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**READING THE BODY:
Genetic Knowledge and Social
Marginalization in the People's Republic of China**

FRANK DIKÖTTER*

Scientific knowledge, like all knowledge, is necessarily grounded in cultural, social and political contingencies which create the conditions of their appearance and the possibility for their expression. Irrespective of the practical truth of particular claims, scientific knowledge both shapes and reflects social order. A good example is human fertilization: gendered discourse, which represented women as the passive counterparts of men, privileged sperm as the only active agent in medical descriptions of the fertilization process until the advent of the language of "equal opportunity" in textbooks about twenty years ago. This narrow focus positively and effectively led to the discovery of the molecular mechanisms of sperm activity. Each of these "facts" in turn consolidated a gendered version of social reality which ignored the active mechanisms by which the egg produces the proteins or molecules responsible for enabling and preventing adhesion and penetration.¹

The contingencies of all scientific knowledge lay not so much in the inherent "truth" of a set of given "facts", but rather in the cultural, social and political context which endows such facts with meaning and constructs what is seen to constitute knowledge in the first place. The cultural values, social goals and political implications of such knowledge should thus be highlighted, rather than the rationality or irrationality of particular beliefs.

The role of genetics in legitimizing social inequalities in contemporary societies is well known. Claims about the control of human existence by DNA or the power of "genes" to determine individual personality are made almost on a monthly basis in Europe and the United States. Genetic knowledge has also started to play an increasingly important political role in the PRC since the reforms initiated by Deng Xiaoping. While this article is not meant to be a systematic investigation of the complex interplay between culture, politics and science — a task which is much better left to cultural anthropologists or political scientists — it highlights the political importance of scientific research in the PRC. In contrast to the period from 1949 to

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¹ Evelyn Fox Keller, *Refiguring Life: Metaphors of Twentieth-Century Biology*. New York: Columbia University Press 1995, pp. xii-xiii.

1978, moral, social or cultural features are alleged to be the result of more permanent organic traits in some medical circles.²

A number of researchers active in the field of criminal anthropology tend to interpret social deviance in biological terms. Marginalized social groups, from so-called "minorities" to "schizophrenics" and "retardants", are increasingly represented as genetically defined classes of people who should be either secured or cured. Whether expressed in terms of criminal genes, Han blood or schizophrenic finger-whorls, a biologizing approach endows medical authorities and government circles with greater powers of intervention in the regulation of reproduction, in particular since the introduction of eugenic legislation in 1995. The 1995 law supports the systematic "implementation of premarital medical check-ups" in order to detect whether one of the intending parents suffers from a "serious hereditary", venereal or reproductive disorder as well as a "relevant mental disorder" or "legal contagious disease": it suggests that in order to prevent "inferior births", those "deemed unsuitable for reproduction" should undergo sterilization or abortion or be compelled to remain celibate.³

Based on studies in medical science, mainly paleoanthropology, serology, genetics, and dermatographics, this contribution ought to be considered as no more than a few observations gathered by a historian whose expertise lies primarily in the Republican period. In the notable absence of more reliable studies in this field, it seems prudent to let the sources speak for themselves, rather than attempt to build a theoretical model which the fragmentary nature of available evidence might not support. The lack of public information on many aspects of scientific research in a one-party state makes speculations about the funding, dissemination and impact of genetic knowledge even more hazardous. It is beyond doubt, however, that many of the biomedical views presented here would elicit vigorous debate in more open societies.

Paleoanthropology and Physical Anthropology

Paleoanthropological research nicely illustrates the intersection between culture, politics and science in the PRC.⁴ Prominent researchers have represented Beijing Man at Zhoukoudian as the "ancestor" of the "mongoloid race" (*Menggu renzhong*).

² Some parts of this article are based on Frank Dikötter, *Imperfect Conceptions: Medical Knowledge, Birth Defects and Eugenics in China*. London: C. Hurst; New York: Columbia University Press 1997.

³ "Zhonghua renmin gongheguo muying baojian fa" (The People's Republic of China's Maternal and Infant Health Law), *Zhonghua renmin gongheguo quanguo renmin daibiao dahui changwu weiyuanhui gongbao*, No. 7 (1994), pp. 3-8.

⁴ This paragraph is borrowed from Frank Dikötter (Ed.), *The Construction of Racial Identities in China and Japan: Historical and Contemporary Perspectives*. London: C. Hurst; Honolulu: University of Hawaii Press 1997.

A great number of hominid teeth, skull fragments and fossil apes have been discovered from different sites scattered over China since 1949, and these finds have been used to support the view that the "yellow race" (*huangzhong*) today is in a direct line of descent from its hominid ancestor in China.

Although paleoanthropologists in China acknowledge that the evidence from fossil material discovered so far points at Africa as the birthplace of mankind, highly regarded researchers like Jia Lanpo have repeatedly underlined that man's real place of origin should be located in East Asia. Wu Rukang, also one of the most respected paleoanthropologists in China, has come very close to upholding a polygenist thesis (the idea that mankind has different origins) in mapping different geographical spaces for the "yellow race" (China), the "black race" (Africa) and the "white race" (Europe): "The fossils of homo sapiens discovered in China all prominently display the characteristics of the yellow race (...) pointing at the continuous nature between them, the yellow race and contemporary Chinese people."⁵

Early hominids present in China since the early Middle Pleistocene (1 million years ago) are believed to be the basic stock to which all the population groups in the PRC can be traced back. Physical anthropologists have also invoked detailed craniological examinations to provide "irrefutable evidence" about a continuity in development between early hominids and the "modern mongoloid race".⁶ Detailed studies of prehistoric fossil bones have been carried out to represent the nation's racial past as characterized by the gradual emergence of a Han "majority" into which different "minorities" would have merged.⁷ As one close observer has noted, "In the West, scientists treat the Chinese fossil evidence as part of the broad picture of human evolution world-wide; in China, it is part of national history — an ancient and fragmentary part, it is true, but none the less one that is called upon to promote a unifying concept of unique origin and continuity within the Chinese nation."⁸

Serology and Anthropometrics

Serological studies have been carried out to highlight the biological proximity of all minorities to the Han. Mainly initiated by professor Zhao Tongmao, estimations of

⁵ Wu Rukang, *Guren leixue* (Paleoanthropology). Beijing: Wenwu chubanshe 1989, pp. 205-206; see also Wu Rukang, *Renlei de qi yuan he fazhan* (The Origin and Evolution of Ancient Man). Beijing: Kexue chubanshe 1980.

⁶ For instance Yang Qun, "Kaoguxue yu renleixue" (Archaeology and Anthropology), in Zhongguo renlei xuehui (Eds.), *Renleixue yanjiu* (Studies in Anthropology). Beijing: Zhongguo shehui kexue chubanshe 1987, pp. 288-302.

⁷ See for instance Han Kangxin and Pan Qifeng, "Gudai Zhongguo renzhong chengfen yanjiu" (Research into the Racial Composition of Ancient China), *Kaogu xuebao*, No. 2 (Feb. 1984).

⁸ John Reader, *Missing Links: The Hunt for Earliest Man*. London: Penguin Books 1990, p. 111.

genetic distance based on gene frequency are claimed to have established that the racial differences between population groups living within China – including Tibetans, Mongols and Uighurs – are comparatively small. Serologists have also observed that the "Negroid race" and the "Caucasian race" are closer related to each other than to the "Mongoloid race". Zhao Tongmao puts the Han at the very center of his chart, which branches out gradually to include other minority groups from China in a tree highlighting the genetic distance between "yellows" on the one hand and "whites" and "blacks" on the other hand. The author hypothesizes that the genetic differences within the "yellow race" can be divided into a "northern" and a "southern" variation, which might even have different "origins". His conclusion underlines that the Han are the main branch of the "yellow race" in China to which all the minority groups can be traced: the political boundaries of the PRC, in other words, appear to be founded on clear biological markers of genetic distance.⁹

In a similar vein, skulls, hair, eyes, noses, ears, entire bodies and even penises of thousands of subjects are routinely measured, weighed and assessed by anthropometrists who attempt to identify the "special characteristics" (*tezheng*) of minority populations. To take but one example, Zhang Zhenbiao, a notorious anthropometrist writing in the prestigious *Acta Anthropologica Sinica*, reaches the following conclusion after measurements of 145 Tibetans: "In conclusion, as demonstrated by the results of an investigation into the special characteristics of the heads and faces of contemporary Tibetans, their heads and faces are fundamentally similar to those of various other nationalities of our country, in particular to those of our country's north and north-west (including the Han and national minorities). It is beyond doubt that the Tibetans and the other nationalities of our country descend from a common origin and belong, from the point of view of physical characteristics, to the same East-Asian type of yellow race (*huangzhongren de Dongya leixing*)."¹⁰ As a theory of common descent is constructed by scientific knowledge, the dominant Han are represented as the core of a "yellow race" which encompasses in its margins all the minority populations. The political implications of such research for minority groups in the PRC are apparent in the government's promotion of China as the "homeland of the modern yellow race" of which even Outer Mongolia is described as an "or-

⁹ Zhao Tongmao, *Renlei xuexing yichuanxue* (Genetics of Human Blood Groups). Beijing: Kexue chubanshe 1987, pp. 351-371; see also Yuan Yida and Du Ruofu, "Zhongguo shiqige minzu jian de yichuan juli de chubu yanjiu" (Preliminary Investigation of the Genetic Distance Between Seventeen Ethnic Groups in China), *Yichuan xuebao*, Vol. 10, No. 5 (1983), pp. 398-405.

¹⁰ Zhang Zhenbiao, "Zangzu de tizhi tezheng" (The Physical Characteristics of the Tibetan Nationality), *Renleixue xuebao*, Vol. 4, No. 3 (Aug. 1985), pp. 250-257; it may be of interest to those not conversant with this type of literature that the only reference to a European study in Zhang Zhenbiao's research is an article published in 1954 in the *Annals of Eugenics*.

ganic and integral part".¹¹ Within both scientific institutions and government circles, different population groups in China are increasingly represented as one relatively homogeneous descent group with a unique origin and uninterrupted line of descent which can be traced back to the Yellow Emperor. Contemporary China, in short, is not so much a "civilization pretending to be a state", in the words of Lucien Pye¹², but rather an empire claiming to be a race.

The Genetic Discourse on "Minorities"

If "minorities" are located at the margins of an imagined "majority" in publications dealing with genetic research, they have also been singled out for medical opprobrium, as if their political and economic marginalization is somehow the expression of a deeper genetic liminality: it is claimed in numerous medical studies that inbreeding has wrought havoc on these more "feudal" (*fengjian*) and "backward" (*luohou*) communities. Frequent studies on "intermarriage" appear in the learned journals of genetics and anthropology, pointing both to their cultural backwardness and their genetic inferiority. To take a single example among the dozens to be found in these journals, one team surveyed five "minority" groups in Xinjiang and found that consanguineous marriages had significantly increased among the Hui and the Uighur, leading to a variety of genetic diseases.¹³ Some of these studies have been carried out by "minority" scientists. For instance, Abudula Bakhy revealed that the Uighur of Turpan suffer from dangerously high rates of inbreeding ranging from 16.5% to 21.7%, and called for increased government intervention in the control of reproduction.¹⁴ While minority groups no doubt suffer from a variety of diseases, the belief that their social and economic problems are caused by inbreeding is often no more than a scientized version of Han prejudice against Hui endogamic practices.¹⁵

¹¹ W.J.F. Jenner, "Past and Present Political Futures for China", paper presented to the 19th National Conference of the Australian Institute of International Affairs, Sydney, 9 October 1993, p. 13.

¹² Lucien W. Pye, "China: Erratic State, Frustrated Society", *Foreign Affairs*, Vol. 69, No. 4 (Fall 1994), p. 58.

¹³ Ai Qionghua *et al.*, "Xinjiang Yili wuge shaoshu minzu de jinjin jiehun" (Consanguineous Marriages Among Five Minority Nationalities in Yili, Xinjiang), *Renleixue xuebao*, No. 3 (1985), pp. 242-249.

¹⁴ Abudula Bakhy, "Tulufan shijiaoqu Weiwuerzu de jinjin jiehunlü ji yichuanxue xiaoying" (Rates of Inbreeding and Their Genetic Effects in Uighurs of the Suburbs of Turpan), *Yichuan*, No. 3 (1996), pp. 252-253.

¹⁵ Dru C. Gladney, *Muslim Chinese: Ethnic Nationalism in the People's Republic*. Cambridge, MA: Harvard University Press 1996, p. 28.

Geneticists and the "Backward Peasants"

Much biomedical research is also dedicated to the presumed dysgenic tendencies within the majority population. Identifying the "peasants" as the core of dysgenic tendencies, the journal *Population and Eugenics*, published for a popular audience by the Population Research Center of Zhejiang Medical College in Hangzhou, deplores the increasing number of "sub-products" (*cipin*) and "reject products" (*feipin*) born every year: knowledge of eugenics among peasants is very poor, they have "ugly habits" (*chengui louxi*), and they frequently intermarry or reproduce outside the marital bond.¹⁶ Even the newly rich villages are alleged to have a high percentage of retardation, 80% of which is described as "light retardation" (*qingdu zhiruo*).

Although these figures are explained by consanguineous marriages, the second major factor is said to be the lifestyle of these *nouveau riche* peasants, who "don't read books, don't read newspapers, lead an unhealthy lifestyle, drink alcohol, smoke cigarettes, gamble and whore, and even take concubines and drugs, thus directly endangering the health of the next generation, engendering one batch after the other of retarded children".¹⁷ In a somatizing approach which does not strictly distinguish between nature and nurture, virtually every mental, moral or social characteristic is seen to have a genetic basis which can be transmitted to the next generation via sexual intercourse. Adequate restraint and strict selection are deemed necessary before engaging in the act of reproduction, as every person harbors potentially harmful features which might imperil future offspring.

Because illiterates and half-literates reproduced themselves so quickly in the countryside, natural selection laws in which "the superior win and the inferior lose" (*yousheng liebai*) were replaced by a more worrying trend of "the inferior win and the superior lose" (*liesheng youbai*).¹⁸ "The higher the level of education, the lower the number of children" concludes a more detailed study of genetic trends in Fujian Province, where in strict numerical terms the least gifted members of society are shown to contribute seventy-five times more children than intellectuals: the article proposes the immediate targeting of genetic diseases and inbreeding in the

¹⁶ "Tigao renkou suzhi de guanjian zai nongcun" (The Key To Improving the Quality of the Population Lies in the Countryside), *Renkou yu yousheng*, No. 1 (1993), pp. 24-25.

¹⁷ Tao Kan, "Fushu diqu yuanhe ruozhi ertong yuelai yueduo" (Why Retarded Children Are on the Increase in Rich and Populous Regions), *Renkou yu yousheng*, No. 4 (1996), p. 3.

¹⁸ Wang Ruogu, "Wen Xinjiapo xin renkou zhengce you gan" (The Population Policy in Singapore), *Renkou yu yousheng*, No. 4 (1992), p. 26.

countryside.¹⁹ "Low intelligence" (*zhineng di*) and "psychological disorders" (*jing-shen fayu buliang*) are interpreted as polygenic traits that are genetically transmitted. Supported by investigations into family pedigrees, tables of statistics are meant to demonstrate that 55% to 60% of the children born to parents who both suffer from "low intelligence" will be "cretins" (*daizi*), the remaining 40% also being below par.²⁰ Wang Ruizi, vice-director of a demography center in Hangzhou, noting how vagrants block traffic in cities and indulge in criminal activities, similarly points out that the great majority of handicapped people are to be found in the countryside.²¹

In the early 1990s, concern over the differential birthrate between urbanites, who were seen as embodying the more gifted parts of the population, and peasants, who were portrayed as a demographic wasteland of retardants and mutants, prompted *Population and Eugenics* to advocate a eugenic policy similar to that enacted in Singapore: genetically fitter elements should be encouraged to have more than one child while massive disincentives would contribute to checking dysgenic trends in the countryside. While this journal may be unique in advocating Singapore as a eugenic model to be closely followed, there is mounting evidence that educated people resent the existing disparities between cities and countryside in the implementation of the one-child program. Eugenic arguments are voiced against population policies that are seen as contributing to a differential growth rate between the more gifted members of the urban population and the vast hordes of dysgenic elements represented by migrants, "peasants" and paupers. Under pressure from the medical experts and family planners who present such ideas in the guise of "science", the government is alleged to have moved in 1996 towards a policy of encouraging urban dwellers and educated people to have more babies while discouraging "peasants" from doing so, on the grounds that "quality stock" is indispensable to China's modernization. The government was said to have accepted the recommendation of a task force that parents likely to produce more intelligent children be eugenically selected.²²

Consanguineous marriages, in which genetically dominant diseases are said to occur in disproportionately high numbers, are singled out for special opprobrium: emblematic of benighted rural practices to be swept away by medical enlightenment in the name of collective health, they are claimed to be the main factor responsible

¹⁹ Chen Tingdong, "Tigao renkou suzhi dui kongzhi renkou shuliang de zhanlue yiyi" (The Strategic Meaning of Improving the Quality of the Population Versus Limiting the Quantity of the Population), *Renkou yu yousheng*, No. 1 (1991), pp. 18-19.

²⁰ Zhou Haobai, *Jitai zongheng tan* (Talks about Malformations). Hangzhou: Jiangsu kexue jishu chubanshe 1985, p. 319.

²¹ Wang Ruizi, "Zhongguo renkou wenti de zhongdian zai nongcun" (The Core of Demographic Problems Is in the Countryside), *Renkou yu yousheng*, No. 2 (1991), pp. 3-4.

²² "'More babies move' for China's well-educated", *Straits Times*, 29 August 1996.

for mental retardation and other "genetic" conditions in the countryside. Repeated *ad nauseam* in popular health manuals and corroborated by a spate of professional opinions in specialized journals, the emphasis on the genetic basis of mental retardation and the medical dangers of inbreeding dominate eugenic discourse. As the "gene pool" gradually becomes a metaphor for the social field, entire statistical tables are provided to demonstrate the inevitability of mental retardation and physical weakness in offspring of marriages between close relatives. Reports from hospitals are invoked to demonstrate how close relatives produce feeble-minded offspring: "One famous professor in Beijing and his wife were both healthy in body and mind but gave birth to three retarded daughters. When their genes were checked, it appeared that they were close cousins. These retarded children were able to survive thanks to the conditions created by civilized society, but if they were allowed to marry in turn, the consequences would be even worse. In one place, a retarded couple gave birth to a series of six retarded children."²³

Although historians of medicine have generally taken "inbreeding" as an objective given, an entire cluster of cultural and social values, rather than straightforward factual knowledge, has clearly endowed the notion of consanguinity with a rich layer of different meanings. Consanguinity is closely linked to older ideas of patrilineality, and represents isolation in a world of movement, symbolizes a closed and self-contained localism in an age of open and interdependent globalism, and backward rural ways in opposition to the modern city. In their scientization of the incest taboo, medical ideas against "inbreeding" often say more about social values than about genetic facts. Just as the medical arguments occasionally invoked against "miscegenation" between imagined "races" determine the outer limits of a social field in which it is morally acceptable to form a relationship, so the notion of "consanguinity" identifies the inner limits of admissible reproductive behavior. It defines the minimum level of participation of the individual in the social field and fixes a threshold of tolerance below which intimate behavior is seen to be morally corrupt and biologically degenerative. Legitimizing the reach of the government into families and lineages, it endows society with unprecedented powers of intervention and regulation into the personal lives of individuals in the name of public health.

The Genetic Discourse on "Criminals"

If "minorities" and "peasants" are portrayed as sections of the national population marked by an unwholesome genetic profile, individuals who are defined as "unfit", often in the most arbitrary way, also appear to belong to genetic sub-classes which ought to be closely monitored in the interests of collective health. Rearticulating outdated theories about the biological basis of criminality that were popular in Republican China, the control of reproduction is thought to be effective in decreasing the high crime rates which afflict China:

²³ Zhao Gongmin, *Yichuanxue yu shehui* (Genetics and Society). Shenyang: Liaoning renmin chubanshe 1986, p. 210.

Outbreeding can reduce the crime rate. The hereditary quality of the population is the basis of the population's physical growth. It has a definite influence on the behavior of the population. Criminal genetics demonstrate that some criminals have an extra Y chromosome, and some suffer from trisomy 21. Outbreeding can reduce several hereditary diseases related to crime. The XYY syndrome, for instance, is a disease of people with a tall stature and a normal intelligence, but who have a violent character, easily fly into a rage, cursing and beating in every way, and easily commit crimes. Trisomy 21, also called Down syndrome, is due to a distortion of a chromosome: the chromosomes of pair 21 have an extra chromosome. This sort of people lack self-control, and are inclined towards crime. There is also schizophrenia, mania, depression, and other diseases which have something to do with chromosomal abnormalities. Since there is a hereditary background to the criminal behavior of the population, it indicates that dependence on ideological education alone is insufficient, and that it is necessary to take further steps in eugenics, genetic research and the prohibition of inbreeding. This should lead to favorable variations in the process of gene duplication or to the restriction of defective genes, thereby reaching the goal of improving the ideological and moral qualities of the population.²⁴

Based at the Zhejiang Provincial Party Committee School, the author of the above quotation is visibly not an expert in human genetics. His views represent a more extreme position on a spectrum of possible attitudes towards social order, but the medicalization of crime, represented as a biologically contingent flaw rather than a socially constructed norm, also marks more professional publications. Lesions of the nervous system in retarded subjects may explain an impulsive character, non-controlled sexual tendencies and anti-social behavior. IQ tests and an examination of the nervous system administered in 1981 on 441 criminals show that 196 suffer from light injuries on the brain or from a cerebral malfunction (*nao gongneng shidiao zonghezheng*). Thieves, robbers, hooligans and killers, among others, seem to be over-represented in this group of born criminals.²⁵ A small number of authors even invoke the work of H.H. Goddard — a notorious hard-liner in eugenics active in the 1910s, author of *The Kallikak Family: A Study in the Heredity of Feeble-mindedness* (1912) — to portray "retardation" as an inherited condition passed on from generation to generation within deviant families.

²⁴ Zhu Hong, "Lianyin fanwei yu renkou suzhi", *Zhong Gong Zhejiang Shengwei Dangxiao* (Communist Party of China's Zhejiang Provincial Party Committee School), March 1990, pp. 29-35, reprinted in *Renkouxue* (Demographic Studies), No. 5 (1990), pp. 96-100.

²⁵ Chen Xianrong and Li Zhengdian, *Fanzuixue yu shehui duice* (La criminologie et les contre-mesures sociales). Beijing: Qunzhong chubanshe 1992, p. 423.

The mad and the bad both threaten public order, as other studies presented in a survey by Chen Xianrong and Li Zhengdian demonstrate. Apart from genetic factors, mental illness may also be due, it is hypothesized, to a disorder of the superior nerves in the cerebral center, leading to an impediment of cognitive and emotional faculties. Moreover, since the 1950s, the rate of mental illness has increased from 0.2% to 1.26% in the overall population. Such an alarming trend demands a much stricter supervision of the mentally ill, envisaged by the 1995 eugenics law which stipulates that those suffering from mental disorders are not allowed to marry. According to the statistics provided by criminologists, over 4000 criminals suffering from some form of mental disorder were identified in Liaoning Province in 1972.²⁶

A correlation can even be established between different types of nervous activity (*shenjing leixing*) and moral behavior: a medical investigation shows that extreme types, described as either extremely nervous (*qiangxing*) or nervously weak (*ruoxing*) are disproportionally present among juvenile delinquents. Violent crimes such as murder and rape tend to be committed by extremely nervous youth while non-violent infractions are more characteristic of the nervously weak. In general, however, criminological treatises insist less on biological determinism than on a dialectical relationship meant to exist between biology and environment.²⁷ Linked to a somatizing representation of the human body, biomedical discourse underlines that many biological features only become apparent under specific social conditions: social education and medical surveillance are seen to be complementary strategies rather than mutually exclusive choices in the fight against crime. The educational aspect remains dominant in official discourse, while the medical approach is more difficult to document. Medical experiments on categories of people judged to be deviant, from criminals to schizophrenics, are obviously not reported in the official literature, although it should be underlined that at least one article recently recommended the regulation of hormones in sexually dangerous criminals and sexually active young girls.²⁸

The "Genetic Basis of Mental Disease"

Just as folk notions represent madness as a somatic defect running in family lines, so medical discourse underlines the genetic basis of mental disease, which it interprets as an organic lesion, a blot on the brain or a hereditary taint that is almost incurable. As one popular booklet on family planning put it,

²⁶ *Ibid.*, p. 425.

²⁷ For example Qiu Guoliang, *Fanzuixue* (Criminology). Shanghai: Shehui kexueyuan chubanshe 1989, pp. 118-119.

²⁸ Børge Bakken, "Modernizing Morality? Paradoxes of Socialization in China During the 1980s", *East Asian History*, No. 2 (Dec. 1991), p. 127.

There are many types of mental disease, such as schizophrenia, manic-depressive psychosis and paranoia, and all have a genetic basis. The rate of occurrence among relatives of sufferers of mental disease is significantly higher in comparison to the average, and the results of research demonstrate that when both parents suffer from mental disease, 40% of their offspring will also be sufferers. If one side is affected by mental disease, 2 to 4% of their children will be sufferers. Hence people who suffer from mental disease should not marry among themselves, since they are not only unable to live independently, but the risk of them giving birth to offspring with mental disease is also great. [...] No matter whether one or both parents suffer from mental disease, they should neither marry nor reproduce when the disease is active.²⁹

If medical circles advocate a strict ban on the reproduction of those deemed to be "mad"³⁰, some psychiatrists in the PRC have themselves been very concerned with the genetics of "schizophrenia", and a few have recommended and enforced a eugenic policy of compulsory sterilization well before the enactment of the 1995 eugenics law.³¹

Dermatographics

Not without resonance with palmistry, the traditional art of divination from the lines on the palm, dermatographics have also become popular in the identification of different social groups, seen as genetic clusters marked by specific digital patterns.³² Popular by the end of the nineteenth century thanks to the efforts of Francis Galton, obsolescent by the 1950s³³, the science of detecting genetic signatures in dermal lines has contributed a flood of articles in *Hereditas*, one of the

²⁹ Weng Xiayun, *Jihua shengyu yu yousheng 200 wen* (200 Questions about Birth Control and Eugenics). Beijing: Jindun chubanshe 1992, p. 101.

³⁰ For instance Hu Weiqin, "Jingshen bingren de hunyin wenti" (The Question of Marriage for Mentally Sick People), *Renkou yu yousheng*, No. 1 (1988), p. 11.

³¹ Veronica Pearson, "Population Policy and Eugenics in China", *British Journal of Psychiatry*, 167 (1995), p. 3; see also Veronica Pearson, *Mental Health Care in China: State Policies, Professional Services and Family Responsibilities*. London: Gaskell 1995.

³² Jia Jingtao (Ed.), *Fayi renleixue* (Forensic Anthropology). Shenyang: Liaoning kexue jishu chubanshe 1993, pp. 521, 546-547.

³³ The last significant research carried out in Europe on the link between the inheritance of dermatographic patterns and mental retardation took place under Otmar Vershuer at the Kaiser Wilhelm Institute for Anthropology, Human Genetics and Eugenics in Berlin during the 1930s.

most respected journals on genetics in China, including studies on "minorities", "schizophrenics", "cretins" and even "superior athletes". On the basis of detailed measurements of the arches, loops and whorls on fingers, palms and soles, a close link is established between social position and genetic status.

Lai Rongxing, for instance, shows a strong correlation between intelligence and the so-called atd angle of both hands (the atd line is a particular line on the palm), while others readily detect mental retardation in this or that finger-whorl.³⁴ Many popular publications on reproductive health also offer the general reader explanations of the genetic principles of "retardation" as well as detailed illustrations of those palm-lines in neo-nates which unambivalently indicate "congenital imbecility" (*xiantian yuxing*).³⁵

Rather than pointing at the large variety of learning disabilities which resists the use of generic terms and underlining that even severely retarded children often display the same range of emotions as the rest of the population, genetic knowledge portrays individual misfortunes as social failures to be generically eliminated. Links between fingerprints and blood type (yet another widespread theme in both medical and popular literature which deserves to be analyzed in much greater detail) are also established.³⁶ Recapitulating the agenda agreed by the Association for Dermatographics at its third conference in 1989, Guo Hanbi underlines the practical application of this branch of genetics in family planning and forensic medicine, although little is said about how such a contribution could be made.³⁷

³⁴ See Lai Rongxing *et al.*, "Piwen yu zhili de xiangguan fenxi" (Analysis of the Correlation Between Dermatoglyphics and Intelligence), *Yichuan*, Vol. 14, No. 5 (1992), pp. 20-23; Liao Zhisheng *et al.*, "Difangxing keding binghuanzhe zhangwen A D zhuxian de guancha" (Study of the A and D Line Distribution on the Palms of Sufferers of Endemic Cretinism), *Yichuan*, Vol. 12, No. 3 (1990), pp. 37-38; on "schizophrenia", see Xuan Miaozen, "Jingshenfenliezheng huanzhe de shouwen pinggu" (An Evaluation of the Dermatographic Lines in Sufferers of Schizophrenia), *Renleixue xuebao*, No. 3 (1991), pp. 243-250; on "olympic athletes", see Cheng Huilong, "Nanxing youxiu juzhong yundongyuan de zhiwen chubu fenxi" (Initial Investigation into the Dermatographics of Outstanding Weightlifters), *Jiepouxue zazhi*, No. 3 (1991), pp. 267-268.

³⁵ One example among many others is Luo Hong and Jiang Chaoguang, *Taijiao yu yousheng 200 wen* (200 Questions about Foetal Education and Superior Birth). Beijing: Jindun chubanshe 1992 (5th repr. 1994), p. 25.

³⁶ Luo Tongxiu and Zhou Xiang, "406 li Hanzuren zhiwen yu xuexing xiangguanxing de yanjiu" (A Study on the Correlation Between Fingerprints and Bloodgroup in 406 Cases of Han People), *Yichuan*, Vol. 15, No. 2 (1993), pp. 6-8.

³⁷ Guo Hanbi, "Renlei piwenxue yanjiu guanचा de biaozhun xiangmu" (The Standard Items in the Study of Dermatographics), *Yichuan*, Vol. 13, No. 1 (1991), p. 38.

Conclusion

Historically, scientific advances in genetic research have brought mankind not only greater knowledge of human reproduction, but also increased social prejudice against racial, sexual, religious or political minorities. The legacy of eugenics is still highly visible in developed countries, mainly in contemporary debates about new medical techniques for isolating and manipulating genes. Gene therapy, embryo selection and prenatal screening are important tools which are open to race and class bias, threatening a commitment to social equality and reproductive rights. Information about human genetics can be used to stigmatize not only people alleged to suffer from genetic diseases, but almost anybody whose existence is deemed to be economically costly or socially undesirable.

Social and political factors continue to exert formidable influence on scientific research, although eugenic laws are unlikely to reappear in countries which protect reproductive freedoms and civil rights. However, it is true that even in democratic countries, marginalized people may be treated in a discriminatory way, as social prejudice and economic interest are liable to affect the exact nature of the genetic information made available to families, employers, hospitals, insurance companies or welfare states.

Excursions into different fields of research in the PRC reveal a strong connection between culture, science and politics. Geneticists, for example, have not so much resisted as promoted the use of science in the politics of population control. The need to restore the prominence of genetics after the debacle of the Great Leap Forward and the Cultural Revolution, the desire for professional status and opportunities for greater financial resources are some of the reasons which account for the fact that geneticists have actively pushed rather than passively followed the government towards the enactment of a eugenics law. Moreover, genetic knowledge is not only relied on to solve social problems in government policies which disregard reproductive rights: it provides a legitimate basis for unequal treatment and exclusionary practices. Social marginalization is often legitimized on the basis of genetic knowledge. One is not a "minority" or a "criminal" merely as the consequence of a socially contingent and hence contestable arrangement, but also as the result of biologically determined facts claimed to be rooted deep inside the body.

Whether scientific knowledge has replaced Communist ideology in China as an epistemological foundation for prescriptive claims about social order is open to debate, but available evidence shows that genetic ideas are increasingly used in the marginalization of devalued social groups from poor farmers in Gansu Province to minority people in Tibet.