



Ability vs Background: An Analysis of the Distribution Mechanism of Higher Education Enrolment Opportunities

Liu Jingming

To cite this article: Liu Jingming (2015) Ability vs Background: An Analysis of the Distribution Mechanism of Higher Education Enrolment Opportunities, *Social Sciences in China*, 36:2, 69-90, DOI: [10.1080/02529203.2015.1029665](https://doi.org/10.1080/02529203.2015.1029665)

To link to this article: <https://doi.org/10.1080/02529203.2015.1029665>



Published online: 26 May 2015.



Submit your article to this journal [↗](#)



Article views: 167



View related articles [↗](#)



View Crossmark data [↗](#)

Ability vs Background: An Analysis of the Distribution Mechanism of Higher Education Enrolment Opportunities*

Liu Jingming

Department of Sociology, Tsinghua University

个人的教育成就通常受能力和出身（家庭背景）的共同影响，而能力和出身作用的相对大小又是评判教育公平的基本依据。采用系数集束化方法，比较能力和出身两种机制对不同层级的普通本科教育机会分配的影响作用，发现能力和出身的影响同时显著存在，高等学校的层级越高，对学生的能力要求越高，出身的影响也显著增强；能力影响始终较大幅度地高于出身影响。可见，当前中国高等教育机会分配中尽管存在出身的影响，但根本上仍秉持着能力评价的主导性标准，体现了绩能社会“唯才是举”的典型特征。

关键词：能力 出身 普通本科 绩能主义 系数集束化

Individual education performance is usually influenced jointly by ability and background (family background). The relative share of these two factors forms the basic grounds for judgments of educational equity. Using sheaf coefficients, we compare the influence of these two mechanisms on the distribution of access to regular first degree higher education opportunities for institutions at different levels. Our findings show that both ability and family background have a marked influence. The higher the level of the institution, the

* This study was supported by the National Philosophy and Social Science Foundation project “A Study of Trends in the Evolution of the Structure of Social Strata in China” (10ASH002); the Ministry of Education Humanities and Social Sciences Key Research Bases (Center for Studies of Sociological Theory and Method of Renmin University) major topic “Sociological Theory and Empirical Research on Equity in Education” (07JJD840198), Tsinghua University Humanities and Social Sciences Revitalization Fund Research Program Later Stage project “Research on Educational Equity and Social Stratification” (2010WKHQ008), etc. The empirical research data in the paper come from the China Higher Education Student Study and Development Tracking Survey, a survey of college and university students jointly undertaken by Tsinghua University’s Institute of Education and the China Economic and Social Data Center (CCSS2010-2013). Special thanks goes to our program partners, especially Professor Shi Jinghuan, Professor Li Hongbin and Professor Luo Yan from Tsinghua University and other partner universities and their staff. We also express our gratitude to anonymous reviewers for providing valuable advice and suggestions. It should be noted that the research data in the paper cover only higher education students, excluding those not admitted to colleges or universities; therefore, the distribution of opportunities for admission to higher education refers only to the distribution of opportunities for admission to different levels of colleges and universities.

greater the ability demanded of its students. The effect of family also increases significantly at this level, but ability always has a much stronger influence than family background. It can be seen that though family background is influential in the distribution of higher education opportunities in China today, ability fundamentally remains the dominant criterion, embodying the classic features of a meritocratic society “open to talent.”

Keywords: ability, family background, regular first degree colleges and universities, meritocracy, sheaf coefficients

I. The Problematic

Access to higher education has always been an important issue in China. Since the early 1990s, educationalists have given much thought to the unequal distribution of higher education opportunities, and especially to the disparities among social strata, urban and rural areas, and different regions.¹ Researchers found that following the expansion of higher education, access to higher education opportunities became increasingly unequal due to intensification of the effect of family background (such as disparities in cultural capital and social strata, and even number of family members) and the widening of regionally-based gaps and gaps between urban and rural areas. Vulnerable groups have relatively equal access to adult higher education and vocational education, but they are worse off in terms of access to quality higher education opportunities.² Addressing this change, some studies have explained the relationship between educational expansion and educational inequality from the point of view of three major theoretical models: MMI (Maximally Maintained Inequality), EMI (Effectively Maintained Inequality), and RAT (Rational Action Theory) with the Educational Decision-making Model.³

1 Wang Weiyi, *Research on Opportunities for Admission to Higher Education: A Social Strata Perspective*.

2 Xie Zuoyu and Wang Weiyi, “An Exploration of Differential Opportunities for Admission to Higher Education for Children from Different Social Strata: A Survey of Some Colleges and Universities in Shaanxi, Fujian, Zhejiang and Shanghai”; “Research on Differential Opportunities for Admission to Higher Education for Children from Different Social Strata: In Terms of Disciplines and Specialities”; “Research on Differential Opportunities for Admission to Higher Education for Children from Different Social Strata in the Context of Mass Higher Education”; Ding Xiaohao, “Higher Education Expansion and Equalization of Admission Opportunities”; Liu Jingming, “Higher Education Expansion and Differential Opportunities for Admission: 1978-2003”; Hu Rong and Zhang Yizhen, “A Study of the Current Rate of Enrolment for Different Social Strata in Chinese Higher Education”; Yang Dongping, *Ideal and Reality in China’s Educational Equity*; Liu Yunshan *et al.*, “Selection of Elites: From the Perspective of Status, Region and Financial Capital: Farmers’ Children Admitted to Peking University (1978-2005)”; Du Guiying, “Influence of Family Background upon Opportunities for Admission to Higher Education in China: Based on the Report of a 2009 Survey of University Graduates”; Yan Guangfen and Wang Hongyu, “Analysis of Access to Quality Higher Education Resources and Its Determinants: A Social Stratification Perspective,” etc.

3 J. Goldthorpe, “Rational Action Theory for Sociology,” pp. 167-192; Samuel R. Lucas, “Effectively

The existing research has done a good job of revealing the unequal distribution of higher education opportunities in Chinese society and the way they have changed over the past 20 years, but research on this topic has left vague the extent to which differences in opportunity are due to student ability rather than inequitable access to higher education. We believe that in examining this issue, it is necessary to distinguish clearly between differences in access due to “differences in student ability” and those due to “different structural conditions.” Therefore, the questions this paper raises are these. At present, are higher education opportunities in China distributed according to students’ abilities or dominated by their family background? If both factors influence the individual’s education, how do they jointly affect the distribution of opportunities? What are the respective contributions of ability and family background in terms of access to different levels of higher education?

Utilizing survey data on students taking their first degree in regular higher education, we analyze the mechanisms influencing access to different levels of higher education institutions and examine the varying effects of ability and family background upon access.⁴

II. The Debate over Theories of Social Reproduction vs Meritocracy

People’s concern over inequality in education originates in a deeper level of distributive justice. What is called “distribution” in social stratification research refers mainly to two intersecting processes: the process of distribution that remunerates people according to the positions they hold, and the process of selecting the people who will fill those positions.⁵ There are two opposing views in the discussion of the distributive justice of the latter process: “social reproduction” and “meritocracy.”

The theory of social reproduction is generally regarded as an important summary of violations of distributive justice. Its two analytical models, the “strong” and the “weak,” were put forward by J.W. Meyer.⁶ The strong reproduction mode is commonly concerned with the way social classes or status groups as a whole are reproduced through the education system; it emphasizes the way the formal education process reproduces the original class structure. The weak reproduction mode, on the other hand, emphasizes individual inheritance of familial advantages; it is relatively common in the new sociology of education dominated by the research paradigm of knowledge stratification. In the weak reproduction mode, cultural

Maintained Inequality: Education Transitions, Track Mobility, and Social Background Effects,” pp. 1642-1690; Adrian E. Raftery and Michael Hout, “Maximally Maintained Inequality: Expansion, Reform, and Opportunity in Irish Education, 1921-75,” pp. 41-62.

4 In discussing the distribution mechanisms for access to higher education, we take ability and class background as two independent explanatory variables. In fact, the latter is one of the most significant factors influencing ability, but we do not focus on indirect effects of this kind.

5 F. Parkin, *Class Inequality and Political Order: Social Stratification in Capitalist and Communist Societies*.

6 J.W. Meyer, “Types of Explanation in the Sociology of Education,” p. 348.

reproduction (or the handing on of a class's cultural advantages) is the more important social analysis paradigm.

The opposite of social reproduction is meritocracy. Following the publication of Michael Young's *The Rise of Meritocracy* in 1958, the word "meritocracy" became rapidly and extensively used in research on economic inequality. "Merit" refers to the combination of individual ability (or intelligence) and hard work while "ability" or "talent" is generally measured by such indicators as IQ, cognitive ability and education level.⁷ The 1970s and 1980s saw a heated debate over "social reproduction" and "meritocracy" in sociological circles, revolving around the question of whether, in a more open society, the principle of social stratification would be dominated by meritocracy.

Cyril Burt's early research on the relationship between intelligence and social class was one source of this debate. He pointed out that in IQ tests, the average score of management and professional or technical personnel was higher than that of low-ranking non-manual personnel, and the IQ of low-ranking non-manual personnel was higher than that of manual workers.⁸ This discovery produced a significant paradox: in a more open society, class differences in IQ are even greater. In a social stratification system based on the merit principle, income, power and prestige are empirically correlated with individual ability.

However, new empirical research on occupational attainment indicates that there is still quite a strong class effect after controlling for the role of individual education; the individual's class position is not always determined by ability.⁹ A US comparison of the 1958-1970 birth cohort from with that of 1970-1982 found no change in the effect of class inequality upon children's educational attainment in American society.¹⁰ Nor was this all: as American children grow up, they are influenced by a great deal of invisible inequality; in bringing up their children, parents from different social strata interact differently with their offspring, with quite a large impact upon their children's educational attainment.¹¹

Chiming in with the above research are the studies of social mobility conducted by their European counterparts. A series of studies by Goldthorpe and others note that in British society, individual success is more closely associated with family background. Some even hold that British society is a "closed shop," with "recruitment" of class members almost always occurring from within the class. Historical studies of social mobility comparing England with Wales and Britain with France and Ireland have found that overall social

7 M.R. Olneck and J. Crouse, "The IQ Meritocracy Reconsidered: Cognitive Skill and Adult Success in the United States," pp. 1-31.

8 C. Burt, "Ability and Income," pp. 83-98.

9 Larry J. Griffin and Arne L. Kalleberg, "Stratification and Meritocracy in the United States: Class and Occupational Recruitment Patterns," pp. 1-38.

10 John Bynner and Heather Joshi, "Equality and Opportunity in Education: Evidence from the 1958 and 1970 Birth Cohort Studies," pp. 405-425.

11 Annette Lareau, "Invisible Inequality: Social Class and Childrearing in Black Families and White Families," pp. 747-776.

fluidity did not change much between given points in time, except for some changes in class distribution.¹²

Saunders was the first to argue that one could not say British society was not a “meritocracy,” since large-scale long-distance upward and downward mobility existed simultaneously.¹³ Bond and Saunders used structural equation modeling to re-analyze the sample data of 4,298 British males aged 33 used by Goldthorpe *et al.*, and discovered that the strongest factor affecting occupational attainment was personal ability, followed by achievement drive.¹⁴ This gave rise to a debate between Goldthorpe and Saunders that has lasted over 20 years, up to the present day. Subsequently, each side yielded some ground. Goldthorpe stressed that though ability does affect occupational attainment, class remains strong after controlling for ability and motivation; in order to achieve similar class status, children from disadvantaged families have to be more talented and work harder than those from advantaged families.¹⁵ Saunders, however, stressed that individual ability and effort play a much greater role than family background.¹⁶ In recent research, Saunders still holds that bright and hardworking children from working class families can often realize upward mobility in current structural conditions, while idle and unintelligent children from middle-class families tend to fail. Therefore, although family background does have a certain impact upon individual achievement, ability and effort are more important.¹⁷ Similar experimental facts have been discovered in empirical research on Ireland, Australia,¹⁸ Asia and the Pacific,¹⁹ though the issues encountered may not have been completely identical.

In general, the debate underlines the question of different ways of evaluating a society’s openness. Research indicates that ability and family background have a simultaneous influence on individual achievement; the crux of the debate is how one distinguishes between the two. It is indeed true, as some scholars have said, that the process by which individual ability develops is never free of the impact of family background, an impact embodied in ability. Though some technical models can distinguish between the two effects most of the time, we feel that it is not necessary to make this distinction in analyzing criteria for the recruitment of talent or the characteristics of recruitment systems. Regardless of the way

12 Such as J. Goldthorpe, *Social Mobility and Strata Structure in Modern Britain*.

13 P. Saunders, “Social Mobility and Meritocracy”; “Might Britain Be a Meritocracy?”, pp. 23-41.

14 R. Bond and P. Saunders, “Routes of Success: Influences on the Occupational Attainment of Young British Males,” pp. 217-249.

15 R. Breen and J. Goldthorpe, “Class Inequality and Meritocracy: A Critique of Saunders and an Alternative Analysis,” pp. 1-27.

16 P. Saunders, “Reflections on the Meritocracy Debate in Britain: A Response to Richard Breen and John Goldthorpe,” pp. 559-574.

17 P. Saunders, *Social Mobility Delusions*.

18 Gary Marks and Julie McMillan, “Declining Inequality? The Changing Impact of Socio-Economic Background and Ability on Education in Australia,” pp. 453-471.

19 Ora-orn Poocharoen and Alex Brillantes, “Meritocracy in Asia Pacific: Status, Issues, and Challenges,” pp. 140-163.

or degree to which family background affects the development of individual ability, ability is internalized in the lives of individuals and is indivisible from them. In a recruitment system based on the individual's skill or ability, the expression of ability is always achieved independently by individuals. Therefore, when analysis is confined to the criteria for the recruitment of talent or the specific characteristics of recruitment systems, ability and family background can be treated as two independent influencing variables.

III. The Reform of Higher Education and Its Impact upon Access

To judge whether a society's elite recruitment follows the principles of reproduction or meritocracy requires an exhaustive study of that society's system of talent recruitment.

There can be no doubt that higher education is one of the most important ways in which talent is selected in modern society. In deciding who should be selected and how they should be allocated to colleges and universities at different levels and different specialities to receive training, what matters are the criteria and methods for recruiting talent. In 1977, China restored the national higher education entrance examination system, which meant that the system of talent recruitment returned to the principle of making individual ability (especially academic performance) the prime criterion. In the first decade after restoration of the examination, colleges and universities stuck closely to a selection mechanism strictly based on examination scores. This has been the core criterion dominating student selection to date, despite several rounds of reform of the enrolment system and the higher education system.

It should be noted, however, that with the 1985 reform of the educational system, market factors began to permeate into higher education. Especially from the 1990s, national policy has been dominated by plans to deepen market reform. This has had a far-reaching influence upon the field of education, especially with regard to the distribution of higher education opportunities.

It should be noted, however, that in 1985 China started enrolling self-financing students outside the official plan, so that self-financed and publicly financed student systems coexisted. Since they came through different channels, self-financed students usually required lower entrance scores than similar publicly financed students. In 1994, colleges and universities began to merge the two separate streams; the system of "centralized enrolment and allocation" system once more fell by the wayside. Self-financed and publicly financed students were no longer distinguished, and a unified fee system was built up. Students pay part of the tuition fees themselves, and most graduates find jobs on their own. By 2003, the merging of the two enrolment systems had been completed. During the trial period (1994-2003), about 3-5 percent of university students across the country obtained entry by making up with tuition fees what they lacked in examination scores (this does not include those who went to private higher education institutions). Amid mounting criticism of "one's whole life pivoting on one exam" and "a mighty army jostling to cross a single-plank bridge," the autonomous enrolment

system was officially launched in colleges and universities in 2003. Under this system, some key colleges and universities could offer preferential admission involving 10-30 bonus points to about 10-30 percent of the planned intake of students, with some universities offering even more. The system of recommending students for admission was even more straightforward: about 5 percent of students could be admitted to key colleges and universities directly upon recommendation and review, without taking the entrance examination. These reforms meant that a seemingly pure distribution of opportunities on the basis of academic performance intermingled with a number of other influences beside individual ability.²⁰

Along with reform of the enrolment system, Chinese higher education carried out a series of major reforms on all fronts ranging from educational philosophy, operation of institutions, and funding, to discipline construction, structural layout and internal management, with a view to fitting the system for marketization and internationalization. The results indicate that the distribution of enrolment opportunities has been directly changed or influenced by a number of reforms, most importantly the relative centralization of higher education resources. Between 1990 and 2003, the Chinese government merged higher education institutions in a major structural adjustment. The 597 institutions participating were reduced by 330,²¹ and the average number of students in each rose from 2,380 in 1993 to 3,815 in 2000.²² Since 1993, the state has successively constructed key engineering universities and key disciplines (such as the Project 211 and Project 985 Engineering Universities and the 2011 Collaborative Innovation Program) supported by dedicated funding. This has meant that quality higher education resources and funding have been concentrated on some top universities, disciplines and specialities.

The merging of colleges and universities and the construction of key engineering universities have effectively encouraged the integration and centralization of quality higher education resources, and have at the same time resulted in much fiercer competition between different social strata for access to the varying levels of higher education. A 2006 study indicates that over the years of expanded enrolment (1998-2003), the differences among social strata in terms of access to adult higher education, etc., lessened considerably, with the vulnerable strata enjoying an adequate share of these resources, but in terms of access to first degree university study the difference among the strata was greater than before the expansion.²³ Although expanded enrolment brought a rapid increase in higher education student numbers, especially for those from the lower social strata, opportunities for admission to quality higher education institutions and to courses with better market prospects remain

20 The data in this paragraph does not have an immediate source. It is mainly based on some key colleges' and universities' annual autonomous enrolment plans, the conditions under which they offer bonus points and their quota of recommended students.

21 Liu Jirong, *A Theoretical and Empirical Study of the Merging of Higher Education Institutions*.

22 Cited from Kang Ning, "The Theoretical Basis of Higher Education Reform and Structural Adjustment in Today's China."

23 Liu Jingming, "Higher Education Expansion and Differential Opportunities for Admission: 1978-2003."

biased toward the upper social strata.²⁴

Consequently, our discussion of equity in higher education may need to go beyond the question of who gains access to higher education; it must also provide a detailed analysis of how they gain access and what level of institution they enter. This is extremely significant for revealing the varying access to higher education of different social strata.

IV. Research Hypotheses

The real theoretical content of the categories of “social reproduction” and “meritocracy” is another expression of those hardy perennials of social stratification research, “ascribed status” and “achieved status.” Our paper’s theoretical discussion and empirical analysis will also follow this basic framework. Based on the above discussion and analysis of the realities of higher education reform, we put forward the following hypotheses.

Hypothesis 1: Ability plays a decisive role in distribution of higher education opportunities (“dominance of ability” hypothesis).

Since Chinese colleges and universities always make academic performance the main criterion for entry, and since, when it comes down to it, academic performance is the result of individual ability and effort, within the basic framework of reproduction *vs* meritocracy and ascribed status *vs* achieved status, access to higher education is ultimately fairly clearly characterized by the primacy of ability. This hypothesis also indicates that if different levels of higher education make entry examination scores their central criterion, then students’ ability (especially academic ability) will rise according to the level of the institutions they enter.

At the same time, those colleges and universities with the power to conduct enrolment autonomously and enrol students by recommendation (mostly concentrated among the “985” and “211” key engineering universities, especially those top universities that draw students from a wider pool), carry out more extensive and in-depth review of students’ comprehensive ability, so it is easier for them to single out students with outstanding ability as well as academic performance. Therefore, in making a more detailed comparison of the effect of ability, we can see that the effect of non-academic abilities is greater in admission to top-level universities.

Hypothesis 2: The higher the ranking of the university, the stronger the role of family advantages (“strong selection, strong influence” hypothesis).

In a series of studies of social mobility, the well known FJH (Featherman-Jones-Hauser) hypothesis and the later CASMIN (Comparative Analysis of Social Mobility in Industrial Nations) demonstrate that in modern industrialized countries where the nuclear family is dominant, intergenerational inheritance and short-distance mobility are the basic mode of intergenerational social mobility.²⁵ This hypothesis is a classic expression of the family’s

24 Samuel R. Lucas, “Effectively Maintained Inequality: Education Transitions, Track Mobility, and Social Background Effects,” pp. 1642-1690.

25 R. Breen, “Inequality, Economic Growth and Social Mobility,” pp. 429-449.

significant influence upon the education and occupational attainment of the next generation. In fact, in the nuclear family's mode of childrearing, what is passed on within the family cannot in most cases be separated out, especially as regards academic performance and occupational attainment. Although it acts through multiple channels, including familial cultivation, cultural capital, psychological encouragement, material support, etc., and although different influences exert different effects upon the development of children's abilities, what is passed down within the family can always be manifested holistically. In a society where childrearing within the family is the basic norm, parents' influence on the development of the next generation is all-pervasive, so that the differences between families tend to be expressed in differences in the development of the next generation. This basic fact allows us to believe that the competition for status among the next generation is at the same time a competition among families. We cannot mention competition without mentioning equity; and equitable competition must ultimately be realized through the next generation of entrants in the race. In other words, it is only when family advantages are transmuted into the next generation's ability to compete that the results can be said to show formal equity.

We assume that every family has the same preference for access to different levels of higher education. All parents hope their children will go to the best schools for the best possible education, and join with their children in pursuit of this goal. Students compete for opportunities on behalf of their families, which in their turn do their best to mobilize and utilize their own resources to help their offspring in this critical life choice. Therefore, provided the next generation has equivalent abilities, families that can provide more assistance to their children will find it easier to win life's race. These family influences come through at least two channels: the first is the reasons mentioned above, such as prevalence of market factors in student selection, and the second is the selection effect of social status, or what Boudon called the "secondary effect" of family influence, seen in such things as the limitations imposed by family conditions on the expression of preferences when applying for higher education.²⁶ Thus, the strong-selection strong-influence hypothesis can be stated as follows: even if we control for the influence of ability, a strong net family background effect can still be observed; and the higher the university is ranked, the stronger the influence of family background on admission opportunities. In other words, the more selective the university, the greater the influence of family background.

V. Data and Variables

1. Data description

The research data comes from Tsinghua University's Chinese College Student Survey

26 Here we are grateful to Li Yu, Professor at the Institute of Sociology, Shanghai Academy of Social Sciences, for his suggestions on the interpretation of the selection effect.

(CCSS),²⁷ a student survey conducted from 2009 on in colleges and universities across the nation. The sample is stratified on the basis of such indicators as level and type of institution and the development of higher education in the province or municipality concerned. Within the strata, PPS sampling was used, and within each institution, independent simple random sampling was conducted based on year of study. In the first four years of the survey, the survey was mainly conducted in regular first degree colleges and universities. Our study analyzes the sample responses from these institutions (excluding private first degree institutions and independent colleges). In the four years from 2010 to 2013 respectively, 42, 53, 52 and 58 regular public first degree colleges and universities were surveyed (some of which were not selected randomly). In the first three years, the survey was conducted through paper questionnaires, with students writing in most of the answers, but in 2013 half the survey was conducted through paper questionnaires and the other half online. Due to missing survey variables in some years, the final total number of samples selected for this study was 227,459.

2. Variables and their descriptive features

(1) Stratification of universities

The sample universities (all are colleges and universities) are stratified according to their reputation, whether they are key universities, their cut-off point in the higher education entrance examination (that is, first tier and second tier universities) and whether they are universities or colleges. They are classified into six levels from the top down: top universities (six out of the most famous 20 universities were selected); “985” universities, “211” universities, first tier universities, second tier colleges and universities.

Table 1 Distribution of Samples by Level of College and University

University level	Unweighted sample number	Unweighted percentage	Weighted sample number	Weighted percentage
Top 6 universities	11,446	5.03	3,949	1.7
“985” universities (excluding top 6)	34,966	15.37	11,925	5.2
“211” universities (excluding “985” universities)	66,164	29.09	28,391	12.5
First tier universities (excluding “211” universities)	16,654	7.32	12,758	5.6
Second tier universities	64,626	28.41	99,625	43.8
Second tier colleges	33,603	14.77	70,811	31.1
Total	227,459	100	227,459	100

27 For more detailed information on the project, see its website: <http://ccss.ioe.tsinghua.edu.cn>, April 23, 2014.

(2) Measurement of ability

The definition and measurement of ability have always been a complex issue in pedagogy and psychology. Analysis using the “ability effect” of sheaf coefficients includes academic ability, creative ability, organizational ability and comprehensive ability. Specific measurement techniques are:

(a) Academic ability

Academic ability has two indicators, both related to higher education entrance examination scores: whether the score meets the requirements of first tier university entrance and whether it meets the requirements of first tier university performance for that year in the province where the student sat the examination.

The variable of higher education entrance examination score asks for the student’s raw score in the entrance examination. Since students’ examination subjects and papers vary by province, their raw scores are not comparable. Therefore, in introducing this variable, we conduct a standardized conversion of the entrance examination score using the following conversion equation:

$$sscore_{i,k,t,p} = \frac{score_{i,k,t,p} - \overline{score_{k,t,p}}}{stdev_{k,t,p}}$$

Here *sscore* is the standard score,²⁸ *score* is the total of the higher education entrance examination scores (the raw scores of the students surveyed) and *stdev* is the standard deviation. Subscripts *i*, *k*, *t* and *p* respectively refer to the sample individual, the entrance examination field (arts or sciences), the year the sample individual took the entrance examination (2006-2011) and the sign for the province (in which the sample individual took the entrance examination) .

Whether the student’s score in the higher education entrance examination met the cut-off point for entry into a first tier university for that year in the province where the examination was taken is the fundamental threshold for admission to a first tier university, but since a certain number of students enrol with lower scores, enter under universities’ autonomous enrolment programs, or are enrolled by adding bonus points or by reducing the required score, this variable is more significant as an indicator of academic ability.

(b) Creative ability

Creative ability is represented by winning competitions at senior high school, ranged

28 It should be noted that there are many missing values in the variable for the higher education entrance examination score. In order to bring the samples with the missing variable into the model analysis, we replace the missing *sscore* with “0,” and at the same time set up a missing value dummy in the model [*missscore* = missing (*sscore*)]. This treatment ensures that the covariate values of samples where the entrance scores are missing can be part of the model analysis. The effect of the variable itself can only be calculated from the valid samples; it is not affected by the replacement value “0” of the missing samples. The effect of the missing samples is fully expressed by the missing value dummy variables.

under four levels: national or international awards, provincial awards, municipal awards and regional or county-level awards. For those students who did not win any awards, it is just a reference category.

(c) Organizational ability

The indicator for organizational ability is being a student cadre in senior high school, over five levels: group leader, class committee member, class president/Communist Youth League branch secretary, member of the school's Student Union/Communist Youth League Committee and President or Vice-President of the school's Student Union/ Communist Youth League Committee. For those who did not hold any student cadre positions, this is just a reference category.

(d) Comprehensive ability

Comprehensive ability includes two variables: whether the student was awarded the title of "Three Good Student" [good in study, attitude and health] and whether he or she had joined the Party while in high school. The "Three Good Student" award has four levels: school level, district and county level, municipal level and provincial level. For those not awarded the title at any level, it is just a reference category. Whether a student joined the Party in senior high school is a dummy variable, "1" if the student joined the Party before admission to university, or "0" if he or she did not.

(3) Family background variable

Ascribed factors are usually multidimensional, and are classified differently by different researchers.

(a) Natural endowment

Natural endowment is a very broad concept, employed here to express the set effects of two variables: gender (female=1) and ethnicity (ethnic minority=1). It does not involve other hereditary effects such as natural talents.

(b) Family background

a. Parental socio-economic status is represented by the following five variables: father's occupational stratum, mother's occupational stratum, family income level, household registration before university admission (rural household registration=1) and whether the student is an only child. Occupations are divided into eight strata: owners of private companies, managers, professional or technical personnel, office staff, self-employed, skilled workers, manual workers and farmers. Family income is classified in eight levels, from low to high.

The socio-economic status variable sheaf includes the dummy variable of whether the student is an only child (yes=1). In studies of inequality in education, number of siblings is generally analyzed as a family background variable that dilutes or divides family resources.²⁹ Here being an only child is taken as a predictive variable in the latent variable causal model of

29 J. Blake, *Family Size and Achievement*, p. 12.

socio-economic status.

b. Family cultural capital, including parents' educational level, family's book collection while student was in senior high school (excluding textbooks), etc. We divide parents' education into six levels: primary school and lower, junior high school, senior high school or equivalent, tertiary vocational education, university undergraduate education, and university higher degree.

(4) Other control variables

Other control variables in the model include the level of educational development in the student's province (log of the number of university students per 100,000 population), year of entry, and a dummy variable for the point of time of the survey.³⁰

VI. Model and Sheaf Coefficient Method

To introduce the sheaf coefficient method, we begin with the binomial logit model, as in Equation (1):

$$\log it \frac{P}{1-P} = \alpha + \sum_{i=1}^I \beta_i X_i + \sum_{j=1}^J \beta_j X_j + \sum_{k=1}^K \beta_k X_k + \varepsilon \quad (1)$$

X_i denotes a series of independent variables related to ability, X_j denotes vectors of independent variables related to family background, and X_k denotes the matrix of other control variables in the model. In order to provide a comprehensive comparison of the effect of differences in the effects of ability and family background, we adopt the sheaf coefficients technique in the model fitting process.³¹ Suppose two latent variables coexist, with latent variable (η_a) denoting ability and latent variable (η_b) denoting family background. They are respectively the outcome variables of a series of independent variables X_i related to ability and a series of independent variable X_j related to family background:

$$\eta_a = c_1 + \sum_i Z_i X_i \quad (2)$$

$$\eta_b = c_2 + \sum_j Z_j X_j \quad (3)$$

Equation (1) can be written as:

$$\log it \frac{P}{1-P} = \alpha + \lambda_1 \eta_a + \lambda_2 \eta_b + \sum_{k=1}^K \beta_k X_k + \varepsilon \quad (4)$$

In fact, Equation (4) is simply an alternative presentation of Equation (1), and its estimation is completed after fitting Model (1). The goal of post-estimation is to choose two parameter sets, Z_i and Z_j , at the same time to make the standard deviation of both η_a and η_b be 1, so that the effects (λ_1, λ_2) of the two sheaf variables η_a and η_b will be comparable.

30 Due to space limitations, we omit the descriptive statistics of the variables and the results of the following conventional mlogit model. Interested persons can obtain them from the author at socliu@163.com.

31 David R. Heise, "Employing Nominal Variables, Induced Variables, and Block Variables in Path Analyses," pp. 147-173.

Estimation method.³² In estimating Equations (2) and (3), constants c_1 and c_2 are both restricted to 0 (in this way, when the observed variables X_i and X_j used to estimate the latent variables of ability and family background are both 0, the latent variables η_a and η_b are also 0). Because Equation (1) is equivalent to Equation (4), the estimation of Z_i and Z_j in Equations (2) and (3) and λ_1, λ_2 in Equation (4) necessarily guarantees that they will lead to the same result as Equation (1). Therefore, we can set λ_1, λ_2 as 1 and $Z_i=\beta_i$ and $Z_j=\beta_j$ as initial values and use iterative method to find the answer.

The use of sheaf variables enables us to estimate the degree of importance of the effects of the two different categories of ability and family background. It should be noted that sheaf coefficients always have a non-negative value. If we are to understand the direction of the effect upon the dependent variables of each observed variable, we need to examine the relationship between latent variables and independent variables in the latent variable causal model simultaneously.

Similarly, with regard to access to higher education at different levels, we can set up a multinomial *logit* model (*mlogit*) to compare the difference between the integrated effects of ability and family background upon opportunities for admission to higher education institutions at different levels:

$$\left\{ \begin{array}{l} \log it \frac{P_m}{P_M} = \alpha + \sum_{i=1}^I \beta_{m,i} X_{mi} + \sum_{j=1}^J \beta_{m,j} X_{mj} + \sum_{k=1}^K \beta_{m,k} X_{mk} + \varepsilon \end{array} \right. \quad (5)$$

$$\left\{ \begin{array}{l} \log it \frac{P_m}{P_M} = \alpha + \lambda_{m,1} \eta_{m,a} + \lambda_{m,2} \eta_{m,b} + \sum_{k=1}^K \beta_{m,k} X_{mk} + \varepsilon \end{array} \right. \quad (6)$$

$$\left\{ \begin{array}{l} \eta_{m,a} = \sum_{i=1}^I Z_{m,i} X_{m,i} \end{array} \right. \quad (7)$$

$$\left\{ \begin{array}{l} \eta_{m,b} = \sum_{j=1}^J Z_{m,j} X_{m,j} \end{array} \right. \quad (8)$$

Here m denotes level of institution. The reference category for our model is the student sample from second tier colleges.

VII. Findings and Interpretation

In order to analyze and compare the different effects of ability and family background upon admission to higher education institutions at various levels, we have conducted our estimation mainly through a multinomial *logit* model and sheaf coefficients. Sheaf coefficients are, in fact, a kind of post-estimation of the equation coefficients of the multinomial logit model. The parameter results of the same model can be handled through different sheaf coefficient approaches, enabling the sheaf coefficients of different combinations to be obtained. In order to differentiate between the effects of natural endowment and the individual's origins (family

32 For estimation methods and their calculation, please refer to Maarten L. Buis, "Three Models for Combining Information from Causal Indicators."

background) in terms of ascribed effect and to analyze the various sub-effects within the effects of family background and ability, we make three successive estimations, the results of which are shown in Table 2. See above for the explanation of the variables included in the sheaf effects in Table 2e.

In terms of coefficient description, the sheaf effect value in the *mlogit* model can be understood in the same way as the *logit* coefficients. For instance, in Post-estimation (2), we can say that for every increase of one standard deviation in the estimation value of the standardized ability latent variable, the odds ratio of admission to a top university rather than a second tier college (Equation 1) is twice [=exp (2.8178-2.1213)] that of admission to a “211” university (excluding “985” universities) rather than a second tier college (Equation 3). Even more valuable is the fact that sheaf coefficients can be compared both within one equation and among different equations, since the sheaf variables have been standardized. When compared within a single equation (as in a comparison of the effect of family background and ability), the sum of the ability effect and the family background effect is generally limited to 1. When it is compared in different equations, the absolute values of the coefficients are used.

Table 2 Comparison of the Effect Values of Ability and Family Background on Admission to Universities of Different Levels (Sheaf Coefficients of *mlogit* Model)

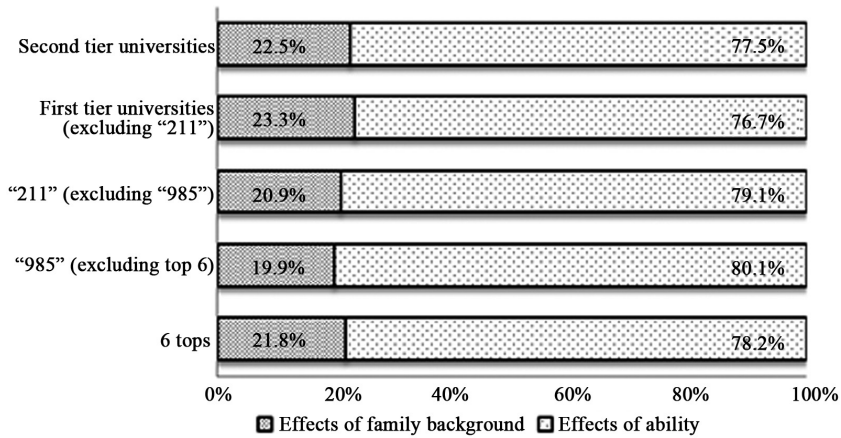
		Equation (1)	Equation (2)	Equation (3)	Equation (4)	Equation (5)
		Top universities vs. 2 nd tier colleges	“985” (excluding top 6) vs. 2 nd tier colleges	“211” (excluding “985”) vs. 2 nd tier colleges	1 st tier (excluding “211”) vs. 2 nd tier colleges	2 nd - tier universities vs. 2 nd tier colleges
Post-estimation (1)	Ascribed effects (including family background and natural endowment)	1.0377 [0.0215]	0.7410 [0.0135]	0.6772 [0.0126]	0.5000 [0.0132]	0.4106 [0.0112]
	Ability effect (total)	2.7893 [0.0377]	2.4789 [0.0214]	2.0633 [0.0175]	1.4950 [0.0178]	1.1811 [0.0172]
Post-estimation (2)	(1) natural endowment (gender, ethnicity)	0.6661 [0.0208]	0.3082 [0.0129]	0.3410 [0.0118]	0.1789 [0.0126]	0.2193 [0.0101]
	(2) family background effect (total)	0.7855 [0.0207]	0.6299 [0.0130]	0.5608 [0.0122]	0.4662 [0.0130]	0.3441 [0.0111]
	(3) ability effect (total)	2.8178 [0.0376]	2.5402 [0.0218]	2.1213 [0.0178]	1.5339 [0.0182]	1.1864 [0.0172]

Post-estimation (3)	(1) natural endowment (gender, ethnicity)		0.6661 [0.0208]	0.3082 [0.0129]	0.3410 [0.0118]	0.1789 [0.0126]	0.2193 [0.0101]
	(2) Family background effect	a. family cultural capital	0.4588 [0.0281]	0.3895 [0.0198]	0.3405 [0.0175]	0.3028 [0.0184]	0.1880 [0.0152]
		b. socio-economic status	0.4929 [0.0266]	0.3552 [0.0156]	0.3203 [0.0144]	0.2684 [0.0148]	0.2131 [0.0132]
	(3) Ability effect	a. academic ability	2.6127 [0.0381]	2.4305 [0.0217]	2.0582 [0.0177]	1.4981 [0.0183]	1.1276 [0.0173]
		b. innovation ability	0.5105 [0.0165]	0.3002 [0.0139]	0.1898 [0.0134]	0.0578 [0.0144]	0.1343 [0.0124]
		c. organization ability	0.1432 [0.0195]	0.0711 [0.0142]	0.0678 [0.0126]	0.0742 [0.0129]	0.0353 [0.0114]
		d. comprehensive ability	0.3652 [0.0191]	0.2358 [0.0137]	0.1500 [0.0129]	0.1308 [0.0135]	0.1394 [0.0108]
	Model checking			N=227459; pseudo R2=0.173; chi2=57172.4, dfm=340			

Note: numbers in square brackets are standard deviations of sheaf coefficients.

The model results indicate that when those student groups who already have access to regular public higher education at the undergraduate level are further selected for admission to higher ranked universities, the influence of natural endowment, family background and ability become extremely significant, with ability, in relative terms, playing a greater role than family background and natural endowment. As showed by Post-estimation (1), the ability effect in Equations (1) to (5) is respectively 2.69 (=2.7893/1.0377), 3.35, 3.05, 2.99, and 2.88 times the total of the ascribed effects. If ability is compared with family background alone, after deducting natural endowment, Post-estimation (2) shows that the total ability effect in Equations (1) to (5) is respectively 3.59, 4.03, 3.78, 3.29 and 3.45 times the total effect of family background. If we set the sum of ability and family background effects at 1, an interesting common feature can be found in all the equations; that is, the influence of ability is around 80 percent in all cases, while that of family background is between 20 and 23 percent (as shown in Figure 1). Of course, if natural endowments such as gender and ethnicity are taken into account, the relative importance of all the ascribed effects reviewed will be somewhat higher, between 23 and 27.

Figure 1 Comparison of the Relative Importance of Ability and Family Background

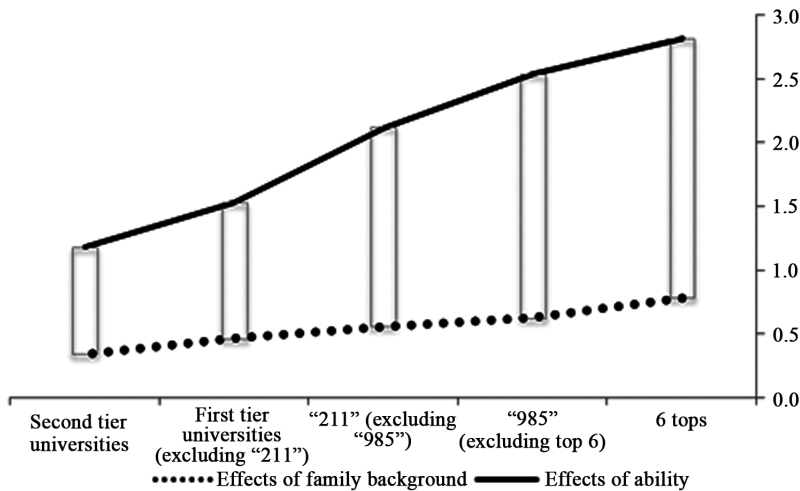


The comparison among different equations shows that the more highly ranked the university is, the more marked will be the effects of ability, natural endowment or family background, evincing a clear hierarchical relationship which can be most clearly displayed in a diagram. In terms of the effect coefficients in Post-estimation (2), Figure 2 shows that with each step in the hierarchy, from second tier universities and colleges, first tier universities (excluding "211" universities), "211" colleges and universities (excluding "985" universities), "985" institutions (excluding the the top six) up to the top six universities, the values of the ability effect and the family background effect increase by almost linear increments. This indicates that the higher the level of the institution, the greater the ability required. At the same time, the effect of the individual's origins (or the advantages enjoyed by virtue of family background) are much stronger.

Overall, the research findings indicate that in access to regular undergraduate colleges and universities of different levels, students' personal ability plays a much greater part than the ascribed effect and the family background effect, and the level of ability required clearly rises with the level of the institution. This shows that in the selection of talent among the younger generation, individual ability (especially academic ability) is the most important factor in China's present higher education system, which has the unified national entrance examination as its instrument and students' academic ability as its major criterion.

With this as its premise, the above analysis also reveals that the effect of family background, like that of ability, has a marked hierarchical character. Post-estimation (3) in Table 2 indicates that within the family background effect are two sub-effects—family cultural capital and socio-economic status—which have almost the same importance for the next generation's access to regular undergraduate education at different levels. This finding clearly shows that access to better or higher level universities likewise requires superior advantages in terms of family cultural capital and socio-economic status.

Figure 2 Hierarchical Differences in Effect Coefficients of Ability and Family Background



VIII. Conclusions and Discussion

On the basis of large-scale survey data on higher education institutions across the nation, we arrived at three main conclusions:

- (1) The criterion of ability occupies a position of absolute dominance so far as the current distribution of regular undergraduate higher education opportunities is concerned;
- (2) As the level of first degree higher education institutions rises, the effects of ability and family background rise simultaneously;
- (3) Regardless of the level of higher education accessed, the relative relationship or basic pattern between the effects of ability and family background remains fairly stable.

The argument about social reproduction and meritocracy has a long history, but earlier studies on educational inequality paid less attention to the importance of merit in the process. Our study adds ability to the analysis of access to education with a view to conducting a comprehensive review of the overall mechanism governing distribution of opportunity. Our findings show that the distribution mechanism for higher education opportunities at various levels is clearly based on the classic "selection by talent alone" of a meritocratic society, due to the fact that Chinese higher education institutions adhere to the national higher education entrance examination as the main way of selecting talent.

Nevertheless, we must be cautious about assessing the issue of equity in higher education based on these findings. First of all, our study stresses that what we call the classic feature of a meritocracy is simply relative to China's current higher education enrolment mechanism, in that individual ability plays the more decisive role in the enrolment process for first degrees at higher education institutions of various levels. But if we broaden

this conclusion to the wider issue of equity in education, we still need to consider the influence of family background or individual origins in the development of ability. We have deliberately refraining from pursuing and discussing this process, but the questions remain: How does ability develop? How is it influenced by the family's socio-economic status and cultural capital? How do schools and classrooms, the interaction between school and family, and the community environment influence children's growth and development? This series of questions involves precisely the important research issues that can lead us to a deeper discussion of educational equity.

Secondly, the family background effect observed in this study is the net influence after controlling for the effect of ability. Although it is less important than ability, its appearance as a link in the enrolment process merits careful attention.

Lastly and most importantly, it should be realized that a talent selection system based on meritocratic principles is a "double-edged sword" for wider social justice. A meritocratic society follows the basic principle of "survival of the fittest." In a hierarchical education system that is "heavy on classification, light on empowerment and high on admonition," meritocracy can easily become "a sharp weapon of social alchemy" for those with a superior family background and greater ability.³³ A purely meritocratic society tends to form a ladder graded along the lines of high and low intelligence or ability. On such a ladder, lack of protection for vulnerable groups can lead to serious social segregation. This is precisely the reason for Michael Young's warning that meritocracy would only perpetuate inequalities.³⁴

The limitations of this study lie in the following areas. First, although our research conclusions on the dominance of ability in the university enrolment mechanism, the joint enlargement of the effects of family background effect and ability, their maintenance of a stable relationship, etc., can be applied to the overall distribution of higher education opportunities, they need to be further verified by data from empirical surveys, since our sample comes from students already admitted to higher education. Second, although we find that the effects of family background and ability have quite a stable relative relationship with regard to access to higher education opportunities at different levels, at the opposite poles of the top universities and the second tier colleges, the family background effect is relatively more important for access than it is in intermediate-level colleges and universities. This requires more detailed discussion.

Notes on Contributor

Liu Jingming is Professor and Doctoral Supervisor at the Department of Sociology, Tsinghua University. His major research fields are sociology, social stratification and social mobility, and he has published over 30 papers and books. Among his representative papers and books are *State, Social Strata and*

33 See also Liu Yunshan, "Beyond Meritocracy."

34 See also A. Allen, "Michael Young's *The Rise of the Meritocracy: A Philosophical Critique.*"

Education (国家、社会阶层与教育, Beijing: China Renmin University Press, 2005); “Analysis of Inequality in Opportunities for Basic Education in China” (中国基础教育领域的机会不平等研究, *Zhongguo Shehui Kexue* [中国社会科学], 2008, no. 5); and “Changes in the Structure of the Labor Market and the Returns on Human Capital” (劳动力市场结构变迁与人力资本收益, *Sociological Studies* [社会学研究], 2006, no. 6). E-mail: socliu@163.com.

References

- Allen, A. “Michael Young’s *The Rise of the Meritocracy*: A Philosophical Critique.” *British Journal of Educational Studies*, vol. 59, 2011, no. 4.
- Blake, J. *Family Size and Achievement*. Berkeley: University of California Press, 1989.
- Bond, R. and P. Saunders. “Routes of Success: Influences on the Occupational Attainment of Young British Males.” *British Journal of Sociology*, vol. 50, 1999, no. 2.
- Breen, R. and J. Goldthorpe. “Class Inequality and Meritocracy: A Critique of Saunders and an Alternative Analysis.” *British Journal of Sociology*, vol. 50, 1999, no. 1.
- Breen, R. “Inequality, Economic Growth and Social Mobility.” *British Journal of Sociology*, vol. 48, 1997, no. 3.
- Buis, Maarten L. “Three Models for Combining Information from Causal Indicators,” United Kingdom Stata Users’ Group Meeting, 2009. Retrieved from http://www.stata.com/meeting/uk09/uk09_buis.pdf, April 28, 2014.
- Burt, C. “Ability and Income.” *British Journal of Educational Psychology*, vol. 13, 1943.
- Bynner, John and Heather Joshi. “Equality and Opportunity in Education: Evidence from the 1958 and 1970 Birth Cohort Studies.” *Oxford Review of Education*, vol. 28, 2002, no. 4.
- Ding, Xiaohao. “Higher Education Expansion and Equalization of Admission Opportunities” (规模扩大与高等教育入学机会均等化). *Peking University Education Review* (北京大学教育评论), 2006, no. 2.
- Du, Guiying. “Influence of Family Background upon Opportunities for Admission to Higher Education in China: Based on the Report of a 2009 Survey of University Graduates” (家庭背景对我国高等教育入学机会的影响——基于2009年高校毕业生的调研报告). *Journal of the National Academy of Education Administration* (国家教育行政学院学报), 2010, no. 10.
- Goldthorpe, J. “Rational Action Theory for Sociology.” *British Journal of Sociology*, vol. 49, 1998, no. 2.
- . *Social Mobility and Class Structure in Modern Britain*, 2nd ed. Oxford: Clarendon Press, 1987.
- Griffin, Larry J. and Arne L. Kalleberg. “Stratification and Meritocracy in the United States: Class and Occupational Recruitment Patterns.” *British Journal of Sociology*, vol. 32, 1981, no. 1.
- Heise, David R. “Employing Nominal Variables, Induced Variables, and Block Variables in Path Analyses.” *Sociological Methods & Research*, vol. 1, 1972, no. 2.
- Hu, Rong and Zhang Yizhen. “A Study of the Current Rate of Enrolment for Different Social Strata in Chinese Higher Education” (现阶段我国高等教育机会阶层辈出率研究). *Journal of Xiamen University (Arts & Social Sciences)* (厦门大学学报 [哲学社会科学版]), 2006, no. 6.

- Kang, Ning. "The Theoretical Basis of Higher Education Reform and Structural Adjustment in Today's China" (当前我国高等教育体制改革与结构调整的理论基础). *Educational Research* (教育研究), 2000, no. 10.
- Lareau, Annette. "Invisible Inequality: Social Class and Childrearing in Black Families and White Families." *American Sociological Review*, vol. 67, 2002, no. 5.
- Liu, Jingming. "Higher Education Expansion and Differential Opportunities for Admission: 1978-2003" (高等教育扩展与入学机会差异: 1978-2003). *Chinese Journal of Sociology* (社会), 2006, no. 3.
- Liu, Jirong. *A Theoretical and Empirical Study of the Merging of Higher Education Institutions* (高等学校合并重组的理论与实证研究). Ph.D. Thesis, Zhejiang University, 2003.
- Liu, Yunshan. "Beyond Meritocracy" (超越贤能主义). *Educational Research and Experiment* (教育研究与实验), 2009, no. 2.
- Liu, Yunshan *et al.* "Selection of Elites: From the Perspective of Status, Region and Financial Capital: Farmers' Children Admitted to Peking University (1978-2005)" (精英的选拔: 身份、地域与资本的视角——跨入北京大学的农家子弟 [1978-2005]). *Tsinghua Journal of Education* (清华大学教育研究), 2009, no. 5.
- Lucas, Samuel R. "Effectively Maintained Inequality: Education Transitions, Track Mobility, and Social Background Effects." *American Journal of Sociology*, vol. 106, 2001.
- Marks, Gary and Julie McMillan. "Declining Inequality? The Changing Impact of Socio-Economic Background and Ability on Education in Australia." *British Journal of Sociology*, vol. 54, 2003, no. 4.
- Meyer, J.W. "Types of Explanation in the Sociology of Education." In *Handbook of Theory and Research for the Sociology of Education*, ed. J. G. Richardson. New York: Greenwood Press Inc., 1986.
- Olneck, M. R. and J. Crouse. "The IQ Meritocracy Reconsidered: Cognitive Skill and Adult Success in the United States." *American Journal of Education*, vol. 88, 1979, no. 1.
- Parkin, F. *Class Inequality and Political Order: Social Stratification in Capitalist and Communist Societies*. New York: Praeger, 1971.
- Poocharoen, Ora-orn and Alex Brillantes. "Meritocracy in Asia Pacific: Status, Issues, and Challenges." *Review of Public Personnel Administration*, vol. 33, 2013, no. 2.
- Raftery, Adrian E. and Michael Hout. "Maximally Maintained Inequality: Expansion, Reform, and Opportunity in Irish Education, 1921-75." *Sociology of Education*, vol. 66, 1993.
- Saunders, P. "Social Mobility and Meritocracy." In *Work and Employment in Liberal Democratic Societies*, ed. D. Marsland. Minnesota: Paragon House, 1994.
- Saunders, P. "Might Britain Be a Meritocracy?." *Sociology*, vol. 29, 1995, no. 1.
- . "Reflections on the Meritocracy Debate in Britain: A Response to Richard Breen and John Goldthorpe." *British Journal of Sociology*, vol. 53, 2002, no. 4.
- . "Social Mobility and Meritocracy." In *Work and Employment in Liberal Democratic Societies*, ed. D. Marsland. Minnesota: Paragon House, 1994.
- . *Social Mobility Delusions*. London: Civitas Press, 2012.
- Wang, Weiyi. *Research on Opportunities for Admission to Higher Education: A Social Strata Perspective* (高等教育入学机会研究: 社会阶层的视角). Guangdong: Higher Education Press, 2011.

- Xie, Zuoyu and Wang Weiyi. "An Exploration of Differential Opportunities for Admission to Higher Education for Children from Different Social Strata: A Survey of Some Colleges and Universities in Shaanxi, Fujian, Zhejiang and Shanghai" (不同社会阶层子女高等教育入学机会差异的探讨——陕、闽、浙、沪部分高校调查). *Southeast Academic Research* (东南学术), 2004, supplement.
- . "Research on Differential Opportunities for Admission to Higher Education for Children from Different Social Strata: In Terms of Disciplines and Specialities" (社会阶层子女高等教育入学机会差异研究——从科类、专业角度谈起). *University Education Science* (大学教育科学), 2005, no. 4.
- . "Research on Differential Opportunities for Admission to Higher Education for Children from Different Social Strata in the Context of Mass Higher Education" (高等教育大众化视野下我国社会各阶层子女高等教育入学机会差异的研究). *Journal of Educational Studies* (教育学报), 2006, no. 2.
- Yan, Guangfen and Wang Hongyu. "Analysis of Access to Quality Higher Education Resources and Its Determinants: A Social Stratification Perspective" (优质高等教育资源的获得及影响因素分析——从社会分层的视角出发). *Modern University Education* (现代大学教育), 2012, no. 1.
- Yang, Dongping. *Ideal and Reality in China's Educational Equity* (中国教育公平的理想与现实). Beijing: Peking University Press, 2006.

—Translated by Hao Jinchuan from
Zhongguo Shehui Kexue (中国社会科学), 2014, no. 8
Revised by Sally Borthwick