

From Mass Disasters to State Violence: Genetic Identification of Victims and the Politics of Memory in South Korea, 1988–2002*

Jaehwan HYUN[†]

On the first day of May in 1998, a 73-year-old Korean woman, Leng Hun or Yi Nam-yi, more widely known in South Korea as Grandma Hun (훈 할머니), arrived in Seoul from a small village in Cambodia called Skuon. Her physical return coincided with a general reemergence of the politicization of memories concerning “comfort women” (*Wianbu* 위안부). From that point on, she would live with her kin, who she had been separated from for more than fifty-five years as a result of Japanese imperialism. Born in Jindong village, Masan, South Gyeongsang Province, in 1926, she was forcibly mobilized by the Japanese Army to the war front in Cambodia as a “comfort girl” in 1943. The Japanese army abandoned Grandma Hun after the end of the Pacific War, so she settled in Skuon and married a local male.¹ Her presence there, became known by chance because of a Korean entrepreneur who stopped by her village in late July of 1996. Almost one year later, on June 13, 1997, her story was reported by the Cambodian newspaper *Phnom Penh Post* and was soon widely known in South Korea. The local society of her hometown Masan responded to the news promptly. The township office and the local newspaper *Gyeongnam Mail* campaigned to find her family and relatives. Her youngest sister Yi Sun-yi was found

Received June 25, 2023; Reviewed August 10, 2023; Accepted August 10, 2023.

DOI: <http://dx.doi.org/10.36092/KJHS.2023.45.2.321>

[†] Institute of Liberal Education, Pusan National University, jhwanhyun@pusan.ac.kr

* I would like to thank Scott Gabriel Knowles for his encouragement and support in writing this paper. I also appreciate the contribution of the three anonymous referees for their meaningful suggestions and constructive criticism. This work was supported by the Ministry of Education of the Republic of Korea and the National Research Foundation of Korea (NRF-2022S1A3A2A01090073).

¹ It is not known why she did not leave Cambodia after the Pacific War at which point other Koreans returned to Korea. She married a Japanese military officer who took part in the Cambodian civil war following the end of the Pacific War. Yet a few years later, he abandoned her in Cambodia and left for Japan. Grandma Hun then remarried with a local male and settled in Skuon. For an established narrative about her life, see Citizens group with grandmothers who were Women’s Volunteer Corps 정신대 할머니와 함께하는 시민모임, *Abandoned Maidens of Korea: Grandma Hoon, a Japanese Comfort Woman Who Was Forcibly Abducted* 버려진 조선의 처녀들: 강제로 끌려간 일본군 위안부 훈 할머니 (Seoul: areumdaun saramdeul, 2004).

in the process, and they finally met on August 29, 1997. Soon after, Grandma Hun applied to regain her South Korean citizenship under her old Korean name Yi Nam-yi. However, a month after her return to South Korea in May 1998, Grandma Hun returned to her Cambodian family because of “homesickness.” Regardless of how it ended, hers became one of the most powerful stories in the newly opened history war between South Korea and Japan in the mid-1990s.²

Grandma’s temporary return to South Korea would have been more difficult without the help of genetic profiling. She barely spoke Korean, and her memory was rusty; she did not even remember the names of her family members. Indeed, at least two families claimed kinship with Grandma Hun. After realizing that her memory of her family was unclear, the Korean Prosecution Service’s Forensic Science Department (KPS-FSD, 대검찰청 과학수사과; Forensic Science Division now) offered to conduct DNA testing to confirm her kinship.³ Through matching specific DNA sequence regions, KPS-FSD finally confirmed that Yi Sun-yi was her biological sister.⁴ The Korean media outlets reported that KPS-FSD’s genetic science had confirmed the accuracy of both Yi Sun-yi’s family memory and the South Korean state’s official memory of Japanese imperialism’s violence.⁵ In other words, biological memory in DNA served to revitalize the family’s private memory and the state’s political memory.

This paper examines how genetic profiling came to interact with mass disaster management and the politics of memory in South Korea from the late 1980s to the early 2000s. It pays particular attention to the parallel emergence of Disaster Victim Identification (DVI) governance and the politicization of modern and contemporary Korean history, including not only Japanese colonial and Korean War crimes but also South Korean state-led massacres during the Jeju Uprising of 1947–1954 and the Gwangju Uprising of 1980. I argue that genetic profiling, which had only recently been integrated into DVI governance in the mid-1990s, entered the field of human rights when the concept of victim identification in South Korea was reconfigured to include the victims of war crimes and state violence in the late 1990s. This integration of genetic profiling into human rights activities reconstructed the landscape of South Korean memory politics: some local forensic scientists, who were equipped with genetic profiling and based in specific regions, such as Gwangju, where the state massacres had occurred in the previous decades, began to recognize the identification of the victims of state violence as their scientific vocation. They

² Ibid.

³ “The Korean Prosecutor Service Wants to Confirm the “Family Relationship” of Kim Nam-jo with Grandmother Hun Through Genetic Profiling 혼할머니 김남조씨 ‘혈연’ 검찰 유전자 감식 확인 자청,” *Kyunggang Shinmun*, June 20, 1997.

⁴ “The Korean Prosecutor Service Announced the Result of Genetic Profiling 검찰 유전자 감식 결과 발표,” *Donga Daily*, August 30, 1997.

⁵ “My Sister, the Beautiful Girl Who Was Taken Away By the Japanese Military 일본군 끌려갔던 꽃다웠던 언니야,” *Chosun Daily*, August 30, 1997.

became core set experts for introducing scientific approaches to the excavations and exhumations of the remains (*Yuhaebalgul* 유해발굴) of those victims and for the reconciliation projects in the following decades.

Science studies scholars have examined the role of genetics in social justice and mass disaster management, but the two areas have historically been studied separately. On the one hand, there is vast literature examining the recent history of the use of genetic profiling in reconciliation projects concerning the history of African American slave populations, the historical injustices of indigenous people in the United States and Canada, and state violence exerted by military-authoritarian regimes in Argentina and Chile.⁶ This literature pays attention to how forensic science and genetic technology became entwined with human rights activism in the post-conflict context. On the other hand, the DVI-focused scholarship is mainly centered on the geneticization of DVI activities and the exclusion of victims' families and related social and cultural contexts from the identification process. This literature mainly confines its interest to mass disaster cases.⁷ This paper connects these two separate areas of study by focusing on a South Korean case in which mass disaster genetics engaged with reconciliation projects in the last decade of the twentieth century. The local reconceptualization of victims, which occurred through memory politics in mid-1990s South Korea, blurred the boundaries between human-rights forensics and disaster-focused forensic genetics.

This paper also contributes to the historiography of South Korean science. South Korean historians have mainly paid attention to the development (or underdevelopment) of science, technology, and medicine from the perspectives of institutional history and science policy.⁸ Despite the increasing interest in disaster

⁶ Alondra Nelson, *The Social Life of DNA: Race, Reparations, and Reconciliation after the Genome* (Boston: Beacon Press, 2016); Kim TallBear, *Native American DNA: Tribal Belonging and the False Promise of Genetic Science* (Minneapolis: University of Minnesota Press, 2013); Lindsay A Smith, "The Missing, the Martyred and the Disappeared: Global Networks, Technical Intensification and the End of Human Rights Genetics," *Social Studies of Science* 47:3 (2017), 398–416; Eden Medina, "Forensic Identification in the Aftermath of Human Rights Crimes in Chile: A Decentered Computer History," *Technology and Culture* 59:4 (2018), 100–133. For a review of genetics and social justice, see Lindsay Smith, "Genetics and Social Justice," James Wright ed., *The International Encyclopedia of Social and Behavioral Sciences*, 2nd Edition (Amsterdam, NL: Elsevier, 2015), 969–974.

⁷ Jackie Leach Scully and Robin Williams, "Approaching Disaster Victim Identification," *New Genetics and Society* 33:3 (2014), 233–238; Caroline Bennett, "Who Knows Who We Are? Questioning DNA Analysis in Disaster Victim Identification," *New Genetics and Society* 33:3 (2014), 239–256; Matthias Wienroth, Niels Morling, and Robin Williams, "Technological Innovations in Forensic Genetics: Social, Legal and Ethical Aspects," *Recent Advances in DNA & Gene Sequences* 8:2 (2014), 98–103; Victor Toom, "Whose Body Is It? Technological Materialization of Victims' Bodies and Remains after the World Trade Center Terrorist Attacks," *Science, Technology, & Human Values* 41:4 (2016), 686–708.

⁸ Hyungsub Choi, "Familiar Narratives and New Questions: Recent Trends in the Modern and Contemporary History of Science in Korea [과학사] 익숙한 서사와 새로운 질문: 근현대 한국

and science in this historiography, the use of science in the post-disaster context has remained understudied.⁹ Furthermore, the South Korean history of genetics has been heavily centered on its engagement with national identity politics with a focus on historical anthropogenetics.¹⁰ Illustrating the use of genetics in post-disaster contexts and its entanglement with the politics of memory contributes to expanding future avenues for the South Korean history of genetics.

To this end, this paper first examines how genetic profiling came to be central to South Korean DVI activities during the Sampoong Department collapse disaster investigations. In the following section, I will examine how genetic profilers working on mass disaster victim identification became entangled with the politics of memory from the mid-1990s onward as a result of bereaved families', civic activists', and supportive academics' promotion of historical reconciliation movements. These movements problematized public memories of civil uprisings and state violence that occurred under the military dictatorship of Chun Doo-hwan but had been forcibly silenced by the previous authoritarian regimes. Subsequently, in the late 1990s, forensic scientists who had introduced and used genetic profiling for DVI activities became involved in identifying such newly integrated types of victims and became part of local reconciliation projects. It was in this process that genetic profiling in South Korea became intertwined with human rights activities and contributed to

과학사 연구의 최근 동향,” *Yoksa Hakbo* 255 (2022), 477–494; Manyong Moon and Hyangsook Shin, “The Achievements and Tasks of Research on the Modern and Contemporary History of Science in Korea: From “Korean Science” to “Scientific Korea” 한국 근현대 과학사 연구의 성과와 과제: ‘한국 과학’에서 ‘과학 한국’까지,” *The Korean Journal for the History of Science* 42:3 (2020), 665–693.

⁹ For the recent rise of interests in a disaster history approach, see Yeonsil Kang, “Transnational Hazard: A History of Asbestos in South Korea, 1938–1993,” *The Korean Journal for the History of Science* 43:2 (2021), 433–458; Ji-hye Yang, “Mining and Environmental Pollution as “Slow Violence” after the Colonial Period in Korea 근현대 한국의 광업 개발과 ‘公害(公害)’라는 느린 폭력,” *Historical Criticism 역사비평* 134 (2021), 383–412; Tae-woo Ko, “Pollution Problems and Disaster Awareness in 1970s South Korea 1970년대 한국의 공해(公害) 상황과 재난 인식,” *Concept and Communication 개념과 소통* 28 (2021), 7–52; Seulgi Lee, “Pesticide Problems in the Korean Green Revolution: Inequal Knowledge Production, Ignorance, and Invisible Pesticide Poisoning in the 1970s 농약을 중심으로 본 녹색혁명: 1970년대 증산과 공해에 가려진 농약 중독,” *The Korean Journal for the History of Science 한국과학사학회지* 43:1 (2021), 215–235; As an exception, see Chihyung Jeon, Scott Gabriel Knowles, and Sang-Eun Park, “Disaster (Continued): Sewol Ferry Investigations, State Violence, and Political History in South Korea,” *History and Technology* 38:1 (2022), 84–106.

¹⁰ Jaehwan Hyun, “Between Engagement and Isolation: Population Genetics and Transnational Nationalism in South Korea,” *The Korean Journal for the History of Science* 42:2 (2020), 357–380; Jaehwan Hyun, “Blood Purity and Scientific Independence: Blood Science and Postcolonial Struggles in Korea, 1926–1975,” *Science in Context* 32:3 (2019), 239–260; Jaehwan Hyun, “Tracing National Origins, Debating Ethnic Homogeneity: Population Genetics and the Politics of National Identity in South Korea,” *Historical Studies in the Natural Sciences* 49:4 (2019), 351–383.

reconciliation projects but resulted in the geneticization in both the disaster victim and state violence identification processes.

DVI and DNA in the Korean Context

(1) The “Mass Disaster” Idea and DNA Testing

In South Korea, in the late 1980s and 1990s, there were two governmental forensic institutions and two university institutions engaging in forensic practice: The National Forensic Service (NFS, 국립과학수사연구소) cooperated with the National Police Headquarters (now the National Police Agency) under the Ministry of Home Affairs (now the Ministry of the Interior and Safety), the KPS-FSD under the Ministry of Justice, and the Departments of Forensic Medicine at Seoul National University College of Medicine (SNUCM) and Korea University College of Medicine (KUCM). It was, however, the NFS that mainly led forensic activities, especially in cases involving accidents. University professors of forensic medicine also worked closely with the NFS and were sometimes appointed as directors of the government institution. From the mid-1990s on, the NFS became the center of DVI activities, and was equipped for DNA profiling. But it was not until the early 1990s that the concepts of mass disasters and DVI and the use of genetic testing for victim identification were articulated.

In the summer of 1989, an airplane crash increased awareness of mass disasters, thus changing the history of Korean forensics. On July 27, Korean Air Flight 803 crashed while landing in Tripoli, Libya. Sixty-eight Koreans (65 passengers and 3 crew members) and 7 people from other countries were killed in the accident. After the victims' remains were moved to Seoul on August 8, the NFS completed the identification work. NFS-forensic scientist Kang Shin-Mong, who led the postmortem examinations of the accident victims, came to realize that the command structure in place to deal with such events involving mass casualties was poorly organized; furthermore, due to the extreme shortage of forensic practitioners coupled with the massive number of corpses, the NFS had to delay forensic activities relating to criminal investigations for months while they dealt with the victims of the crash. Later Kang defined the Flight 803 accident as a “mass disaster” (*Daeryang jaehae* 대량재해) that caused mass casualties.¹¹ He predicted that such mass disaster cases

¹¹ Shin-Mong Kang, Won-Tae Lee, Young-Chang Ko, Sang-Gyu Choi, Yun-Hoi Kim, Hong-Seok Lee, Jae-Kwan Suh, and Jung-Jin Yun, “Individual Identification of KAL Accident Victims in Tripoli Airport Disaster KAL기 추락에 의한 대량재해의 개인식별,” *Korean Journal of Legal Medicine* 한국법의학회지 15:2 (1991), 13–22; Shin-Mong Kang, “Current Status and Problems in Individual Identification of Mass Bodies 집단사체 개인식별의 현황과 문제점,” *Annual Report of National Institute of Scientific Investigation* 국립과학수사연구소연보 25 (1993), 381–384.

would increase in South Korea in the following decades. Although his interest was mostly confined to aircraft incidents, for the first time in Korean forensic history, Kang urged the establishment of a DVI governance specifically for dealing with mass fatalities.¹²

Kang's suggestion was partially influenced by forensic institutions in the countries where NFS practitioners had visited during their studies. The United States, for example, had been conceptualizing mass disasters and establishing its DVI governance since the 1947 Texas City disaster (581 deaths and over 5,000 injuries), West Germany since the 1972 Santa Cruz de Tenerife air disaster (155 died), and Japan since the 1984 Japan Air Lines Flight 123 crash accident (520 died and 4 were injured).¹³

On the other hand, his emphasis on administrative reformation as a solution for mass casualty issues was also rooted in his confidence in the institution's technological superiority. According to Kang, the NFS had already secured sophisticated technologies for victim identification but needed more human resources to be able to manage mass casualty incidents effectively. For instance, during the Flight 803 incident, NFS practitioners mobilized a variety of scientific methods, including photographic and fingerprinting information, radiological pictures (e.g., chest x-ray pictures), dental and craniological examinations, and serological testing (ABO blood typing). Through these techniques, they were able to successfully identify all the victims.¹⁴ The NFS was most proud of their superimposition technique though they did not use it in this instance. They had learned the technique from Japan's National Research Institute of Police Science (JNRIPS, 科学警察研究所) in 1983–1984 and had purchased a very expensive superimposition machine—made by the Japanese company Fujitsu, even in Japan there was only one in existence—in the following year.¹⁵ With confidence in their technological capacity, NFS practitioners believed that the mass fatality issue could

¹² Shin-Mong Kang et al. (1991), op. cit., 20–21; Shin-Mong Kang, op. cit., 384.

¹³ For the role of the Texas city disaster in the formation of US DVI governance, see Vicki Daniel, “The Social History of Disaster Victim Identification in the United States, 1865 to 1950,” *Academic Forensic Pathology* 10:1 (2020), 4–15. For the activities of *Bundeskriminalamt's* DVI team in (West) Germany, see “Missions of the Disaster Victim Identification (DVI) Team” (https://www.bka.de/EN/OurTasks/SpecialFunctions/MissionsOfTheDisasterVictimIdentificationTeam/disastervictimidentificationteamMissions_node.html, accessed August 11, 2023). For the history of the 1984 Japan Air crash accident and its role in the beginning of DVI practice in Japan, see Tsutomu Ōkuni, *Victim Identification: An Ontology and Craniology-based Approach* 身元確認 歯や骨からのアプローチ (Tōkyō: Free Press, 2001).

¹⁴ Shin-Mong Kang et al. (1991), op. cit., 14.

¹⁵ Young-Suk Lee, “Report on In-Service Training in National Institute of Police Science, Japan 일본과학경찰연구소의 연수상황보고,” *Annual Report of National Institute of Scientific Investigation* 국립과학수사연구소연보 17 (1985), 302–303; Young-Suk Lee, “Superimposition Method 슈퍼임포즈법,” *Annual Report of National Institute of Scientific Investigation* 국립과학수사연구소연보 18 (1986), 98–104.

be resolved by training and employing more forensic experts and by establishing rigid procedures for DVI administration.

In this context, at least at the outset, the introduction of DNA testing into NFS procedures happened regardless of DVI activities. It was immunology expert and leader of the NFS Biology Division, Choi Sang-Kyu, who led the introduction of the technology.¹⁶ Choi developed his interest in DNA profiling during his training in sero-immunological analysis at JNRIPS in 1984, when he recognized its technological possibilities. His team participated in a seminar on new serological testing, including DNA profiling, and published one article introducing the possibility of the use of DNA profiling in forensic practice in 1988. In that review article, Choi and his colleagues predicted the availability of DNA profiling by 1991 and set that year as a deadline for establishing a genetic laboratory, hiring more genetic experts, supporting overseas training, and purchasing DNA profiling-related apparatuses for the NFS.¹⁷

Choi's team followed a step-by-step procedure in accordance with their vision. During the next year, the same year of the Flight 803 incident, Choi finally took an opportunity to participate in an international conference related to forensic DNA profiling. The conference, titled "An International Symposium on the Forensic Aspects of DNA Analysis," was organized by the Laboratory Division of the Federal Bureau of Investigation (FBI) and held in the FBI Academy, Quantico, Virginia, in late June. Despite its academic appearance, the symposium was much closer to a summer school for training in new forensic techniques. Choi also visited Applied Biosystem, a biotech firm in San Francisco, to explore the option of buying equipment related to DNA fingerprinting.¹⁸

In June and November of 1990, Choi and his team member Han Myun-Soo seized an opportunity to take part in a DNA profiling training program at the FBI Forensic Science Research and Training Center, Quantico.¹⁹ In July 1991, his team member Paik Hyung-soon was also dispatched to the Institute for Forensic Medicine at Johannes Gutenberg University Mainz and the Federal Criminal Police Office,

¹⁶ Sang-Kyu Choi, *Memories of Crime: Truths and Misconceptions in South Korea's Forensic Investigations* 범죄의 추억: 대한민국 과학수사의 진실과 오해 (Seoul: Cheongoram, 2013), 34–37.

¹⁷ Sang-Kyu Choi, "Application to Forensic Science of DNA-Fingerprints 유전자지문의 법의학적 응용," *Annual Report of National Institute of Scientific Investigation* 국립과학수사연구소연보 20 (1988), 97–105.

¹⁸ Sang-Kyu Choi, "Report on Attendance an International Symposium on the Forensic Aspects of DNA Analysis, FBI, U.S.A 미국 FBI 주최 DNA 분석의 법적 응용에 관한 국제 심포지움 참석에 관한 보고," *Annual Report of National Institute of Scientific Investigation* 국립과학수사연구소연보 21 (1990), 317–319.

¹⁹ Sang-Kyu Choi and Myun-Soo Han, "Report on The Forensic Application of DNA Typing Methods in Forensic Science Research and Learning Center, FBI, U.S.A 법과학 연수센터 주관 DNA 형 분석의 이용 및 실습과정 연수보고," *Annual Report of National Institute of Scientific Investigation* 국립과학수사연구소연보 23 (1991), 375–379.

Wiesbaden, Germany, to practice DNA profiling over three weeks.²⁰ On August 1 of the same year, the Genetic Analysis Laboratory was established and they began analyzing DNA samples for criminal investigations in April 1992.²¹ The KPS-FSD, a rival institution of the NFS, also hurriedly organized a genetic profiling team in May 1991 and they established the Genetic Profiling Laboratory, nominating biologist Lee Seung-hwan as a director on July 2, 1992. Lee had also trained in the FBI Academy for two months before his lab's establishment and set up the facilities while interacting with the Department of Forensic Medicine at Seoul National University.²²

Both the NFS Biology Division and the KPS-FSD Genetic Profiling Laboratory envisioned DNA profiling as a crucial technological advancement in the context of criminal investigations. As disaster investigators did not yet use genetic profiling, neither of the DNA profilers included the DVI among its areas of application. For instance, the NFS Genetic Analysis Laboratory analyzed 362 samples for DNA profiling throughout its first year, and they were all conducted for criminal investigation purposes.²³ The KPS-FSD Genetic Profiling Lab also used the technology exclusively for criminal investigations. It is interesting to note that DNA profiling was not used in the victim identification work for the Seongsu Bridge collapse disaster (October 21, 1994), one of the three biggest collapse disasters in South Korean history, with 32 killed and 17 injured. The first case of DNA testing being used for DVI purposes, in fact, was the Chungju Lake pleasure boat accident, where a fire engulfed the boat and killed 29 passengers on October 24, 1994. Yet, even here, genetic profiling was used as one among several forensic technologies and in interviews with the media, it was the superimposition technique employing computers that was presented by technicians as a more advanced, crucial identification technology than genetic profiling.²⁴

²⁰ Hyung-Soon Baik, "Report on the Forensic Application of DNA Typing Methods in Institut fur Rechtsmedizin Johannes Gutenberg—Universitat Mainz, and Bundes Kriminal Amt, Germany BKA 및 마인츠 대학 법과학 연구센터 주관 DNA형 분석의 이용 및 실습과정 연구보고," *Annual Report of National Institute of Scientific Investigation* 국립과학수사연구소연보 24 (1992), 370–374.

²¹ Sang-Kyu Choi (2013), op. cit., 34–37.

²² "The Supreme Prosecutors' Office Launched A Genetic Profiling Division 대검, 유전자감식반 신설," *Chosun Daily*, March 18, 1991; "'Advanced Investigations' with Genetic Profiling Launched 유전자 감식 '첨단 수사' 시동," *Hankyore*, July 2, 1992.

²³ Sang-Kyu Choi, Myun-Soo Han, Yang-Han Lee, Ki-Won Park, Moon-Suk Seon, Ji-Seock Suh, Young-Ae Lee, Hyung-Soon Baik, Pil-Won Kang, Kyung-Lyong Lee, Young-Bo Lee, Jong-Jin Kim, Dong-Ho Choi, Kang-Chang Kim, and Dae-Yeol Kim, "A Statistical Evaluation on the Biological Evidences 생물학적 증거물의 통계적 고찰," *Annual Report of National Institute of Scientific Investigation* 국립과학수사연구소연보 25 (1993), 167–168.

²⁴ "National Forensic Service: What is the Level of Forensics 국립과학수사연구소: 감정 어느 정도인가," *Donga Daily*, June 28, 1991. This "high-tech" image of the super-imposing method

In this context, although the introduction of DNA profiling into the Korean forensic scene coincided with the emergence of the concept of mass disasters in the forensic expert community, they were still quite separate from each other. It was the largest disaster in South Korean history—which would happen one year later in Seoul, with about 1,500 casualties—that would offer an opportunity for the emergence of genetics for mass disaster.

(2) The Sampoong Department Store Disaster

On June 29, 1995, the Sampoong Department Store, situated in the affluent district of Gangnam in Seoul, collapsed, resulting in over one thousand casualties. The Sampoong Department Store, constructed in 1990, was a five-story building with a capacity to receive 40,000 people per day. The lavish architecture collapsed due to structural failure—ultimately caused by the negligence of Sampoong’s executives in terms of both how it was constructed and its maintenance.²⁵ There were 502 deaths, and a total of 937 people were injured because of the collapse.

The NFS was quickly mobilized for disaster control one day after the tragic incident, but in this case, victim identification was not an easy task. The collapse had occurred in the middle of the hot monsoon season, meaning corpses quickly decomposed. Some of the dead bodies, which were dug out of the rubble after mid-July, were no longer in a condition where they could be fingerprinted because the decomposition process was too far gone. Amid the confusion during the early rescue activities, the discarding of collapsed wreckage at waste disposal sites without first conducting a detailed inspection caused the loss of some human remains. Between July 8 and August 13, 269 fragments of remains were registered in total, including some that were collected at the Nanji waste disposal site. They found that 14 of the cases consisted of the remains of more than one person, so the final total number was 283 cases. Among them, only nine cases consisted of bodies recovered relatively intact. In 53 cases more than half of the body remained, and 33 cases had less than half or just a portion of the body remaining, including severed limbs, feet, fingers, and toes. Of the total, 146 cases were just bones, bone fragments, or hair. It later

was still maintained in 1996. “The Advanced Equipment and the Researchers at National Forensic Service 첨단장비와 국과수 연구원,” *Hankyore*, July 28, 1996.

²⁵ For the Sampoong disaster’s impact on the emergence of disaster governance in South Korea, see Tae-Min Woo, “Escaping from the Sandcastle: KRISS, Safety Culture, and Social Meanings of Measurement in Korea,” (KAIST STP Master Thesis, 2012) and her paper on this issue. For the general review, see Sung-Tae Hong, *Ten Years After the Sampoong Disaster: Lessons and Challenges* 삼풍사고 10년 교훈과 과제 (Seoul: Bomundang, 2006).

turned out that 42 pieces were not human remains at all but animal bones or plastic.²⁶ The poor quality of the recovered samples made DVI activities extremely difficult.

Meanwhile, it was exactly because of the poor condition of the remains that DNA profiling gained increased recognition. It offered a solution to the limitations of the poor quality samples—if the DNA database of the victims' family members was well established, forensic scientists would be able to successfully identify victims. NFS genetic lab leader Choi Sang-Kyu certainly amplified such high hopes through media outlets. Choi made a promise to the victims' families that his genetic lab team would be able to identify all the victims even in the cases where only bones and ashes had been recovered.²⁷ He showed overconfidence in DNA profiling in his interviews with news reporters, so that in the media, genetic profiling was presented as the last resort for identifying missing persons.²⁸ Amid such high hopes, on July 20, blood was taken from 178 family members of 82 missing persons for the purposes of DNA profiling with the help of a medical support team dispatched from the Samsung Medical Center.²⁹

However, what the forensic practitioners encountered in practice was not promising. First, they were limited by their technological capacity. At the time, DNA analysis generally took about seven to ten days per sample, but the number of missing persons (including those whose body remains were yet to be found) was supposed to be over 400.³⁰ The sample number would increase exponentially given that they also needed to conduct analysis for family members in order to match the DNA sequences with those from the body remains. It became evident that if the NFS continued to work on the DNA profiling work alone it would take them over a year to finish. Since both the government and the bereaved families were keen that the

²⁶ Nak-Eun Chung, Han-Young Lee, Jae-Kwan Suh, Joong-Seok Seo, Il-Hoon Kwon, Young-Sik Choi, Hyun-Wook Kang, Young-Chhang Koh, Young-Joo Kim, Young-Suk Lee, Ji-Seok Suh, Young-Bo Lee, Myun-Soo Han, Eun-Ho Kim, Yoon-Hoi Kim, Oh-Sung Kwon, Young-Chan Yoo, and Chong-Youl Kim, "Individual Identification of Dead Bodies in Sampoong Department Store Collapse 삼풍백화점 붕괴사고의 개인식별에 대한 보고," *Annual Report of National Institute of Scientific Investigation* 국립과학수사연구소연보 28 (1996), 18–19.

²⁷ Sang-Kyu Choi (2013), op. cit., 253; "If DNA is present, Identification Is 90% Possible DNA 남아있으면 90% 가능," *Chosun Daily*, July 21, 1995.

²⁸ "How to Identify the Victims of the Sampoong Department Store Collapse 삼풍백화점 붕괴-사망자 신원확인 어떻게," *Jungang Daily*, July 5, 1995.

²⁹ Soong-Deok Lee, Chang-Ho Shin, Ki-Beom Kim, Young-Tae Choi, Yoon-Seong Lee, and Jung-Bin Lee, "Individual Identification Using Polymorphism in Control Region of mtDNA in case of Mass Disaster 대량재해에 있어 미토콘드리아 DNA 다형성을 이용한 개인식별: 삼풍백화점 사건에 대하여," *Annual Report of National Institute of Scientific Investigation* 국립과학수사연구소연보 28 (1996), 93; "The Collection of Blood From the Families of the Victims for Genetic Profiling Began 유전자감식 가족채혈 시작," *Chosun Daily*, July 21, 1995.

³⁰ "Identification of 410 Missing Persons in the Sampoong Disaster Urgently Needed 삼풍 실종자 4 백 10 명 신원확인 비상," *Joongang Daily*, July 15, 1995; Sang-Kyu Choi, *Scientific Investigation: Theory and Practice – Forensic Serology and Genetic Fingerprinting* 과학수사: 이론과 실제-법의혈청학과 유전자지문 (Seoul: Beommunsa, 1998), 281.

identification work be completed as soon as possible, the long-term timeline of six months to a year would not have been acceptable. Second, extracting nuclear DNA samples to identify short-tandem repeats (STRs)—that is, short-length sequences in nuclear DNA, which were what was generally used for DNA profiling in that period—from decayed remains, was extremely difficult or in some cases, even impossible.³¹ So contrary to Choi's assurance, it became apparent that it was impossible to identify all missing people using the decayed fragments of remains alone.

In order to resolve the practical problems, the NFS sought help from the KPS-FSD and the two forensic science laboratories at SNUCM (led by medical professor Yi Jung-Bin) and KUCM (led by medical professor Hwang Juck Joon).³² The NFS also asked the Molecular Genetics Laboratory at Seoul National University College of Natural Sciences (SNUCNS, led by biology professor Yi Chong Choo) to join the DVI work; the biology lab had already worked on genetic research on the Korean population using DNA markers, so it had some capabilities for carrying out genetic profiling.³³

Two of these groups, the KUCM team and the SNUCNS team, decided to use a novel mitochondrial DNA (mtDNA) analysis to break through the difficulty of extracting nuclear DNA due to its abundance within each cell compared to nuclear DNA. It also degrades much more slowly than nuclear DNA meaning that even low amounts of DNA in old and degraded samples would allow practitioners to conduct mtDNA profiling.³⁴

It is important to note that in South Korean forensic practice, DNA profiling was still considered a supplementary technology to be used in conjunction with several other forensic procedures rather than the ultimate solution for identification work. Indeed, there were no identification cases that were decided by DNA profiling alone. Forensic medicine examinations, including autopsies, were carried out on all the victims' remains. After that, the NFS classified them into 79 identifiable cases and 144 unidentifiable cases (46 of the 269 cases in total turned out to be plastics or

³¹ "Problems with Body Identification 시신확인 의 문제점," *Sisa Journal*, August 3, 1995.

³² *The Seoul Metropolitan Government, Sampoong Department Store Collapse White Paper 삼풍백화점 붕괴사고 백서* (Seoul: The Seoul Metropolitan Government, 1996), 391. Although the NFS planned to complete their forensic analysis, including genetic profiling, within 50 days with help from four additional genetic labs, they didn't announce its completion until the end of 1995. "144 unidentified body parts and the families of the victims who could not find any remains would hold a common ritual 신원미확인 부분사체 144 점 주검 못찾은 유족들 '공동상주'," *Hankyore*, December 21, 1995.

³³ Nak-Eun Chung et al. (1996), op. cit., 28.

³⁴ Sung-Soo Hong, Sung-Ho Goh, and Chung-Choo Lee, "Mitochondrial DNA Types Determined by Hybridization with Sequence-Specific Oligonucleotides and Its Forensic Application Sequence-Specific Oligonucleotides 의 Hybridization 방법에 의해 결정된 미토콘드리아 DNA 형의 법의학 적 유용성," *Annual Report of National Institute of Scientific Investigation 국립과학수사연구소연보* 28 (1996), 102–111.

animal bones). For 79 cases, based on the applicability, the NFS used three to seven forensic methods, including forensic craniology, forensic dentistry, radiography, blood group testing, super-imposing technique, and genetic profiling. Forensic dentistry was the most frequently used and the most reliable method for identifying the victims.³⁵

In this context, DNA profiling was used to identify only 48 of the 79 cases in total and was mostly used to determine the identification already confirmed by other forensic procedures. For instance, in the case of bone remains, forensic scientists first took a craniological analysis to identify the victim's age and height. Genetic profiling was only carried out once forensic biologists had conducted blood group testing and narrowed down the number of possible matches following the craniological analysis.³⁶ Genetic profiling results were never used as crucial evidence independently from other forensic evidence, at least not in the post-Sampoong DVI operation.

The outcome of the mtDNA profiling was also disappointing. The forensic laboratory at SNUCM failed to identify a single victim. The molecular genetics laboratory at SNUCNS identified six victims, but none of them were newly identified and rather had already been confirmed by other forensic methods.³⁷

Interestingly, with hindsight, forensic geneticists who participated in the DVI activities later overestimated the role DNA profiling played, assigning it a more crucial role than it in fact had. Decades later, both NFS genetics lab director Choi Sang-kyu and the KPS-FSD genetics lab director Lee Seung-hwan commented that DNA profiling had been crucial, especially in the cases where multiple families claimed one victim's remains.³⁸ Indeed, there was one case involving the foot of a victim where a DNA profiling result was certainly used as evidence for its identification; but one family member's memory about the shape of her older sister's feet was also considered corresponding evidence to the genetic profiling.³⁹ Furthermore, at the time, the missing person management team consisting of police

³⁵ Chong-Youl Kim, Young-Suk Lee, Chang-Lyuk Yoon, Woong Hur, Jong-Hoon Choi, and Jae-Hong Kim, "Individual Identification of Sampoong Department Collapse Mass Disaster: Using the Forensic Odontological Studies 삼풍백화점 붕괴 대참사의 법의치과학적 개인식별," *Annual Report of National Institute of Scientific Investigation 국립과학수사연구소연보* 28 (1996), 68.

³⁶ Nak-Eun Chung et al. (1996), op. cit., 22–23.

³⁷ Nak-Eun Chung et al. (1996), op. cit., 100–101; Sung-Soo Hong et al. (1996), op. cit., 106–108.

³⁸ Sang-Kyu Choi (2013), op. cit., 253–256; "Victim Identification is the State's Duty: Seung-Hwan Lee of the Supreme Prosecutors' Office Genetic Analysis Unit 신원 확인은 국가의 일: 대검찰청 유전자분석실 변사체처리반 이승환 씨," in Seoul Foundation for Arts and Culture, *The Sampoong Disaster in Seoul in 1995* 1995 년 서울, 삼풍 (Seoul: Dongasia, 2016), 86–88.

³⁹ Chung et al., op. cit. (note 26), 27; "I Cried While Holding Her Fingers and Toes: Bereaved Family Member Cho Jong-kyu 손가락, 발가락을 붙들고 울었어요: 유가족 조종규 씨," in Seoul Foundation for Arts and Culture, op. cit., 179.

authorities and Seoul Metropolitan Government officials blamed the slow genetic profiling process for the late announcement of their DVI outcome.⁴⁰ This in turn gave a misleading impression to the public that genetic profiling had been an important part of the identification work.

Although genetic profiling played a modest role in the Sampoong DVI activities, it did become a part of routine DVI practice. On August 10, 1997, five days after the Korean Air Flight 801 accident occurred in the US territory of Guam, killing 229 people, the KPS-FSD-NSF collaborative team was quickly dispatched for the DVI activities. Genetic lab members in both institutions were included in the collaborative team lineup and played a leading role in the DVI activities.⁴¹ By this point, forensic geneticists had also come to recognize themselves as experts not only in the context of criminal investigations but also for mass disaster identification.

While genetic profiling and forensic geneticists came to be part of the newly emerging DVI practice, the meaning of victims and their identification was undergoing a rearticulation in the context of the civilian government's and civic society groups' political movement toward a modern and contemporary Korean history. As the government and civil activists politicized the recent historical past and promoted the memorialization of unspeakable war crimes and state violence, along with the loud voice of identifying victims of state violence, genetic profiling would find its new place in the field of human rights.

The Identification of Victims of State Violence through DNA

(1) Revisiting the Past

After the civilian government was established in 1993, civil society groups and bereaved families began to speak out about civilian massacres that had occurred during the Korean War (1950–1953) and the previous authoritarian regimes. The Kim Young-Sam government, the first civilian government after the decade-long dictatorship, first problematized colonial history and the April Revolution of 1960 and took the decision to destroy the old Government-General Building of Korea, and began to restore the previously blocked Gyeongbokgung Palace. In response to the government-led revision of Korea's modern history, civil society movements demanded the investigation and punishment of the perpetrators of the civilian

⁴⁰ Ibid., 183.

⁴¹ “National Forensic Service to Complete DNA Profiling of 124 Guam Disaster Victims in 3–4 Months 국립과학수사연구소, 참사망자 124 명 DNA 감식 3~4 개월내 완료,” *Joongang Daily*, August 31, 1997.

massacres had taken place in recent Korean history.⁴²

The most recent civilian massacre, the May 18 Uprising, occurred in Gwangju in 1980, when citizens protested the May 17 coup that had installed Chun Doo-hwan as a military dictator and imposed martial law. The Kim Young-sam government was reluctant to commit to investigating the Gwangju massacre as Kim's ruling party had been formed through a coalition with the conservative forces of the Chun Doo-hwan regime. In July 1995, when the Korean Prosecution Service concluded that the statute of limitations had expired and that Chun Doo-hwan and his military conspirators could no longer be indicted for the crime of rebellion in connection with the May 18 Uprising, the National Association for Fact-Finding and Inheritance of the Spirit of Gwangju Uprising (5·18진상규명과광주항쟁정신계승국민위원회) organized nationwide protests against the decision. The National Committee for the Gwangju Uprising Special Law Enforcement (5·18특별법제정범국민대책위원회) also led a series of rallies. Faced with this political crisis, the Kim Young-sam government announced on December 22 of that year the passing of the "Special Law on the May 18 Democracy Movement" (5.18민주화운동 등에 관한 특별법). This law made it possible for those responsible for the Gwangju massacre to be prosecuted. The National Assembly immediately passed the bill, and fourteen politicians were indicted and convicted in April 1997. However, President Kim subsequently pardoned all those convicted in the name of "national reconciliation" (*Gungmin hwahap* 국민화합). This political decision reignited nationwide anger and the politics of memory surrounding the contemporary history of state violence became even more thorny.⁴³

Another concurrent reconciliation movement surrounded the Jeju April 3 Uprising and Massacre. Like the May 18 Uprising, the activism started after the April Revolution in 1987 and gained momentum during the civic government's period. In 1989, the Jeju April 3 Research Institute (제주4·3연구소), a civilian research organization, was established and began to collect oral history materials and carry out the excavation of remains. In 1993, the Jeju Provincial Council established the April 3 Special Committee (제주4·3특별위원회) to "investigate the truth and to rehabilitate the victims."⁴⁴ In 1995, the Special Committee submitted a report titled *The Investigation Report on the Victim Cases Caused by Jeju April 3 Incident*

⁴² Moo-yong Jeong, "Prelude to the 'History War': the Making history Right of the Kim Young-sam Regime '역사전쟁'의 序: 김영삼 정권의 역사바로세우기," *Chung-Ang Saron* 중앙사론 54 (2022), 226–228.

⁴³ Yong Wook Chung, "Historical Conflict and Restoration of Truth and Justice in Korean Society 한국의 역사 갈등과 과거사 정리: 목은 갈등의 소환인가 새 정체성 형성의 진통인가," *Yeoksa Hakbo* 역사학보 249 (2021), 9–11. For the expression on the "national reconciliation," see "What Led to the Pardon of Mr. Jeon and Mr. No: The Forgiveness of Victims... Into A 'Kim Dae-jung Era' of Reconciliation 전·노씨 사면 배경 피해자의 용서...화합의 '대중시대'로," *Kyunghyang Shinmun*, December 21, 1997.

⁴⁴ "Jeju Provincial Council Established the First Official Body to Investigate the Jeju 4.3 incident 「제주4.3」진상규명 공식기구 첫 설치 제주도의회," *Donga Daily*, February 20.

(제주4·3사건 피해실태 조사보고서). In March 1998, newly elected South Korean president Kim Dae-jung's ruling party organized the Jeju April 3 Incident Truth Investigation Commission, and in December of the following year, the National Assembly passed the Jeju April 3 Special Law (제주4·3사건 진상규명 및 희생자 명예회복에 관한 특별법).⁴⁵

It is important to note that the increased attention given to the memory of these relatively recent state massacres coincided with the Sampoong disaster in South Korea. Civil society groups protesting for the reinvestigation of the Gwangju and Jeju massacres, made a deliberate connection between the Sampoong disaster and their memory politics. For instance, in July 1995, while criticizing the Kim Young-sam government's modest response to punishing Chun Doo-hwan and his military comparators, Yoon Jaehyun, president of the Citizens Coalition for Economic Justice (경제정의시민실천연합), contended that the "Gwangju May 18 massacre and the Sampoong disaster" have "the same cause," which is "the culture of irresponsibility in which no one takes responsibility."⁴⁶ Roman Catholic cardinal Kim Sou-hwan, a religious leader of South Korean democratic movements, also harshly criticized the decision not to prosecute Chun Doo-hwan. Cardinal Kim also believed that the "mass disasters, including [Chun Doo-hwan's] December 12 Military Insurrection, the May 18 Massacre, and the Sampoong Disaster" occurred for the same reason—an obsession with a materialistic worldview that dismissed humanity.⁴⁷

From this perspective, the delayed investigation process of the Sampoong disaster was seen as a small part of a larger continuum of incidents buried in South Korea's contemporary history, that were never properly investigated and that refused to hold anyone accountable. In a special issue of the progressive newspaper *Hankyoreh* for Korea's National Liberation Day, August 15, 1995, an editorial addressed the issues of reunification and a need for "settling the past" (*Gwageosa cheongsan* 과거사 청산). The editorial listed incidents including "the May 18 massacre in Gwangju, cases of corruption in power, and disasters such as the collapse of the Sampoong department store," while mentioning that they showed the need to "settle the past" through "proper investigation and punishment."⁴⁸

Equally, the commemoration of the Sampoong disaster became intertwined with the commemoration of the state massacres. In July 1995, civil groups protested at the Seoul Central District Prosecutors' Office against the decision of the prosecutors regarding Chun Doo-hwan. They then visited the families of the Sampoong disaster victims to offer their condolences.⁴⁹ It was believed that the government had allowed

⁴⁵ Yong Wook Chung (2021), op. cit., 11–13.

⁴⁶ "Let's Promote a Nationwide Campaign to Call For a Reopening of the Investigation 재수사촉구 국민운동을," *Chosun Daily*, July 19, 1995.

⁴⁷ "Mr. Jeon Doo-hwan Said He Was Disappointed in Me... 전두환 씨 나한테 섭섭했다고...", *Kyunghyang Shinmun*, November 24, 1995.

⁴⁸ "Prepare for unification 통일을 준비하자," *Hankyoreh*, August 15, 1995.

⁴⁹ "Prosecuting the Slaughterer of May 18 5.18 학살자 기소," *Hankyoreh*, July 15, 1995.

the owners of Sampoong to disregard safety measures, and that this contributed to the tragic event. In this sense, the victims of the Sampoong disaster and the victims of the Gwangju massacre were in the same boat. Along the same lines, in December of the same year, *Samsohoe* (삼소회), an association of female clergy from the Catholic Church, Buddhism, and Won Buddhism, held “a joint memorial service” (*Hapdong wiryeongje* 합동위령제) to comfort “the spirits of disaster victims and May 18 victims.” Around 600 clergy gathered at the sanctuary of the Buddhist Broadcasting System building to “comfort the mass disaster victims of the May 18 Gwangju Uprising and the Sampoong Department Store Disaster.”⁵⁰ The money raised at the event was donated to the families of the victims of the May 18 Massacre and the victims of the Sampoong Disaster.⁵¹

In the midst of this politicization of the official memory of recent state-led massacres, the line between victims of large-scale technological disasters—transportation accidents, including plane crashes, train wrecks, and bridge and building collapses—and victims of state violence began to blur. For a variety of reasons, including requests from civil society organizations or central and local governments, it was then that forensic scientists expanded their DVI work to include the identification of victims of state violence.

(2) Genetic Profiling Enters the Politics of Memory

From the late 1990s onwards, forensic researchers working for governmental agencies like the NFS and the KPS-FSD were tasked with identifying the victims of Japanese colonialism and the Korean War. The KPS-FSD’s identification work to help Grandma Hun find her family in 1997 is representative of their approach. Moreover, as a continuation of this, identifying the remains of South Korean soldiers from the Korean War became a government-led excavation project. Originally conceived as a three-year project to commemorate the 50th anniversary of the outbreak of the Korean War, it later evolved into a permanent program of the Korean Ministry of National Defense following the re-establishment of the Agency for KIA Recovery & Identification within the ministry.⁵² The government and its forensic agencies considered these strands of investigation to be safer because they were less controversial and thus less likely to cause political unrest than the investigation of

⁵⁰ “A Joint Memorial Service for the Victims of May 18, Hosted by the Samsohoe 「삼소회」 주최, 「5.18」 희생 영령 합동 위령제,” *Catholic Times*, January 1, 1996.

⁵¹ “Samsohoe Launched a Joint Memorial Service for the Victims of May 18 삼소회 5.18 합동 천혼재 신행,” *Bulgyo Shinmun*, December 26, 1995.

⁵² Yongseok Noh, “The Dead Body and Modernity : The Study of MIA/Mass Killing of Civilian Exhumations in Korea 죽은 자의 몸과 근대성: 한국의 전사자·민간인 피학살자 유해 발굴 연구,” *Memory & Vision 기억과 전망* 23 (2010), 234–259.

cases of state violence such as the Gwangju massacre, which remained a contentious issue in the politics of memory context.

They did not completely ignore the issue of victims of state violence, however. In 1997, NFS director Kim Chong Youl revealed to *Jeonnam Ilbo* that in the late 1980s, when he had been a professor of forensic dentistry at the Yonsei University College of Medicine, his team had participated in the forensic identification of cremated remains excavated from Mt. Bonghwang and Juam village in Gwangju, that were believed to be victims of the Gwangju massacre. The NFS director thought this could help prove that the state-led massacre had occurred.⁵³

Their university partners were under less political pressure and were thus able to take more direct action. Yi Jung-Bin, professor of forensic science at SNUCM and participant in the genetic profiling that was conducted for the Sampoong disaster DVI, revealed that his team had also participated in investigations to identify the Gwangju cremated remains and that they had been ready to deliver the DNA profiling result in 1989, but that the Korean prosecutors had not published their results.⁵⁴ The following year, Yi's SNUMC team published the DNA profiling report on the remains, and it became the first case to apply genetic profiling for the identification of state violence victims.⁵⁵

Yi Jung-Bin was not alone in his endeavors. In November 1995, Lee Yunseong, a forensic science professor and Yi's departmental colleague, also accepted a request from the victims' families to identify the remains of a body found in Geumjeong Cave in Goyang, Gyeonggi Province. The incident, later known as the Geumjeong Cave Massacre, occurred in October 1950, when villagers were shot and buried in the cave by police officers. Lee's team concluded that at least 153 people had been killed, about 10% of whom were women. Although genetic profiling to match the victims and their families was not conducted at this time, DNA testing was conducted to identify the sex of the remains.⁵⁶

In the late 1990s and early 2000s, many university-based forensic scientists became involved in reconciliation projects just like these. Among them was Park Jong-tae of the Chonnam National University College of Medicine (CNUCM), one of the dedicated scientists who devoted his life to human rights work. In 1993, Park became the first professor of forensic medicine at CNUCM and he was equally known as a local forensic expert who conducted postmortem examinations in

⁵³ "Remains Found in the 1989 Gwangju Incident Special Commission's Excavation of Nokdong Village 89광주특위 녹동마을 발굴 암매장 유골," *Jeonnam Ilbo*, May 16, 1997.

⁵⁴ "Continued From Page 1 1면에서 계속," *Jeonnam Ilbo*, May 16, 1997.

⁵⁵ "Excavated in 1989, the Remains Are Still Well Preserved 89년 발굴 유골 온전한 상태," *Jeonnam Ilbo*, April 28, 1998.

⁵⁶ Yoon-Seong Lee, Soong Deok Lee, and Yong-il Hwang, "The Morphologic Examination and DNA Test for Sexing Using Skulls from "Keumjeong-gul" Site '금정굴' 유골에 대한 남녀 구분을 위한 형태학적 조사와 유전자 검사," *Korean Journal of Legal Medicine* 한국법의학회지 24 (2000), 51–56.

regional criminal cases. Park might have learned genetic profiling techniques from either the NFS or Yi's lab at SNUMC when the NFS established its Gwangju branch in Jangseong, South Jeolla Province, in June 1997.⁵⁷

At the time, the Gwangju Metropolitan Government discussed organizing a Gwangju Massacre Investigation Committee, composed of forensic experts from the NFS and the KPS-FSD, to identify the cremated remains. The bereaved families of the Gwangju massacre and local civil society groups distrusted the government agencies, especially the KPS, and sought the help of a politically neutral foreign organization such as the Argentine Forensic Anthropology Team (*Sitio Oficial del Equipo Argentino de Antropología*, EAAF). In 1999, the Gwangju government proposed organizing the "Truth Investigation Committee" (사실조사위원회) consisting of "... the NFS, and bereaved families" in cooperation with the "EAAF."⁵⁸ This proposal was opposed by both civil society groups and national forensic experts, and the establishment of the committee was delayed until 2001.⁵⁹ To avoid further delays in the excavation and exhumation project, the Gwangju Metropolitan Government contracted local forensic expert Park Jong-tae's team for the identification task.⁶⁰ Park was considered a good candidate because he had already been working with the civil society group since 1997. In the spring of the following year, his team made the first successful identification of three missing persons from the Gwangju massacre through Y-chromosome and mtDNA profiling.⁶¹ From that moment on, Park's team became the core set experts in identifying the victims of the Gwangju massacre and would also play some role in DVI for the Sewol ferry disaster in 2014.

Genetic profiling thus underwent a significant shift in the way it was used. While the role it played in the Sampoong disaster was purely supplemental, it was now becoming a crucial technique for the identification of victims in state-led massacres. This changing conception of genetic profiling was certainly linked to the rapid technological progress that had been made in the field of genetics and genomics in the late 1990s and early 2000s, partially driven by the hope and hype of the Human Genome Project (1990–2003).⁶²

⁵⁷ *The Fifty Years of Scientific Investigation* 과학수사 50년사 (Seoul: National Forensic Service, 2005), 152–154.

⁵⁸ "Exhume the Remains of the Mass Grave of the May 18 Massacre. Pursue the Identification of Missing Persons 5.18 암매장 발굴. 행불자 신원확인 본격 추진," *Jeonnam Ilbo*, February 20, 1999.

⁵⁹ "A Wall of Mistrust Between May Uprising Civil Society Groups and Forensic Scientists 5월단체-법의학자 '불신의 벽'," *Jeonnam Ilbo*, May 19, 2001.

⁶⁰ "Pursue the Identification of Missing Persons of the May 18 Incident '5.18 행불자 찾기' 본격화," *Jeonnam Ilbo*, February 8, 2001.

⁶¹ "Three Missing Persons Were Identified For the First Time 5.18 행불 3명 첫 신원확인," *Kwangju Ilbo*, April 19, 2002.

⁶² For the rapid development of genomic technologies and the emergence of the genomics field in South Korea, see Jaehwan Hyun, "The Korean Genome for Asian Health": A Commercialization Strategy of the Korean Genome Projects "아시아인 건강을 위한 한국인 게놈": 한국인 유전체

However, there were also other factors that changed how important a role genetic profiling played in the identification of state violence victims. For instance, in 2000, Lee Yunseong and his team at the SNUMC published an article on the victim identification of the Geumjeong Cave Massacre. In this article, they explicitly emphasized the superiority of genetic testing over traditional forensic methods. Their emphasis on genetic testing reflected the different nature of the remains and sites of the massacre cases from the mass disaster cases.⁶³ In contrast to their DVI activities, which dealt with a variety of evidence and relatively “fresh” corpses at mass disaster sites, the identification of the victims of state violence had to be carried out, in the worst case, with only skeletons that had already been buried for decades. In these cases, the use of traditional identification methods such as craniological examination, only allowed them to discover basic information about the victims, such as sex and age. Thus, in contrast to its use in previous DVI activities, in these cases, genetic profiling truly became the last resort for identifying the victims.

Conclusion

In 2003, while Park Jong-tae’s CNUMC team was increasing the number of identified cases of missing persons during the Gwangju massacre, a similar initiative was taking shape in relation to the Jeju massacre. Kang Hyun-Uk, once an NFS researcher and now a professor of forensic medicine at Jeju National University College of Medicine (JNUMC), served as the only forensic scientist on Jeju Island since 1997. Involved with Jeju April 3 activist groups, Kang began identifying the remains of Jeju massacre victims in 2001. In 2003, when the government released *The Jeju April 3 Disaster Investigation Report*, which included recommendations for government support for the excavation and exhumation of group burial sites and ruins, the families of the Jeju massacre victims asked Kang and other local experts to help excavate the communal grave in the Uigwi village. Kang claimed that the remains in the communal grave were relatively well preserved for genetic profiling purposes and proposed that they do this; the victims’ families rejected his proposal because of the cost and the loss of remains.⁶⁴ Kang’s wish to use genetics for human rights purposes was realized with the government-sponsored excavation project for the victims of the Jeju April 3 incident (제주4·3사건 희생자 유해 발굴사업) in 2006. Kang took on the role of forensic identification in the project and later brought Lee Soong Deok’s forensic medicine group (a junior colleague of Yi Jung-Bin and Lee Yoon-

프로젝트의 상업화 전략,” *Journal of Science & Technology Studies* 과학기술학연구 19 (2019), 117–167.

⁶³ Yoon-Seong Lee, Soong Deok Lee, and Yong-il Hwang (2000), op. cit.

⁶⁴ “Problems with “Hyunui” Communal Grave Excavations ‘현의합장묘’ 발굴의 문제점,” *Sounds of Jeju*, September 20, 2003.

Seong) at SNUCM to the excavation project to carry out genetic profiling.⁶⁵

In the 2000s, genetic profiling became a crucial method for identifying victims of both disasters and state violence. This became particularly evident after the government institutionalized reconciliation activities in the form of the Clarification Commission on Suspicious Deaths (의문사진상규명위원회, 2001–2004) and the first Truth and Reconciliation Commission (진실화해를위한과거사정리위원회, 2005–2010). NFS researchers carried out genetic profiling of the remains sent by the Clarification Commission and by the DVI team at mass disaster sites. They contributed to the identification of both the student activists that went missing during the Roh Tae-woo regime and the victims of the Daegu subway fire disaster.⁶⁶

According to human rights sociologist Noh Yongseok, since the early 2000s, excavations of the remains of victims of state violence have incorporated a scientific approach, including DNA testing. Roh claims that the “scientization” (Gwahakwa 과학화) of the excavations was made possible because academic scholars and civil activist groups came to lead excavation activities, officializing and framing these activities as human rights issues rather than something limited to the bereaved families.⁶⁷

This paper has shown that this “scientization” process is not simply a matter of replacing bereaved families with academic experts and civil activists and placing them in the position of leading state violence-related excavation projects. The process was much more complex, occurring in the context of the intertwining of DVI practice and the politics of memory related to state violence in the mid-1990s and early 2000s. While civil society activists and religious groups linked victims of state massacres and victims of mass disasters through their commemorative activities, forensic scientists began to participate in excavation and exhumation projects, contributing to the identification of victims of state violence. In this process, genetic profiling, initially introduced to identify victims of mass disasters, quickly entered the human rights field and became a crucial part of truth-seeking reconciliation projects.

Meanwhile, genetic profiling also became a gatekeeper for bereaved families in the DVI procedures of both mass death and state violence. During the Daegu subway fire disaster, the police delivered the dead to their family only once their kinship had been identified by genetic profiling. This new procedure caused a conflict between

⁶⁵ For the Jeju 4.3 excavation project from 2006 onward, see Yong-gwan Ban’s paper on this issue.

⁶⁶ “Missing Female College Student Found Dead After 10 Years 실종 여대생 10년 만에 사망 확인,” *KBS News*, October 12, 2001. For the forensics of the Daegu subway fire disaster, see Seulgi Lee, Heewon Kim, and Scott G. Knowles’s paper on this issue.

⁶⁷ Yongseok Noh, *The Sociocultural History of State Violence and Exhumation: The Bones of a Man Who Became a Communist and the Exhumation of Human Remains 국가폭력과 유해발굴의 사회문화사: 빨갱이가 된 인간의 뼈, 그리고 유해발굴* (Busan: Sanjini, 2019), 218–220.

the identification team and the victims' families.⁶⁸ In the case of the Jeju April 3 massacre, for those descendants who were not registered in the family registers of their murdered parents, it became imperative to conduct genetic testing to prove family relationships.⁶⁹

I understand the emergence of genetic profiling-centered governance as a symptom of the geneticization of victim identification. This involves adopting genetic identification as the primary mode of victim identification in both post-disaster management and reconciliation projects. Science studies scholars have already addressed the possible perils that might arise from geneticization by integrating ethnographic research into contemporary DVI practices. For instance, anthropologist Caroline Bennett, who worked on mass graves and forensics in Cambodia has cautioned that incorporating DNA profiling into post-disaster management as the primary method may conflict with socio-cultural norms and result in the underestimation or marginalization of local sociocultural norms related to the management of the dead and expectations surrounding mass death in a local context.⁷⁰

As Noh's supportive gesture towards the "scientization" of reconciliation projects implies, the geneticization of victim identification in the South Korean context has not been critically questioned but rather encouraged, even by activists and non-forensic experts.⁷¹ Future research should investigate the socio-technical issues that have arisen from geneticized identification practices in post-disaster management and reconciliation projects in South Korea from the 2000s onward.

⁶⁸ "The Daegu Subway Disaster: "How to Prove Being on the Subway" 대구 지하철 참사: 탑승 우째 증명하란 말인가," *Hankook Ilbo*, February 2, 2003.

⁶⁹ "The Family Discrepancy Issues 가족관계 불일치... "증언으로 회복"," *KCTV Jeju*, April 5, 2023.

⁷⁰ Caroline Bennett (2014), op. cit., 243–244.

⁷¹ Yongseok Noh (2019), op. cit., 218–220.

Abstract

This paper examines how genetic profiling came to interact with mass disaster management and memory politics in South Korea from the late 1980s to the early 2000s. It pays particular attention to the parallel emergence of Disaster Victim Identification (DVI) governance and the politicization of modern and contemporary Korean history, including not only Japanese colonialism and Korean War crimes but also the South Korean state-led massacres, the Jeju Uprising of 1947–1954 and the Gwangju Uprising of 1980. I argue that genetic profiling, which had only recently been integrated into DVI governance, entered the human rights field when the concept of victim identification in South Korea was reconfigured to include victims of war crimes and state violence in the late 1990s. Beginning in the late 1990s, forensic scientists who had introduced and used genetic profiling for DVI activities became involved in identifying these newly integrated types of victims and became part of local reconciliation projects in the early 2000s. In this way, genetic profiling became intertwined with human rights activities, contributing to transitional justice and reconciliation. However, it also resulted in the geneticization of both disaster victims and state violence identification processes.

Keywords: Genetic Profiling, Mass Disaster, State Violence, Disaster Victim Identification (DVI), Politics of Memory