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South Korea's Detent with Soviet Russia: Building Diplomatic Relationship through Science and Technology Diplomacy, 1988–1998

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Abstract

This paper examines the highs and lows of Russian-South Korean collaboration in science and technology (S&T) during the first 10 years of diplomatic relations between the two countries (1988–1998). S&T collaboration served as a path to improve diplomacy in the absence of prior interaction and offered an opportunity for both countries to collaborate in their pursuit of technological advancement and economic growth. However, the history of this collaboration has been largely forgotten. The paper investigates the reasons for the decline of Russian-South Korean S&T collaboration and identifies potential obstacles to establishing a lasting and stable bilateral partnership in the field of science and technology.

Keywords

S&T Collaboration, science diplomacy, innovation diplomacy, Korean-Russian Relations, 1988 Seoul Olympics

Introduction

International science and technology collaboration (S&T collaboration) can serve as an effective diplomatic tool for promoting national economic and political interests. It can also serve as a means to establish contact between countries in times of tension contributing ultimately to promoting peace in the long run. It serves as a gateway for introducing new technology and innovation that mutually benefits economies of participating countries. According to Pascal Griset (2020, p.386), innovation diplomacy, a form of science diplomacy that converges science, technology, and economy, is a tool for promoting trade and investment that "enables partnerships to be set up and bridges to be built between research and business, thereby supporting the dynamisms of the economy internationally."

This paper explores the highs and lows in Soviet-South Korean and later Russian-South Korean science diplomacy that promoted science and technology (S&T) collaboration in the diplomatic engagement between the two countries (1988–1998). Science and technology collaboration provided an avenue for the countries to build a bridge towards diplomatic normalization. Since the Korean War (1950–1953), South Korea and the Soviet Union harbored the mutual feeling of hostility towards each other until the diplomatic breakthrough in the mid-1980s. S&T cooperation was also a way for the countries to collaborate in their pursuit of new momentum for technological innovation and economic growth. As a result, both Moscow and Seoul invested diplomatic efforts and financial resources to promote bilateral science and technology collaboration, establishing treaties and specialized organizations. The S&T partnership was well-received, particularly in South Korea

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where media coverage of advanced Soviet technology altered popular sentiment from hostility to curiosity. In 1990, national TV news programs broadcasted Soviet scientists' visit to Seoul, including Alexander Prokhorov, a Nobel Prize Laureate of Physics. The report expressed South Korea's hope that the partnership with Soviet scientists would one day bring the country its first Nobel prize (KBS 1990).[1] In 1993, the Mir space-station was brought to the Daejeon International Expo as part of then the Russian pavilion. It attracted more than 100,000 visitors in the first two weeks of the exhibition (Dong-A Ilbo, 1993 Aug. 25, p.22).

South Korea and the Russia officially established diplomatic relationship on September 30, 1990, a year before the collapse of the Soviet Union. The year 2020 marked the 30th anniversary of diplomatic normalization between South Korea and Russia. However, the science-technology partnership of the early 1990s has been forgotten. The memory of the S&T partnership is tainted by the "Brown Bear Project (*bulgom saeop*)" signed in 1995. Russia transferred military technology and equipment as a partial loan repayment to South Korea. The project was criticized for South Korea's diplomatic ineptness in dealing with Russia. The Russian technology, that was transferred to South Korea, was deemed obsolete. In addition, the Asian financial crisis that hit South Korea in 1997 and the political tension between South Korea and Russia triggered by the reciprocal expulsion of diplomats in 1998 disrupted scientific and technological cooperation between the two countries (Ko, 2019, p. 403). The 1998 financial and diplomatic crisis brought a halt to the Russian-South Korean S&T collaboration that gradually lost momentum.

This paper explores the factors that contributed to the success and decline of Soviet/Russian-South Korean science and technology collaboration during the first decade of diplomatic engagement between the two countries (1988-1998) to explore what may foster or hinder the construction of a durable and robust S&T partnership. Ruffini (2020) posits that innovation diplomacy should be perceived as a self-serving science diplomacy strategy guided by national interests. He points out that diplomatic efforts to support national researchers and businesses in accessing foreign science and technology, as well as promoting national S&T to attract foreign doctoral students and researchers to the national R&D system, should also be considered a part of science diplomacy. Such activities, aimed at revitalizing the national innovation system, are "driven by the will of taking advantage over others—and this is the very spirit of competition" (Ibid). The Soviet/Russian-South Korean S&T partnership demonstrates how the "spirit of competition" can influence science diplomacy and can both foster and limit S&T collaboration. The paper begins with discussing how the 1988 Seoul Olympics marked the beginning of the relationship between Russia and South Korea, ultimately leading to the establishment of diplomatic ties.

The 1988 Seoul Olympics: A turning point

The relationship between South Korea and Russia dates back to Soviet times when Russia was one of the republics of the Soviet Union. In the 1970s, during the détente between the United States and the Soviet Union, South Korea began to seek ways to approach Communist bloc countries. President Park Chung Hee issued the *June 23 Statement,* expressing a desire to "open its doors, on the principle of reciprocity and equality, to all countries regardless of differences in ideologies and systems" (quoted in Lho, 1989, p. 1154).[2] This announcement was made in response to the change in the international order that seemed to head towards peaceful coexistence. South Korea passively and reluctantly "opened its doors" to the communist countries with the hope of weakening the Moscow–Beijing–Pyongyang alliance and thereby isolating North Korea (Bae, 2016; Hong, 2018). Park's "open door policy" met with suspicion from the Soviet Union and Communist China, and did not lead to improvement in the Korean-Soviet relationship.[3] In 1979, the Soviet Union invaded Afghanistan which brought an end of the US-USSR détente. Then in 1983, the Soviet Union shot down a Korean Airlines flight that further strained the relationship between the two countries.

Despite its limitations, Park's "open door policy" provided the backbone of what came to be known as the Northern Policy (*bukbang jeongchek*) introduced in 1983. South Korea pursued the Northern Policy with more confidence and ambition. The policy aimed to establish two interrelated goals: first, to establish relationship with Eastern bloc countries, mainly with the Soviet Union and China; and second, to use these diplomatic ties as a leverage over North Korea to reduce tension in the Korean Peninsula (Lho, 1989). In 1988, President Roh Tae-woo delivered the *July 7 Statement,* which asserted that South Korea was "willing to cooperate with North Korea in improving its relations with our allies including the United States and Japan" and would "seek to improve relations with the Soviet Union and China and other socialist countries, in order to create conditions for establishing peace in the Korean peninsula" (NAK 1982).[4] North Korea was no longer seen as an enemy but as a brother to be embraced. Communist countries were seen as potential allies in this effort (Kim, 2011). Park Cheol-eon (2011), an architect of the Northern Policy, emphasized that the policy was "the first ever proposal to directly link the question of *nordpolitik* with the question of national unity".

This change in South Korea's policy regarding the communist bloc and North Korea was motivated partly by the desire to make the 1988 Seoul Summer Olympics a success story. For Seoul, the Olympics were an opportunity to showcase the country's economic development and political maturity. The United States and its allies boycotted

the 1980 Moscow Olympics to protest the Soviet invasion of Afghanistan. The USSR and its allies had boycotted the 1984 Los Angeles Olympics in retaliation. Watching how the Cold War politics affected the previous Olympic games, the South Korean government adopted a new foreign policy agenda in 1985 which entailed extending non-governmental contacts with communist countries in a nonpolitical field such as culture, science, and sports to bring the Soviet Union to the Olympic Games (Radchenko, 2012). The Seoul Olympics Organization Committee (SLOOC) headed by would-be-president Roh envisioned making the Games the stage for a historic East-West reconciliation. Therefore, "the Soviet Union had held the key to the success of the Seoul Olympics," recalled Seh Jik Park (2002, p. 71), as Roh's successor to the SLOOC.

The political environment in Northeast Asia took a dramatic turn with the rise of the new leadership in the Soviet Union in the mid-1980s. In 1985, Mikhail Gorbachev was elected to the post of the General Secretary of the CPSU. The new Soviet leader introduced radical reforms including the *perestroika* and *glasnost* programs to revive the country's stagnant economy and to solve staggering social and political problems. Gorbachev also reoriented Soviet foreign policy, withdrawing from Afghanistan and approaching the capitalist world to build a collaborative relationship based on pragmatism. His aim was to stop the costly arms race that drained his country's resources and instead, to build a system of peaceful coexistence.

In July 1986, Gorbachev visited Vladivostok and delivered a speech which signaled Moscow's hope to expand economic and security cooperation with countries in the Asia-Pacific region. In the speech, he stated that the Soviet Union would "give impetus to its bilateral relations with all countries in the [Asia-Pacific] region without exception," and "appeal to all the Asian-Pacific countries with a proposal for cooperation in the name of peace and security" (Gorbachev, 1987, p.26, p. 33). In January 1988, the Soviet Union announced its participation in the Seoul Olympics against North Korea's objection (Radchenko, 2012, p. 213). Then on the eve of the Seoul Olympics, Gorbachev delivered a speech, which suggested that "in the context of the general improvement of the situation on the Korean peninsula, an opportunity for establishing economic ties with South Korea may open up" (Gorbachev, 1987 p. 560). This announcement marked a breakthrough for enthusiasts of Soviet-South Korean rapprochement in Moscow who thought that "without South Korea and at odds with this dynamically developing country, it [was] more difficult to push forward out initiatives, concerning the Asia-Pacific region, it [was] more difficult to develop stable and mutually beneficial relations with many countries of [that] region" (Radchenko, 2012, pp. 222-224).

In September 1988, a Soviet cruise liner docked in Busan, bringing 625 Soviet athletes, 159 government officials, 100 journalists, 269 tourists, and performers from the Bolshoi Ballet and Moscow Philharmonic Orchestra.[5] The Soviet delegation organized cultural events which were hugely successful. The Bolshoi ballet performances sold more than 19 thousand tickets while the Moscow Philharmonic concert sold nearly 13 thousand tickets (Radchenko, 2012, pp. 214-215). Lotte Mall, a luxurious department store located at the heart of Seoul, launched a successful "Russian Week," selling more than 150 thousand souvenirs from Russia, including folk pottery, porcelain, wooden dolls, and amber jewelry. Some of the items such as Hermitage art-books were so popular that they were sold out within an hour of the opening (Kim, 1988). Overall, South Koreans welcomed the Soviet visitors as "special guests" with curiosity and looked forward to the new economic and political opportunities that might arise from Soviet-South Korean reconciliation (Dong-A Ilbo, 1988c Sep. 7).

Soviets (re)discovered South Korea through the Olympics. The Soviet visitors were surprised by what they saw in South Korea during the Olympics. They found a modern and technologically advanced country, far from how it was portrayed in Soviet propaganda.[6] Seoul was a bustling city with modern skyscrapers and busy streets offering a range of high-quality and affordable consumer goods, especially small electronics. The athletes' village was equipped with state-of-the-art computer technology, allowing athletes and support staff, as well as delegates and journalists, to access game results and to send/receive international e-mails using computer stations and delegation offices (SLOOC 1988, pp.56-58). Nearly 200 million Soviet viewers watched the opening ceremony of the Seoul Olympics and discovered a modern Asian country through the 550 hours of airtime allocated to the Olympics broadcast.

The Seoul Olympics presented an opportunity for Moscow and Seoul to discuss possible collaboration, starting with trade and economic cooperation. During the games, high-ranking Soviet officials acting as temporary consulates visited the Korea Trade-Investment Promotion Agency (KOTRA) to discuss ways to expand trade between the two countries, including the establishment of reciprocal trading offices in Seoul and Moscow (Dong-A Ilbo, 1988b Sep. 6, p. 1). As a result, the Seoul branch of the Chamber of Commerce and Industry of the USSR and the Moscow branch of the Korean Trade-Investment Promotion Agency were established as the first formal bodies of national representation in the spring following the Olympics. The discussions that took place during the games boosted Soviet-South Korean economic cooperation, with import and export between the two countries increasing by nearly 43% and 78% annually from 1989 to 1990 (Ko, 2019, p. 392). In June 1990, Gorbachev and Roh met in San Francisco to discuss Soviet-South Korean and North Korea-South Korea relations, and finally on September 30, 1990, the Soviet Union and South Korea officially established diplomatic relations.

The path to diplomatic normalization between South Korea and the Soviet Union was challenging due to conflicting interests and priorities. Gorbachev sought South Korea's economic cooperation and financial support to revive the struggling Soviet economy. However, Gorbachev was hesitant to Roh's loan offer in exchange for diplomatic recognition of South Korea due to concerns about deteriorating relationship with North Korea, a long-standing Soviet ally. As a result, "he failed to reap the benefits of prompt recognition of South Korea, but did enough to ruin the Soviet relationship with North Korea" (Radchenko, 2012, p. 242). Meanwhile, South Korea prioritized political interests, particularly with regards to North Korea (Rozman, 2008, pp. 225-238). The Northern Policy aimed to pressure North Korea into a dialog with South Korea by gaining support from North Korea's communist patrons, the Soviet Union and China (Chun 2003, pp. 368-403; Chun 2010). South Korea viewed that this would allow the country gain more autonomy from the United States in Korean affairs.[7] In summary, while economic collaboration was the Soviet Union's primary goal, political collaboration South Korea's priority. By early 1989, Korean newspapers expressed skepticism about the economic and political viability of investing in the Soviet Union amid the crisis in Communist Eastern European countries.[8] Under such circumstances, science and technology emerged as a promising avenue for pragmatic and mutually beneficial collaboration.

The Seoul Olympics and Soviet-South Korean science diplomacy

The Soviet-South Korean rapprochement came at a turning point in South Korea's science and technology development. South Korea saw the Seoul Olympics as an opportunity to showcase the nation's technological advancement to the world, calling the Games a "Science Olympics." The government created a special technology committee and invested approximately 700 million USD to install highly complex technology to ensure smooth and efficient operation of the Games (International Olympic Committee, 2020). South Korea chose to develop its own computer programs for tracking and managing games in the 1988 Olympics instead of importing them from previous games. Despite being in an early stage of computer science and technology, the government and South Korean scientists saw the event as a chance to advance their technology (Shin, 2019). Both public and private research centers participated in state-funded projects to develop the GIONS and WINS programs used at the 1988 Seoul Games. The programs were recorded as the most advanced ever used in Olympic history (IBM). The successful use of the GIONS and WINS programs at the 1988 Seoul Olympics boosted South Korea's national pride and confidence. It symbolized the country's transformation from being known as a nation that relied on American aid or copied American and Japanese technology, to a high-tech country that was taking steps towards a scientific future in the 21st century (Dong-A Ilbo, 1988a 17 Aug, p. 5).

In the late 1980s and early 1990s, South Korea diversified its scientific partnerships and expanded cooperation with countries previously unfamiliar to its science community (Park 2011). Previously, the country had undergone rapid industrialization driven by compressed growth of science and technology led by state-funded public research institutes and technology transfer from developed countries in the West (Moon, 2015). By the 1980s, the country gradually moved away from relying on technology aid from advanced countries and shifted towards fostering its own technology as competition with developed countries intensified. Recognizing the need to strengthen their relatively weak pure science capacity, the scientific community and government sought new international partners beyond just their traditional Western partners. The Soviet Union was seen as an ideal partner, with its solid capacity in both pure and applied science and a willingness to transfer technology.

In the same period, Soviet science and technology faced challenges of its own. Although the Soviet government invested heavily in research and development (R&D) and the Soviet Union had more researchers than the United States, their industrial output and technical product complexity were limited compared to capitalist countries. There were repeated calls for a system that would better translate scientific advancements to industrial production in the previous decades (See Kapitsa, 1966, pp. 7-14). In 1986, the new Soviet leader, Mikhail Gorbachev, announced his plan for economic modernization, which was dependent on scientific and technological advancement. He promised increased government support for scientific and technological research, but criticized the current ineffectiveness of Soviet science. Gorbachev (1987, p. 50) suggested that "regrettably, not a few scientific discoveries and major inventions fail to find practical application for years, and sometimes for decades." He blamed this on scientists who concentrated on pure science rather than applied research and the prevalence of departmental barriers and selfishness. The Soviet Academy of Sciences was also criticized for being too slow to change its orientation. Gorbachev (p. 49) asserted that "our country is entitled to expect from its scientists, discoveries and inventions that will bring about genuinely revolutionary changes in the development of machinery and production methods". In other words, Soviet science itself needed a *perestroika*.

To improve its technology and access to the global market, the Soviet government made changes to its research and development institutions and promoted international trade as a way to procured advancement technology from abroad (Graham, 1988, pp. 29–30). In 1987, Soviet enterprises were allowed to form joint ventures with foreign businesses. The right to conduct foreign trade was given to a number of

organizations including 21 ministries and 72 state enterprises (Ibid). Soviet scientists also played a role in promoting technology transfer by serving as intermediaries between Soviet S&T research institutes and the global market.

The 1988 Seoul Olympics marked the beginning of Soviet-South Korean collaboration in science and technology. During the games, a new gas chromatography-mass spectrometry developed by Korean scientists was used to improve the accuracy in doping control. This technology helped establish South Korea's Doping Control Center as an official anti-doping test laboratory accredited by the International Olympic Committee. The head of the Moscow Anti-Doping Laboratory, Vitaly Semenov, who was involved in evaluating South Korea's anti-doping facilities, proposed collaborative research between the two labs in 1989. This became the first science-technology cooperation between the two countries (Dong-A Science, 1990). During the Olympics, Soviet cosmonaut Alexei Leonov came to Seoul as a member of the Soviet NOC. During his visit, Leonov noted South Korea's plan to launch its first satellite by the 1990s and suggested that collaboration between the two countries in aerospace technology was "not impossible to start right away" noting that South Korea had plans to launch its first satellite by the 1990s (The Kyunghyang Shinmun 30 Sep. 1988, p. 19). His visit led to in the signing of a partnership agreement between the Korea Aerospace Research Institute (KARI) and Glavkosmos in 1990, and the establishment of the Russia-South Korea Joint Aerospace Research Center in 1994.

In February 1990, the Soviet Academy of Sciences and the Korean Science and Engineering Foundation signed the *Protocol on Scientific Cooperation and Exchange of Scientists*, based on a generic document used by the Soviet Academy to initiate relation with a foreign entity for cooperation. The *Protocol* aimed to facilitate the exchange of scientists and research information, promoting mutual understanding of both countries' R&D system and research status, and serving as a foundation for launching bilateral scientific and technological cooperation.[9] A Joint Committee for Basic Science Research was established with six scientists from each country specializing in key areas of cooperation, including high-energy physics, high-temperature superconductivity, optics, bioengineering, oceanography, and aerospace science. A similar agreement for technological cooperation was signed between the Korea Institute of Science and Technology and the Soviet Institute of Machine Science.

South Korean-Soviet/Russian technology collaboration in the 1990s

In 1990, delegations from both countries visited Seoul and Moscow to explore and discuss possible areas for cooperation. The delegations included not only scientists—mostly from national institutes—but also high-ranking government officials, diplomats, economists, and trade specialists. The Soviet State Committee for Science and Technology proposed a list of 100 technologies for transfer and cooperation. In response, the Korean Ministry of Science and Technology identified "43 technologies immediately transferrable to businesses" and "35 technologies [that could be] transferred to businesses within 3–5 years with collaborative research."[10] In addition, the Ministry surveyed 686 technologies offered by the Soviet Licensintorg and selected desirable technologies for transfer by South Korean corporations.[11] In addition, the delegation agreed to pursue collaborative research in the fields of high-energy physics, high-temperature superconductors, optics, bioengineering, marine science, and aerospace science. South Korea and the Soviet Union also signed an *Agreement of Scientific and Technological Cooperation* to establish a legal framework for bilateral scientific and technological collaboration. The agreement encouraged the creation of specific cooperative programs and projects between government agencies, research institutes, universities, and businesses. The terms and conditions, procedures, financial agreements, and other important details were to be established in accordance with the laws of both countries. In February 1991, the Korea-Soviet Scientific and Technological Cooperation Center was established within the Korea Institute of Science and Technology (KIST). The center aimed to strengthen future cooperation between the two countries by merging Soviet basic science and South Korean applied manufacturing technology.

The first Korean-Soviet Ministerial Meeting and the first Korean-Soviet Science and Technology Committee Meeting took place in Moscow in June 1991. The meeting resulted in an agreement to do joint research and commercialize 48 Soviet technologies in South Korea, involving both national research institutes and private companies. After the collapse of the Soviet Union in December 1991, the Russian Federation took over the science and technology collaboration agreements previously signed between the Soviet Union and South Korea. During the Second Ministerial Meeting in 1992, South Korea showed interest in continuing technological transfer and joint research efforts. In response, Russia requested to set up a research center using Korean technology in Russia. As a result, the Moscow branch of the Korea-Russia Science and Technology Cooperation Center (KORUSTEC) was established. KORUSTEC gathered information of Russian research institutes, key Russian scientists, and on-going science and technology projects and created a database that could be accessed by South Korean organizations seeking collaboration opportunities with their Russian counterparts.[12]

By expanding collaboration with Russia in the field of science and technology, South Korea aimed to improve its science and technology capabilities by "diversifying international collaborators and absorbing Soviet and later Russian basic science and advanced specialized science."[13]

South Korean science prioritized practical and market-oriented application of science and industrial technology development, whereas Soviet and Russian science placed and continue to place a stronger emphasis on fundamental research. Soviet research institutions were organized by region and area of expertise, while the process of technological development was centralized, with a single institute usually overseeing all stages of R&D process from basic research to production. In addition, because Soviet researchers had little exposure to commercial market, they did not prioritize commercial potential and cost-effectiveness of a given research. Therefore, collaboration between the two countries with very different approaches to science and technology could potentially lead to complementary benefits.

The fall of the Soviet Union and the bilateral agreements signed between the two countries made Russian S&T more accessible to South Korea, who saw it as an untapped source of valuable science and technology. The 1986 Uruguay Agreement, established to reduce trade barriers, intensified global competition. In response, South Korea sought to reduce its reliance on technology transfers from Japan and the United States, who were implementing technological protectionist measures to eliminate a potential competitor, and to strengthen its technological autonomy by adopting and commercializing Russian technology. South Korea considered Russia as the "only technologically-advanced country that [was] willing to transfer technology at an affordable price amid the on-going global technology competition."[14] In fact, Russia offered public sale of its best technologies due to its economic difficulties. Korean scientists and science policy makers advised the government to pursue building a substantial partnership with Russia (see Lee et al., 1995, p.5). They also pointed out that in addition to potential economic benefits, "technological collaboration with the CIS region would greatly contribute to the national reunification problem" (Ibid).

South Korea and Russia formed partnerships between Korean private corporations and Soviet/Russian state research institutes for technology development and commercialization. This led to the establishment of the Samsung software center in Moscow and the advancement of text, voice, and pattern recognition algorithms developed by the center. Over the period between 1989 and 1992, 26 technologies were directly imported from Russia, including carbon materials, lasers, aircraft brakes, unmanned control helicopters, and fluorocarbon replacement technologies. Russian scientists were also invited to South Korea to participate in research projects including high-power laser diode manufacturing technology development by Samsung Advanced Institute of Technology and wastewater/waste gas purification equipment development by Hanso Technology Trade. During this time, South Korea also exported automobile manufacturing technology, electronic exchanger manufacturing technology and liquid crystal display (LCD) panel production technology to Russia (Lee et al., 1995, p.13). These technological partnerships opened new markets for both countries, providing access to the CIS market for South Korea and the South Korean for Russia.

In November 1992, the National Science Museum of South Korea hosted the Exhibition of Successful Research and Development to mark the completion of the Daedeok Science Town, showcasing two examples of successful R&D collaboration between Russia and South Korea. In the following year, the Daedeok Science Town organized the Exhibition of Russian Advanced Technology, displaying 29 machines and 21 materials.[15] These exhibitions demonstrated the symbolic and practical significance of the partnership between Russia and South Korea in the latter's technological advancement. In terms of personnel exchanges, 430 Russian scientists were invited to South Korea on three-month visits and seminars in 1991–1992, and 191 Russian scientists participated in collaborative projects in 1992–1993. Meanwhile, 36 South Korean scientists and researchers were sent to Russia (Lee et al., 1995, p. 12). From 1995, join research centers were established in Russia with a focus on aerospace and new materials technology, leading to long-term cooperation.

Decline of South Korea-Russian S&T diplomacy

As previously stated, South Korea and Russia established the foundation for a long-term collaboration in the fields of aerospace science and new materials development. However, this was not the case in most other scientific and technological fields. By the mid-1990s, the S&T partnership between the two countries had begun to lose momentum. Over the past decade, the focus of S&T cooperation between South Korea and Russia shifted towards unidirectional technology transfers and R&D commissions, rather than promoting scientific research collaboration and reciprocal partnership. South Korea's science diplomacy emphasized technology acquisition and pursued short-term projects that met the country's industrial needs.

Other countries also bid for Soviet and later Russian technology. Western countries also perceived the opening and eventual collapse of the Soviet Union as a "new and profitable opportunities for Western firms interested in technology licensing and patent acquisition" (Feller, 1990, p. 16). This window of opportunity was deemed open for a short time before Russian researchers learned about capitalist market mechanism (Ibid). South Korea was not the only country that prioritized technology acquisition rather than collaborative research when approaching the Soviet Union and later Russia.

Russia was undergoing a restructuring of its S&T system amid an economic crisis and had limited understanding of the global technology competition. While the Russian government supported the "internationalization" of Russian science, decentralized system, lack of coherent policy or diplomatic support, and shortage of funding often drove Russian research institutes to strike unfavorable contracts with foreign funders (See Fortescue, 1992; Allakhverdov & Pokrovsky, 1997; Gorodnikova, 1999; Berdashkevich, 2000; Wilson & Markusova, 2004). The majority of S&T exchanges between the two countries were limited to individual level personnel exchanges, rather than collaborative research projects that would bring long-term mutual benefits at the national level. Therefore, Russia became increasingly dissatisfied with the S&T cooperation with South Korea, perceiving Korea as a country that exploited and leaked Russia's valuable technology.

In 1994, Russia requested a government-to-government agreement to enhance intellectual property (IP) protection for its technology.[16] The country was concerned that South Korea was not expanding its investments, but instead exploiting Russia as a market for disposing surplus products and contributing to Russia's brain drain problem. As a result, Russia asked for increased IP protection from the South Korean government. However, South Korea declined the proposal, stating that bilateral IP agreements were uncommon, and disputes could be resolved through international agreements such as the World Trade Organization's Agreement on Trade-Related Aspects of Intellectual Property Rights (WTO/TRIPs). Instead, South Korea suggested regulating IP through an annex to the *Russia-Korea Science and Technology Cooperation Agreement*.[17]

South Korea also reassessed the economic benefits of continued scientific and technological collaboration with Russia. In 1996, South Korea launched the Technology Cooperation Offset Promotion Project, in which it would countervail loans given to Russia in exchange for technology transfer. Despite this, South Korea remained hesitant to expand its investment in Russia without resolving the issue of the loans provided to initiate economic cooperation. South Korea also did not see much benefit in joining the International Science and Technology Center (ISTC), an intergovernmental organization established to convert Soviet military technology into industrial technology.

Another challenge faced by both South Korea and Russia was the lack of specialists in area studies who could provide advice to scientists and policymakers, as well as serve as intermediaries between the two nations. In South Korea, Russian studies were still a niche field in the late 1980s, with only three universities offering Russian language training programs. The first Slavic Society in South Korea was not established until 1985. Soviet scholars had limited knowledge of South Korea, as Korean studies within the Soviet Union primarily focused on North Korea. Although South Korea and Russia attempted to utilize Soviet Korean scientists as intermediaries between their scientific and diplomatic circles, this approach had limited success due to South Korea's limited understanding of Soviet Koreans.

In 1997, the financial crisis hit South Korea, which drove overseas branches of Korean companies to downsize or closedown. Not only key South Korean investors but also government offices established to promote bilateral collaboration pulled out from Russia. In July 1998, Russia accused a South Korean diplomat of conducting military technology espionage activities and expelled him. South Korea retaliated by expelling a Russian diplomat further straining not only the diplomatic relationship between the two countries but also opportunities for bilateral collaboration in the field of science and technology.

Conclusion

This paper has discussed the highs and lows in Soviet-South Korean and later Russian-South Korean science diplomacy. South Korean-Russian science and technology partnership in the 1980s–90s is an example of science diplomacy where science and technology (S&T) collaboration provided a channel to build diplomatic relations between countries with no prior history of engagement. It is also an example of innovation diplomacy, a form of science diplomacy where science, technology, and economy converge to promote trade and investment. In the period covered in this paper, the Soviet Union and later Russia, and South Korea had a common goal of finding new impetus for innovation and economic growth. The countries hoped that South Korea with its industry-oriented R&D system and the Soviet Union/Russia with its solid pure research base would complement each other and form a synergic partnership. This partnership also enhanced internationalization of the countries' national science and technology, with diplomatic agreements and institutions established specifically to promote bilateral S&T collaboration.

Yet, Russian-South Korean science and technology collaboration had gradually lost momentum due to the economic crisis and strained diplomatic relations between the two countries by 1998. In other words, once the economic and political incentives to promote science diplomacy diminished, bilateral S&T collaboration also lost its impetus. This was partly due to the fact that technology- or innovation-driven science diplomacy is market-oriented as Ruffini suggests, and thus it falls short of building a long-term, resilient S&T collaboration that may not bring an immediate and tangible economic benefit.

However, one of the fields where a foundation for long-term scientific collaboration was established between South Korea and Russia is aerospace science. As a result of the collaboration, South Korea successfully launched its first rocket, Naro (KSLV-1), into orbit in 2013. As mentioned

earlier in this paper, the rocket launch was an accomplishment of the Russian-South Korean science and technology partnership, which began with the 1988 Seoul Olympic Games. Since then, the two countries have continued to work together in various aerospace science and engineering projects, including the design and launch of the Arirang-2 satellite and Naro rockets, and the construction of the Naro Space Center, as well as the training of Korean astronauts. This partnership highlights the value of long-term collaboration in research, not just for economic or political gain, but for the advancement of scientific knowledge and the strength of the partnership itself.

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Notes

1. "Korea-Soviet Joint Science and Technology Seminar," *KBS News 9*, November 21, 1990.
2. Original text from National Archives Korea, "Peace and Unification Policy Declaration (June 23 Declaration) (Pyeonghwa tong-il oegyo jeongchaeg seon-eon (6.23 seon-eon))," *Unification* (*Tong-il*), https://www.archives.go.kr/next/search/listSubjectDescription.do?id=010450&sitePage=1-2-1#
3. In 1978, the Soviet government allowed the entrance of a South Korean delegation which included the Minister of Health and Social Welfare to Soviet Kazakhstan to attend the WHO International Conference on Primary Health Care held in Almaty. Although the delegation was there only to attend the conference, it was the first time a high-ranking South Korean government official visited the Soviet Union. See Ministry of Foreign Affairs of Korea (MOFA) Archive 722.210810 *Hanssogan insagyolyu sanghwang* (1982. 11. 25.)
4. National Archives of Korea (NAK). 1988. Notaeu daetonglyeong 77 seon-eon. *Diplomacy* (*Eo-gyo*), https://www.archives.go.kr/next/search/listSubjectDescription.do?id=002874&pageFlag = &sitePage = 1-2-1
5. MOFA Archive 2013070050 Han-Soryeon Haksulgyoryu, 1987-1988. p. 71
6. Soviet media suggested that Seoul was a dangerous city with many problems and therefore the host for the 1988 Olympics should be reconsidered until 1983. See MOFA Archive 07-37201. p. 17.
7. Some scholars suggest that President Roh and his political circle were personally invested in the success of the Northern Policy which would win them public support and quiet down their political opponents. This explains why Young-sam Kim, Roh's leading political opponent at the time, pulled every string he could to arrange a visit to Moscow in 1989. See Chae Sung Chun. (2003). "Analysis of Determinant Factors of the Northern Policy and Subsequent Changes to the Northern Policy Bugbangjeongchaeg gyeoljeong-yoin-gwa ihu-ui bugbangjeongchaeg-ui byeonhwagwajeong bunseog," in Yong-Chool Ha (Eds) *Northern Policy: Origin, Implementation, and Influence Bugbangjeongchaeg: giwon, jeongae, yeonghyang*. Seoul National University Press. pp. 23–46.
8. See "Excitement over the Northern Policy, Confusion at the Ground-level, Deulteun bugbang-oegyo silmuchawonseon honseon," *Hankyoreh*. 1, Feb. 1989. p. 3; "Soviet Economic Crisis, Calls for Drastic Reforms So-gyeongjewigi gwagamhan gaehyeog choggu," Dong-A Ilbo. 29, Jun. 1989a. p. 5; "88 Economics Opportunities and Challenges: Northern Trade in Full Swing 88-gyeongje dojeongwa silyeon bugbang-gyoyeog bongyeog-hwa," Dong-A Ilbo, Dec. 16, 1989b. p.7; "Investing in the Soviet Union, Too Many Obstacles Daeso tuja bogbyeong neomu manhdeola." *Maeil Business News*. 13, Jun. 1990.
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