North Korea's Quest for Nuclear Weapons: New Historical Evidence

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Soviet and East European documents provide significant revelations about the interactions of North Korea and its allies. First, they show Pyongyang's longstanding interest in obtaining nuclear technology and probably nuclear weapons. Second, they reveal that North Korea's leadership consistently evaded commitments to allies on nuclear matters-particularly constraints on its nuclear ambitions or even the provision of information. Third, North Korea's words and deeds evoked substantial concerns in Moscow and other communist capitals that Pyongyang, if it obtained nuclear weapons, might use them to blackmail its partners or risk provoking a nuclear war. When aid from the Union of Soviet Socialist Republics was not forthcoming, the Democratic People's Republic of Korea sought to bypass Moscow and obtain assistance from the Kremlin's East European clients and, when that proved fruitless, from Pakistan. The absence of international support reinforced the logic of selfreliance and "military first," pushing North Korea to pursue an independent line with respect to its nuclear weapons. These patterns cannot be extrapolated in a linear way, but they surely suggest reasons for caution by those hoping to engage North Korea in a grand bargain.

Keywords: North Korea, nuclear technology, weapons, USSR, Eastern Europe, China, diplomacy

orth Korea exploded a nuclear device in 2006. How did it obtain the materials and technology? The story began more than a half century earlier (Mazarr 1996; Oberdorfer 1997; Wampler 2003). Recently released documents detail the long history of North Korea's efforts to acquire nuclear weapons, in part through demands on its allies for assistance in nuclear science, nuclear power, and nuclear weapons.¹ These efforts reflected a host of competing motivations on the part of Pyongyang. The Democratic People's Republic of Korea (DPRK) wanted a nuclear deterrent and doubted the reliability of Soviet and Chinese backing in times of crisis. Competition with South Korea no doubt played a role as well, not only militarily but in terms of prestige. North Korea also wanted to be treated by the Union of Soviet Socialist Republics (USSR) on a par with East Europe's Communist regimes, and to be noticed and respected by the United States and other non-Communist governments.

Whatever Pyongyang's motives, several features of its diplomatic behavior are of more than historical interest. First, Pyongyang was aggressive and insistent in seeking foreign aid and assistance for nuclear purposes and continually complained about the failure of the USSR and other Communist regimes to do more for the DPRK. Second, the documents reveal that North Korea's leadership consistently evaded commitments to allies on nuclear matters, particularly constraints on its nuclear ambitions or even the provision of information. Third, North Korea's words and deeds evoked substantial concerns in Moscow and other Communist capitals. Communist allies feared that if Pyongyang obtained nuclear weapons, it might use them to blackmail its partners or take risks that could provoke a nuclear war.

When the USSR was not forthcoming, the DPRK sought to bypass Moscow and obtain aid from the Kremlin's East European clients. When this effort proved fruitless, Pyongyang looked to and obtained some help from Pakistan. But the nuclear device North Korea exploded in 2006 appears, like China's first nuclear test in 1964, to have been achieved with very limited help from outside—a tribute, Pyongyang could say, to self-reliance and putting the military first.

The documents show that North Korean diplomacy toward friends was nearly as combative as toward its supposed foes. Given that even Pyongyang's professed allies were subject to continual evasion and subterfuge, the record augurs poorly for the success of a nonproliferation regime that requires a substantial amount of trust. The North Koreans, no less than their erstwhile Soviet backers, excel at *maskirovka*—camouflage and other deceptions. But as in the current setting, the more that Pyongyang sought to secure weapons and to hide both its capabilities and intent, the more concerned its partners and adversaries became.

I offer this caveat: The record is incomplete—consisting mainly of Soviet and East European (mainly Hungarian) reports on what North Koreans did and said. But the reports are congruent with each other and what is otherwise known about the DPRK and the world.²

North Korea's Strong Interest in Things Nuclear

As early as the mid-1950s Kim II Sung initiated a quest for nuclear weapons, in part to counter nuclear threats from the United States (Mazarr 1996, 17). In July 1955, members of the DPRK Academy of Sciences attended a nuclear energy conference in Moscow. In 1956, the DPRK signed an agreement on nuclear research with the USSR. Soon, North Korean scientists, along with scientists from the People's Republic of China (PRC) and other Communist countries, began arriving at the Dubna Joint Institute for Nuclear Research in central Russia for training.

The Soviets tried to keep military know-how to themselves. Having "mastered the atom," neither Moscow nor-fifteen years later-Beijing wanted to share its nuclear secrets. Whatever nuclear or other assistance the USSR provided the DPRK was transmitted grudgingly and with many strings attached-as also with Soviet aid to China. Soviet assistance to China's nuclear power program began about the same time as to North Korea-in 1954-1955. But Chinese sources assert that the USSR on October 15, 1957, signed a New Defense Technology Pact with China. According to Beijing, this pact committed the USSR to assisting China's nuclear weapon program-even to delivering a "sample atomic bomb." As Marxists might say, it was "not by accident" that the very next month Mao Tse-tung endorsed Soviet leadership of the Communist movement at the Moscow Conference of Communist and Workers' Parties. Having pocketed Mao's support, the N. S. Khrushchev regime then stalled on its commitment and finally reneged on the deal on June 20, 1959-citing prospects for arms limitations with the United States. It appeared that Khrushchev played a double game, never intending to give real support to China's nuclear weapon program (Clemens 1968). This interpretation was later confirmed in the memoir of the marshal who supervised China's development of nuclear weapons and missiles (Nie Rongzhen 1983, vol. 3).

Moscow's regrets for whatever nuclear aid it gave China probably contributed to the Kremlin's refusal to make the same mistake with North Korea. Nonetheless, the Kremlin in September 1959 agreed to assist in the establishment of a nuclear research center in North Korea, code-named "The Furniture Factory" and located on the bank of the Kuryong River some eight kilometers from the town of Yongbyon. As Sino-Soviet tensions rose, the DPRK also persuaded China in 1959 to sign an agreement on nuclear cooperation.

When Moscow suspended the 1957 pact with China in 1959, it drove a stake into the heart of the Sino-Soviet partnership. Signs of a serious rift appeared in 1960, but Beijing revealed its story of the New Defense Technology affair only in 1963—one element in China's response to Moscow's signing a limited nuclear test ban with Washington and London, portrayed by PRC authorities as a kind of nonproliferation accord.

On August 26, 1963, as Sino-Soviet discord made headlines, the Soviet ambassador in Pyongyang, Vasily Moskovsky, reported to the Kremlin that he received the East German ambassador at the latter's request. The ambassador "said that the Koreans, apparently on Chinese instructions, are asking whether they could obtain any kind of information about nuclear weapons and the atomic industry from German universities and research institutes" (Document 1).

A month later, on September 27, 1963, Moskovsky invited two Soviet specialists analyzing uranium ore in the DPRK for a talk at the USSR Embassy. They told him "the Korean side insistently tries to obtain information about the deposits and quality of the uranium ore mined in the Soviet Union. But our comrades have been instructed on this account, and know how to evade answering such questions" (Document 2).

The "specialists reported that the Korean uranium ore is not rich and is very scarce. The mining and processing of such ore will be extremely expensive for the Koreans. But from conversations with the Korean specialists they learned that the Koreans, despite all odds, want to develop the mining of uranium ore on a broad scale." The Soviet specialists thought it probable that "uranium ore mined in the DPRK will be supplied to China," because a small quantity of uranium ore would suffice for a North Korean nuclear reactor. The Soviets were trying to persuade the North Koreans that it "would be much easier for the economy of the DPRK to satisfy all internal needs by means of purchasing a small amount of the necessary processed 'product." But the Koreans replied that they needed to extract uranium ore in large quantities. Moskovsky concluded: "I think that by sending specialists to the DPRK from the Soviet Union we are helping China, and at the time of the current struggle against the Chinese splitters, one should not do this" (Document 2).

North Koreans often bit the hand that fed them. The Hungarian ambassador to Pyongyang, József Kovács, reported to Budapest on January 11, 1964, how Soviet ambassador Moskovsky told him at dinner the previous evening that in 1963 the North Korean "officials had demanded fingerprints from the Soviet technical experts who worked on the construction of a radio station, an experimental nuclear reactor, and a weaving mill (!) that were being built with Soviet assistance and cooperation, and made [the Soviet experts] fill out a form of 72 questions, in which they had to describe their circle of relatives and friends in detail, with addresses! A Korean 'colleague' told one of the technical experts, 'if we cannot get you for some reason, we will get your relatives; this is why [the questionnaire] is needed!'" (Document 3, exclamation marks in the original).

1965: A Small Reactor at Yongbyon

Despite the end of Soviet nuclear assistance in June 1959 and withdrawal from China of thousands of Soviet specialists in 1960, China detonated its first nuclear device in October 1964. Pyongyang then sent a delegation to Beijing to request Chinese assistance in nuclear matters, but Mao Tse-tung sent the Koreans away empty-handed. One year later, however, the USSR sold the DPRK a small two- to four-megawatt research reactor, also built in the vicinity of Yongbyon. It began operation in 1967. Ten years later, at Soviet insistence, Pyongyang signed a "Type 66" safeguards agreement with the International Atomic Energy Agency. Officials from the IAEA inspected the plant in 1988 and 1989, but they also helped North Korea with uranium mining (Mazarr 1996, 25).

1966–1967: Ingrates Who Demand Ever More

North Korea pocketed foreign aid and then demanded more. It used its existing debts as a bargaining tool to acquire more. But the Soviets could say *nyet*. Thus, the Hungarian ambassador to DPRK, István Kádas, reported to the Hungarian Foreign Ministry on March 13, 1967, that the Soviets had recently "rejected a Korean request for the delivery of a *nuclear power plant*." The context shows the importance Pyongyang attached to this project. The request began with an "incognito visit that Comrade Kim II Sung made to Moscow" in late 1966. He headed a high-level delegation that visited the Soviet Union from February 13 to March

3. The DPRK delegation was received by the Soviet party leader Leonid Brezhnev and by Prime Minister Aleksei Kosygin, while the head of the Soviet delegation was First Deputy Premier Kiril Mazurov. The Hungarian ambassador gave no specific reason for the Soviet rejection except to note that an "experimental nuclear reactor . . . established with Soviet assistance . . . opened approximately one and a half years ago, and since then the Soviet comrades hardly have any data about its operation" (Document 4). The Soviets may well have been displeased by the North Korean proclivity to demand much and give little in return.

1967: An End Run Deflected in Berlin

Late in 1967, the DPRK tried to do an end run by persuading the East Germans to do what the Soviets refused. A delegation of North Korean nuclear experts visited the German Democratic Republic (GDR) from December 4 to 12, 1967. Early the next year, the GDR chargé d'affaires ad interim in Pyongyang informed the Hungarian Embassy to the DPRK about the visit. The details were provided in a report by Hungarian ambassador István Kádas to the Hungarian Foreign Ministry, February 29, 1968 (Document 5).

According to Kádas: "The three-member Korean delegation was led by the vice-chairman of the Atomic Energy Commission of the DPRK. The other members of the delegation were a departmental head of the Commission and the head of a major department of the Institute for Research on Atomic Energy. The host of the Korean delegation was the GDR State Planning Commission. During its stay there, the delegation visited several industrial plants, mines, institutes of higher education, and several research institutes related to the field [of nuclear science]."

On the last day the DPRK delegation said it wished to

- sign an agreement with the GDR in the field of nuclear research,
- obtain equipment needed for the construction of a nuclear power plant from the German side,
- share the experiences gained in the operation of nuclear reactors with it,
- purchase equipment needed for producing radioactive isotopes from the GDR,
- share in the experiences that the Germans gained in the field of radiation protection,
- conduct an exchange of nuclear scientists,

- send nuclear science trainees to the GDR, and
- purchase from the GDR instruments measuring radioactive isotopes, measuring instruments used in nuclear physics, certain secret equipment used in nuclear research, plus microfilms or copies of articles on nuclear research in Western scientific journals.

The GDR replied that, "as far as possible," it was ready to cooperate with the DPRK but was "not in a position to make wide-ranging cooperation in every field of the peaceful utilization of atomic energy since the GDR also cooperates with several socialist countries, above all with the Soviet Union." The GDR asked "the Korean comrades to appeal simultaneously to the countries that cooperate with the GDR." Also, while the Germans acknowledged the verbal requests of the Korean delegation, the GDR asked the North Koreans to "make their proposals on the government level in the form of a written request or to include the whole issue in the agreement on scientific and technical cooperation."

The GDR "strongly emphasized that the DPRK should appeal to the Soviet Union, because they [the East Germans] could enter into negotiations [with North Korea] only if the latter [the USSR] agrees with it." Also, the GDR could "receive trainees only if the DPRK sends their scheme of work in advance. They [the East Germans] will decide on this basis whether it is possible to receive them." The GDR affirmed its readiness to "send a delegation of experts to the DPRK or receive one from that country." However, the Germans asked that "in such cases, the delegations should be given authorization by their governments." The GDR chargé d'affaires ad interim added that DPRK delegations had visited Czechoslovakia and the Soviet Union for similar purposes (Document 5).

1968

The year 1968 saw turbulence across the globe. Mao Tse-tung's Cultural Revolution was reaching fever pitch. Chinese placards screamed "fry Brezhnev and skin Kosygin!" (Clemens 1968). In January, while Communists in Vietnam launched their Tet offensive, North Korean forces attacked the Republic of Korea (ROK) president's Blue House in Seoul. When the attackers perished, Pyongyang said they had been "South Korean partisans." Needing to mask North Korea's adventurism, the DPRK protested US aggression and seized an unarmed US spy ship, the *Pueblo*. Faced with a strong response from the Lyndon Johnson administration

that seemed to challenge Moscow's Far Eastern fleet and Soviet interests in Northeast Asia, the Kremlin appeared to support the DPRK. Johnson backed down. Behind the scenes, however, the Soviets ordered Kim II Sung to return the US crew. But he did not. Instead, the DPRK regime began to evacuate its capital and mobilize the entire population. Kim II Sung then called on the Soviet Union to honor its alliance, but Brezhnev refused and summoned Kim to Moscow. Kim did not go but eventually canceled the evacuation and returned the US crew (Weathersby 2008).

The Nuclear Nonproliferation Treaty (NPT) drafted by the USSR and United States and submitted to all UN members for signature in 1968 added to tensions between the DPRK and Soviet leaders. It appeared that the USSR stood ready to provide nuclear power assistance only to clients who were both faithful and sufficiently advanced to deal with nuclear technology—Bulgaria, Czechoslovakia, the GDR, and Hungary. Often-defiant Romania and North Korea were excluded; so was Vietnam—obedient but not ready for high tech. When a Romanian delegation visited Pyongyang in February 1968, both sides agreed that "the big countries that have nuclear capacity should ensure that the small countries would also be able to utilize atomic energy for peaceful purposes. The small countries should not suffer a loss as a consequence of the [nonproliferation] treaty." This, at any rate, was how the Hungarian Embassy in the DPRK reported the visit to the Hungarian Foreign Ministry on February 29, 1968 (Document 5).

After raising many objections to the NPT in 1968 (Clemens 1968, 159–160), however, Bucharest signed the treaty and submitted to safeguards. Pyongyang, by contrast, refused to sign the NPT until 1985 and put off signing a safeguards agreement with the IAEA until January 1992, after US nuclear weapons were withdrawn from Korea; even then, North Korea's obligations under the NPT immediately became the subject of dispute that escalated into the first nuclear crisis in 1993–1994.

In summer 1968 (while Moscow deliberated forceful intervention against nominal comrades in Czechoslovakia), the DPRK asked Moscow for a large increase in economic and military aid. Constrained by the Sino-Soviet rift, Moscow complied with some requests. The USSR could not intervene in North Korea's domestic affairs as in 1956, when the Soviet Embassy sheltered anti-Kim Communists. Moscow "continued to provide North Korea's essential security while asking little in return." As Weathersby writes (2008), this nexus "made it possible for Kim II Sung to transform the *juche* idea into a full-blown nationalist ideology."

1969: Tilting Toward Beijing on Nuclear Proliferation

Jeno Sebestyén, recently named Hungarian ambassador in Pyongyang, stopped in Moscow on November 10, 1969, on his way to his new post. In Moscow he met with O. V. Okonishnikov, who had worked in Korea as a counselor, and V. I. Likhachev, the head of the Soviet Foreign Ministry's Far Eastern Department. On November 12, the ambassador reported to the Hungarian Foreign Ministry:

The Soviet comrades emphasized that on the part of the Soviet Union as well as the other socialist countries that hold correct views, patient and persistent persuasion was needed to get the Korean position closer to our common position on the big issues of international politics. This task was not an easy one; they cited the Soviet-Korean debate over the nuclear nonproliferation treaty as an example. The Soviet side asked the Korean comrades whether they thought that it would be a good thing if, for instance, Japan—which possesses the required industrial and technical capacity—obtained nuclear weapons.

The North Koreans acknowledged that in the specific case of Japan, efforts to prevent nuclear proliferation were justified, "but in general they did not (by which they actually give veiled support to the Chinese position)" (Document 6, italics mine).

1970s: Moscow, Beijing, and Budapest See Kim II Sung as a Military Adventurer

We have no documents for the early 1970s, but Pyongyang's interest in acquiring nuclear power mounted when the price of oil increased several times in the 1970s and the USSR raised the price of oil to its client states (though keeping it at far below world prices). While Washington permitted and even helped the ROK develop nuclear power, the Kremlin did little to assist North Korea on this path.

North Korea also took note of India's "peaceful" nuclear explosion in 1974. India's example showed how even poor nations could develop nuclear weapons with materials gathered from far and wide—in India's case, a Canadian reactor using heavy water from the United States. Like Israel, India would be treated as a de facto nuclear-weapon state. North Korea wanted to follow suit.

By 1972 and for most of the decade, both the USSR and China sought détente with the United States and did not want North Korea to

rock the boat. Kim Il Sung, however, hoped to emulate Vietnam's Communists and unite the divided country under his rule. Many details of these developments were reported by János Taraba, chargé d'affaires ad interim in the Hungarian Embassy in the DPRK to the Hungarian Foreign Ministry on July 30, 1975 (Document 7).

Taraba wrote that "China is wary of a second Korean War, whereas Kim II Sung makes it clear that military force is an option." A party and governmental delegation led by Kim II Sung traveled extensively in spring 1975—to China (on April 18–26), Romania (on May 22–26), Algeria (between May 26 and June 2), Mauritania (from May 30 to June 1), Bulgaria (on June 2–5), and Yugoslavia (on June 5–9). After Kim II Sung's visit to China,

he also wanted to visit the Soviet Union in the second half of May, but the date he proposed did not suit the Soviet leaders. He also asked to be received in Prague, but the date did not suit [the Czechoslovak leadership] either. His intention to visit Moscow is an important political fact for two reasons. On the one hand, it shows that the DPRK continues to pursue a so-called policy of maintaining a balance of power between the Chinese party and our parties; on the other hand, we should take this intention into consideration while evaluating his trips to China, Europe, and Africa. (Document 7)

The Vietnamese ambassador to Pyongyang told Taraba about a conversation he had with the Chinese ambassador there. According to the Chinese ambassador, "the DPRK wants to create the kind of military situation in South Korea that came into being in South Vietnam before the victory [Communist takeover of the entire country]. Taking advantage of the riots against the dictatorial regime of Park Chung Hee, and invited by certain South Korean [political] forces, the DPRK would have given military assistance if it had not been dissuaded from doing so in time" (Document 7).

Taraba went on:

China holds back and opposes any kind of armed struggle that might shake the position of the USA. . . . A new Korean War would not be merely a war between North and South [Korea]. With this end in view, during the Korean party and government delegation's stay in Beijing, the Chinese side strongly emphasized the importance of the peaceful unification of Korea. . . . For his part, Kim II Sung said nothing, or hardly anything, about his own proposals to find a peaceful solution. On the contrary, he declared that if a revolution flared up in South Korea, the DPRK could not remain indifferent; it would give active assistance to the South Korean people. And if the enemy started a war, it would be met with a crushing repulse. In such a war the DPRK could lose only the cease-fire line, but it might achieve the unification of the country, he said. (Document 7)

Taraba believed that, "of the six visits, the ones made to China and Yugoslavia were also important in regard to the military equipment and military technology made available to the DPRK. China provides the People's Army of the DPRK with many kinds of military equipment and arms." Taraba's language was opaque, but he seemed to say that North Korea asked China for tactical nuclear weapons "to offset the nuclear forces in South Korea." Taraba noted that a deputy minister of the People's Armed Forces in Pyongyang who received Hungarian officers "vacationing [sic]" in North Korea alluded on June 11 to the DPRK's hope of obtaining tactical nuclear arms from China. Taraba added that Yugoslavia also helped the DPRK, "primarily in the field of naval forces" (Document 7).

An outsider can only be amazed at the assumption that China, *if* it possessed tactical nuclear weapons in the mid-1970s, might share them with the DPRK—especially given its worries about Kim II Sung's bellicosity. As for Yugoslavia, its capacity to help any country's naval forces was surely minimal at that time, even though Belgrade was still engaged in its own clandestine effort to develop nuclear weapons (Potter, Miljanic, and Slavs 2000).

1976: Anything Goes— Ultimatums from the *Demandeur*

North Korean demands on its Communist comrades reached a new level of intensity in 1976 against a strong uptick in belligerent actions. On April 7, two North Korean tanks entered the demilitarized zone (DMZ) and remained for four hours. On August 18, DPRK troops killed two US officers in a "tree-cutting" incident within the DMZ. Two days earlier, however, while the Nonaligned Nations were meeting in Colombo, the DPRK asked the UN General Assembly to put the Korean question on its agenda.

When a DPRK delegation visited the Hungarian Foreign Ministry on February 13, 1976, it exaggerated North Korea's military prowess telling bald-faced lies even to its nominal partners in the Communist realm. "The North Koreans believe Korea can not be reunited peacefully, and that the DPRK is prepared for a nuclear war." This is the central point in a memorandum by Thilstván Garajszki, who received O Song-gwon, the third secretary of the Korean Embassy in Budapest, and Yi Un-gi, the Korean deputy military attaché (Document 8). The North Koreans told Garajszki that

in their opinion, Korea cannot be unified in a peaceful way. *They [the North Koreans] are prepared for war. If a war occurs in Korea, it will be waged with nuclear weapons, rather than conventional ones. The DPRK is prepared for such a contingency:* the country has been turned into a system of fortifications, important factories have been moved underground (for instance, recently they relocated the steel works in Kangson), and airfields, harbors, and other military facilities have been established in the subterranean cave networks. The Pyongyang subway is connected with several branch tunnels, which are currently closed but in case of emergency they are able to place the population of Pyongyang there. (author's emphasis)

Implying some worry about the possibility of a US nuclear attack, the North Koreans were not above bluffing. The North Koreans assured their Hungarian comrade: "By now the DPRK also has nuclear warheads and carrier missiles, which are targeted at the big cities of South Korea and Japan, such as Seoul, Tokyo, and Nagasaki, as well as local military bases such as Okinawa." When the Hungarian diplomat asked "whether the Korean People's Army had received the nuclear warheads from China, they replied that [North Koreans] had developed them unaided through experimentation, and they had manufactured them by themselves" (Document 8).

A few days after this meeting in Budapest, the second-highestranking diplomat in the Polish Embassy in Pyongyang briefed the heads of the "fraternal eight" (Communist) embassies on information received from the Polish members of the Neutral Nations Supervisory Commission. Hungarian ambassador Ferenc Szabó reported on this briefing to the Hungary Foreign Ministry on February 18, 1976. The focus of Szabó's memorandum, however, was a study by the Far Eastern Institute in Seoul. The South Korean researchers reported that

the DPRK spent 60, 165, 135, and 140 million dollars on the purchase of arms in 1970, 1971, 1972, and 1973 respectively. During this time the manpower of the army underwent the following changes: it was 438,000 in 1970, 450,000 in 1971, 460,000 in 1972, and 470,000 in 1973. That is, military preparations continued in the period of [North-South] dialogue as well. The army of the DPRK has 1,100 T-55 tanks and a substantial number of surface-to-surface missiles. The DPRK or-

dered a substantial amount of diving suits and facilities in Japan. . . . The number of MiG fighter planes is 200, but they also have Su-7 [fighter-] bombers. (Document 9)

The Hungarian ambassador also asserted that "the DPRK wants to construct nuclear reactors, and is having talks about this issue in order to become capable of producing atomic weapons in the future" (Document 9). It was not clear whether he based this view on information from Polish officials, the South Korean report, or some other source. Whatever the source, he did not question this appraisal. It jibed with the report of a Russian intelligence officer that, in the late 1970s, Kim II Sung instructed the Ministry of Public Security to initiate a nuclear weapons program at expanded Yongbyon facilities (Oberdorfer 1997, 253).

Unfazed by the cool reception received in Beijing and Moscow in 1975, a DPRK delegation visiting Moscow in January–February 1976 again demanded that the USSR build a nuclear power plant for North Korea. The Hungarian Embassy in Pyongyang learned from a Soviet comrade that "for various reasons—primarily military considerations and the amount of investment—the Soviet side declared that this [request for a nuclear plant] was now inopportune and proposed to come back to it only in the course of the next [five-year] plan. The Korean side was very reluctant to accept this Soviet decision and [Moscow's] rejection of a few other investment demands" (Report by the Hungarian ambassador to the DPRK to the Hungarian Foreign Ministry, April 15, 1976, in Document 10).

The Hungarian Embassy also learned that in negotiations over credit and other issues, "the head of the Korean delegation—Deputy Premier Kang Chin-t'ae—behaved in an extremely aggressive way, definitely crude and insulting in certain statements vis-à-vis his Soviet counterpart, Deputy Premier Arkhipov. [Kang] declared several times that if the Soviet Union was unwilling to make 'appropriate' allowances for the 'front-line situation' of the DPRK, and did not comply entirely with the Korean requests, the DPRK would be compelled to suspend its economic relations with the Soviet Union." When Kang visited the Kremlin, Soviet prime minister Aleksei Kosygin rebuked him, saying that the Soviet Union did not accept ultimatums. "It was only after his visit to Comrade Kosygin that Kang Chin-t'ae changed his conduct, and thus it became possible to sign the agreements" (Document 10).

Not inclined to take no for an answer, DPRK Deputy Premier Kang Chin-t'ae again demanded a nuclear power plant when DPRK and Soviet officials met at the thirteenth session of the Intergovernmental Consultative Committee held in Moscow from June 8 to 11, 1976. The Hungarian ambassador to the DPRK, Ferenc Szabó, reported to the Hungarian Foreign Ministry on June 25, 1976, that the USSR refused to deliver a nuclear power plant to North Korea in the current five-year (1976–1980) plan, because it had long-term commitments to construct such plants elsewhere. Also, the USSR refused "for the time being" to extend its agreement with the DPRK on lumbering in Siberia by three years, because ecological surveys were taking place there (Document 11).

Based on talks with a Soviet commercial counselor, István Suhajda, a Hungarian official in the DPRK branch of the Hungarian Ministry of Foreign Trade, provided more details on the Moscow meetings in a memorandum to the Hungarian Ministry of Foreign Trade on August 9, 1976. Suhajda reported that North Korea "attempted to evade the questions related to foreign trade, for that was a thorny issue." The Soviets, however, complained that "in 1976 Korean shipments had substantially decreased in comparison with the same period of earlier years; the [DPRK's] failure to deliver the raw materials that were planned to be imported from Korea caused stoppages in the operation of important Soviet industrial plants, seriously jeopardizing the continuity of production." The North Koreans did not deny that a slowdown had occurred but promised to make up for underfulfillments in the second half of the year. The Soviets believed that scanty rainfall in 1975 and 1976 had severely reduced electricity production in North Korea, where hydroelectric power plants provided half of existing power capacity (Document 12).

When they wished, DPRK officials could be polite. Their behavior and its motivations were described by György Osztrovszki, chairman of Hungary's National Commission of Atomic Energy, in a report to the Hungarian Foreign Ministry on August 31, 1976. A few days earlier, two North Korean officials had given him some small gifts and thanked him for "the very valuable advice" they had received from the Hungarian delegation at the coordinating meeting of socialist countries held in Székesfehérvár in 1974. "As a result of [this advice], at the general assembly [of the International Atomic Energy Agency] the DPRK obtained IAEA membership without any difficulty" (Document 13).

Osztrovszki thought the sign of DPRK gratitude was also connected to a request he received from the DPRK at a meeting of socialist countries in Minsk on August 26, 1975 (just after the tree-cutting incident in the DMZ). The DPRK delegation asked Osztrovszki to mobilize the socialist countries to prevent the IAEA Technical Assistance Program from establishing a reprocessing plant for the Far Eastern region in South Korea. If it was built anywhere, the North Koreans proposed the Philippines (Document 13).

Ambassador Szabó reported to the Hungarian Foreign Ministry on December 8, 1976, a series of confrontational meetings between DPRK and Soviet officials in the course of the year. On November 12, Prime Minister Kosygin chose not to answer North Korean requests for a nuclear power plant and other assistance in writing but to convey his *nyet* in a verbal reply by the Soviet chargé d'affaires in Pyongyang. On November 13, the DPRK minister of foreign trade, Kae Un-t'ae, told the Soviet chargé d'affaires that the DPRK was in a difficult economic situation and needed immediate assistance from the socialist countries. He asked for 200,000 metric tons of oil and 150,000 metric tons of coking coal. (On the basis of the intergovernmental protocol then in force, the Soviet Union was supplying North Korea with slightly more than 1 million metric tons of oil and 1.2 million metric tons of coking coal in 1976.). Szabó said the Soviet chargé d'affaires expected Moscow to deny the request. The Soviet side was taking "every possible opportunity to make the Korean side understand that it is the COMECON [Council for Mutual Economic Assistance] countries that have priority when [the Soviets] decide on unexpected demands" (Document 14).

1977: Mutual Concerns About Exploitation to Get Hard Currency

By early 1977, the North Koreans made it clear to the USSR that the DPRK did not intend to fulfill its obligations as set down in the trade agreement signed in 1976. Despite the imbalance in trade and Pyongyang's unwillingness to meet its own commitments, North Korea still wanted more resources from the USSR, including nuclear power cooperation. These and other details of Soviet-DPRK relations were given in a long report by the Hungarian Embassy in Moscow to the Hungarian Foreign Ministry on January 20, 1977 (Document 15). Hungarian diplomats learned, however, that the Soviets expected to discuss primarily economic issues when the DPRK representative Pak Song'-ch'ol arrived in Moscow. The Soviets expected that "the DPRK intends to relieve its serious economic situation by not fulfilling its obligations . . . with regard to the export of goods that are saleable on non-socialist markets as well." At the same time, North Korea "constantly insists on the uninterrupted and punctual fulfillment of Soviet export obligations."

According to the same January 1977 report, the Soviets claimed that they had fulfilled their obligations under the 1976 accord but that

the DPRK fell far short—delivering only 90 million rubles' worth of provisions instead of the agreed 216 million rubles' worth of cement, fire-resistant bricks, and other goods. This shortfall caused "consider-able difficulties" in the Soviet Far East, because such goods could not be obtained elsewhere without substantial delays. The Hungarian Embassy believed the North Koreans would "probably attempt to convert the deficit . . . into a Soviet credit"—which, a skeptic might infer, would evolve into a gift.

Meanwhile, the North Koreans opposed application of price policies used in COMECON (where the DPRK had only observer status) to Soviet transactions with the DPRK. "The Soviet side did not manage to achieve the COMECON price level in its relations with Korea" in 1976 and did not expect to do so in 1977.

The Hungarian Embassy reported Moscow's belief that the DPRK intended to convert some Soviet oil deliveries into a source of hard currency earnings. "The Korean side constantly announces new demands (in addition to the agreements), and impatiently presses for their fulfillment. They repeatedly and very emphatically urge, at every level, that Soviet shipments of crude oil be increased to two million metric tons per annum," which the Soviets expected would be sold in capitalist markets as processed petroleum derivatives.

Pyongyang continued to press for a nuclear power plant, citing "reasons of prestige." But the current Soviet five-year plan made no provision for this kind of assistance. North Korea ignored Soviet statements that the USSR could not "deliver loss-making articles over the quantity specified in the plan." Adding insult to injury for the USSR, the Soviets believed that DPRK domestic propaganda blamed North Korea's economic difficulties on Soviet exploitation of the DPRK by raising prices and refusal to deliver goods needed for economic development, preferring to sell them to the capitalists (Document 15).

1977: Diverging Assessments in Eastern Europe

On January 25, 1977, the DPRK issued a four-point declaration in response to a South Korean proposal for a North-South nonaggression pact in tandem with a US troop withdrawal. Pyongyang immediately launched an international campaign to win backing for its declaration, and the Czechoslovak Foreign Ministry worried it would soon ask socialist countries for their official support. Hungarian authorities treated the DPRK declaration as nothing more than another call for the peaceful and democratic unification of Korea. This is how the declaration was portrayed in the Hungarian press. And when the DPRK ambassador visited the Hungarian Foreign Ministry, he was satisfied with its assurances and did not ask for a public endorsement of the declaration.

For its part, the Czechoslovak Embassy in Pyongyang perceived an extremely threatening tone in the declaration—for example, its description of the situation on the Korean peninsula as one that might lead to the outbreak of a global nuclear war. The embassy also saw a hint that the DPRK was equipping itself with nuclear weapons. Prague could not support Pyongyang's démarche, apparently fearing it could be a harbinger of DPRK adventurism. Hungarian officials often took note of worrisome developments in North Korea, but disagreed with their Czechoslovak comrades in this case. Such was the gist of a memorandum by András Forgács of his conversation with Czechoslovak first secretary Lehocky when he visited the Hungarian Foreign Ministry on February 14, 1977 (Document 16).

When Soviet and DPRK delegations met September 1–3, 1977, in Pyongyang to discuss economic, technical, and scientific matters, they agreed not to discuss North Korea's difficulty in repaying its debts to Moscow or Moscow's refusal to supply a nuclear power plant to North Korea. They deferred important decisions to higher levels of authority, but the Soviets were satisfied with the atmospherics. This, at least, is what the Hungarian ambassador learned and reported to the Hungarian Foreign Ministry more than two months later—on November 21, 1977 (Document 17).

1979: Attempted End Runs

We have no documents from 1978, but in 1979 the DPRK again tried to bypass the Kremlin. The Czechoslovak ambassador to Pyongyang informed Szabó that on February 12, 1979, a North Korean official requested Czechoslovakia to deliver uranium-mining equipment to the DPRK and to construct a 440-megawatt nuclear power plant in the DPRK. Szabó also heard from the Soviet ambassador that the DPRK had two uranium quarries—one where the uranium content of the ore was 0.26 percent and another with 0.086 percent (Telegram from Szabó to the Hungarian Foreign Ministry, February 17, 1979, in Document 18).

Meanwhile, the Soviet government revealed little to the public about its dealings with the DPRK, but "rumors about North Korea circulated widely among educated Soviet people. They were aware of Kim Il Sung's deification, police omnipresence, and strained relations with Moscow. To a large extent, the North Koreans damaged their own standing by flooding the USSR with exceptionally bad propaganda." The bottom line was that "nobody in Soviet intellectual circles of the 1960s or 1970s felt positive toward either Mao Zedong or Kim Il Sung." Soviet leader Leonid Brezhnev and most Soviet diplomats disapproved Pyongyang's "brutal and inefficient Stalinism and they also saw [North Korea] as an unreliable, costly and scheming ally" (Lankov 2004). Officials and the intelligentsia in Czechoslovakia and other East European states probably shared these attitudes.

The 1980s

On March 12, 1981, Hungary's ambassador in Pyongyang, Sándor Etre, summarized for Budapest a lengthy report by the Soviet ambassador on recent discussions between DPRK and Soviet officials in Moscow. The atmosphere was cordial but the North Koreans repeated their request for a nuclear power plant, which the Soviets deflected, saying that if the DPRK sought an East European-type arrangement, they would have to contribute to the cost-to which the North Koreans could "give no genuine" reply. The North Koreans also asked for "special technology"-probably for nuclear weapons-which the Soviets said would be considered by "competent authorities." Moscow agreed to extend more credits but insisted the interest rate jump from 2 to 4 percent after 1985. Serious differences emerged over Pyongyang's friendly treatment of Cambodia's Prince Sihanouk-mere "hospitality" said the North Koreans, who professed not to know that a book by Sihanouk with anti-Soviet remarks had been published in various languages and sold in Pyongyang (Document 19).

In 1981, North Korea continued to ask East European countries— Hungary, East Germany, and Czechoslovakia—to accept dozens of North Korean postgraduates to study nuclear energy and other topics microelectronics, laser technology, enrichment facilities, reactive engine technology, protection of nuclear reactors, electronic equipment of nuclear reactors, and isotope separation. Authorities in Budapest, Berlin, and Prague rejected these requests even when Pyongyang offered to pay the students' expenses, because the information sought was "confidential." Indeed, "the Korean side was forced to recall" five graduate students from Czechoslovakia in 1980 because the topics they tried to study were "strictly confidential." The most the East Germans offered was to send two language instructors to North Korea and to consider some DPRK students in social sciences, to which Pyongyang gave no answer (Report by Ambassador Sándor Etre to the Hungarian Foreign Ministry, April 30, 1981, in Document 20).

In 1983, the DPRK asked Hungary to train technicians to operate North Korea's first nuclear power plant, soon to be constructed in North Korea (Document 21). The Hungarian Foreign Ministry on April 6 told the Hungarian Academy of Sciences to say no. Hungary's power plant "is being built on the basis of Soviet documents and with direct Soviet support; its machinery is also largely Soviet made. For some time it will be operated with the support of Soviet experts, as the training of Hungarian experts has just gotten underway." The North Koreans should make their "request directly to the competent Soviet authorities" (Document 22).

Anxious and resentful in the 1980s that its nuclear program lagged not only South Korea's but also those in Eastern Europe, the DPRK began work on a twenty- to thirty-megawatt research reactor in the Yongbyon area not far from the much smaller reactor earlier supplied by the USSR. A US satellite spotted a large hole for the second reactor. The US Central Intelligence Agency could not say in 1982 whether the second reactor at Yongbyon was being built by North Koreans alone or with Soviet help. As of May 1983, the agency had "no basis for believing that the North Koreans have either the facilities or materials necessary to develop and test nuclear weapons" (Wampler 2003; Documents 1 and 2).

Using its own experience and blueprints declassified by the United Kingdom, North Koreans built a gas-graphite-moderated RBMK reactor that operated on natural uranium fuel, which, when irradiated, is an ideal source for weapons plutonium. Each core load could produce thirty kilograms of plutonium—sufficient to make five nuclear warheads. When US intelligence spotted this operation in the mid-1980s, North Korea was already working on a much larger reactor (Wit, Poneman, and Gallucci 2004, 3). By contrast, the Soviet-supplied reactors in Eastern Europe were light-water VVER reactors, from which it would be much more difficult to fashion a bomb. Also, the East European reactors were dependent on the USSR for fuel. Graphite-moderated reactors operate with natural uranium, where the VVER type needs enriched uranium, a task that might have been beyond North Korea's capacity at that time.

In 1984, relations between Pyongyang and Moscow improved. The USSR provided North Korea with SAM-5 missiles plus MiG-29 and Su-25 jet fighters it had denied Pyongyang in 1981. It appears also that

the USSR agreed in 1984 to build a nuclear power plant in North Korea. Details of this project were discussed by a team from Gosplan visiting Pyongyang in February 1985—one month before Mikhail Gorbachev took the helm in Moscow. DPRK authorities said they wanted the plant to offset the reactor already operating in South Korea and to secure economic prestige. North Korea agreed to share the plant's cost and to accept IAEA inspection. The Soviets offered a \$2 billion loan at 4 to 6 percent interest, while Pyongyang wanted to pay only 2 percent. The North Koreans wanted the plant to be built in five years, while the Soviets said it would take 10 to 12 years. They would need two years just to decide on the best of six sites on offer (most likely, Hamhung on the "Sea of Japan"). The Soviets would operate the plant for five years, train DPRK technicians, supply enriched uranium, and help survey for uranium in North Korea (Ambassador János Taraba in Pyongyang to Hungarian Foreign Ministry, March 9, 1985, in Document 23).

Moscow agreed on December 25, 1985, to build four nuclear power plants in North Korea. This looked like a reward for Pyongyang's finally signing the NPT on December 12, but, as we have seen, North Korea had agreed to IAEA inspection by March 1985 if not in 1984.

Why then did the Soviets change course and agree in 1984–1985 to build a power plant in North Korea? Moscow's policy shift could have reflected the Soviet Union's diplomatic isolation in the early 1980s and stepped-up pressures from the Reagan administration. But the Kremlin may also have concluded that the DPRK was going great guns in nuclear affairs and that Moscow should monitor the situation. By the end of 1984, the Yongbyon reactor and adjoining buildings neared completion—over a year before the December 1985 agreement with Moscow. In 1986, the Yongbyon reactor commenced operations. While some facts suggest a DPRK decision to use this reactor to make a bomb, the DPRK did not produce plutonium for long periods and failed to put the facility underground, as it did many other potential targets for US attacks.

Three years later, however, the Soviet-DPRK project was stalled. The North Koreans in April–May 1988 wanted production to begin at the reactor's first block by 1993. But the two sides had still not settled on the construction site. The Soviets said safety had to be the sole standard and blamed North Korea for the delay. Moscow also refused to double the capacity of a steel plant being constructed at Ch'ongjin, saying this was not "realistic" (Document 24).

Were the Soviets going more slowly now that Gorbachev was courting not only the West but also South Korea? Was this a replay of Khrushchev's promise of nuclear military know-how to Mao Tse-tung in 1957 and reneging in 1959 as he sought peaceful coexistence with the United States? Or were the North Koreans obdurate on details of their project with the USSR as they had also been with the United States and its partners who pledged to build two light-water reactors in the 1990s? Documentation from Soviet and Hungarian archives stops in 1988.

Underlying Factors: Mutual Disaffection

Kim II Sung in the 1940s respected and emulated Stalin. But kowtowing to Moscow and Beijing gave way to profound bitterness and real or imagined slights by Soviet and Chinese leaders. As early as 1945–1946, Kim II Sung began to perceive that Stalin put the security and economic interests of the Soviet state over both Communist international ideals and the needs of Korean Communists.³ Kim II Sung and his son, Kim Jong II, felt betrayed by one Soviet leader after another down to Gorbachev and Boris Yeltsin. Yes, the Kremlin sold more advanced weapons to North Korea in the mid-1980s. But in 1986 Gorbachev also called for new thinking in Asia—to include a collective security system for the region and elimination of nuclear weapons. As the USSR moved toward closer ties with South Korea, Moscow agreed to attend the Olympics to be held in Seoul in 1988. This was a Rubicon for Pyongyang. Its agents placed a bomb in a South Korean airliner that killed 115 persons—a warning to anyone wishing to attend the games.

In need of cash and credits, the Soviet leadership agreed to establish diplomatic relations with the ROK on January 1, 1991. Informed of the Soviet decision in September 1990, Pyongyang threatened retaliation: Since the foundation for the 1961 DPRK-Soviet alliance would disappear, Pyongyang would feel free to act on its own without consulting Moscow and to build its own nuclear weapons. It would also feel free to extend diplomatic recognition to the breakaway Soviet republics. As the Kremlin needed a loan without delay, the recognition date was moved up to September 30, 1990. Seoul insisted on and got a substantial quid pro quo: an end to Soviet military aid to North Korea. Consequently, in 1991, Moscow's military support to the DPRK, which had guaranteed the country's security since its inception, abruptly evaporated. The DPRK press howled: "Diplomatic Relations Sold and Bought with Dollars" (Weathersby 2008, 21).

The nuclear device tested by the DPRK in 2006 represented more than half a century of determined striving. Like China, the DPRK entered the nuclear weapons club by dint of its own efforts with only marginal and intermittent foreign assistance. Pakistan probably transferred centrifuge technology to North Korea in the late 1990s in exchange for missiles and probably to China for plans about how to use uranium to make nuclear weapons (Bernstein 2009, 2007). Outsiders do not know precisely what Pakistan's A. O. Khan turned over to the DPRK or Iran. But the twin realities are that North Korea used the plutonium route for the device exploded in 2006 and that Pyongyang has refused to provide any information on its uranium-enrichment (Richelson 2006, 530; Reed and Stillman 2009, 254, 262).⁴ North Korea appears to have mastered plutonium-metal production. The director of the Yongbyon nuclear complex, Ri Hong-sop, told visiting US scientists that the plutonium for the 2006 test came from pre-1994 production at the five-megawatt (electrical) reactor. The Radiochemical Laboratory at Yongbyon was originally designed for a commercial nuclear fuel cycle, but after the cutoff of US heavy fuel deliveries in November 2002, the reactor resumed operations and the design of the laboratory was changed to produce plutonium metal. This permitted the DPRK to claim in February 2005 that it possessed nuclear weapons. All the necessary equipment was indigenousfrom corrosion-resistant steels to tributyl phosphate used in the separation process (Hecker 2006; Bernstein 2008, 281).

Absent more evidence of foreign assistance, we should probably regard the Yongbyon plutonium-producing reactor as basically homemade. Despite many North Korean requests and faced with Moscow's ultimate *nyet*, the only way the DPRK could enter the nuclear club was by self-reliance and putting the military first.

Pyongyang diligently sought nuclear weapons for many decades before its 2006 nuclear test. But DPRK policy was not single-minded. Pyongyang sought a deterrent, but it also wanted nuclear power and economic development. If South Korea and other East Asian nations had nuclear power, so too should the DPRK. If the USSR helped East European countries to build nuclear power stations, it should do no less for North Korea—which, unlike the Warsaw Treaty nations, suffered huge material and human losses fighting for Communist causes in 1950–1953.⁵ If the United States helped South Korea, why should the USSR not do more for the North?

Western experts believed that North Korea lacked—and still lacks—a power grid that could carry electricity from power reactors such as those to be built under the 1994 Agreed Framework. In the early twenty-first century, however, the George W. Bush administration refused in principle to provide any kind of nuclear reactor in North Korea for fear that its output could be diverted to military uses. This became a sticking point in six-party negotiations. But if nuclear power is not practical for North Korea's energy needs, Pyongyang's quest for nuclear energy would apparently be motivated by military or prestige concerns or both.

If Seoul and Tokyo renounced nuclear arms and trusted in extended US deterrence, why would Pyongyang not rely on a comparable Soviet guarantee? There was probably little reason to fear that the USSR would not honor its defensive commitments. Rather, Pyongyang seemed to be dissatisfied by the unwillingness of Moscow to support its offensive ambitions. In the absence of such support, they became diffident and angry, leading the Kremlin to be increasingly concerned that North Korea might provoke a war and drag in the USSR. As North Korea failed to meet its commercial obligations to the USSR, the Kremlin shied away also from economic engagements with Pyongyang.

In the years 2000–2002, Kim Jong II and the new Soviet leader, Vladimir Putin, met three times and concocted huge plans for Russian military deliveries and for economic cooperation. Putin envisaged an iron silk road that would tie an intra-Korean rail system to the Trans-Siberian. But these plans collapsed when the Russian side again demanded cash up front (Seung-Ho Joo 2009). This left North Koreans dependent on *juche* plus donations from China, the ROK, and the United States and whatever they could get for their missiles and military technology from Iran, Syria, and other actors searching for such equipment.⁶

Plus ça change? Russia continued to worry about DPRK nuclear developments and was anxious to take part in the six-party negotiations in Beijing and contribute its share of oil and some quiet diplomacy to keep the negotiations moving. Both Moscow and Beijing proved more cautious in dealing with the DPRK than Washington, Seoul, or Tokyo. They knew from intimate experience how deeply emotions could run in Pyongyang.⁷

Conclusion

The documents show a long-standing drive by the DPRK leadership to obtain nuclear weapons but a reluctance by North Korea's professed allies to assist this effort. Neither Moscow nor Beijing wished to serve as Pyongyang's comrades-in-arms. They feared that Pyongyang might use nuclear weapons to blackmail them or in some aggressive way that could endanger peace and security. The collapse of the Soviet Union and the emergence of a new line toward South Korea in Beijing as well as Moscow only deepened Pyongyang's determination to acquire a nuclear capability. The fact that North Korea received only limited assistance in nuclear matters from its partners led it to look for help from Pakistan and, receiving only limited aid from Islamabad, ultimately adopt a self-reliant posture in developing weapons. We cannot project linearly into the future, but this history is a cautionary tale for all those urging engagement with the DPRK.

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Appendix: Documents Referred to in the Text

The following is a list of the documents used in this article. All are available from the Woodrow Wilson International Center for Scholars, Cold War International History Project (CWIHP), Virtual Archive 2.0, Subject: Korea, DPRK, Nuclear Program, available at www.wilson center.org/index.cfm?topic_id=1409&fuseaction=va2.browse&sort=Subject&item=Korea%2C%20DPRK%2C%20Nuclear%20Program (accessed May 30, 2009). The Russian documents were obtained and translated for CWIHP by Sergey Radchenko; the Hungarian documents, by Balazs Szalontai. Without their industry and scholarship, made available through the CWIHP Virtual Archive, this article could not have been written.

- Document 1: Conversation Between Soviet Ambassador in North Korea Vasily Moskovsky and the German Ambassador, August 26, 1963.
- Document 2: Conversation Between Soviet Ambassador in North Korea Vasily Moskovsky and Soviet specialists in North Korea, September 27, 1963.
- Document 3: Report, Embassy of Hungary in North Korea to the Hungarian Foreign Ministry, January 11, 1964.
- Document 4: Report, Embassy of Hungary in North Korea to the Hungarian Foreign Ministry, March 13, 1967.
- Document 5: Report, Embassy of Hungary in North Korea to the Hungarian Foreign Ministry, February 29, 1968.
- Document 6: Report, Embassy of Hungary in the Soviet Union to the Hungarian Foreign Ministry, November 12, 1969.

- Document 7: Report, Embassy of Hungary in North Korea to the Hungarian Foreign Ministry, July 30, 1975.
- Document 8: Memorandum, Hungarian Foreign Ministry, February 16, 1976.
- Document 9: Report, Embassy of Hungary in North Korea to the Hungarian Foreign Ministry, February 18, 1976.
- Document 10: Report, Embassy of Hungary in North Korea to the Hungarian Foreign Ministry, April 15, 1976.
- Document 11: Telegram, Embassy of Hungary in North Korea to the Hungarian Foreign Ministry, June 25, 1976.
- Document 12: Memorandum, Branch Office of the Hungarian Ministry of Foreign Trade in Pyongyang to the Hungarian Ministry of Foreign Trade, August 9, 1976.
- Document 13: Memorandum, Hungarian National Commission of Atomic Energy to the Hungarian Foreign Ministry, August 31, 1976.
- Document 14: Report, Embassy of Hungary in North Korea to the Hungarian Foreign Ministry, December 8, 1976.
- Document 15: Telegram, Embassy of Hungary in the Soviet Union to the Hungarian Foreign Ministry, January 20, 1977.
- Document 16: Memorandum, Hungarian Foreign Ministry, February 16, 1977.
- Document 17: Report, Embassy of Hungary in North Korea to the Hungarian Foreign Ministry, November 21, 1977.
- Document 18: Telegram, Embassy of Hungary in North Korea to the Hungarian Foreign Ministry, February 17, 1979.
- Document 19: Report, Embassy of Hungary in North Korea to the Hungarian Foreign Ministry, March 12, 1981.
- Document 20: Report, Embassy of Hungary in North Korea to the Hungarian Foreign Ministry, April 30, 1981.
- Document 21: Memorandum, Hungarian Academy of Sciences to the Hungarian Foreign Ministry, March 7, 1983.
- Document 22: Letter, Hungarian Foreign Ministry to the Hungarian Academy of Sciences, April 6, 1983.
- Document 23: Report, Embassy of Hungary in North Korea to the Hungarian Foreign Ministry, March 9, 1985.
- Document 24: Report, Embassy of Hungary in North Korea to the Hungarian Foreign Ministry, May 30, 1988.

Notes

1. The record presented here draws on "Korea, DPRK, Nuclear Program," compiled by the North Korean Documentation Project at the Woodrow Wilson International Center for Scholars (2008), supplemented by Szalontai and Rad-chenko (2006), Shen (2008), and Weathersby (2008). The Wilson Center documents are listed in the Appendix to this article and referenced in the text by their number (e.g., Document 1).

2. For a bibliography of recent scholarship on North Korea, see Clemens 2008.

3. For Stalin's rather labored explanation of why it was useful for the USSR to be absent when the Security Council took action on the Korean conflict, see Stalin 1950.

4. According to Reed and Stillman (2009, 262–263) the device tested in 2006 was "probably a plutonium-based derivative of the CHIC-4/A Q. Khan design, first tested by China in October 2006." However, these two authors often make bold assertions with little or no documentation. Russian sources, not confirmed, suggest that North Korea may have smuggled fifty-six kilograms of plutonium from former Soviet republics in 1992, and that Soviet nuclear experts were present in North Korea in 1994 (Seung-Ho Joo 2009, 119–120).

5. For reasons why international actors may seek nuclear weapons—or choose not to, even when they have the means to buy or make them—see Solingen 2007.

6. ROK officials estimated that by 2001 the DPRK had 2,500 to 3,000 nuclear experts, many of whom trained at the Dubna facility in Russia (*Korea Times*, March 24, 2001), while in South Korea, Kim Hong-suk, a research fellow at the Korean Institute of Nuclear Safety, was ranked by several agencies among the hundred leading scientists, intellectuals, and educators in the world (*Korea Times*, September 4, 2009).

7. When the DPRK conducted another long-range missile test in April 2009, Russia's foreign minister, Sergei Lavrov, said the UN sanctions could not be constructive. He was rebuffed when he visited Pyongyang later that month, trying to persuade the DPRK leaders to return to the six-party talks. But he also advised patience: "We should not give way to emotions, instead we should concentrate on what we have already achieved."

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