to have changed little, what is particularly egregious about the Khan case? One answer may lie in Khan and his associates’ apparent ability to provide “one-stop shopping.” Khan sold blueprints; components; full centrifuge assemblies; uranium hexafluoride feedstock; and, from some accounts, a nuclear-weapon design. If he had desired, Khan also could have provided some missile technology because Khan Research Laboratories (KRL) developed missiles in collaboration with North Korea. Was Khan able to provide this one-stop shopping because of his unique position within the Pakistani nuclear weapons program and heroic popular image or because the Pakistani government helped?

Khan’s assistance to Iran in centrifuge uranium-enrichment apparently began in the late 1980s and continued at least until the mid-1990s. Assistance to Libya began in the early 1990s and may have continued into 2002. Beyond blueprints, components, full assemblies of centrifuges, and low-enriched uranium, Libya also received—a startlingly—a nuclear weapons design. In both cases, it is clear that Khan provided technology for an advanced centrifuge design (the P-2). There is no confirmation that the nuclear-weapon design Libya received in 2001 or 2002 is from Pakistan, but some sources have reported that the design contained Chinese text and step-by-step instructions for assembling a vintage 1960s, highly enriched uranium (HEU) implosion device, which could indicate that Khan passed on a design that Pakistan is long rumored to have received from China.

Whether Khan gave North Korea nuclear-weapon-related technology or equipment is still disputed. U.S. officials and sources close to Khan have said he did; the Pakistani and North Korean governments have denied any technology transfers. One popular theory is that Pakistan bartered uranium-enrichment technology for missile technology from North Korea, but Musharraf has stated that “whatever we bought from North Korea is with money.” A Pakistani official involved in Khan’s investigation reportedly said North Korea ordered P-1 centrifuge components from 1997 to 2000. Separately, other evidence points to Pakistani nuclear assistance. As far back as 1991, a German intelligence investigation concluded that Iraq, and possibly Iran and North Korea, obtained uranium-melting information from Pakistan in the late 1980s.

Investigating Khan

The Pakistani government began to investigate allegations of nuclear transfers in 2000. The Inter Services Intelligence Agency (ISI) raided a plane chartered by Khan bound for North Korea but found nothing. Further, although Musharraf admitted that he “forcibly retired” Khan from the KRL in 2001 to prevent him from transferring more nuclear secrets, Khan ultimately was undone not by his government, but by his clients. Forced to prove to the IAEA that it had not enriched uranium to HEU levels, Iran revealed the existence of foreign suppliers in October 2003. Iran had held back information on the procurement network for months. Apparently, Khan had written letters to Iranian clients, urging them to destroy some of their facilities and tell the IAEA that their Pakistani contacts were dead. Libya’s decision to give up its WMD programs voluntarily, however, unleashed a torrent of information about Pakistani assistance, forcing the Pakistani government to conduct a two-month investigation.

The Pakistani government has been slow to admit that there were nuclear transfers and quick to deny any official complicity. Initially, official Pakistani responses ranged from “our nuclear weapons are secure” to “there is no smoking gun.” In December 2003, the Foreign Ministry spokesman claimed that Pakistan never authorized transfers but that individuals may have been involved in transfers to Iran. On January 6, 2004, when asked about transfers to Libya, Information Minister Sheikh Rashid Ahmed said “This is total madness.” An interview in February 2004 with Musharraf noted that Pakistan’s investigation had not uncovered evidence of transfers to countries other than Iran and Libya.

The structure of the nuclear establishment in Pakistan and the key role of the military, as well as long-standing ties between Pakistan and all three countries, raise doubts that Khan acted completely without government knowledge. Pakistan’s military is widely believed to control the Pakistani nuclear weapons program. Musharraf has taken pains to clarify that Pakistan established civilian control of the nuclear weapons program (embodied in himself) under the National Command Authority, but until Musharraf steps down as army chief of staff, this distinction may be irrelevant. Moreover, a key
feature of Pakistan's export control regulations allows for an explicit exemption for Ministry of Defense agencies, which suggests that weapons programs under military leadership could skirt domestic export control laws.[19]

Khan has alleged that military officials, including former Chiefs of Army Staff (COAS), knew of the transfers. One account claims that equipment to Iran was transferred at the request of the late General Imentz Ali between 1988 and 1990.[20] Another states that Musharraf was aware of aid to North Korea, that General Mirzla Aslam Beg knew about aid to Iran, and that two other COAS (Generals Jehangir Karamat and Abdul Waheed) knew of aid to North Korea.[21] General Beg long has had a reputation for being an Islamist and an admirer of the Iranian revolution. Beg officially denied knowledge of aid to Iran, although former Prime Minister Benazir Bhutto said she was approached several times from 1988 to 1990 (the period when Beg was COAS) by military officials and scientists who wanted to export nuclear technology. According to Bhutto, “it certainly was their (scientists’) belief that they could earn tons of money if they did this.” But Bhutto had established a policy in December 1988 not to export nuclear technology.[22] Bhutto also said that “no Pakistani thought Mr. Khan was acting alone.”[23]

Reports of extensive official cooperation between Pakistan and the three countries lend credence to claims that Pakistan’s government might have known of transfers. Pakistan reportedly signed a nuclear cooperation agreement with Iran in 1986, although the terms of that agreement are unknown, and Iranian scientists received training in Pakistan in 1988. Libyan funding of the Pakistani nuclear weapons program in the early years long has been alleged.[24] Pakistan’s well-documented missile cooperation with North Korea beginning in the early 1990s may have provided either a convenient excuse for rogue nuclear scientists to ply their trade or sparked the plan for a barter arrangement as Pakistani foreign currency reserves fell dangerously low in 1996.[25]

Khan reportedly made more than $100 million from selling nuclear technology to Libya alone.[26] Musharraf has stressed the role of greed, but Khan reportedly told investigators he hoped to deflect attention from Pakistan’s nuclear program and support other Muslim countries (i.e., Iran and Libya) by providing nuclear assistance.[27] In the late 1980s, when cooperation with Iran allegedly began, the argument for deflecting attention from Pakistan could have been plausible, particularly as pressure from the United States grew with each new revelation of Pakistan’s nuclear progress.

U.S. Policy Toward Pakistan

For 30 years, the U.S. government has tried to restrain Pakistan from acquiring nuclear weapons using such tools as diplomacy, aid, and interdiction. When those failed, sanctions were developed specifically against Pakistan to slow its nuclear program (see sidebar). U.S. policy implementation, however, has been inconsistent, particularly when other U.S. national security interests at times have taken precedence. Less than six months after cutting off aid in 1979 to Pakistan for its uranium-enrichment activities, the Soviets invaded Afghanistan and negotiations to resume aid to Islamabad began. In 1990, after the Soviets pulled out, President George H.W. Bush determined he could not certify that Pakistan did not possess a nuclear device, and so aid was cut off again, this time for several years. In 1998, aid was cut off following Pakistan’s nuclear tests, but this lasted less than a year. After the attacks of September 11, 2001, Congress passed legislation allowing Pakistan to circumvent the remaining restrictions on aid (related then to its foreign debt arrears and 1999 military coup).

Over time, the U.S. threshold of proliferation tolerance has risen from Pakistan’s acquisition of technology to its possession of a nuclear device and then to nuclear testing (in 1998). Has the threshold now risen to the point where the United States is seeking to sidestep laws aimed at penalizing states that supply nuclear technologies, rather than those that receive such aid? This could explain why the United States has not strenuously pursued the question of potential Pakistani government cooperation in Khan’s activities. The State Department concluded in a letter to key members of Congress on March 12, 2003, that “the administration carefully reviewed the facts relating to the possible transfer of nuclear technology from Pakistan to North Korea, and decided that they do not warrant the imposition of sanctions under applicable U.S. laws.” Given administration statements alleging such nuclear transfers, the United States appears to have accepted Islamabad’s explanation that it had no role.
Pinning the blame on individuals is a time-tested and obvious circumvention (à la the 1996 provision of Chinese ring magnets to Pakistan, which was not deemed a sanctionable offense). Although individuals engaging in proliferation are barred under U.S. law from receiving U.S. government contracts, there are few other ways for the United States to punish them. Nonetheless, a determination that Libya and Iran received such equipment, even from an individual, might not relieve Bush of an obligation to make a determination and then perhaps waive sanctions. In particular, receiving a nuclear weapons design is a trigger for cutting off aid under Section 102 of the Arms Export Control Act. In the case of both Libya and Iran, new sanctions would add little to the broader burden already imposed on them by virtue of their status as a state sponsors of terrorism. With respect to Pakistan, draft Senate authorizing legislation on the foreign affairs budget (S. 2144) currently contains a waiver of sanctions (including those for proliferation) previously in force.

The line in the sand appears to be drawn now at the transfer of nuclear weapons technology to terrorists. Unfortunately, such activities are incredibly difficult to deter, detect, identify, and stop. The 2002 U.S. National Strategy to Combat Weapons of Mass Destruction identifies this problem as “one of the most difficult challenges we face.” Whether the threat of terrorists acquiring and using nuclear weapons is greater now than before is unclear, but the ability to influence terrorists in this regard, in contrast to states, remains extremely limited.

U.S. officials have intimated they knew about Khan’s network for several years, and the U.S. government seems to have been quietly working with the Pakistani government to limit the damage from Khan’s nuclear network.[28] Shortly after Khan’s dismissal in 2001, Deputy Secretary of State Richard Armitage reportedly stated that “people who were employed by the nuclear agency and have retired” could be spreading nuclear technology to other states, including North Korea.[29] Nonetheless, after U.S. intelligence officials leaked the news in 2002 that Pakistani enrichment technology was transferred to North Korea, Secretary of State Colin Powell claimed that “President Musharraf gave me his assurance, as he has previously, that Pakistan is not doing anything of that nature....The past is the past.”[30] But Powell put Musharraf on notice: “I have made clear to him that any, any sort of contact between Pakistan and North Korea we believe would be improper, inappropriate, and would have consequences.”[31]

Clearly, another key factor here is the priority of counterterrorism over counterproliferation policy in the Bush administration. In 2002, White House spokesman Ari Fleischer was asked whether countries that provided assistance to North Korea on the enrichment program would risk being cut off from U.S. assistance and he responded that “September 11th changed the world.” Two months later, the United States decided to impose sanctions on North Korea for sending Scud missiles to Yemen, yet waived sanctions against Yemen for receiving them. The reason: According to State Department spokesman Richard Boucher, “because of the commitments that they [Yemen] had made and in consideration of their support for the war on terrorism.”

Missiles to Yemen may be one thing, but tacitly condoning past nuclear weapons cooperation with three state sponsors of terrorism is counterproductive. Secretary of State Powell’s announcement on March 18th that Pakistan would be designated a “major non-NATO ally,” a step that facilitates military cooperation and assistance, reinforces the impression that for the Bush administration, counterterrorism trumps counterproliferation cooperation.

Next Steps

There is no telling how much information Khan’s 12-page confession contains, whether it is accurate or complete, or how much will be revealed either to the IAEA or other states. So far, Musharraf has denied the need for an international investigation or any international inspections of Pakistani nuclear facilities.[32] He has said he will share some information with the IAEA, and U.S. officials apparently are content with that approach.[33]

The main U.S. response so far has been to focus on closing down Khan’s covert nuclear network. On February 11, 2004, Bush unveiled new efforts aimed partly to accomplish this.[34] Briefly, Bush proposes to expand interdiction efforts (under the Proliferation Security Initiative) to “shut down labs, to seize their materials, to freeze their assets;” criminalize proliferation through a new
U.S.-sponsored UN Security Council resolution; expand cooperative threat reduction measures to states such as Libya; ban enrichment and reprocessing capabilities beyond those states that already have them; make the Additional Protocol (to the nuclear Nonproliferation Treaty [NPT]) a prerequisite for nuclear-related imports; and create a special committee at the IAEA to investigate compliance.

Strengthening export controls is laudable and necessary, but these measures, even taken together, are unlikely to prevent another Khan affair. Above all, supplier controls rely on the fundamental premise that slowing the leakage of technology (which itself is inevitable) buys time for the world community to persuade states not to acquire nuclear weapons. This premise is undone by the emergence of a supplier who can supply it all. In one sense, Khan’s success is the natural result of a well-known NPT loophole: states outside the treaty that have acquired nuclear weapons. Pakistan, India, Israel, and possibly North Korea are likely to remain outside the NPT and therefore are not bound by the treaty’s prohibitions on sharing nuclear weapons technology.

Despite this, the United States and other supplier countries have their own means to impose penalties for actions that undermine the NPT (see sidebar), as well as ample carrots to offer Pakistan. The Bush administration has proposed a $3 billion aid package to Pakistan over the next five years. At a minimum, the United States should condition this aid on requiring Pakistan to give the United States full access to Khan, as well as to improve transparency, export controls, and personnel reliability in its nuclear program.

Conclusion

By treating Libya, the “axis of evil” countries, and Pakistan as separate and distinct problems, the United States is missing an opportunity to develop a common and consistent nuclear nonproliferation policy.

Events in Iraq, Iran, Libya, Pakistan, and North Korea all point to the lesson that nothing can substitute for on-site inspection of suspicious activities. Inspections in Iraq failed to come up with evidence of a reconstituted nuclear program, whether conducted by the IAEA and the UN Monitoring, Verification and Inspection Commission (UNMOVIC) or the Iraq Survey Group. Inspections in Iran have slowly revealed capabilities Iran had been loathe to admit and which were not revealed by overhead imagery alone. Inspections in Libya surprised some with revelations of centrifuge and weapons design procurement but basically confirmed long-held views that Libya’s nuclear weapons program did not amount to much. Finally, the lack of inspections in North Korea has left the United States guessing about North Korean enrichment capabilities.

Although Pakistan has rejected the NPT and any kind of international inspections into Khan’s activities, there may be ways of introducing more transparency into its nuclear program. Serious discussions with Pakistan on export control only began in 2003 and the Bush administration has asked for just $1 million in the FY05 State Department budget for export control assistance, a tiny fraction of the $700 million in assistance to Pakistan for next year. U.S. export control assistance should be expanded, with a particular focus on eliminating exemptions for Pakistani defense agencies and assisting Pakistan to adhere to Nuclear Suppliers’ Group guidelines. The United States could also offer specific assistance in physical protection of nuclear material and personnel security under the auspices of a cooperative threat reduction program. Nonetheless, even if Pakistan accepted this offer, this may not produce adequate transparency.

Ultimately, it would be far better to get international inspections at Pakistani facilities and to draw Pakistan into a fissile material cutoff treaty (FMCT). U.S. policy has supported such a treaty since 1993, but little diplomatic capital has been expended on it. Pakistan has said it will support an FMCT. At a minimum, a cutoff agreement would place all enrichment and reprocessing worldwide (given universal adherence) under inspection. In this way, it would require inspections at facilities that have operated covertly for many years, opening them up to international scrutiny and making it more difficult for covert supplier networks to flourish. A treaty also could go further and close down unneeded production capacity or incorporate international management or control of fissile material.

Finally, although Pakistan’s current importance to the war on terrorism makes U.S. sanctions unlikely, the United States needs to make clear that there will be severe consequences for further
transgressions, regardless of the counterterrorism issue. U.S. policymakers also need to reevaluate their tepid support for multilateral nonproliferation approaches. If anything, the globalization of the black nuclear market should provide a warning that one country cannot halt this problem alone.

Retracing Khan’s Path

Abdul Qadeer Khan’s unlikely route to nuclear stardom began in 1972. As a trained metallurgist subcontracted to the fledgling URENCO consortium, he was asked to translate classified documents on centrifuge technology from their original German into Dutch. Khan’s access, as well as overt Pakistani procurement attempts, began to attract notice from Dutch authorities in late 1975. Transferred to a less sensitive position, Khan fled Holland for his native Pakistan in December 1975. His intimate knowledge of suppliers and a weak international export control regime allowed him to build a centrifuge enrichment plant at Sihala in just a few years.\[1\] The construction and operation of the Kahuta enrichment facility, known then as the Engineering Research Laboratories (ERL), followed. Khan’s hard work was rewarded in 1981 when President Muhammed Zia ul-Haq renamed the ERL as the Khan Research Laboratory (KRL).\[2\] According to some reports, a competition was encouraged between the KRL and the Pakistan Atomic Energy Commission (PAEC) to develop two routes to the bomb—HEU and plutonium. Khan himself has described his activities as supporting the PAEC’s reactor development program, enriching uranium to use as fuel in the Chasma nuclear reactor.

By many accounts, the KRL and Khan were given remarkable autonomy. This independence only grew after the uranium-enrichment program, once thought of as a fallback in case the French reprocessing plant at Chasma fell through (which it did in 1978 under strong U.S. pressure), became the cornerstone of the Pakistani nuclear arsenal.\[3\] One aide close to President Gen. Pervez Musharraf stated, “Khan had a complete blank check. He could do anything. He could go anywhere. He could buy anything at any price.”\[4\] Musharraf himself has noted that “there was a covert program for maybe 30 years, and there was a lot of autonomy given to the organization and individuals running the program. There was a lot of chance for leakages.”\[5\]

A critical question is why the Pakistani government permitted this autonomy. Politics likely played a key role. After taking power in 1999, Musharraf began to receive reports of corruption (skimming government contracts and nepotism) at Kahuta.\[6\] Khan’s lavish lifestyle, despite his modest salary, was “the worst-kept secret in town,” said one Pakistani official.\[7\] Still, Musharraf did not remove him as KRL head until 2001, allegedly under considerable pressure from the United States. Even then, he was appointed special adviser to Musharraf. After Khan’s confession, Musharraf called him a personal hero and a hero to the nation.\[8\] Musharraf declared that, “since [Khan] had acquired a larger-than-life figure for himself, one had to pardon him to satisfy the public.”\[9\]

Khan further cemented his importance to the entire nuclear weapons program through KRL development of missiles in the 1980s. Reportedly, a competition was encouraged between the plutonium team (PAEC), working toward Chinese-derived nuclear-capable missiles, and the HEU team (KRL), collaborating with North Korea on a Scud derivative.\[10\] Khan’s frequent trips abroad for “legitimate” missile cooperation with North Korea might have provided cover for his nuclear deals.

The nuclear program prior to 1998, according to Pakistani officials, was handled by just a few people at the top.\[11\] Despite Pakistan’s claims to have tightened controls by creating the National Command Authority (NCA) in February 2000, high-level officials still seem to be exempt. Reportedly, key people in the Pakistani nuclear weapons program are screened every two years (since 2000) by the Inter-Services Intelligence Agency (ISI), Military Intelligence, the Intelligence Bureau, and the Strategic Plan Division of the NCA. However, “top-level people (including scientists) are controlled by their organizations and not psychologically screened.”\[12\] Musharraf has suggested in interviews that it is virtually impossible to stop security breaches by institution leaders. Referring to himself, he stated, “If there was a security problem here and if I myself am involved in the breach, do you think anyone is going to check me?”\[13\] This analogy might reflect the unique status of Khan, a fundamental flaw in Pakistani nuclear security procedures, or both. Moreover, it is yet to be established that some or all of these exchanges were not matters of national policy.
NOTES


12. Ibid.


During the past three decades, the United States has imposed and lifted sanctions on Pakistan many times. The changes have reflected modifications in U.S. foreign policy priorities as much as shifts in Pakistan's nonproliferation behavior.

1976 Congress amends the Foreign Assistance Act of 1961 (FAA) to bar aid to countries that transfer uranium-enrichment or reprocessing equipment, materials, or technology in violation of specified conditions (Symington amendment, Sec. 669, FAA).

1977 Congress amends FAA to bar aid for countries that detonate a nuclear explosive (Glenn amendment, Sec. 670, FAA, which also covers reprocessing transfers). Aid suspended in September.

1977 because Pakistan is found to be seeking reprocessing technology from French companies.
<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
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<tr>
<td>1978</td>
<td>Aid resumed in October 1978 after France cancels reprocessing deal.</td>
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<tr>
<td>1979</td>
<td>Aid cut off in April 1979 because of Pakistan’s enrichment activities (Symington invoked).</td>
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<tr>
<td>1980</td>
<td>Negotiations to resume aid begin after Soviets invade Afghanistan.</td>
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<tr>
<td>1981</td>
<td>Aid resumed (Symington waived by Congress (Sec. 620E, FAA) of Sec. 669) for Pakistan but restrictions added for transfers of nuclear weapons and design information.</td>
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<tr>
<td>1985</td>
<td>Solarz amendment (amends Sec. 670, FAA) bars aid for illegal export from the United States of any material, equipment, or technology that would contribute significantly to the ability of a country to build a nuclear explosive device. Pressler amendment (Sec. 620E(e), FAA) prohibits the transfer of military equipment or technology to Pakistan specifically unless the president certifies to the Congress that Pakistan does not possess a nuclear explosive device and that the proposed U.S. aid program would reduce significantly the risk that Pakistan will possess such a device.</td>
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<tr>
<td>1987</td>
<td>Symington waiver expires; renewed for 30 months.</td>
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<tr>
<td>1990</td>
<td>Aid suspended under Pressler amendment. Symington waiver expires.</td>
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<tr>
<td>1995</td>
<td>Brown amendment relaxes cut-off so that only military aid and transfers barred.</td>
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<tr>
<td>1998</td>
<td>May: aid suspended after nuclear tests. July: Congress provides waiver for wheat purchases. Aid resumes for one year, except military assistance, dual-use exports, and military sales (India-Pakistan Relief Act of 1998 (Brownback I)).</td>
</tr>
<tr>
<td>1999</td>
<td>Aid resumes permanently (Brownback II gives president permanent waiver authority for proliferation sanctions). However, foreign debt arrears and military coup bar aid to Pakistan.</td>
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<tr>
<td>2001</td>
<td>Presidential executive order lifts remaining restrictions.</td>
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**NOTES**


3. A 1982 Senate Foreign Relations Committee report, *Analysis of Six Issues About Nuclear Capabilities of India, Iraq, Libya, and Pakistan*, concluded that from 1978 to 1981 India acquired technology from France, the United States, and the United Kingdom; Iraq from Brazil, Germany, France, Italy, Niger, Norway, Portugal and Russia; Libya from Argentina, Finland, India, Niger, the United States, and Russia; and Pakistan from Germany, France, Italy, the Netherlands, Niger, Norway, Spain, Switzerland, Turkey, the United Kingdom, the United States, and Russia. By the 1991 Persian Gulf War, the United States, the United Kingdom, and Switzerland were also found to have supplied Iraq with nuclear technologies. See “Who Armed Iraq?” *The New York Times*, July 18, 1993.

4. Pakistan’s investigation also included Mohammed Farooq, who supervised the KRL’s contacts with foreign suppliers; Yasin Chohan, a KRL metallurgist; Major Islam ul-Haq, a personal staff officer; Nazeer Ahmed, a KRL director; and Saeed Ahmed, head of centrifuge design. Between 11 and 25 KRL employees were questioned, as well as the generals in charge of KRL security, Generals Beg and Karamat. Simon Henderson, “Link Leaks,” *National Review Online*, January 19, 2004.

6. In fact, U.S. sanctions were imposed in early 2003 on the KRL for receiving MTCR Category I missiles from North Korea.


9. Libya received two of the P-2-type centrifuges in 2000 and placed an order for 10,000 more. Iran has claimed that it received P-2 plans, but no centrifuge components, and tried to develop a carbon-composite rotor on its own, with no success. GOV/2004/11 report and GOV/2004/12 report.


11. Asked by Senator Chuck Hagel (R-NE) what the United States knows about Pakistan’s involvement in helping North Korea, Deputy Secretary of State Richard Armitage replied that “[w]e know it’s both ways and we know a good bit about a North Korean-Pakistan relationship.” Richard Armitage, testimony before the Senate Foreign Relations Committee, February 4, 2003.


15. “Pakistan Informed U.S. of ‘Personal’ Nuclear Technology Transfer: Report,” Agence France-Presse, December 25, 2003. According to this report, the United States asked the Pakistani government to look into alleged nuclear transfers to North Korea, and Pakistani officials concluded from the deposit of large sums of money in Kahuta scientists’ bank accounts that nuclear technology had indeed been transferred on an individual basis.

16. Ibid.

17. Glenn Kessler, “Pakistan’s N. Korea Deals Stir Scrutiny; Aid to Nuclear Arms Bid May Be Recent,” The Washington Post, November 13, 2002. Pakistan’s ambassador to the United States, Ashraf Jehangir Qazi, reportedly stated that “[n]o material, no technology ever has been exported to North Korea “and “[n]obody can tell us if there is evidence, no one is challenging our word. There is no smoking gun.”


23. On the other hand, Bhutto stated she did not think it probable that centrifuge parts were exported from Pakistan to Iran from 1994 to 1995 (while she was prime minister), despite revelations of exactly that in a Malaysian police report connected to the Iran investigation.


33. State Department spokesman Richard Boucher stated in the daily press briefing on February 17, 2004, that “we look forward to hearing from the Pakistani government about the facts as they have developed them during the course of their investigation.”


35. For specific impediments to providing cooperative threat reduction assistance to Pakistan and India, see Sharon Squassoni, “Nuclear Threat Reduction Measures for India and Pakistan,” *CRS Report for Congress*, RL 31589.

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