The Pedagogy of Race: The Peking Union Medical College and Its Effects on Chinese Socio-Medical Scientific Discourse, 1912-1949

by Matthew Foreman
Northwestern University

© 2024 by Matthew Foreman
Abstract

In 1906, the Peking Union Medical College was established in Republican China. Together with the Rockefeller Foundation’s China Medical Board and the China Foundation for the Promotion of Education and Culture, the Republican Chinese government promoted the expansion of all areas of research and education. Between the 1920s and 1940s, Chinese biologists, eugenicists, among others began to make serious contributions not just to Chinese science but also to global science. Led by imported eugenicists like Edmund Cowdry and Alex Hrdlicka, many PUMC projects were preoccupied with analyzing China’s “racial problems,” especially the pressing question whether miscegenation ought to be encouraged or discouraged. The most ambitious of these projects, the Collection of Chinese Embryos, was an undertaking dedicated to sustained analysis of Chinese biological data. Using cutting-edge research from racial embryology, PUMC anatomists measured the biodata of donated Chinese embryonic specimens and attempted to draw conclusions about the “Mongoloid” typology as well as whether Chinese-white mixes displayed “hybrid vigor” or “enfeeblement” – the scientific terms for the conditions of mixed-race offspring at the time. Although the project ultimately failed – in part due to the outbreak of the Sino-Japanese War, and partly due to the poor medical infrastructure across Republican China – it reflected a successful effort at tying Chinese medical development with the wider (specifically North American) scientific project of race research. Archival materials in the Rockefeller Archive Center (RAC), including correspondence, annual reports, personnel biographic information, and oral history materials, reveal an overall picture of the Peking Union Medical College’s efforts in disseminating racial and eugenic knowledge in China in the early twentieth century. This research report, consisting of part of my PhD research on the emergence of miscegenation discourse in twentieth-century China, underscores the process through which the Peking Union Medical College transformed the intellectual landscape of Republican China.
The Pedagogy of Race: The Peking Union Medical College and Its Effects on Chinese Socio-Medical Scientific Discourse, 1912-1949

The genius of a correct colonizing policy lays down the public hygiene enterprise as its herald or forerunner. The proper function of a medical institute is, in short, to experiment and conduct research upon medical problems, and, at the same time, to serve as guide and counsel as regards the hygienic administration. In consequence, in all civilized countries, such an institute is an indispensable one. The lower the stage of progress of a race, the more keenly this indispensability seems all the more accentuated.¹

In October 1925, Edmund Cowdry (1888-1975) remarked in the journal Science that it was the American desire to bring about a “transformation of the mind of China” which encouraged Chinese authorities to construct the Peking Union Medical College (est. 1906) – one of China’s first Sino-American collaborative institutions.² To showcase the College’s research progress, Cowdry emphasized its most recent Contributions of the Peking Union Medical College, a collection of papers conducted at PUMC over the previous five years. The laboratories had made great strides by studying various diseases endemic in the “disease reservoir” that was China. In the coming years, he maintained, the PUMC should continue training Chinese students to lead research projects with the ultimate goal of being self-sufficient in creating scientific knowledge – without foreign aid. Cowdry argued that one area the PUMC should focus their research on is the measuring of the “psychology of Orientals.” Cowdry urged his scientific colleagues in Europe and North America to push funding towards this direction. Measuring the psychological differences between races was essential in identifying “abnormal mental states” that prevented the Chinese race from intellectual improvement. Such measurements would also provide the necessary bio-data for “Western guides” – that is, the Euro-American scientists – to “teach” the “native mind.”³
Cowdry believed the PUMC to be at the forefront of this task. The institution served as an emerging global authority on the science of physical anthropology, especially the all-important subfield of miscegenation:

In the inevitable adjustment between Orientals and Occidentals scientific information regarding the inherent capacities of the Chinese and of the effects of climatic changes and of interbreeding with other races will be of great value, supplemented, it is hoped, by a sympathetic understanding of their psychology and philosophy of life.

Cowdry’s piece in *Science* demonstrates how miscegenation was central to early-twentieth century narratives of scientific progress in China, and how the advancement of Chinese science during this period was a global collaborative project. Cowdry and his colleagues at the PUMC – both Chinese and foreign – firmly believed that human biology was a crucial factor in determining the welfare of different racial groups. Since science at the time widely accepted that differences between races can lead to differences in physical and mental capabilities, further research was necessary to determine whether these differences could have significant social and economic implications if intermarriage were left uncontrolled. Cowdry, himself a fierce advocate of selective breeding and sterilization, wanted to turn the PUMC into East Asia’s leading research institution on the scientific implications of miscegenation. This was his personal mission during his tenure as founder of the anatomy department from 1917-1921.¹
Analyzing several research papers of the PUMC in the early 1920s, my research at the Rockefeller Archive Center delves into the conceptual importance of miscegenation in Republican-era biology. As showcased in the outset of this report, one prime contribution that PUMC anatomists envisaged was scientific information regarding the feasibility and viability of interbreeding between Orientals and Occidentals. Edmund Cowdry, himself involved in the American eugenics movement led by Charles Davenport, spearheaded this effort as a department head, hiring prominent anthropologists like Ales Hrdlicka (1869-1943), Paul Stevenson (1890-1971), and Wu Lien-teh 伍連德 (1879-1960) to run laboratories and teach Chinese students. The impetus for the PUMC’s research projects to systematically understand “the Chinese type” in scientific terms the same way as they sought to understand “the Negro type” in North America reveals the centrality of race science – and its corollary, miscegenation – in the development of science across the world. Their funders, the Rockefeller
Foundation, conceptualized anthropological work in China as part of a global network of “racial laboratories” dedicated to studying not just “societies as they exist,” but the phenomenon of “racial interbreeding” so as to gain important knowledge on heredity and the effects of cultural interaction on biology. Moreover, the work of Cowdry and Hrdlicka – like Shirokogorov’s studies – offered complex theories of analyzing recorded racial data through quantitative methods. Their concerted efforts to reinforce the science of race-mixing as a politically salient sphere of knowledge laid the groundwork for conceptual and methodological apparatus through which the state and their associated social institutions would later build their population management policies.

Much of the PUMC’s research output was dedicated to gathering and analyzing physiological data of Chinese subjects. Perhaps the most ambitious of these projects was the Collection of Chinese Embryos, which Cowdry proclaimed an unprecedented undertaking dedicated to the sustained analysis of Chinese biological data. Led by Cowdry himself, the project’s aim was to “determine the normal growth curves of the different organs and parts of the body and to compare them with American and European standards.” At the time, “racial embryology” was regarded as cutting-edge research that revealed a vast array of social issues, from birth defects to women’s reproductivity to miscegenation. This was part of a broader mission of the China Medical Board to record “as widely as possible in the provinces of China” within two years beginning 1920 the 1) height, weight and chest measurements; 2) incidence of diseases of ductless glands; 3) the pulse, respiration, and temperatures; 4) the blood; 5) the relation of dentition and dental caries to age, 6) the urine; and 7) the blood pressure. These measurements served as racial data for constructing racial characteristics not just for the Chinese but for all racial typologies; datasets that were already standardized in North American research. The PUMC operated as an extension of this North American movement, not only to gather racial data for characterizing typologies, but also to piece together whether Chinese-white mixes displayed “hybrid vigor” or “enfeeblement.” Figuring out what types of miscegenation were desirable was central to eugenic research coming out of Europe and the United States. In the United States, this racial data was used by many eugenicists to voice their disapproval at mass immigration and call for state intervention to improve the American population through social policies like the sterilization of those deemed biologically inferior, forced monogamy between superior individuals, and regulating
immigration. This logic, well-established in North American eugenic literature, was the foundation upon which the PUMC’s research on the Chinese population was built, and one that the collaborators of the institution – both foreign and Chinese – hoped to cultivate in the Chinese medical sciences. While specific proposals were never enacted out of PUMC research due to political instabilities in northeastern China, social policies regarding population control were frequently discussed as ultimate goals. With respect to the Collection of Chinese Embryos project, Cowdry believed the that the PUMC’s research would lay the methodological foundations for later Chinese scientists to employ in their own considerations of domestic intermarriage.

The PUMC’s endeavors in embryo collection were deeply tied to a broader embryo-collecting project conducted by the Carnegie Institution of Washington in the early 1910s. Cowdry, who had worked under racial anatomist and embryologist Franklin P. Mall (1862-1917), emulated Mall’s methods in the United States, hoping to develop China’s own trove of racial data for the purposes of educating Chinese students and contribute to the global debates on comparative racial embryology. Franklin Mall was considered a revolutionary in American anatomy and pathology, founding the departments of Anatomy and Embryology at Johns Hopkins and at the Carnegie Institution of Science respectively, who reformed the way these subjects were taught in American institutions. Cowdry hoped to use the Chinese context to further research in this area, given that much of existing literature was rooted in the European and North American contexts. He, and the China Medical Board who sponsored the project, saw the PUMC as East Asia’s equivalent to the Carnegie Laboratory of Embryology at John Hopkins Medical School – a model for laboratories around the world dedicated to solving complex racial problems. Like Shirokogorov, both Mall and Cowdry believed that more sophisticated quantification methods must be developed to have more accurate understandings of racial typologies. In China, this project marked the beginning of a “modern” medical curriculum geared towards quantifying the Chinese racial type. The PUMC strived to establish a racial “norm” for the Chinese racial type, which included: the classification and arrangement by stages of racial development, body proportions, anthropological measurements to ascertain racial variations, the development and morphology of the Chinese brain, and the effects of various cultural practices and environmental factors on the development of the average Chinese individual.
Despite difficulties in procuring embryos due to local distaste towards embryo extraction, Cowdry and his colleagues managed to collect 400 embryos due to legal protection through the Anatomy Law. Medical doctors across China gave specimens to the PUMC primarily through miscarriages, extraction from corpses, and donations from orphanages. Some doctors admitted to stealing embryos, believing the morality of acquiring racial data to be superior to respecting the wishes of “backward” Chinese women.\(^{18}\) The process of extracting embryos encapsulated the PUMC’s attitude towards the civilizational backwardness of China – the anatomist Paul Stevenson remarked to his North American funders in 1922 that it was “the repulsive cultural practices” of the Chinese that was responsible for both the high rate of miscarriage among Chinese women and also the difficulty in educating them in proper practice.\(^{19}\) Despite great strides in opening up China to scientific realities – like the Anatomy Law – improving China’s population remained a long and arduous road which necessitated the existence of institutions like the PUMC. In 1927, the PUMC published *A Catalogue of the First 400 Specimens of the Human Embryological Collection*, a catalogue dedicated to racial comparisons and racial variation between measurements of various racial types. Among the collections were also three mixed-race specimens and thirty-three white race specimens, although there were no detailed analyses of either group. Despite a lack of sufficient data, PUMC anatomists believed that there was enough evidence to suggest that Chinese embryos were less evolved than Europeans, displaying “primitive characteristics” such as flattened noses, pointed tips of ears, and “muzzle-like conformations of the face.”\(^{20}\) To them, these initial findings correlated with the hypotheses advanced by eugenicists back in North America, most notably Charles Davenport, who surmised that Chinese-white hybridization should be avoided due to extreme differences in typological biodata.\(^{21}\)

While no official policy suggestions emerged out of these findings and the project was ultimately regarded as a failure due to lack of sufficient data, the *Collection of Chinese Embryos* reflected two core assumptions that characterized the development of medical science in early-Republican China. The first was the belief that racial deficiencies existed and that these deficiencies were part of an objective reality. The second was the assumption that scientific measurement offered the best tools to assess and interpret this reality. The project – and indeed the PUMC enterprise writ large –
demonstrated how biomedicine and its eugenic logic developed in Republican China as a pedagogical project dedicated to teaching “the Chinese” about the racial realities of the modern world. Embedded within this project were the ostensibly dispassionate analyses of racial quality which further reified the racial boundaries and hierarchies that were first articulated in Europe centuries earlier. Indeed, as Hrdlicka professed at a joint conference between the China Medical Missionary Association and the National Medical Association of China in Beijing 1920, understanding “the anthropological problems of the Far East...is no small task.” It was essential, for both scientists overseas and the Chinese themselves, to have a correct understanding of when and how their own country had been peopled. The anthropological problems of China were part of a greater global context whereby scientists, politicians, eugenicists, reformists, and revolutionaries across different geographies and cultures grappled with the interpreted consequences of racial modernity. In the Republican Chinese context, the particular impetus for understanding China’s racial problems was twofold. First, from the perspective of Western anatomists, understanding the Chinese race in eugenic terms would further their understanding of Chinese diaspora within their own borders. As Cowdry and Davenport both demonstrated, analyzing the Chinese body through the lens of miscegenation allowed North American eugenicists to further their own political agendas by arguing for greater social control over certain population groups. China was one “laboratory” among many in the non-Western world where eugenic race science could shed light on how the Asiatic peoples, like “waves of a rising surf,” periodically “engulfed” Asia Minor and Europe – and thus needed to be curtailed. These racial problems were “of intense medical as well as anthropological interest” and their solutions were “indispensable to scientific medicine” throughout the world. Anthropology and medicine were weapons of scientific progress; the outdated mode of relying on superficial cultural impressions must eventually be entirely overhauled by “actual, painstaking investigations” to examine, “feature after feature, function after function,” the psychological and biological foundations of every racial group.22 Second, from the perspective of Republican Chinese intellectuals, it was necessary to have an adequate scientific understanding on the differences between the “sub-races” of Chinese, Mongolians, Koreans, Japanese, Malays, among others, as well as how they differed in their “physical, chemico-physiological, mental, and pathological characteristics.” A proper, scientific understanding of China’s racial problems would, in the words of Pan Guangdan, “promote China’s strive for civilizational maturity” 促
Understanding China's racial deficiencies with precise scientific precision was vital for preventing, diagnosing, and treating diseases that held China back. For many commentators, the PUMC represented a step forward towards shaping China to become a modern nation.

My Rockefeller Archive Center research experience in August-September 2022 not only allowed me a deeper insight into the broader history of social and medical scientific education in Republican China but helped me organize my PhD dissertation in the following ways. First, there were important personnel relations between the Rockefeller Foundation and the North American eugenics movement. The global, collaborative nature PUMC investment revealed how the newly established mission to improve the Chinese race was inseparable from a broader transnational impulse for science-as-progress. Republican China, just like the United States, the United Kingdom, Japan, among others, produced racial facts to identify population weaknesses and to come up with social engineering solutions accordingly. Racial modernity was a global, collaborative scientific project which involved multiple actors and institutions across the globe. All over the world, measuring human beings to produce racial data underpinned statist goals of strengthening the nation in the globalized arena of modern political struggle. Republican China was no different. Institutions like the PUMC were built for the purpose of participating in this global scientific reality. Over time, this method of knowing the racial subject gradually became normalized in sociopolitical institutions like the hospital, police, and immigration.

Second, a body of research papers highlighted how PUMC projects helped amass the theoretical and methodological techniques necessary for later Chinese social scientists to create their theories of racial-national unity. Their efforts to draw racial truths from racial data reflected how three core ideas formed the impetus behind the development of the social and medical sciences in Republican China: 1) the belief that racial progress and national progress were inseparable, 2) the assumption that racial problems can and must be solved, and 3) that scientific measurement was the only way to analyze racial realities and then potentially redress the situation. Finally, the rich and well-organized collection of the Rockefeller Archive Center provided me with a chance to observe the vital importance of the PUMC and American investment in the development of the Chinese sciences. While medical missionaries like Peter Parker (1804-1888) and
Dugald Christie (1855-1936) had earlier established medical hospitals that trained Chinese students in Western medical techniques, the PUMC was the first in China to offer a standardized, systematic curriculum on Western medicine backed by central authorities, with deep ties to the American eugenics movement.

2 *Science* was the United States’ leading journal in scientific advancement, published by the American Association for the Advancement of Science.
4 E. V. Cowdry, “Medical Research in China,” 375.
6 See for example “Interrace; A Eugenic or Dysgenic Force?”, *Eugenics*, 3 (1930): 58-61. (Discussion by C. B. D., Hrdlicka, Newman, and Herskowitz);
13 “J. D. Rockefeller Jr. Speaking at the Dedication Ceremonies of the Peking Union Medical College,” September 19, 1921, Harold H. Loucks Papers, China Medical Board, Peking Union Medical College, Series 3, Box 3, RAC.
23 Pan Guangdan, “Yousheng yu minzu jiankang,”, 41-42.