When Choices Become Chances: Extending Boudon's Positional Theory to Understand University Choices in Contemporary China

Abstract

This article extends Boudon's positional theory to understand how students from different social backgrounds estimate their academic performance and how they translate their choices into the final destinations in higher education in the context of contemporary China. I draw upon empirical evidence from a first-hand survey study involving 2,425 undergraduates from different social backgrounds and from different types of universities. The statistical analyses suggest that students from privileged backgrounds and metropolitan areas are more likely to achieve both the institution and field of study of their choice. Geographical origin is the most consistent factor in predicting the overestimation of academic performance and in successful translation of choices into the final desired destinations. Therefore I argue there is a meritocratic legitimation of geographical inequality between developed regions like Shanghai and under-developed areas through higher education selection.

Key words:

Boudon; China; choices in higher education; social reproduction; the Gaokao; the three-choice system

Introduction

The young generations in China have experienced remarkable new opportunities in the past two decades. As a rapidly rising global power, China is shifting its economic focus towards technological innovation and scientific advancement, and this has created a growing demand for high-value and highly skilled labour (Jacques 2012). Mass higher education recruitment has sought to meet this demand (Author B; Marginson 2016). There is a growing volume of research in different disciplines into the massification of higher education in contemporary China (Author A). Higher education has expanded rapidly during the past two decades, with gross enrolment ratios at 30 per cent by 2013 (World Bank 2015). The ambitious 'world-class university' project has produced an output of science and technology graduates that has already outpaced that of Western countries (Carnoy et al. 2013; Brown et al. 2010). Moreover, women have achieved substantial participation in higher education, from less than 30 per cent in 1980 to 50 per cent in 2013 (Author C, D).

However, many unanswered questions remain in the research on higher education in the Chinese context. Existing research shows that the expansion of higher education opportunities has powerful effects on individual life chances (Author A, D; Tam and Jiang 2015), as well as on the changing forms of governance in higher education and on government's national development strategies (Marginson 2016). We also know that access to higher education varies for people from different social and geographical origins (Author A, C) and that the wage premium for graduates from elite universities is significantly higher than that for graduates from non-elite universities (Li et al. 2012; Hartog et al. 2010).

Much less is known, however, about the process by which expansion is impacting on equality of educational opportunities. In particular, there has been little research on the complex system of access to higher education in China. This involves both university quotas for students from different areas, as well as a process by which students from different socioeconomic and geographical origins make choices of types of universities and fields of study, which are crucial to their chances. This article is therefore designed to investigate the extent to which students' social origins affect their choices and transitions into higher education. The analysis of socioeconomic characteristics on the impact of choice patterns will also help to shed light on the unique contextual factor—the importance of geographical origins on higher educational opportunities.

Boudon's positional theory: primary and secondary effects

This article draws on the work of Raymond Boudon on educational opportunities, which is particularly relevant to systems undergoing rapid expansion. In Boudon's positional theory of 'primary and secondary effects' (Boudon 1974), social reproduction in education occurs through a dual process. The primary social reproduction effect occurs through the direct influence of parental cultural capital on the child and the child's ability to achieve in school (Boudon 1974). However, social reproduction also occurs through secondary effects, whereby the impact of parental cultural capital is mediated by choices that children themselves make about their educational careers which, in turn, influence their future educational achievements. In this regard, the nature of the available choices will be affected by the structure of an education system, which may promote social reproduction to a greater or lesser degree. Specifically, an education system with multiple branching points will allow more room for students' choices to impact their ultimate achievements, thus increasing the space for cultural capital to intensify the process of social reproduction.

Boudon's theory is comparatively less explored in the contemporary sociology of education than Bourdieu's cultural capital thesis. However, the former is of particular relevance to understanding social inequality during the expansion of higher education opportunities in the era of globalisation. First, Boudon argues that primary effects of cultural capital might decline in advanced tracks of the education system (Boudon 1974, 1998). This is partly because students from working-class backgrounds tend to either enter the labour market at an early stage or leave these tracks due to unfavorable positions in competitive examinations. Meanwhile, those from under-privileged backgrounds who stay on the educational track might have achieved a desirable academic level to allow them to seek further education opportunities. In this scenario, primary effects might be reduced and secondary effects might become more pronounced, so that educational choices will make an impact.

Second, the transition from secondary schooling to post-compulsory education allows more space for making choices, which have been limited either by the compulsory nature of the schooling system or by the availability of subjects in the curricula in previous transitions (Boudon 1974, 2003). In this regard, the choices that have opened up in higher education include types of institutions, fields of study and geographical mobility (Author B; Shavit et al. 2007). The recent development in

higher education, in most if not all societies, is the expansion at the horizontal, vertical and transnational levels (Marginson 2016). Therefore, the choices in higher education assume greater importance in this context.

The nature of higher education provision has changed significantly since the 1990s, partly because of the intensified global competition between countries in the era of the knowledge economy (Brown et al. 2010) and partly because of the impact of neoliberal policy that has reshaped the governance of higher education in many countries (Mundy et al. 2016). Diversification and differentiation are two main characteristics of the expansion of higher education. There has been an increasing diversity of provisions involving the public, private and joint venture organizations in creating a quasi-market of higher education institutions in many countries (Triventi 2013). Moreover, fields of study have also become diversified as a response to a wider demand of growing clientele (Author B).

Furthermore, the higher education system has been increasingly stratified both nationally and globally, which is evident from the rise of international ranking systems including the Times Higher Education, Shanghai Jiaotong Index for institutional ranking and the QS World University for the subject ranking (Matthew 2015). The global and national competition puts the pressures on the national governments to prioritize elite universities that compete well internationally and also to economize on the costs of higher education by focusing their resources on their elite research institutions while marketizing the teaching-oriented institutions (Author B). As a result, university types are becoming more disparate, and the hierarchies of institutions and subjects more pronounced in many countries (Shavit et al. 2007). Therefore, this increasingly diversification and stratification will affect what choices students make about types of institutions and fields of study.

Boudon's positional theory argues that students make different choices 'according to their position in the stratification system' (Boudon 1974: 36). The position is elaborated along two dimensions—socioeconomic position and cultural identity. The former is often argued to involve rational choices (Boudon 2006, 2003; Breen and Goldthorpe 1997; Coleman 1990), whereby, for instance, prospective students calculate the economic cost and benefits of a particular university degree or field of study. The latter means that students make decisions that are shaped and constrained by their cultural identity (Atkinson 2012; Duru-Bellat 2010; Scherger and

Savage 2010). Formulated as such, the theory stresses the dual positions, which are not contradictory but complementary in the process of decision-making.

Scholarship on the sociology of education has explored the relevance of positional theory to understanding students' educational choices. The first of the scholarly perspectives on this issue highlights how the dual position affects the estimation of chances of those from different backgrounds regardless of prior academic performance. It is argued that students from less privileged backgrounds tend to under-estimate their potential (Thomsen et al. 2013; Jackson 2012; Duru-Bellat et al. 2008; Jackson et al. 2007). For instance, Duru-Bellat finds that French working-class students tend to underestimate their academic performance in the lycée and therefore choose less ambitious vocational pathways instead of academic tracks (Duru-Bellat 2010; Duru-Bellat et al. 2008).

Similarly, Sianou-Kyrgiou and Tsiplakides's (2011) study shows that students from working-class families in Greece made less ambitious choices than those from privileged backgrounds even when they achieved similar levels of academic performance. In England and Wales, working-class students were found to be less likely to make ambitious educational choices even when their A-level results suggested their ability to aim high (Jackson et al. 2007). It is argued that 'static and homogeneous class subcultures' (Jackson et al. 2007: 224) limit the ambitions and aspirations of less privileged students who under-estimate their academic potential and fear the identity costs of the social dislocation and failure that may result from aspiring choices.

The second perspective stresses how cultural identity and socioeconomic position also shape students' choices about types of fields of study. Davies and Guppy's (1997) research on students' choices in the United States demonstrates that working-class students tend to choose fields of study in which the effects of their parents' cultural resources, operationalized as family reading habits, are minimized, when academic ability is controlled, and which offer high economic returns. A more recent Danish study finds that students from middle and upper-class backgrounds tend to choose Medicine, Architecture and Economics, whilst working-class students are more likely to choose less selective programmes (Thomsen et al. 2013).

Moreover, the two positional factors are likely to affect students' assessment of risks even more in an increasingly uncertain society. Clark et al.'s (2015) recent study finds that working-class students in England are less risk-taking than their middle-

class counterparts and that they seek to maximize the benefits of their degrees by choosing fields with good 'value for money' as a way of compensating for their social disadvantages. The level of risk-taking in relation to social backgrounds is also explored in studies on American youth in the era of uncertainty (Putnam 2015; Silva 2013). In-depth individual interviews with young people from privileged backgrounds illustrate how they are more risk-taking and how their family resources and parental support cushion the negative impact of 'bad choices' or 'under-performance' (Putnam 2015). By contrast, Silva's (2013) study presents a painful picture of deprived youth who are trapped in chronically unemployed families and unable to make bold choices other than 'going to community colleges'.

We know in general terms that the expansion and stratification of opportunities in higher education provide more space for students' choices, and that students' dual positions shape their choice strategies. However, we still know little about how this works in different national contexts with different education systems. In this article, I will examine, the effects, in the Chinese context, of students' dual positionality on: 1) their estimations of academic performance in the University Entrance Examinations (the *Gaokao*) and 2) their choices of institutions and fields of study.

University choices in contemporary China

China offers some attractive attributes as a case with which to examine Boudon's positional theory. First, the unprecedented expansion of higher education and the stratification of the system since the 1990s allow more space for choices (Author A). It is estimated that the gross enrolment ratio of higher education increased from 3.1 per cent in 1990 to 23.32 per cent in 2010 to 29.7 per cent in 2013 (UNESCO, 2015). As more students pursue higher education degrees, the system expands horizontally as well as vertically. The number of comprehensive universities and vocational institutions at the provincial level has swollen, accounting for 80 per cent of the total number of higher education institutions (MOE 2011). This is partly a result of the introduction of tuition fees in 1997 and the withdrawal of state funding from higher education, which began the shift to marketized choices for higher education (Author D). Meanwhile, the elite (985) and key (211) universities at the top of the pyramid account for less than 20 per cent of the total number of higher education institutions (MOE 2011; MOE 2008).

The stratification of the higher education system has strong implications for labour market outcomes. Existing scholarship has used a variety of indicators to measure the outcomes of different types of university education, including wage premium, income level, and destinations in managerial positions. Li et al. (2012) find that the wage premium of attending the 985 and 211 universities was 26.4 percent by drawing on data from the 2010 Chinese College Students Survey. Similarly, Hartog et al. (2010) confirm that the students who attended the top 100 universities earned 25-30 per cent more than the graduates from non-elite universities. Hu and Vargas, using the data from the Chinese General Social Survey (2008), find out that the graduates from top-ranking universities are more likely to assume a managerial position (2015).

Second, in addition to the hierarchal system, the fields of study have become differentiated within the same tier of higher education institutions and between different tiers (Li 2014; Author A). Technology, natural sciences and engineering are comparatively more selective, as measured by their enrolment criteria (Author A) and evidenced by their labour market returns (Guo et al. 2010; Hartog et al. 2010). The relatively higher value of these fields of study is made even more apparent by the fact that nearly 43 per cent of the elite (985) universities are STEM-specialised universities (MOE 2011). Hu and Vargas's (2015) analysis suggests that the economic advantages in wages and employability of the STEM graduates were significantly higher than those of graduates from medicine as well as the humanities, social sciences, arts and sports.

The increasingly hierarchical differentiation of pathways by types of institution and fields of study provides multiple branching points, which allow more space for choices in universities (Author B). This is also fuelled by the complicated higher education application procedure after the *Gaokao* whereby students can enter choices regarding both university tier and field of study on their 'University and Field Forms' (see Table 1). The so-called 'three-choice' system firstly refers to the three preferred choices of institutions identified in three tiers of the system (i.e., the key universities, the non-key institutions and the non-degree institutions). Secondly, for each institution listed, at least three further choices of preferable fields of study are to be specified in the submission[1].

[1] In shanghai, students are asked to submit 4 choices for elite and key universities and 6 for non-key universities, and a further 6 choices of fields of study in each category.

Table 1 about here

Students' choices in the Forms are directly affected by the 'cut-off' points set up by the local Ministries of Education. For instance, the Ministry of Education in Shanghai specify different *Gaokao* cut-off points for entry to the key and non-key universities and the non-degree colleges and for entry to two broad tracks -natural sciences and social sciences. Meanwhile, individual institutions not only adjust its own cut-off points against the Ministry's guideline; but they also operate a quota policy, which assigns recruitment quota for specific fields of study for applicants from different geographical origins (Author A, C). If one field is over-selected, the entry point will raise. By contrast, if one field is under-subscribed, the entry point will be lowered. Regardless, the quota tends to favour local applicants (Author A, C; Loyalka 2009).

Given the complication with cut-off points and quotas, completing the form involves making choices which require sophisticated analytical skills and good information (Loyalka, 2009; Author A). Generally speaking, students make choices by drawing on their estimated *Gaokao* scores[2] as well as the information[3] on the recruitment targets, the average admission scores, and the highest and lowest *Gaokao* scores for different fields of study.

The sequence of three choices of institutions and fields of study is of crucial importance. The first choice of an institution and a field of study deserve careful consideration, since it largely determines the chances of one's final university destination (Loyalka et al. 2012). Considerable risks are involved in making the first choice, since students might be rejected if their *Gaokao* scores fail to meet the entry threshold of the nominated university or field. Furthermore, students might risk not being accepted by any chosen universities in the same tier if the first-choice university rejects the application (Loyalka et al. 2012; Li et al. 2012). This is a result of fierce competition among institutions in the same tier, because individual institutions prefer

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For other provinces, there are 3 choices for universities in different tiers and further three choices for fields.

[2] Some provinces publish their *Gaoako* results prior to the deadline of the submissions of the Forms; however, some areas do not release the *Gaokao* results until the forms are submitted to the local Ministries of Education.

[3] The local Ministries of Education publishes *the Guide of the Choices of Higher Education Institutions* annually before the *Gaokao*, which is also accessible on-line. The *Guide* provides information about the admissions patterns of institutions for at least past three years

to be the first choice and penalize candidates who list them as the second or third choice by raising the entry threshold by at least 50 points (Loyalka 2009). If one's first choice in an institution or field of study is rejected, one can always choose the Consent Option on the form, which allows applicants to be assigned to any field of study and any university whose entry points match their academic performance.

Given the limited existing research on how students' choices mediate social background effects on educational destinations in China, this research explores how students from different social origins estimate their chances and translate their chances into destinations in higher education during the application process. It asks the following questions:

1) What are the social characteristics associated with student overestimation and underestimation of their performance in the *Gaokao*?
2) To what extent can students translate their choices into desired fields of study, institutions or both?

Data and variables

The research is based on a first-hand survey study of undergraduates, which was conducted by myself and my contacts between December 2014 and July 2015 in Shanghai. Shanghai was chosen as the main research site due to the variety of institutions and diverse student population. Shanghai is home to 5 (out of 40) elite universities, 12 (out of 123) key universities and 31 (out of 820) comprehensive and specialised degree institutions. Moreover, there is also a diverse student population from different social as well as geographical backgrounds. This survey study includes a sample of 2,425 first-year undergraduates aged between 18 and 20 (equivalent birth cohort between 1995 and 1997).[4]

We visited four different types of universities in Shanghai after the ethical approval and confirmation of the cooperation of these institutions. These included one elite university, one key university, one comprehensive university and one university specialising in Finance and Accounting. Students in the survey came from a variety of fields of study, including Environmental Science, Medicine, Engineering, Law,

[4] The survey aims for a minimum effective achieved sample size. Therefore, the estimated population size for the eligible cohort who entered higher education in 2015 is 3,600,000. The minimum effective achieved size will be 2,400. The target invited population size is 3,850, and the final response rate was 63 per cent. The final number of valid questionnaires is 2,425 after excluding questionnaires with missing values for key variables.

Foreign Languages, Literature and History, Accounting, Finance, and Media Studies. In regards to sampling strategy, students were randomly selected from different types of universities and fields of study. We approached the students in the campus canteens, sports centers and the libraries in the four universities. In addition, we also recruited the students via social media QQ and WeChat. The face-to-face response rate was 51 per cent and the on-line response rate was 74 per cent. Table 2 provides the details of the student population for the new recruits in each university in 2014, the number of approached students and the final number of students from the birth cohorts 1995-1997 who participated in the survey.

Table 2 about here

The questionnaire survey was designed to elicit information regarding both independent and dependent variables, so as to investigate how students from different social and cultural backgrounds make choices to optimize their chances in higher education. The former include socioeconomic status, parental educational level, geographical origins, gender and schooling. The latter include students' positional scores, which are measured by comparing their actual academic scores in the *Gaokao* in relation to the average entry points from the birth origins, and final destinations in fields and institutions.

The rationale for using positional scores deserves some explanation. The *Gaokao* is a university entrance examination at the national level; however, there are some exceptions, like Shanghai, Jiangsu and Zhejiang, where local examinations are implemented to cater the educational needs for the native population (Author A; Hannum et al. 2011). Table 3 compares the local *Gaokaos* to the national *Gaokao* in terms of the absolute points. The maximum score in the national *Gaokao* in 2014 was 750. However, the local *Gaokao*s have different maximum scores, varying from 480 in Jiangshu, to 600 in Shanghai, 810 in Zhejiang and 900 in Hainan. Therefore, it would be impossible to use absolute scores to compare students from different geographical origins who are enrolled in the same university in Shanghai. Hence, this analysis uses the measure of the positional *Gaokao* scores by dividing the *Gaokao* scores by the average entry points of students from the same geographical origins enrolled in the same university. Information on entry points by geographical origins was obtained from the Student Recruitment Office at each university prior to the

survey study. The list of average entry points alongside highest and lowest entry points by geographical origin was attached as an Appendix to the questionnaires.

Table 3 about here

The positional scores are easily calculated from this information. For example, student A's *Gaokao* score was 485 in 2014. Since this student is a native of Shanghai and her destination is in the Humanities track in University A, the positional score will compare her actual *Gaokao* score of 485 to the average entry score (491) to University A for students from Shanghai. Therefore, the positional score for Student A is -6, or 6 points lower than average entry score. For the same track and same university, student B from Henan sat in the national *Gaokao* in 2014 and obtained 610 points. However, the average entry score for students from Henan was 601 in 2014. Therefore, the positional score for student B is 9, or 9 points higher than the average entry score. In the analysis students with positional scores lower than the average entry score for their chosen destination are said to overestimate their performance, whilst those with positional scores higher than the average entry score are said to underestimate theirs. Therefore, student A overestimated her *Gaokao* performance, whilst the student B under-estimated his academic level in accessing University A. In the questionnaires, students were asked to define their positional scores as 1) above or equal to 0 or 2) below 0.

The coding of independent variables is detailed in Table 4. Socioeconomic status uses the Lu Xueyi's conceptualization of contemporary social stratification in China (Lu 2010) and modifies it into four main groups. Parental educational level is another important indicator for socioeconomic characteristics (Tam and Jiang 2015; Hannum et al. 2011). The coding of educational levels is also detailed in Table 4. The questionnaires asked for the educational level of both fathers and mothers and the highest level of education between the parents was chosen in the analysis. Types of schooling and gender are also considered as important indicators of social characteristics.

Table 4 about here

Geographical origin is very important in the Chinese context. There is a high level of mobility of students between different geographical regions in access to higher education. The commonly used coding of geographic origin in China is the rural-urban distinction (Hannum et al. 2008; Author C D). However, this does not capture the complexity of student mobility and choices. Instead, this study

distinguishes between the native Shanghai students, the students from other metropolitan areas, such as Beijing and Tianjin, and those from the rest of China. This allows for an investigation of the extent to which different entry examinations and different university recruitment plans between Shanghai, other metropolitan areas and the rest of China, affect the opportunity structures of higher education.

Table 5 presents a general picture of social characteristics of the surveyed students in terms of socioeconomic status, parental educational level, gender, geographical origins and types of schooling in comparison to the national data. Among the sampled population, the top two socioeconomic groups, including the managerial class, leading cadres and professionals, are over-represented in higher education, accounting for 12.5 percent of the national population but around 40 per cent of the higher education participants. By contrast, the agricultural class are under-represented, accounting for two thirds of the population but only one fifth of the surveyed students. The working class is also under-represented, with around 37 per cent in the survey in comparison to nearly half of the total population.

As far as social background is concerned, those whose parents have completed higher or secondary education have the largest representation in higher education. By contrast, those students whose parents have less than secondary schooling only account for one fifth of the surveyed population. Female students have a slightly higher representation than male students, with a ratio of 1.4 in the survey and 0.91 at the national level. Students from key schools are over represented. Their graduates account for two thirds in the surveyed population, although key schools make up only 20 per cent of the state schools (Liang and Lee 2012). The native Shanghai students have a clear advantage in access, accounting for more than one third of the surveyed students. The students from the metropolitan cities of Shanghai, Beijing and Tianjin represent more than two-thirds of the surveyed population in contrast to less than 5 per cent of the total national population. The students from the rest of China only account for 40 percent in the survey, whereas the 29 provinces represent 95 per cent of the whole national population.

Table 5 about here

Hypotheses and results

I will highlight the regression analysis for two hypotheses concerning Boudon's positional theory (Boudon 1974). The first hypothesis is concerned with one's estimated chances. Boudon's thesis suggests that students from privileged social and cultural backgrounds will be more confident in making educational choices and that they are likely to over-estimate their academic performance. In this analysis a number of models are tested for the impact of the socioeconomic and demographic characteristics on students estimates of their chances, using positional scores as described above.

Overestimation is defined by positional scores below 0, whilst underestimated scores are above or equal to 0. The logistic regression predicts the log odds that an observation will have an indicator equal to 1. The odds of the overestimation of one's chances are defined as the ratio of the probability that a student overestimates their positional score to the probability that the candidate underestimate their positional score. A series of binary logistic regression analyses are used to predict the odds of overestimation (coded 1) rather than underestimation (coded 0). The modelling equation is thus:

$$(\log)Yi = \alpha + \beta 1\chi 1 ... \beta i\chi i$$

Table 6 reports the results of a series of binary regression of the over-estimates of one's chances in the 2014 *Gaokao*. Model 1 shows the net effect of parental socioeconomic status on the *estimated chances*. Students with professional or managerial parents or cadre parents in managerial positions are most likely to overestimate their chances. Parental socioeconomic status has a significant positive impact on the probability of overestimation. Model 2 introduces parental education level alongside parental socio-economic status and shows that both have a significant positive impact on student over-estimation of chances. Students with graduate parents are most likely to over-estimate their chances, but students with parents who achieved secondary schooling are also more likely to overestimate their performance than those from less educated families.

Meanwhile, the impact of socioeconomic backgrounds seems to be reduced when parental educational level is included. This might be related to some overlapping effect between socioeconomic status and educational level. In other words, those in professional positions are more likely to achieve higher educational levels. Model 3

demonstrates the gender difference in estimated chances. It is shown that male candidates are more likely to overestimate their performance than female candidates.

Models 4 and 5 introduce geographical region and types of schooling. A significant impact of geographical origin on estimated chances is shown in Model 4. Students from Shanghai and those from Beijing and Tianjin are more confident than those from provincial areas in estimating their academic performance. In particular, when geographical origin is included, the effects of social characteristics become insignificant. Model 5 introduces types of secondary schooling, and it is shown that the graduates from the key schools are more likely to overestimate their academic performance than those from regular state schools. However, the impact of geographical origin is still significant when including the types of schooling.

Table 6 about here

The second hypothesis is concerned with the extent to which students from different social and geographical origins maximize their chances through the 'three-choice' system and reach the desired destinations in higher education. Boudon's positional theory indicates that students from privileged and cultured backgrounds would be more successful in translating their choices into their final destinations in higher education. When extending this theoretical standpoint to the Chinese context of the three-choice system, it is important to contextualise the successful translation of one's choices into the final desired destinations. Therefore, I propose a three-stage measure of the destinations. The first stage is concerned with the destinations in the desired institutions; the second stage measures the destinations of the desired fields of study; and the third stage concerns both the desired institutions and the desired fields of study.

In order to capture the complexity of student choices, I further develop three sub-hypotheses to capture the higher education destinations through the 'three-choice' system. The odds of maximizing one's chance of achieving the final destination is defined as the ratio of the probability that a student is accepted by any chosen institution, any chosen field, or both a chosen institution and a chosen field to the probability that the candidate fails to get into any listed institutions, any listed fields of study, or either a chosen institution or a chosen field. A series of binary logistic regression analyses are used to predict the odds of a successful translation of one's choices (coded 1) rather than an unsuccessful translation of one's choices (coded 0). The modelling equation is thus:

$$(\log)Yi = \alpha + \beta 1\chi 1 ... \beta i\chi i$$

Two models are used to capture the impact of social origins as well as demographic features. Model 1 assesses the net effect of parental socioeconomic status and educational level. Model 2 includes geographical origins, gender, and types of schooling, along with socioeconomic characteristics. Table 7 reports the results in three columns representing three desired destinations: the first column for institutions, the second for fields of study and the last for both institutions and fields of study.

For institutions in Column 1, Model 1 shows the net effect of parental socioeconomic status and educational level on the *translation of choices* into desired institutions. It is shown that students from managerial and professional backgrounds have a strong and significant advantage in making a successful transition into desired institutions compared to those from working-class and agricultural families. Similarly, students whose parents had higher education or secondary schooling are significantly more likely to make a successful choice of institutions than those with parents who had less than secondary schooling.

Model 2 shows that male candidates are more successful in the translation of their choices than female candidates. Geographical origin also has a strong and significant impact on the successful transition into institutions. This means that students from Shanghai, Beijing and Tianjin are more successful in realizing their choices of desired institutions than those from other provinces. Also, students from the key schools are significantly more likely to be accepted by their chosen institutions than those from non-key schools.

For the second column on fields of study, the patterns are different from those of the previous column. Model 1 examines the impact of parental socioeconomic and educational level on successful translation of choices into fields of study. Students with professional and managerial parents are no longer significantly more likely to achieve successful transition into desired fields. However, students from working-class families are significantly more likely to do so than those from other social origins. Those whose parents had less than secondary schooling are most successful in reaching the desired fields of study.

Model 2 includes additional demographic measures in the regression analysis. The difference between male and female students is not significant in terms of translating one's choices into destinations. Geographical origin has a significant positive impact on the successful translation in fields. Students from Shanghai and

other metropolitan areas are more successful in being accepted by their chosen fields of study than those from other provinces. Similarly, students from the key schools are more successful compared to those from normal schools.

When considering the successful translation of one's choices into both desired institutions and fields of study, Column 3 illustrates socioeconomic and demographic effects. Model 1 shows that students from privileged backgrounds, including managerial and professional families, are significantly more successful in realizing desired destinations in both institutions and fields of study, and those whose parents have more education have better chances in both fields and institutions. Model 2 highlights that male students are generally more successful than their female counterparts in achieving both desired destinations. Students from Shanghai and other metropolitan areas are significantly more likely to be successful compared to those from other provinces. Students from key schools are significantly more successful compared to their counterparts from normal schools.

Table 7 about here

Discussion

This study extends Boudon's positional theory to understand how students from different social backgrounds estimate their *Gaokao* academic performance and how they translate their choices into their final destinations in universities in the context of contemporary China. The statistical analyses partially confirm the applicability of Boudon's theoretical perspectives of secondary effects to the Chinese context. First, Boudon's positional theory is correct in emphasizing social reproduction through educational choices, which are built upon primary effects on academic performance and translated as the level of confidence and expectations. The estimation of academic performance in the *Gaokao* is crucial to making choices in higher education. This study focuses on the patterns of the overestimates and underestimates of those who have already been accepted in higher education by analyzing the nature of positional scores. This particular analytical strategy allows us to examine the extent to which students from different social backgrounds translate their academic performance into their relative chances in the desired destinations in higher education.

Parental socioeconomic status and educational level seem to play an important role in the estimation of academic performance, as measured by the positional scores

in the *Gaokao*. That is, students from managerial and professional backgrounds are more confident about their academic performance and are therefore more likely to overestimate their academic performance. In contrast, those from working-class and agricultural families tend to under-estimate their academic performance.

Strikingly, geographical origin seems to be the most important factor in predicting the possibilities of overestimates and underestimates of the *Gaokao* performance, even when socioeconomic characteristics are included. The advantages and confidence of those born in Shanghai, Beijing, and Tianjin are in contrast to the insecurities experienced by those from the provincial areas in estimating their respective academic performance. This result reveals the deep-seated conflicts in the opportunity structure between affluent metropolitan areas like Shanghai and less developed regions.

Second, Boudon's positional theory is also relevant in understanding the different choice strategies of students from different social backgrounds. Students from privileged backgrounds and metropolitan areas are more likely to achieve both the institution and field of study of their choice. Students from less privileged backgrounds are less likely to achieve both and therefore seem to prioritize fields of study. This may be because they believe they have more chance of enhancing their employability by choosing a type of degree with relatively good employment prospects in a mediocre university, than by choosing a more prestigious university but with a field of study less likely to deliver a good job.

It can be argued that the pattern of overestimation of academic performance and successful choice strategies of students from privileged backgrounds suggests that they are more risk-taking than those from working-class and agricultural families. Those from underprivileged backgrounds are perhaps more conservative about choices, and they might minimize the risks by prioritizing the fields of study and future employability. Other demographic factors, such as gender and types of schooling, seem to be more consistent in predicting the successful translation of one's choices into the final desired destinations. It can be argued that social inequality in the choice strategies in higher education can be traced to the uneven quality of secondary schooling across different regions.

Conclusions

This study points to a number of conclusions, some of which perhaps have implications for empirical research of Boudon's positional theory and some of which are particularly relevant to some important issues regarding the inequality of opportunities in the Chinese context. First, Boudon's positional theory is of particular relevance to understanding how students make choices about universities and fields of study in China. Social reproduction manifests in different patterns of the estimation of academic performance in the *Gaokao*, which has direct implications on students' subsequent choices. Boudon's emphasis on educational choices, rather than a narrow focus on cultural reproduction through families' cultural activities, is particularly insightful in understanding the growing complexity of choices associated with access to higher education in the era of globalization.

Second, social reproduction seems to be masked by the supposedly meritocratic selection system of the examinations-based *Gaokao* and the three-choice system. The *Gaokao* results are the main entry criteria to access higher education in China, which, to a certain extent, has been argued to be meritocratic in previous studies (Author A, D). The three choices appear to correspond to the *Gaokao* outcomes, with specific and detailed choices matching vertical and horizontal stratification of higher education. The seemingly meritocratic process, from academic performance to choices, hides the advantages and disadvantages of students from different social and geographical origins. The confidence of privileged social groups is enhanced by the choice system, whilst the risks and insecurities of students from poor backgrounds and regions make them more conservative and less risk-taking. Thus, social inequality is dressed up in the seemingly coherent and logical choice system in access to higher education.

The main conclusion I would advance for this article is a meritocratic legitimation of geographical inequality between developed regions like Shanghai and under-developed areas through higher education selection. Consistent with previous research about education inequality (Author C; Tam and Jiang 2015; Wu 2010; Hannum et al. 2008; Hannum and Wang 2006), this study found that geographical inequality is the main stratifier in distributing educational opportunities and life chances across China.

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Tables and figures

Table 1: A Sample of the University and Field Form

Universities with priority selection rights including military colleges, national security colleges and teachers training colleges			
Institution	Field		
1	1	2	3
2	1	2	3
3	1	2	3
Tier 1 Universities (the 985 and 211 institutions/ the key universities)			
Institution	Field		
1	1	2	3
2	1	2	3
3	1	2	3
Tier 2 Universities (non-key institutions)			
Institution	Field		
1	1	2	3
2	1	2	3
3	1	2	3
Tier 3 Colleges (thee-year certificate programmes)			
Institution	Field		
1	1	2	3
2	1	2	3
3	1	2	3

Source: the Ministry of Education 2016

Note: The majority of the provinces use the admission procedure in the form. However, the Ministry of Education in Shanghai includes 4 choices for each institution, and further 6 fields of study for each institution。

Table 2: The student population and the surveyed students in the four institutions

	Total population of the 2014 entrants	Number of Approached students	Final number of the students of the age cohorts 1995-1997
U1	4, 149	963	591
U2	4,725	967	619
U3	5,129	965	602
U4	5,250	955	612

Table 3: The local *Gaokao*s in comparison to the national *Gaokao* in terms of the total points

	Total points in the *Gaokao*
Shanghai	600
Jiangsu	480
Zhejiang	810
Hainan	900
All other geographic origins	750

Source: The list of entry points and thresholds of University A between 2013 and 2015.

Table 4: Coding of the independent variables

Independent Variables	**Coding**
Socioeconomic status	01 Managerial class and cadres in a managerial position; 02 Professional class; 03 Urban working class; 04 Rural agricultural class
Highest parental education level	01 Higher education 02 Completed secondary schooling 03 Less than secondary schooling 04 Less than primary schooling
Geographical origin	01 Shanghai 02 Other metropolitan cities (Beijing and Tianjin) 03 the rest of the provinces
Gender	01 male 02 female
Schooling	01 Key/model schools 02 Normal state schools

Table 5: The general social and demographic characteristics of the surveyed students in comparison to the national data

	Percentage in surveyed cohorts (1995-1997)	Percentage in the whole population or the national level whenever applicable
Socioeconomic status		
Managerial class and cadres in a managerial position*	18.7	6.2
Professional class	23.4	6.3
Working class	37.6	47.2
Agricultural working class	20.3	40.3
*Parental education level***		
Higher education	17.4	6.22
Completed senior secondary schooling	58.7	12.92
Less than secondary schooling	23.9	72.07
*Gender****		
Male	41.3	52.4
Female	58.7	47.6
*Geographical origins*****		
Shanghai	31.4	1. 77
Beijing and Tianjin	9.7	2. 68
The rest of China	58.9	95.55
Types of schooling		
Key schools	64.2	20
Normal state schools	35.8	80

Source: NBSC (2009, 2015); Lu Xueyi (2010); the survey data

Notes: * The cadre in a managerial position is defined as the rank of cadres as the ke or about the ke.

** The data of the educational attainment at the national were given as the population above age 6 (NBSC, 2014).
***The gender ratio only includes the age cohorts between 15 and 24 in 2014 from the China Statistical Yearbook 2015.
**** The population data for Shanghai, Beijing and Tianjin are from the China statistical yearbook 2015.

Table 6: Binary regression results of over-estimation of one' academic performance

	Model 1	Model 2	Model 3	Model 4	Model 5
Socioeconomic status (Ref: agricultural backgrounds)					
Managerial class and cadres in a managerial position	1.331*** (.318)	1.386*** (.316)	1.286*** (.315)	. 890 (.065)	.074 (.302)
Professional class	1.838*** (.302)	1.512*** (.324)	1.474*** (.332)	.547 (.053)	.207 (.352)
Working class	.587 (.303)	.575 (.301)	.503 (.321)	.334 (.052)	.018 (.317)
Parental Education (Ref: less than primary schooling)					
Higher education		1.512*** (.324)	.761 (.351)	-1.023 (.201)	-1.220 (.274)
Completed secondary schooling		1.386*** (.316)	.041 (.331)	-.434 (.245)	-.626 (.384)
Less than secondary schooling		.096 (.398)	.012 (.332)	-.349 (.255)	-.313 (.361)
Gender (Ref: Female)					
Male			1.045*** (.251)	. 583 (.253)	.449 (.254)
Geographical Origin (Ref: the birth origins from the rest China)					
Shanghai origin				1.472*** (.235)	1.324*** (.064)
Beijing/Tianjin origins				1.304*** (.261)	1.023*** (.201)
Types of Schooling					

(Ref: regular secondary schools)					
Key/model Schools					1.242*** (.243)
Constant	-.63 (.31)	-.59 (.32)	-.56 (.34)	-.61** (.3)	-.72** (.31)
Chi-square	16.75***	28.79***	34.47***	43.43***	47.97***
DF	3	6	7	9	10
N	2,425	2,425	2,425	2,425	2,425

** p < .10, ** p < .05, *** p < .001*

Table 7: Binary regression results of successful translations of choices into chosen universities, fields of studies and both

	Destinations in chosen universities	(Column 1)	Destinations in chosen fields	(Column 2)	Destinations in both chosen universities and fields of study	(Column 3)
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Socioeconomic status (Ref: agricultural backgrounds)						
Managerial class and cadres in a managerial position	1.010*** (.245)	.931** (.242)	.251 (.243)	.204 (.041)	1.578*** (.273)	1.214*** (.262)
Professional class	1.127*** (.217)	.955** (.250)	.204 (.342)	.267 (.040)	1.360*** (.245)	1.025*** (.263)
Working class	. 417 (.254)	.279 (.251)	.742 ** (.353)	.546 (.240)	.557 (.280)	.439 (.227)
Parental Education (Ref: less than primary schooling)						
Higher education	1.053*** (.269)	.989** (.285)	.279 (.214)	.274 (.243)	1.105*** (.245)	.891** (.257)
Completed secondary schooling	931** (.252)	.753 (.272)	.254 (.273)	.212 (.209)	.979** (.247)	.773* (.272)
Less than secondary schooling	.427 (.287)	286 (.251)	.753** (.072)	.411 (.054)	.294 (.283)	.082 (.262)

Gender (Ref: Female)						
Male		1.034*** (.284)		-. 192** (.253)		1.008 *** (.289)
Geographical Origin (Ref: the birth origins from the rest China)						
Shanghai birth origin		1.153*** (.246)		.882** (.289)		1.025*** (.273)
Other metropolitan origins		.979** (.257)		.734* (.278)		.931** (.256)
Types of Schooling (Ref: regular secondary schools)						
Key/model Schools		1.100*** (.047)		.751* (.283)		1.174*** (.263)
Constant	-.43 (.41)	-.56 (.50)	-.49 (.34)	-.39 (.32)	-.84** (.32)	-.112*** (.31)
Chi-square	27.73***	50.72***	28.93***	45.32***	26.54***	47.10***
DF	6	10	6	10	6	10
N	2,425	2,425	2,425	2,425	2,425	2,425

** p < .10, ** p < .05, *** p < .001*