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EAST ASIAN HISTORY AND CULTURE REVIEW

Abuse of Modernity: Japanese Biological Determinism and Identity Management in Colonial Korea

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Abstract

Medical researcher Kubo Takeshi's contributions to professional publications, such as *Chōsen igakkai zasshi* (*The Korean medical journal*), and more popular magazines, such as *Chōsen oyobi Manshū* (*Korea and Manchuria*), reflected many of the prejudicial attitudes that Japanese held toward Koreans during the first decade of colonial rule. His scholarship was based on biological determinist thinking, an approach developed by eighteenth-century European medical researchers to establish race, class, and gender hierarchies. For Kubo this approach provided a means for exploiting scientific inquiry to establish and manage Japanese superiority over Korean subjects in a more stable manner than one based on more malleable cultural differences. A people could adjust its customs or mannerisms to amalgamate with a suzerain culture but could not do so with hereditarily determined features, such as blood type or cranium size, shape, or weight. Practitioners, however, often linked the physical with the cultural by arguing that a people's physical structure was a product of its cultural heritage. The subjectivity injected into this seemingly objective research methodology abused the lay community's blind trust in modern science in two ways. First, it employed this inquiry to verify biased observations, rather than to uncover new truths; second, it altered the approach, rather than the conclusions, when this inquiry demonstrated the desired truths to be inaccurate. Biological determinism proved useful in substantiating a Japanese-Korean colonial relationship that acknowledged historically similar origins while arguing for the historically different evolutions of the two peoples.

Keywords: biological determinism, *Chōsen igakkai zasshi*, Kubo Takeshi, craniology, racial identity, Keijō Medical College, colonial history, Kubo Incident

By May 1921, Kubo Takeshi (1879–1921), professor of anatomy at the elite Keijō Medical College (from 1926 Keijō Imperial University Medical School, and after liberation Seoul National University Medical School), had made quite a name for himself. Losing his cool and later his mind, on May 31 Kubo accused his Korean students of theft after discovering a precious skull missing from his classroom.¹ Although the class consisted of six Korean students and four

Japanese students, his accusatory remarks targeted solely the Koreans: “Anatomically speaking, Koreans resemble barbarians [K. *yaman*, J. *yaban*],” he purportedly said. “Your past proves that some of you stole [my skull]” (quoted from the *Tong’a ilbo* in *Sŏul taehakkyo ũkkwa taehak* 1978, 47). Kubo drew his confidence in this explosive conclusion from his extensive research in anatomical studies, which had demonstrated to his satisfaction a close relationship between the Korean people’s physical characteristics and their personality traits. Proof of their guilt lay in the shape of the Korean cranium, which resembled that of common thieves. The Korean students, angered by his accusations, delivered an ultimatum to the school authorities: Kubo was to offer a lecture detailing his research findings, after which the school was to replace him. The students set a forty-eight-hour deadline. Their demands unmet, the entire body of close to 200 Korean students walked out. The school authorities responded by suspending over 180 students and expelling 9 more.ⁱⁱ

The protest by the students and the school’s reluctance to respond more positively to their demands was a frequent pattern during the more than three decades of Japanese rule.ⁱⁱⁱ On this occasion the students interpreted Kubo’s accusations as threatening to their individual identities, as well as to that of the Korean people as an ethnic group. In Kubo’s eyes the Korean people as a whole were of inferior stock, a prejudice that we can imagine entered into his lecture content. The school authorities could support their colleague’s claims by pointing to an extensive body of research on biological determinism, the idea that “worth can be assigned to individuals and groups by measuring intelligence as a single quality” (Gould 1996, 52). Using craniometry—the measurement of craniums—and, later, psychological testing, this approach had directed much of the research conducted at medical institutions globally for most of the past century. Indeed, as government-general chief of academic affairs, Matsumura Matsumori, noted in his response to the students’ claims, “In fact, Japanese often hear that they are barbarians compared to Westerners.” Japanese researchers accept this, he continued, “because it’s a scientific fact” (quoted in H. Kim 2013, 424). Starting in the late 1880s, Japanese (and later Korean) researchers employing these practices contributed data to an extensive body of statistics that ostensibly aimed to situate different races along a racial hierarchy determined by level of civilization. Data on Koreans provided a link that bridged peoples of the Asian continent and the Japanese archipelago (Kim 2008; Jung 2012).

The high regard that society placed on scientific inquiry, and particularly what Stephen Jay Gould calls the “allure of numbers,” positioned this central component of modernity for abuse. In a rush to categorize, researchers produced numbers to compare the size, texture, shape, and weight of measurable body parts between races to “prove” the superiority of one over another. Little effort was made to explain in either professional or layman’s terms why, for example, a heavier brain was more developed than a lighter one. Most often the tacit answer to this question was simply that it differed from the special characteristics found in the European specimen, considered the apex of civilization. Researchers often fudged the numbers or altered the criteria should the results betray their biases. Despite its flaws, this inquiry enjoyed substantial acceptance by both the scientific community and the general public for two reasons. First, the generally blind faith that people held in scientific inquiry absolved it from a more rigorous objective scrutiny, and second, the results that it produced generally confirmed widely accepted racist views formed by what David Spurr calls the “visual penetration” of the body (1999, 22).

Though the concept of biological determinism was developed primarily by Western scholars, Japanese were active in carrying out biological determinist studies on both their own people and those that Japan colonized (Sakano 2005). A number of factors encouraged this practice. First, conducting sophisticated research in the sciences placed Japanese in a distinct group of civilized peoples capable of contributing data to racial categorization research. Second, doing so enabled them to distinguish the Japanese people from its neighbors, countering the idea that all Asians had a low level of civilization while justifying Japan’s colonization of other Asians. As is often argued, this was especially urgent given the relatively similar racial characteristics that Japanese shared with other Asian peoples, as opposed to the more distant and distinctive peoples controlled by Europeans (Pak 2006).^{iv} At the same time Japanese could exploit this racial proximity to justify Japan’s assimilation policy (*dōka seisaku*), an administrative approach that encouraged development of the suzerain culture among the colonized but maintained the vertical relationship of colonizer superiority over the colonized (Caprio 2009).

Mismeasuring Human Bodies

Kubo Takeshi never studied in Europe, but his education was influenced by European scholarship, and particularly by the biological determinist principles developed on the continent. Japanese had been introduced to, and began studying, Western medical practices early in the Tokugawa period (1603–1868). A group in Kyushu, benefiting from the Dutch colony in Deshima, engaged in “Dutch studies” (*Rangaku*), which included medical research. Medical practitioners such as the German Engelbert Kaempfer regularly traveled to Edo (Tokyo) to inform the shogunate of the latest news of the field (Kaempfer 1999). Japanese, meanwhile, began to travel abroad to study beginning in the turbulent transition years leading up to the 1868 Meiji Restoration, with large numbers going to Germany for medical studies. In addition, Japan invited a number of prominent European medical researchers to help form, and then teach at, Japan’s newly established medical schools. Kubo’s research was greatly influenced by Koganei Yoshikiyo [Ryosei],^v a professor of anatomy at Tokyo Imperial University, where Kubo worked for two years, from 1899 to 1901. During this time he completed his 718-page dissertation, which he wrote in German. His mentor had studied in Japan under two anatomists, Erwin Baelz and Wilhelm Donitz, who had encouraged Koganei to study in Germany, which he did, thus joining over twelve hundred of his compatriots who received medical training there prior to the outbreak of World War I (H. Kim 2013, 414–417). Those studying at the Daiichi Daigaku-ku Igakko (the Number One University Medical School), which opened in Tokyo in 1872, received an education primarily taught by invited German instructors who sought to assimilate the students into the German medical *linik* culture: they developed a German-style curriculum that was conducted entirely in German, and they even forced students to dress in German-style uniforms and maintain German-style hair (Bowers 1980, 72–75; Lee 2008, 6).

The German curriculum also introduced Japanese students to the biological determinist practices becoming increasingly popular at the time, following the absorption by European empires of new territories and peoples starting in the latter decades of the nineteenth century. While it is difficult to pinpoint the exact origins of biological determinism, the approaches it harbored provided a convenient rationale for objectifying the subjective racial prejudices that had developed over the previous centuries.^{vi} Essential to this science was the value placed on quantification, initially by measuring physical size, weight, and texture and later by measuring performance on aptitude tests. Stephan Jay Gould writes that proponents of biological

determinism “regarded themselves as servants of their numbers, apostles of objectivity.” Yet their efforts “confirmed all the common prejudices of comfortable white males—that blacks, women, and poor people occupy their subordinate roles by the harsh dictates of nature” (1996, 106).

Behavioral determinism, according to Gould, “holds that shared behavioral norms, and the social and economic differences between human groups—primarily races, classes, and sexes—arise from inherited inborn distinctions and that society, in this sense, is an accurate reflection of biology” (1996, 52). Apostles of this research examined virtually every part of the human anatomy, but the protective temple of intelligence—the cranium—assumed the most critical place in their inquiry. Over the nineteenth century, craniometry established a basis for biological determinist theory until it was replaced by intelligence testing in the early twentieth century.^{vii} The results proved invaluable in two ways. On a theoretical level they offered objective criteria for categorizing different races in terms of their level of civilization, and on a practical level they provided a eugenic basis for preventing procreation among members of physically or mentally challenged populations (Black 2003, 7).

Among the earlier practitioners of biological determinism was the Swedish botanist Carolus Linnaeus (1707–1778), now remembered as the “father of taxonomy.” Linnaeus included human beings as one of many categories in his biological classification system (Smedley 1993, 163). The English surgeon Charles White (1728–1813) sought to distinguish racial categories by examining the sizes and texture of the muscles, tendons, cartilage, skin, hair, sex organs, and brains of whites and blacks (Smedley 1993, 163), an approach that Kubo Takeshi later employed in Korea. Researchers were divided over the question of human origins: monogenists believed that humankind stemmed from a single source (one Adam and one Eve), whereas polygenists saw each race as having separate seeds of origin (multiple Adams and Eves). One important polygenist school of thought in Japan contended that there was an Asian branch that produced the “shared origin” (*dōsoron*) of Northeast Asian peoples independent of other racial groups, including other Asians (Kita 1919, 1921).

Those engaging in craniometrical experimentation, which gained popularity starting in the early nineteenth century, tended to favor the polygenist view. One of the earliest such scientists, Samuel George Morton (1799–1851), used measurements from his vast collection of over one thousand skulls gathered from around the world with the aspiration of “ranking the

rac...objectively by physical characteristics of the brain, particularly its size” (Gould 1996, 83). According to Morton, skull size determined brain size, which determined intelligence capacity. If the measurements failed to support the scientists’ racial beliefs they simply invented new methods of measuring that did. Thus, craniology evolved from measuring the outer skull dimensions to measuring skull volume to measuring different areas of the cranium. This latter measurement was conceived after brain volume, measured at first by filling the skull with mustard-seed shot and then with lead shot, failed to produce “correct” results that distinguished the brain capacity of the “civilized” from that of the “uncivilized.” The problem was solved when differences were discovered in the sizes of the frontal and rear lobes of privileged and disadvantaged peoples. This advancement would later allow Kubo to conclude the culpability of his Korean students.

Sir Francis Galton (1822–1911), half cousin to Charles Darwin, popularized craniology when he established a laboratory at the 1844 International Health Exposition, held in London. Here, for three pence, participants could literally have their head examined—that is, measured—and their intelligence level assessed. After the fair closed Galton relocated his laboratory to the South Kensington Museum. Among the many visitors to his popular laboratory was Prime Minister William Ewart Gladstone (Gould 1996, 108). Galton’s most important contribution lay in his idea of “hereditary genius,” the idea that genius was passed down through the generations rather than earned through hard work. His book by this title explains the eugenic value of his research as follows:

A man’s natural abilities are derived by inheritance, under exactly the same limitations as are the form and physical features of the whole organic world. Consequently, as it is easy, notwithstanding those limitations, to obtain by careful selection a permanent breed of dogs or horses gifted with peculiar powers of running, or of doing anything else, so it would be quite practicable to produce a highly-gifted race of men by judicious marriages during several consecutive generations. I shall show that social agencies of an ordinary character, whose influences are little suspected, are at this moment working towards the degradation of human nature, and that others are working towards its improvement. (Galton [1869] 2000, 1)

Galton used this research to establish racial rankings, determined by the ratio of a race’s members who fell into different groups based on intelligence levels, ranging from “eminence” to “idiot.” In Great Britain, for example, he estimated that each million people contained 250 of the

former and 400 of the latter. Inferior races, he stated, had fewer people in the superior ranks and more in the inferior (Galton [1869] 2000, 36, 338–339). While Galton proposed “positive” application of his eugenic theories—matching for marriage people of similar intelligence levels, for example—his ideas were also open to abuse by proponents of “negative” eugenic policy, which sought the sterilization of unfit people to prevent them from passing their mental deficiencies on to their children (Black 2003, 21).

Proponents of biological determinism also exploited their objective data to mask their subjective views on race by manipulating the numbers to secure results that corroborated with these views. Results that contradicted their expectations were either adjusted or simply ignored. Stephan Jay Gould, in reviewing the research of the renowned American physician Samuel George Morton found numerous “miscalculations and convenient omissions” in his skull measurements. Gould wrote:

All miscalculations and omissions that I have detected are in Morton’s favor. He rounded the negroid Egyptian average down to 70, rather than up to 80. He cited averages of 90 for Germans and Anglo-Saxons, but the correct values are 88 and 89. He excluded a large Chinese skull and an Eskimo subsample from his final tabulation for mongoloids, thus depressing their average below the Caucasian value. (1996, 101)

In this way, biological determinists approached their research with a full, rather than blank, slate of predispositions. Their research aimed to provide statistical verification for their biased views, rather than to challenge them. They discarded uncooperative data as a freakish abnormality or the result of faulty experimental procedure, rather than investigate its merit. White supremacist John Van Erie (1814–1896) exhibited the extent to which this body of researchers maintained its unyielding faith in Caucasian superiority when he acknowledged the genius of Confucius but then argued that the Chinese philosopher must have been Caucasian rather than Asian (Smedley 1993, 163).

European physicians passed on this body of research to their Japanese students starting in the mid-nineteenth century. Their research results influenced the research design pursued by their students in procedure as well as verification (as is often seen in the works cited by Japanese in their reports). Of these Europeans, none was more important in this regard than Erwin Baelz, who spent the better part of thirty years (1876–1905) in Tokyo as an educator and physician,

with the imperial family among his many distinguished patients. Baelz's direct connection as mentor to Koganei Yoshikiyo most likely placed him in contact with Kubo Takeshi during the time they shared residence at Tokyo Imperial University.^{viii} Indeed, Kubo's research interests overlapped with those of Baelz, particularly his enthusiasm for measuring the human body. During his tenure in Japan Baelz measured more than one thousand Japanese (H. Kim 2013, 419). In addition, he made two trips to Korea, in 1902 and 1903, in which he "investigated the graves of ancient kings" and examined the bones of other Koreans (Bowers 1980, 125). Baelz's diary entries at this time also reveal that he measured Korean children at a Catholic orphanage and adults at a mining camp. His travels allowed him to draw comparisons between northern and southern Koreans.^{ix} As he departed Korea on June 3, 1903, he wrote in his diary that, "after staying there more than three months, I hope that I have secured enough material to enable me to give an accurate picture of the Korean race" (Baelz 1974, 211). Indeed, Kubo recognized Baelz's influence by citing the German scholar's work in a number of his many contributions to *Chōsen igakkai zasshi* (*The Korean medical journal*), to which he would eventually offer over three hundred pages of research on Korean anatomy.

Kubo Takeshi and Biological Determinism in Korea

Western scholars such as Erwin Baelz had already compiled a rather large database of Korean physical measurements by the time Kubo Takeshi arrived in Korea. *Jinruigaku zasshi* (*The journal of the anthropological society of Tokyo*) reported in February 1914 that, in addition to Baelz, two Frenchmen, E. Chante and E. Boudaret, had completed measurements of over one hundred Korean males (H. Kim 2013, 415–416). Kubo first traveled to Seoul in 1907 to take up residency in a hospital supervised by the residency-general after stints in Tokyo, Kyoto, and Nagoya. After three years he returned to Japan to teach in Kanazawa, but then he traveled to Manchuria to join the staff at the South Manchurian Railway Medical College before returning to Seoul in 1916 to assume his position at Keijō Medical College (H. Kim 2013, 414–415).

In using scientific inquiry to biologically define Koreans, Kubo followed a trail of Japanese intellectuals and amateurs who offered similar conclusions of inferiority based on observational inquiry. In 1885, for example, the scholar Fukuzawa Yukichi (1835–1910), who had received medical training that included human corpse dissection as a part of his Tokugawa-era "Dutch learning" experiences (Fukuzawa 1966 86), diagnosed Korea as the sick patient that

Japan must monitor. As the doctor, Japan must inquire over every aspect of Korean society, prescribe it proper medicine, and “caution [the patient] every day and night.” With the promotion of Korean independence as a primary goal, Japan must be prepared to intercede in the life of this sick “patient” and offer it proper treatment to direct Koreans toward the “new idea of civilization” (Fukuzawa 1925, 591–593).^x Fukuzawa also infamously declared that Japan should “abandon Asia” (*datsu’*a**) so as not to be included by Westerners in this inferior category of civilization. His bias was strengthened by stagnation theories put forth by Japanese intellectuals such as Nitobe Inazō who, upon visiting Korea in the early 1900s, found the country to be static, having not changed over the past three thousand years; its people, he added, were “so bland, unsophisticated and primitive....[t]hey belong to a prehistoric era” (Nitobe [1905] 1983–1987, 667). Ogino Yoshiyuki, doctor of letters, wrote that contemporary Korean customs, which have remained inert for the past two thousand years, resemble those of ancient Japan (1918, 42). Other impressions of Koreans were harbored by Japanese settlers who began to cross over to Korea soon after 1876, when Japan pushed Korea into signing the Kanghwa Treaty, which “opened” the country. Okita Kinjō, for example, compared Korean living conditions with those of primitive aborigines (Duus 1995, 402). Such negative views, hardly unique to Japanese, reflected those held by Western colonizers regarding the peoples they subjugated (Memmi 1965; Said 1979, 85; Mitchell 1988; Spurr 1999).

After annexation, the Japanese medical field quickly established medical associations and publications in Korea. In 1911, the year after annexation, the Korean Medical Association (Chōsen igakkai) was founded, and the first volume of its *Chōsen igakkai zasshi* appeared later that year. The association and journal resembled the Taiwan Medical Association founded by the Japanese in 1905; similarly, in the 1930s, Japanese scholars reorganized the Oriental Medical Association (Tōyō igakusha), founded in Manchuria in 1923, into the Manchurian Medical Association (Manshū igakusha). As in other colonial locations, the Korean organization competed with several other medical organizations, including, in this case, one formed at Severance Hospital (presently affiliated with Yonsei University), also located in Seoul.^{xi} Scholars found additional homes for their research in the rapidly expanding popular press, which catered to a lay readership. Kubo found the popular journal *Chōsen oyobi Manshū* (*Korea and Manchuria*) particularly open to his research. He contributed a total of twenty-four articles to this Seoul-based journal during his active but truncated career.^{xii}

Biases evident over the journal's initial decade of existence reflected, with few exceptions, Japan's long-term colonial view of superiority as presented in the media and in literature and regularly flaunted by the settler population (Duus 1995, chapter 11; Uchida 2011, chapter 4). These biases further reflected the administration's view over this period of "military rule" (*budan seiji*). Here, as in Japan's other territorial additions, the colonizers developed a two-tiered education system directed by civil servants with swords at their sides. This system helped maintain a society that separated, rather than united, Koreans in their neighborhoods, schools, and places of employment, among other places. Editorials in the government-general newspaper, the *Maeil sinbo* (*Daily times*), regularly urged the Korean people to work to gradually "catch up" to their Japanese counterparts, even though they had to do so under these inferior circumstances. Governor-General Terauchi Masatake explained the reasoning that supported this discriminative policy in his contribution to the rather active debate that precipitated the first Education Act, passed in 1911:

Koreans are on a different level than the Japanese and thus it is difficult to put them under the same system right away. After the conditions, customs, and mannerisms of the Japanese are learned; after the welfare of the people is promoted through the improvement of their level of culture; and after this knowledge is developed, the Korean people can be assimilated with the Japanese. (Terauchi n.d., 74–85)^{xiii}

Many contributions to *Chōsen igakkai zasshi* over its initial decade mirrored the biased attitude expressed by Governor-General Terauchi. One representative example is found in the research conducted by two surgeons, the Japanese Kirihara Shin'ichi and his Korean collaborator Paek Inje, both employed at the government-general hospital. Kirihara and Paek exploited a research design that used a "biochemische index" (*seibutsugaku keisu*) developed by Ludwick Hirschfeld (Jung 2012, 521–522) to determine a people's position within a global civilization ranking. This index calculated the ratio of a population's A blood type members against its B blood type members. The results developed the following three-tiered racial categorization index: the advanced European group (with a relatively generous 2.3–4.5 ratio span); the Middle Eastern and Slavic group (with a rather tight 1.3–1.5 ratio span); and the underdeveloped Asian and African group (with a 0.5–1.1 ratio span).^{xiv} The two researchers found the overall Japanese ratio (1.7) to be superior to the Korean ratio (1.1), thus achieving the study's general purpose.^{xv}

Their results strengthened this basic result by demonstrating that Korean ratios decreased as distance from Japan grew. Thus, South Chōlla's *biochemische* index, calculated at 1.41, placed the province's residents solidly in the middle group, and significantly higher than its North Chōlla (1.08) and North P'yōngan (0.83) cousins, both wallowing in the Asian and African group (Kiri-hara and Paek 1922, 273, 294). The Kiri-hara-Paek report did not question the validity of this peculiar experimental design, which had apparently been used extensively by other scholars (Kim 2008, C. Kim 2013, 381; Jung 2012). Nor did they question the lofty status afforded the European group or the study's peculiar connection of a people's blood type ratios to its level of civilization, as if the subjective view of European superiority, rather than any objectively determined scientific reasoning, dictated how the results were to be interpreted.

Researchers also appended discussion of Korean cultural characteristics normally found in the popular press to explain their results. Nakajima Motojirō, who measured the pelvic bones of Korean women, found the diameters of his subjects to be smaller than what would be expected for women of their height, at least when compared to the shorter Japanese women. He attributed this surprising result to their custom of carrying heavy loads on their heads (1913, 125–126). Kudō Takeki (1879–?) discovered a linkage between Korean husband murderers and the general racial traits of Koreans (Park 2013, 128). The idea that certain crimes could be ascribed to the Korean people's "peculiar racial characteristics" (*jinshuteki tokuchō*), to borrow an expression often employed by Kubo Takeshi, was one frequently encountered in this medical research. Kubo himself traced Korean physical peculiarities to practices in their homes (the *ondol* floor used for heat), their clothing (the *manggōn* headbands that they wore), and their physical mannerisms (facial expressions). He stealthily derived positive cultural explanations for those characteristics enjoyed by his fellow Japanese and negative cultural explanations to account for Korean strengths. The stronger abdominal muscles of Japanese, he explained, were a result of their ability to "bear down" (*hara ni chikaru wo ireru*) when necessary (Kubo 1920, 4), whereas the strong sensory muscles of Koreans demonstrated their stunted development.

As mentioned earlier, until his sudden departure from Keijō Medical School followed by his equally sudden death in 1921, Kubo was by far the most active contributor to *Chōsen igakkai zasshi*. His series of articles entitled "Research on the Korean racial anatomy" (Chōsenjin no jinshu kaibōgakuteki kenkyū) became a staple in the journal over the second half of its initial decade of publication. It also appeared as a nine-part series in *Chōsen oyobi Manshū*. Kubo's

research, much of which closely followed procedures conducted by European and American scholars, led him to the foreseen conclusion of Japanese superiority over the Korean. His study on Korean hair—which he found to be weaker, shorter, and thinner than Japanese hair—supported a view he took in his studies of other parts of the Korean body (Kubo 1918a).^{xvi} As we saw above, his attempt to apply conclusions to the real world no doubt contributed to his sudden and tragic downfall.

Kubo's primary research appears to have followed in the footsteps of his mentor's professor, Erwin Baelz, and those of the British surgeon Charles White. Kubo offered his first report on anatomy at the Sixth Annual Korean Medical Association Convention in 1916. Within a year he reported on differences between Korean and Japanese spinal columns (*sesushi*), based on his examinations of forty male and six female subjects. He attributed these differences to Korean customs considered by many at the time to be characteristic of a primitive lifestyle: sleeping on the floor and carrying heavy objects on one's head. He also wrote that Korean men and women were more prone to walk with a *sori* pose (throwing their shoulders back) than Japanese (Kubo 1918b, 57–58). Much of Kubo's research, too difficult and inhumane to conduct on living bodies, depended on his procuring cadavers. This limited his primary subject source to the bodies of executed prisoners, which required cooperation from the police and government-general officials.^{xvii} His comparative conclusions with Japanese and others required him to append the data obtained by other researchers. He occasionally noted the results that these Japanese colleagues, such as the physiologist Kudō Tokuyasu (1888–1955), had obtained in their investigations of Japanese bodies. This approach enabled Kubo to draw comparisons between the Korean body and that of the European and “Mongolian” (which he often defined as Japanese and Chinese); occasionally, and where convenient, he also incorporated observations made of African tribes, such as the Hottentot of South Africa.

Kubo's investigation of ear muscles is a representative example of both his research style and how he formed his conclusions. In this case, Kubo found three muscles in the Korean subjects to be slightly stronger than those of the Japanese subjects. He explained this result as a peculiarity generally found in auditory muscles: unlike other muscles, he claimed, these gradually degenerated as human beings became civilized, due to their lessening utility. Kubo's discussion stops short of saying—but strongly suggests—that the more developed muscles of the Korean people in fact demonstrated their inferiority. As he would on occasion, here Kubo

remarked on the value of creating a continuum between the animal and human worlds, as suggested by Francis Galton, presumably with the aim of demonstrating Korean proximity to these less-developed entities when compared to Japanese. Kubo noted, for example, that an anatomic study should be conducted of facial muscles (*gamenkin*) in different animals in order to develop a continuum between the “primitive” (*genshiteki*) human level of the muscles and that of lower life forms (Kubo 1919b, 22–23).

Kubo’s source of subjects, though not uncommon among his peers, posed problems particularly in that he had to draw conclusions from an extremely small sample and characterize those conclusions as representative of the entire Korean population. The following charts illustrate how he presented results from measurements taken on eye-vicinity muscles (*ganiken*) (Kubo 1919a, 97–100).

Table 1. A comparison of Japanese and Korean optical vicinity muscles

Japanese Subject

No.	Case #	Name	A* R L	B* R L	C* R L	Subtotal R L	D* R L	Total R L
1	82	Shinda	5.0 4.7 9.7	1.6 1.5 3.1	0.3 0.2 0.5	6.9 6.4 13.3	1.3 1.0 2.3	8.2 7.4 15.6

Korean Subjects

1	10	Kim M.	5.0 4.5 9.5	1.7 1.3 3.0	0.3 0.2 0.5	7.0 6.0 13.0	1.0 1.0 2.0	8.0 7.0 15.0
2	35	Kim Y.	3.8 3.5 7.3	0.9 0.8 1.7	0.2 0.1 0.3	4.9 4.4 9.3	0.6 0.6 1.2	5.5 5.0 10.5
3	38	Hung S.	3.9 3.8 7.7	1.9 1.5 3.4	0.2 0.2 0.4	6.0 5.5 11.5	0.3 0.3 0.6	6.3 5.8 12.1
		Average	4.2 3.9 8.1	1.5 1.2 2.7	0.2 0.2 0.4	5.9 5.3 11.2	0.63 0.63 1.26	6.6 5.9 12.5

* A. Pars orbitalis; B. Pars palpebralis; C. Pars lacrymalis; D. Corrugator supercilii.

Source: Kubo 1919a, 98.

The higher numbers signified greater development in each of the four muscles that Kubo tested. Rather than the muscles themselves, of importance here is Kubo’s creative data manipulation. In his report, Kubo concluded that the “muscles in the eye’s vicinity were generally of inferior development [*hatsuiku furyō*] in the case of the Korean.” A casual glance at the bottom line of

Kubo's results appears to support this conclusion: the figures for the lone Japanese subject appeared to be significantly higher than the averages of the three Korean subjects. A more careful inspection, however, reveals problems similar to those that Stephen Jay Gould found in his investigations. First, regarding the subjects, Kubo offers no explanation as to how they were chosen: Why did he compare one Japanese against the averages of three Koreans? Were Shinda's measurements typical or exceptional when compared to other Japanese? What significance (if any) did the case numbers hold? Was case number 38, Hung S., one of thirty-eight (or more) subjects? If so, why was he specifically chosen, along with cases 10 and 35? It would also have been useful to know more about the subjects' lives (at a minimum their age), how they lived and died, and from where Kubo drew the confidence to extend to the entire Korean population results taken from just these three bodies.

Kubo's conclusions depended heavily on averages that obscured the individual results of Koreans, some of which approached those procured from Shinda, the lone Japanese subject. Using averages deceptively suggests significant differences between the two peoples that may not have existed at all on individual levels. Closer scrutiny of Kubo's data on eye muscles reveals this to be true, as at least one of the three Korean subjects, Kim M., had measurements similar to those obtained from Shinda. He thus, perhaps inadvertently, offered viable reason to doubt the premise that drove Kubo's conclusion of Japanese superiority, unless, of course, the sum total difference between the two (Kim M. 15.0 and Shinda 15.6) was indeed significant. This apparently slim difference could very well have been even less, or perhaps greater, depending on how Kubo rounded off his data at the second decimal level.^{xviii} Regardless, to project these results as representing physical characteristics of an entire people, either Japanese or Korean, tells us more about the researcher's subjective biases than the significance of his "objective" results.

Kubo's studies on the Korean cranium are particularly important because of the exaggerated importance that his peers placed on the link between head size and shape and intelligence. The French anatomist Louis Pierre Gratiolet (1815–1865) developed a tri-level classification system for cranial measurement studies that divided people into three categories: Caucasians, with highly developed anterior and frontal lobes; race parietales (i.e., Mongolians), with highly developed partial or mid-lobes; and "race occipitales" (i.e., blacks), with brain mass accumulated in the backside (Gould 1996, 129). Thus, while brain size remained important, even

more crucial (and decidedly more convenient) was the distribution of this brain mass.^{xix} Kubo's conclusions, when coupled with those found in Kudō Tokuyasu's study on Japanese craniums, fit nicely into Gratiolet's classification scheme. Kubo reported that, compared with other Asians, both Koreans and Japanese exhibited relatively developed frontal lobes, with the Japanese subjects displaying slightly more advanced development than the Korean subjects. The two peoples rested quite comfortably in the middle group, safely above the "colored races" but hardly threatening to the superior position of the Caucasian. As in Kubo's previous studies, the average figures positioned Koreans as slightly different from Japanese, but again one of the three Korean subjects yielded measurements that approached those of the Japanese subject. This time it was Kim Y.'s measurements that were nearly identical to those of Shinda, while Hong's measurements demonstrated significant variance.

Table 2. Cranial measurement comparison of Japanese and Koreans

Japanese Subject

Name	Forehead muscle	Nasal-ridge muscle	Frontal lobe	Anterior lobe	Front/back lobe total	Weight	Total
Shinda	22.4	0.6	23.0	20.0	43.0	25.0	68.0

Korean Subjects

Name	Forehead muscle	Nasal-ridge muscle	Frontal lobe	Anterior lobe	Front/back lobe total	Weight	Total
Kim M	20.6	0.4	21.0	19.0	40.0	25.0	65.0
Kim Y	22.4	0.6	23.0	19.5	42.5	22.5	65.0
Hong	16.6	0.4	17.0	15.0	32.0	20.0	52.0
Average	19.86	0.46	20.33	17.83	38.16	22.5	60.6

Source: Kubo 1918b, 70–71.

Yet again, for Kubo, it was the Korean average that mattered. While one Korean figure approached that of the Japanese Shinda, as an average the three Koreans proved inferior in all areas. Kubo concluded that the Korean cranium's anterior lobe was significantly underdeveloped when compared to the frontal lobe. As mentioned above, he attributed this result in part to Korean custom, in particular to Koreans' use of the *manggōn* headband, which applies pressure to the frontal lobe and impedes development of muscles there (Kubo 1918b, 70–79).

Kubo's discussion of this issue in *Chōsen igakkai zasshi* reads rather conservatively, at least when compared to statements he made in a *Chōsen oyobi Manshū* article on the topic in July 1919. Kubo (1919c) began by informing his lay audience about the importance of this research, which he said clarified the “distinguishing racial characteristics of a people” (*minzoku no jinshu tokuchō*); this research relates the values and distinguishing characteristics that a people hold. Kubo added that it makes no difference whether this research is performed on live or dead bodies. Finally, he told the reader, cranium and brain studies produce the most interesting results (Kubo 1919c, 47).

Kubo calculated that, since beginning this research in 1906, he had examined ninety-two corpses, eighty-one male and eleven female. Summarizing the results obtained in one aspect of this research, he said that, generally speaking, “Korean people have nervous systems and internal organs that are inferior to those of the Japanese. Also important to consider is their poorly developed and smaller brains [*nōzui*]” (Kubo 1919c, 47). He described the Korean brain as being both wider and shorter than the Japanese brain. He also provided a range of statistics that demonstrated the brains of Koreans, both male and female, to be slightly smaller than, and thus (we are to presume) slightly inferior to, those of their Japanese counterparts.

Kubo's conclusions held until he compared cranial volume. Replicating a study by Koganei Yoshikiyo, Kubo found that his mentor had mismeasured the Korean cranium capacity, which he had said was 1,500 cubic centimeters, by 10 cubic centimeters. Koganei's measurements raised two concerns for Kubo that drove him to revisit the study: first, they placed the Korean cranium on par with the European cranium; and second, they suggested the apparent superiority of the Korean cranium over the Japanese cranium. Kubo's new measurements still found the Korean cranium to be a full 10 cubic centimeters greater in volume relative to the Japanese cranium, which was 1,480 cubic centimeters. But Kubo reassured his audience that there was a perfectly logical explanation for this rather “strange development” (*fushigi no genzō*): shape trumped volume. That is, while the Korean cranium did have a greater overall capacity in terms of volume, it was at the same time smaller in circumference. This left Koreans with a “rounded” (*tantōkei*, literally a “short head”) form. As [Rudolf?] Steiner^{xx} had demonstrated, the wider and shorter cranium shape indeed carried greater overall area and volume. Without discussing the significance that this cranial shape presented, Kubo continued by citing Koganei's finding of the Ainu cranium having greater overall surface area, but less overall

volume, than the Japanese cranium (Kubo 1919c, 47–49). The point Kubo appears to be making here is that rather than overall measurements the shape of the cranium, and particularly the areas that appear most developed, is important for determining racial superiority. Here, Kubo seems to have had Gratiolet's model (or another similar one) in mind, given the importance he placed on developed anterior and frontal lobe regions of the cranium.^{xxi}

As with the European studies, Kubo sought clarification as to where Japanese stood in this racial hierarchy. If the experimental model's initial objective criteria failed to meet the researcher's perceived subjective reality, they simply found other ways to measure that did. The task at hand was to determine why a predetermined "fact" was so, rather than to allow the research to guide them in discovering new facts and challenging old ones. Kubo's accusations against his students suggest that he preached this doctrine of discrimination in his classroom, and that he felt at least sufficient confidence in using it to contend that Koreans rather than Japanese were responsible for his missing skull.

Anatomic Research and Colonial Identity

The so-called Kubo Incident came at a time of relatively significant change in Japan's administration of the colony, particularly in its views of the Korean people. The catalyst for this change was the 1919 March First Independence movement, which sent thousands of Koreans into the streets to demand national sovereignty. The energy that stimulated this display of anti-Japanese sentiment was a sense that imperialism had reached its zenith and was now facing a state of decline.^{xxii} The government-general announced significant administrative changes in early 1920 that allowed Koreans to print indigenous newspapers and enjoy freedom of assembly, among other new rights. Japan also increased the number of schools for Koreans and allowed a minority of Koreans competent in Japanese to enter those schools established to accommodate Japanese settlers from.^{xxiii} The demonstrations revealed to many Japanese just how little they really knew about the Korean people. Assimilation would not come as easily as initially imagined.^{xxiv} These changing times might also have empowered Kubo's students to actively challenge his racist statements regarding Korean identity.

Chōsen igakkai zasshi also underwent a transformation of sorts in the early 1920s, although one not nearly as abrupt, or significant, as those seen elsewhere. The most obvious change was that its research reports began devoting less space to discussion of results and their

connection to Korean people and culture, as Kubo had enjoyed doing. Rather, researchers tended to simply present their findings with minimal explanation regarding their significance to Korean culture and lifestyle. A second trend was that Korean scholars were increasingly appearing as head researchers on projects rather than subordinates to Japanese researchers, as seen in Paek Inje's case. One such Korean, Ch'oe Hüiyöng, a member of the Department of Hygiene at Keijō Imperial University's School of Medicine, actively compiled "life table studies" (*seimeihyō*). Such studies supported a third trend: Japanese settlers had started moving into areas they had previously avoided, particularly the more distant northern regions of the peninsula, after the Japanese administration established military and police presence in these isolated provinces that bordered China and the Soviet Union. Life table studies yielded detailed information about the peninsula's regions that demonstrated variance among Koreans, strengthening views presented in blood type studies. As Edwin Black (2003) argues in other contexts—the extreme being Nazi Germany—such studies also lent themselves to eugenic exploitation, as the data suggested interethnic differences by region and between residents. One of Ch'oe's first reports focused on factors that caused death among Japanese settlers in Korea (Ch'oe 1936). In a 1937 study he examined the effects of population density, education, medical services, and family size across the peninsula (Ch'oe 1937). Two years later Ch'oe completed his life table study on Korean peninsular residents, both Japanese and Korean, which examined life and death rates by gender and age over five-year increments beginning in 1925. His conclusions, rather than differentiating between Japanese and Korean, simply noted the two variables to be significant. When researchers did consider race and ethnic factors in their studies, their conclusions occasionally downplayed the significance of those factors.^{xxv} Ninomiya Tsukasa, for example, entered his research with the question of whether seasonal fluctuations of fecundity were racially determined, only to conclude that differences were "primarily outcomes of climactic conditions" rather than of inherent differences that separated Japanese from Koreans (1934).^{xxvi} As others have demonstrated, these adjustments did not necessarily signify a dramatic change in attitudes harbored by Japanese (Park 2013; Kim 2008; Pak 2006), but racist views presented in *Chōsen igakkai zasshi* from the mid- to late 1920s were less blatant when compared to reports from the journal's first decade of publication.

The emphasis on regions, as seen in the life table studies, reflected demographic changes that took place starting in the early 1930s, after Japanese administration penetrated the Asian

continent. As the empire expanded and Japan drew closer to war, Korea's role evolved from that of a provider of agricultural goods (primarily rice) in the south to a source of industrial natural resources from the north. Korea's eventual proximity to the war's front line required Japan to expedite its efforts to assimilate the colonized, thus gradually improving the Korean people's status (Eckert 1991; Park 1999). The increased importance of the northern provinces encouraged Japanese to migrate in greater numbers into northern Korea and Manchuria (Caprio 2010). Research projects, such as the life table studies that assessed cultural levels across the peninsula, resurrected long-held prejudicial attitudes that southern Koreans held toward their northern cousins. Many of these Koreans, having been transplanted from the south, were seen as having a lower level of civilization (Kim 2010, throughout). Ch'oe Hŭiyŏng's studies on regional birth, death, and literacy rates emphasized northern Koreans' inferiority to southern Koreans in these areas. His maps drawn to display these results, like Kubo's use of statistics, skillfully exaggerated potentially small differences between the peoples of northern and southern Korea (Ch'oe 1937, (112, 113).^{xxvii} We can imagine that the value of the information generated from biological determinist studies increased exponentially as Japan's war intensified, first in China in 1937 and then with the Allied powers in 1941. Beginning around this time, radical assimilation replaced the gradual approach that had characterized the first two decades of colonial rule, making the Korean body eligible for wartime labor and sexual and military duty.

Conclusion

The results of these latter studies, although differing in tone, shared an important quality with those of *Chōsen igakkai zasshi*'s initial decade in their use of scientific inquiry to define ethnic identity. The later studies ethnically compartmentalized peoples by geographic region through use of a wide number of social variables rather than by physical characteristics. Unlike the European imperialists, who forged external empires, Japanese built their empire among peoples with whom they shared relatively close racial proximity.^{xxviii} Biological determinist research provided one important tool that was used, along with cultural and historical explanations, to establish racial and ethnic difference. On the one hand it provided a scientific methodology to distance Japan from other Asian peoples, as Fukuzawa Yukichi (and no doubt others) advised, by establishing Japanese medical superiority over peoples viewed as underdeveloped. Unlike relatively flexible and adjustable attributes, such as dress, cuisine, and

mannerisms, hierarchical rankings like the biochemische index offered objective data on cranium size, blood type, and other hereditary physical characteristics that could not be “reformed” by the assimilation process (Jung 2012, 516).

It is hard to ascertain the extent to which the sequence of events following the Kubo Incident drove the scholar from his classroom to an insane asylum, and finally to his early grave. The standoff that occurred in May 1921 in many ways reflected the much graver and tenser atmosphere that hung in the colonial air from the time of the 1919 March First Movement. Here the colonizers sought to reclaim administrative space lost by reforms they were compelled to enact after the Japanese military police (*kenpeitai*)’s, violent response to this movement was criticized internationally. The colonized Koreans, now empowered by a supportive print voice, sought to test, strengthen, and perhaps even extend the colonial space they had gained by these reforms. As Prime Minister Hara Takeshi emphasized, one cannot expect cooperation from peoples administered like fools (Hara 1919). It was not as if students suddenly awakened to the demeaning attitude Japanese held toward them. Changes in Korea, however, empowered them to express their disagreement and anger toward this slander. Reforms in the media offered a vehicle for spreading their discontent beyond the walls of the schoolhouse. The students’ demands that Kubo demonstrate the validity of his theories challenged his role as their instructor, and more importantly his position as one of Japan’s leading proponents of biological determinism. Kubo won the battle—the school supported him until the end—but lost the war. He eventually offered an apology to the students, who, pressured by family members, returned to their studies after the principal rescinded the penalties levied against them. Kubo escaped the humiliation of having to explain his research before his most critical audience, his Korean students, but he could not escape the humiliation of this challenge to his lifelong research topic and the biased conclusions that his research allowed him to make.

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Notes

- 1 Unless specified otherwise information on what became known as the “Kubo Incident” is drawn from Hoi-eun Kim’s thorough article on Kubo and his confrontation with the Korean students (Kim H. 2013).
- 2 The Sōul taehakkyo ũikkwa taehak edited publication reports 185 suspensions (1978, 50); Hoi-eun Kim (2013, 411), quoting the *Tong’a ilbo* newspaper, offers the number at 181.
- 3 Hoi-eun Kim reports that the 1920s averaged 40 student protests per year (2013, 411). The most extensive student protest of the colonial period occurred from October 1929 when a school in Kwangju punished Korean male students after they came to the rescue of female students being harassed by Japanese students. The protests, which spread into the following month, were joined by Korean students throughout the peninsula.
- 4 European imperialists did confront racial similarity among colonized peoples at their peripheries. The English, for example, felt a need to draw difference with the Celtic members of the United Kingdom (Horsman 1981, 31–32). Also, their membership in European racial groups that enjoyed physical and psychological separation from the Asian and African continents protected the European colonizers from inclusion in the lower racial groupings imposed on the peoples of these neighboring continents, even though racial similarities did exist in areas that bordered the continents.
- 5 Koganei Yoshikiyo who was educated in Berlin, reportedly collected more than 1,200 skeleton specimens over his career to make his institution, the Anatomy Institute, “by 1900 the ... finest, largest, and most diversified museums in Asia” (Bowers 1980, 98–99).
- 6 Beliefs on racial difference were hardly ideas monopolized by European and American thought. Indeed, as one ancient Chinese text, the *Zuozhuan*, instructed in 399 BC “if he is not of our race, he is sure to have a different mind” (Dikötter 1992, 3).
- 7 The link was direct as Alfred Binet (1857–1911), the originator of the IQ test, began as a craniologist. He set out in search of new ways to measure intelligence after losing confidence in the accepted theory that cranial size differences directly corresponded with intelligence levels (Gould 1996, 146–147). As Pietrusewsky (1994) demonstrates, cranial studies continue to be conducted.
- 8 The published version of Erwin Baelz’s diary, edited by his son Toku, does not mention either Kubo or Koganei (Baelz 1974), but then his entries while in Japan tended to focus more on his daily life, than his research. Those made in Korea, however, offered more information on Baelz’s research interests.
- 9 Along his travels he was given the rather interesting task of deciphering the bones of Korean and French martyrs killed by the Korean government in anti-Christian crackdowns and buried in a common grave. Baelz “happily” reported that the task posed “no difficulty... for the characteristics of the Mongolian race are extremely marked in the bones of the face” (1974, 197).
- 10 Gotō Shinpei offers an interesting example for Japan’s Taiwan colony (Lo 2002, 36–40). While studying hygiene in Germany, Gotō came under the influence of Fredrich Ratzel (1844–1904) and Bernhard Dernburg (1865–1937) (Smith 1986, 145–52). In Germany where he was introduced to “scientific colonialism,” a thinking that saw people as a product of their environment and thus unfit for adopting institutions of civilization. In

- Taiwan, Gotō is credited with “taming” the unhealthy environment that the Japanese encountered.
- 11 The hospital published its own journal, the English language *Journal of Severance Union Medical College*. Other Korea-based professional journals included *Chōsen ihō* (Korean Medical Report), *Mansen no ikai* (The Manchuria-Korea medical world), *Chōsen Hakubutsu gakkai zasshi* (Journal of the Korean museum academic society), *Hanzaigaku zasshi* (The Journal of criminal studies), and *Jinruihaku zasshi* (The Journal of anthropological studies).
- 12 See Yōnseidae ūisahakkwa 2008 for a list of medical-related articles that appeared in *Chōsen oyobi Manshū* from 1908–1941. The government-general magazine *Chōsen* (Korea) also carried a number of medical-related articles, including the series “Chōsen tokuyū ni hanzai” (Crimes unique to Koreans) authored by Kudō Takeki (Park 2013, 139–140).
- 13 This debate included a diverse array of voices, many of which criticized the Japanese view of Koreans as inferior and Japan’s capacity to assimilate a foreign people (Caprio 2009, 92–100).
- 14 By the 1930s researchers had advanced to concluding classifications of more specific ethnic categories than these three rather broad ones (Kim 2008, 200).
- 15 Kiri-hara and Paek’s results support those found the same year by Kyushu Imperial University’s Fukamachi Hozumi but suggest a problem with rounding off numbers. Fukamachi calculated the Korean ratio at 1.16, and thus outside the parameters of the Asian African group, but below that of the Middle Eastern Slavic group (Jung 2012, 528).
- 16 *Chōsen oyobi Manshū* found space for Kubo to advertise this research in a seven-part segment titled “Mōhatsu no jinshugaku” (The Ethnology of Hair).
- 17 Japanese officials, as well as those of other countries, apparently were quite willing to cooperate (Black 2003, 52; Park 2013, 121).
- 18 We see a similar problem in Kubo’s study of mastication muscles (*soshakukin*) published that same year. Using the same subjects as above, he found big differences between the Koreans (177.5), the Europeans (166.0), and the Japanese (152.0), without explaining the significance of these measurements. Among his subjects, this time Kim Y. was one whose 155.8 result presents similar questions regarding his use of a Korean average against a lone Japanese subject (Kubo 1919b, 13–16).
- 19 That criminals had brain sizes equal to that of non-criminals bothered craniologists. Paul Broca (1824–1880) rescued the field when he accounted for this apparent abnormality by claiming, “hanging tended to engorge the brain and lead to spuriously high weights” (Gould 1996, 126).
- 20 Kubo only provides Steiner’s last name, with no indication of his first name. The Austrian philosopher Rudolf Steiner (1861–1925), who was active in a number of other disciplines, including medicine, was perhaps the scholar cited by Kubo.
- 21 We see a similar bias appearing in another report penned by Kubo that appeared in *Chōsen oyobi Manshū*. Here he compared the physiques (*taikaku*) of Chinese, Koreans, and Japanese where he used the Japanese specimen as the standard against which the two other peoples were to be measured (1917, 29–30).
- 22 Encouraging this optimism was Vladimir Lenin’s *Imperialism: The Highest Stage of*

- Capitalism* (1917) and Woodrow Wilson's "Fourteen Points Speech" (January 1918) that pronounced a people's right to self-determination.
- 23 These reforms also provided the Japanese administration greater control over the Korean people (Caprio 2012).
- 24 One example of this transformation in perspectives of Koreans was experienced by Hosoi (1919, 35), who wrote: Upon seeing the Koreans marching down the street in March 1919, "I completely forgot the joy I experienced ten years previous when the lives of our 20 million Korean brothers and sisters were refocused as our compatriot siblings (*dōhō kyōdai*)." He now saw Japan as naïve (*wakaki Nihon*) for believing it could assimilate this people. His six-part essay appeared in *Nihon oyobi Nihonjin* between October 1 and December 15, 1920, under the title "Chōsen no tōchi" (Korean Administration).
- 25 For example, Koreans tended to be weaker in the younger ages but stronger as they aged; Japanese teenager boys tended to be stronger than their Korean counterpart but young Korean girls stronger than Japanese girls (Ch'oe 1939, 68–106). Ch'oe's bibliography lists the work of his professor, Mizushima Haruo, who published a study by the same title in 1938. In 1940 Mizushima completed a study that addressed the same topic with focus on Manchurian residents (Mizushima and Hosogami 1940, 55–57).
- 26 Ninomiya's study compared Japanese living in Japan, Korea, Manchuria, and Taiwan against the indigenous subjects of these colonies.
- 27 For literacy rates, he calculated the most literate provinces at above 80, and the lowest literate provinces at below 74, per 100 people. Yet, his use of shades and other configurations (stripes, polka dots) against the stark black northern provinces made the north appear significantly more underdeveloped than the southern provinces (Caprio 2010, 314–315).
- 28 European powers also established peripheral colonial rule over their neighbors, as seen in the formation of the United Kingdom and German and French rule over Alsace and Lorraine (Caprio 2009, chapter one). It would be interesting to see whether these colonizers conducted biological determinist studies on these peoples.

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