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in the People's Republic of China**



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# The Impact of the Cultural Revolution on Trends in Educational Attainment in the People's Republic of China<sup>1</sup>

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This article examines the effects of social origins on educational attainment, using data from the 1982 census of the People's Republic of China. Analysis of intergenerational relationships in China using census data is possible because nearly half of Chinese adult men live with their fathers. The authors show that the educational attainment of men is highly egalitarian with respect to social origins and has become increasingly so over time. During the Cultural Revolution (1966–76), the advantage of coming from an educated family or an intelligentsia or cadre family was drastically reduced. The weak association between father's socioeconomic status and son's educational attainment reflects massive state intervention.

Education is the engine of social mobility in modern societies. In all industrialized or industrializing societies for which we have data, the central answer to the question "who gets ahead" is "those who get educated" (Treiman, 1977).

<sup>1</sup> This article was prepared, in part, while Donald J. Treiman was in residence as a Fellow at the Center for Advanced Study in the Behavioral Sciences in 1992–93; his fellowship year was supported by a grant to the center from the U.S. National Science Foundation (SES-9022192). Additional work on the article was supported by grants to the University of California, Los Angeles, from the Ford Foundation-Beijing, the Luce Foundation, and the NSF (SBR-9423453). The article was revised during Treiman's tenure as a fellow at the Netherlands Institute for Advanced Study in the Humanities and Social Sciences (NIAS), in 1996–97. Earlier versions of the article were presented by Treiman at meetings of the Research Committee on Social Stratification and Mobility, Canberra, Australia, January 1994; the UCLA Seminar on Comparative Social Structure, April 1994; a seminar at the Department of Sociology, Beijing University, September 1994; a seminar at the Universities Service Center, Chinese University of Hong Kong, March 1996; the Reading Group on Transitional Societies, Department of Sociology, UCLA, April 1996; the Rand Corporation, August 1996; and the Stratification Working Group at NIAS, November 1996. The article has benefited from reactions of the meeting and seminar participants and in particular from comments by Thomas DiPrete, Mariah Evans, William Mason, David McFarland, Walter Müller, and Andrew Walder. Direct all correspondence to Donald J. Treiman,

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man and Yip 1989; Müller and Shavit 1997, p. 1). For this reason, the question of who gets educated has assumed a central place in stratification research. The dominant concern of this research has been to document and to understand the basis of variations in the role of social origins in educational attainment across societies and over time.

Of particular interest for us are claims that command societies (such as East European communist societies) substantially detached educational attainment from social origins by rapidly expanding the availability of education (particularly at the primary level), by substantially reducing or eliminating tuition fees at all levels, and by subsidizing students at higher levels, which removes the opportunity costs of electing further education over employment (see, e.g., Simkus and Andorka 1982). In addition, a kind of "affirmative action" was practiced, at least in some periods, in which children from worker and peasant origins were favored by the educational system and children from bourgeois or professional origins were disfavored (Parkin 1971).

Despite these claims, however, there is little evidence that the pattern of educational attainment in East European societies during the communist era was distinctive. Blossfeld and Shavit (1993), reviewing studies of educational attainment in 13 countries, detect no systematic difference between three then-communist East European countries (Czechoslovakia, Hungary, and Poland) and 10 market-oriented industrialized countries. Other studies reach similar conclusions.

Surely, if state educational policies matter, communist and noncommunist regimes should differ. Perhaps the problem is that Eastern Europe was not communist enough. Despite the rhetoric, the actual educational practices of European communist regimes may not have been radically different from those of West European countries. Moreover, the effect of state interventions to promote equality may have been weak relative to the effect of structural changes affecting West and East European societies alike.

We investigate a case that provides clear evidence of state interventions in the educational system for the explicit purpose of reducing class differences in educational achievements: China. From the outset of the communist regime in 1949 through the Cultural Revolution, which ended in 1976, the Chinese government tried, in a variety of ways (see below), to promote educational opportunities for the children of peasant and worker families at the expense of those from higher status backgrounds. Thus, if state policies matter at all, they should matter in China. We study the impact of these policies by analyzing trends in the effect of social origins on educa-

tional attainment in China over a 20-year period, for cohorts born between 1945 and 1964.

To date, no national sample survey of China has included the information required to assess intergenerational social mobility.<sup>2</sup> Thus, very little is known about the stratification system of the largest country in the world. For this reason, we decided to exploit an unconventional source—the 1982 census of China. The Chinese government has released a 1% public use sample of returns to the 1982 census, the first modern Chinese census.<sup>3</sup> Since the public use file is organized by households and since a large fraction of the population of China lives in “multiple generation households” (i.e., households in which there are two or more generations of adults), the census data are a potentially useful source of intergenerational information.<sup>4</sup> The obvious question is whether, or rather to what extent, a sample of multiple generation households is biased in ways that will affect the validity of conclusions regarding the effect of social origins on educational attainment. We return to this question below, after sketching the Chinese educational system.

### THE CHINESE EDUCATIONAL SYSTEM SINCE 1949

China adopted an American-style school system in 1922 (Gao 1985) and now has a 6-3-3-4/5 structure, that is, six years of elementary school, three

<sup>2</sup> Published studies concerned with status attainment exist only for China's three largest cities: Beijing (Xie and Lin 1986); Tianjin (Blau and Ruan 1990; Lin and Bian 1991; Bian 1994); and Beijing and Shanghai (Zhou, Tuma, and Moen 1996), but these are very atypical places. We know of only three other Chinese surveys containing information on father's occupation: (1) A 1988 survey in six of the 29 provinces of China, “Social Structure in Modern China,” was conducted by the Chinese Academy of Social Sciences, with separate questionnaires administered to urban and rural samples, but so far as we know only one paper, on intergenerational occupational mobility (Cheng and Dai 1995), has been published from it. (2) Davis (1992*a*, 1992*b*) has compiled life histories from 1,023 adult members of 200 families in Shanghai and Wuhan, but these are not from probability samples of these places and overrepresent high status families and individuals. (3) After our analysis was completed, an unpublished study of educational transitions during the communist era, based on data from 17 cities in five provinces (Zhou, Moen, and Tuma 1996) came to our attention. Its results are broadly similar to our own.

<sup>3</sup> We thank the UCLA Social Science Data Archive for obtaining the census file for us from the (unfortunately now defunct) China Statistical Archives at the University of Illinois, Chicago. As of this writing, tabulations from these data are available electronically from the Consortium for International Earth Science Information Network (CIESIN).

<sup>4</sup> A more extended exploitation of these data to study intergenerational social mobility and status attainment in China can be found in the first author's 1993 doctoral dissertation, “Status Attainment in China, 1949–1982” (Deng 1993).

years of lower secondary school (corresponding to American junior high school), three years of upper secondary school (corresponding to American senior high school), and four or five years of university education. After 1949, China's educational system fell under Soviet influence; thus, in 1951, China's Department of Education proposed a system of five years of primary school, five years of secondary school, and four years of university. But most school systems did not carry out this reform, retaining the 6-3-3-4/5 structure, with secondary education divided into academic and vocational tracks (Unger 1982, pp. 12, 33). Thus, the Chinese school system is structurally similar to that of industrialized countries. However, it was frequently subject to explicit political interference.

Nominally, China's system operates in a highly centralized way. All schools at a given level use the same textbooks and arrange their courses, requirements, teaching hours, and lesson speed according to teaching plans issued by the national Department of Education. Admission examinations are required for promotion to each higher level, starting with junior high school (except that examinations were suspended during periods of political upheaval such as the Cultural Revolution).<sup>5</sup> The higher the level, the more centralized are the admission examinations. The entry examination for junior high school was and is normally developed by the school itself; the examination for senior high school is developed by the education bureau of the city or county; and the nationally competitive examination to university or vocational college emanates from China's Department of Education in Beijing. China's examination system is intended to promote intellectual competence as the sole criterion for advancement.

However, for the first 30 years of the communist period, and to some extent even today, three criteria governed advancement through the educational system: academic performance, assessed by the entrance examinations, family class origin, and the student's own political loyalty (Shirk 1982, p. 41; Unger 1982, pp. 12-16).<sup>6</sup> The relative importance of these

<sup>5</sup> The Cultural Revolution (1966-76) was a decade-long mass movement, unleashed and, at least initially, orchestrated by Mao Zedong and his agents. Universities were shut down entirely from 1966 to 1972; students and other urban workers, especially professionals, were "sent down to the countryside" to work as peasants; political loyalty rather than competence became the main criterion for advancement. For good accounts of this period in Chinese history, see Bernstein (1977) and Lee (1978).

<sup>6</sup> In the 1950s, the Communist Party assigned a permanent "class" designation, inheritable in the male line, to each family on the basis of the family head's source of income, employment status, and political status in the years just prior to Liberation (Unger 1982, p. 13). These designations, which were included in student and employment dossiers, faded in importance only during the reform period beginning in the late 1970s. There were three main categories: good-class origins, middle-class origins, and bad-class origins, with many detailed subcategories. Here is (a slight adaptation of) Unger's (1982, pp. 13-14) specification of the entire scheme:

criteria varied substantially among different types of schools and over time, as we will see below.

One reason that family class origin was used as an admissions criterion was to give priority to the children of workers and peasants. Admission examinations permit students who have enjoyed superior prior schooling to obtain superior results. This favors students from urban areas, where the schooling is generally better. In addition, there are class differences in the acquisition of cultural capital at home, since family cultural capital depends substantially upon parental education and parental occupation (Ganzeboom, De Graaf, and Robert 1990, p. 95; Peng and Treiman 1993), and family cultural capital has been shown to strongly affect educational attainment (Bourdieu 1977; Bourdieu and Passeron 1977; De Graaf 1986, 1988).

Unequal cultural capital in the population, and differential school quality, undermined the communist goal of “eliminating the distinctions between town and country, industry and agriculture, physical and mental labor” (*China Youth Daily* 1959). Prior to and during the Cultural Revolution, Communist Party pronouncements repeatedly emphasized that relying solely on examinations to select students unwisely favored students who, for reasons of family background or level of environmental sophistication, were better prepared to take examinations than were the children of workers and peasants. According to party ideology, cultural capital

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- I. Good-class origins (*jieji chengfen hao*de), also referred to as the “five red kinds” (*hongwulei*)
    - A. Politically red inheritances (the families headed by pre-Liberation party members, plus the orphans of men who died in the revolutionary wars)
      - 1. Revolutionary cadres
      - 2. Revolutionary army men
      - 3. Revolutionary martyrs
    - B. Working class
      - 4. Pre-Liberation industrial workers and their families
      - 5. Former poor and lower-middle peasant families
  - II. Middle-class origins (*yiban chengfen*)
    - A. Nonintelligentsia middle class
      - 1. Families of pre-Liberation peddlers and store clerks, etc.
      - 2. Former middle-peasant families
    - B. Intelligentsia middle class (families of pre-Liberation clerks, teachers, professionals, etc.)
  - III. Bad-class origins (*jieji chengfen buhao*de)
    - A. Families of former capitalists
    - B. Families of “rightists” (a label denoting those who were too outspoken in the Hundred Flowers campaign of 1957)
    - C. Pre-Liberation rich peasant families
    - D. Families of “bad elements” (a label denoting “criminal” offenders)
    - E. Pre-Liberation landlord families
    - F. Families of counterrevolutionaries

breeds social "elitism," in which the children of workers and peasants fall victim to "examination discrimination" (Munro 1972, pp. 276, 294; Montaperto 1979, p.94; Smerling 1979, p. 94).

### State Interventions to Promote Educational Equality

China's communist government utilized three techniques to promote and improve educational opportunities for workers and peasants and their children. They expanded the formal education system, established an informal "mass education" alternative, and employed different enrollment criteria for people with different social backgrounds.

*Expanding the educational system.*—In common with many other countries, the Chinese government sought to increase educational opportunity for the children of workers and peasants by providing more schools. The number of schools at each level and the portion of school age children enrolled in them both increased continuously from the 1950s through the 1970s (China Department of Education 1982). By 1981, primary schools were three times more numerous than they had ever been before 1949. The fraction of children of primary school age enrolled in school rose from 20% in 1949 to 85% in 1965 and to 93% in 1981. By 1981, almost every commune had its own lower secondary school. Also, the number of tertiary educational institutes in China increased from 210 in 1950 to 434 in 1965 and to 704 in 1981.

In addition to promoting the expansion of state-run, full-time school systems, China's central government also encouraged new types of primary and secondary schools. These new schools included collective-owned schools (owned by communities, villages, and factories) and "convenient primary schools," which operated on an irregular schedule or in a variable location in order to accommodate rural and migrant children needed at home for work. In 1965, there were 849,000 children enrolled in various types of convenient primary schools. By 1981, more than 25 million students were enrolled, accounting for 22% of the nation's primary school pupils (China Department of Education 1982, p. 124).

The political measures designed to equalize educational opportunity and reduce the influence of inheritance also included affordable primary and secondary education and free tertiary education. The state appropriated all universities and colleges in 1950, abolished tuition fees, provided subsidies for students, and guaranteed jobs following graduation. In this way, students were freed from constraints imposed by their ability to pay or their need to work to help support their families.

*Mass education programs.*—"Mass education" for adults was also introduced. Examples include the "schools for accelerated education of workers and peasants," introduced in 1951–55, and the "red and expert universi-

ties," introduced in 1958–60. These schools declared education for political consciousness their first goal. They gave priority in admission to adults of working-class and peasant backgrounds. Their courses stressed the Marxist classics and the works of Chairman Mao Zedong. These schools trained cadres or potential cadres (workers and peasants identified by the regime as politically outstanding).<sup>7</sup> An important feature of these schools was that they shortened the school program at both the primary and the secondary level, permitting adults to obtain a high school diploma in seven years, instead of the usual 12. Graduates of this mass system were declared qualified to take the admission examinations to universities and were given priority in admission because of their class background and political consciousness.

Mass education schools were mostly short-lived. As a result of their adult students' poor educational background, these schools often had very high dropout rates. The mass education schools were created out of political furor, and they lost their appeal when the political furor died away. However, while they existed, they permitted some otherwise uneducated adults to complete high school. Some of these students later continued their education in universities. Those successful trainees often were appointed to cadre positions. Mass education thus increased the formal education of some workers and peasants even though the curriculum and quality of the mass education system were inferior to and incompatible with the education system's normal requirements (Yao 1984; Gao 1985).

*Special administrative methods.*—With varying intensity over time, special administrative methods were applied to the regular education system in order to increase educational opportunities for those from worker and peasant origins. In recruiting students, the government emphasized "working class" background (which, in China, includes the peasantry), especially at the tertiary level. Starting in the 1950s, the government pressed schools at all levels to increase their enrollment of students of worker or peasant origins (Xu 1982). During some periods, the Department of Education even issued enrollment quotas—the minimum proportion of such students that must be enrolled in each school.

The policy of Open the Door of High Education for Workers and Peasants began in 1953 (Gao 1985). Priorities in college enrollment were given to "worker/peasant speeding-education middle school" graduates, indus-

<sup>7</sup> Cadres are political appointees whose responsibilities principally include political management of the work unit to which they are attached. Paid by their work unit or firm, cadres are Communist Party functionaries in the workplace. In addition to these political functionaries, the term "cadre" (*ganbu*) also encompasses administrators of government and Communist Party units, public institutions, and state-run economic enterprises.



trial workers, and children of “revolutionary cadres and martyrs.”<sup>8</sup> This was done in two ways. First, during some periods admission was granted to some students by “recommendation only,” allowing them to bypass the recruitment examination. Students who received such special treatment usually had made contributions to the revolutionary cause (e.g., they were veterans of the Chinese Civil War or of the Korean War). This recommendation method was used extensively during the early period of communism in order to educate the Communist Party’s political elite so they could run the country (Sun 1958). The result was to substantially increase the proportion of students of worker/peasant origin among newly enrolled college students. Not surprisingly, there was, however, a concomitant decline in the academic level, and in 1959 the national college recruitment examination was reinstituted. A similar “recommendation only” policy was instituted again in 1964–65, just before the beginning of the Cultural Revolution, and continued throughout that period—when the universities were open at all (see below).

Even during periods when the “recommendation only” method was not used, preference was given to students with desirable class backgrounds through the policy of “priorities among equivalents.” While the actual examination procedures were never compromised for political purposes, and examination scores were based strictly on performance, political criteria were and are used extensively to select among those who achieved minimally acceptable scores.<sup>9</sup> This is possible because the number of eligible applicants far exceeds the number of spaces available in Chinese secondary schools and universities.

The two methods had unequal impact. “Priorities among equivalents” was much milder than the method of recommendation only, since the political selection was only among those who met the academic standards.

<sup>8</sup> “Worker/peasant speeding-education” was an adult educational program of the early 1950s. The students in this program were generally semi-illiterate cadres—including veterans of the People’s Liberation Army and cadres in communist local governments. The students enrolled in the program were exempted from their regular jobs during their period of enrollment but continued to receive their regular wages. They typically completed a six-year middle school education in three years (Yu 1982). “Revolutionary martyrs” are those communist soldiers and cadres who died for the communist cause, such as those who died in wars against the Japanese or the Nationalists or those who died in jail (Hu 1964).

<sup>9</sup> The Chinese college recruitment examination emulates the ancient administrative recruitment examination in its strict organization. It is not only illegal but exceedingly difficult to cheat in the examination. Mao, complaining about the strict examination system, described it as “to treat students as enemies.” It was on this ground that during the Cultural Revolution all examinations were abolished. If anyone proposed an examination, he or she would be accused of “treating [the examinees] as enemies” (Mass Criticism Group of the Education Department 1973).

Hence, this method did not satisfy the radical demands of the Cultural Revolution of 1966–76, despite the fact that the proportion of worker/peasant students in higher educational institutes had increased systematically over time since the beginning of the communist era: such students accounted for 28% of all tertiary students in 1953, 55% in 1958, and 71% in 1965 (China Department of Education 1982, p. 338).<sup>10</sup> Not surprisingly, therefore, the peak use of the “recommendation-only admission” method was during the Cultural Revolution.

*Cultural Revolution.*—In May, 1966, Chairman Mao Zedong began a purge of Communist Party officials, with a campaign that relied heavily upon the mobilization of mass support, particularly among youth. More than simply an attack on his political opposition, however, the Cultural Revolution was a “fundamentalist revival of political orthodoxy” (Vogel 1969, p. 321) in which political loyalty, rather than expertise, was the main criterion for advancement. The main target of the Maoist attack on “capitalist-roaders” was the emerging bureaucratic class and the elite privileges they enjoyed. “Mao saw a threat to the socialist revolution not only from the remnants of the old upper classes but even more so from ‘newly engendered bourgeois elements’ in the political superstructure, who might become a ‘privileged stratum’ and take the capitalist road, as allegedly has happened in the Soviet Union” (Bernstein 1977, p. 19). However, as the Cultural Revolution widened and chaos spread, all high status groups became subject to attack. In particular, Mao’s suspicion of the intelligentsia was given free rein. Although the children of prerevolutionary intelligentsia were considered to have neither “good” nor “bad” class backgrounds (see n. 6), during the Cultural Revolution intelligentsia origins were often treated as tantamount to “bad” class backgrounds (Bernstein 1977, p. 18). Moreover, the intelligentsia were in the difficult position of being perceived as the embodiment of bourgeois ideology—but of having no political power with which to protect themselves.<sup>11</sup> Cadres under attack

<sup>10</sup> Due to the impact of the Cultural Revolution, comparable figures are not available from 1965 through 1982, the end of the period under study here. See the discussion below.

<sup>11</sup> In the colorful language of the Chinese communists, the intelligentsia were described as the “‘Smelly no. 9’ bad element” (Lin and Xie 1988, p. 811), but not as important enough to be a main target of the Cultural Revolution. Mao said the intelligentsia were not even a class but rather “hair attached to the skin [of the class they serve]. If the skin is eliminated, how can the hair survive?” (Mao [1938] 1961). The intelligentsia “have tens of thousands of ties with the classes that were overthrown by the communist revolution” (*Light Daily* 1966). They “peddle feudal, bourgeois, and revisionist rubbish in universities.” They are “intellectual aristocrats who ride on the working people. They thought they were knowledgeable, actually they were ‘the most stupid,’ because their knowledge has no use to the working people whatsoever.” They were not good believers in socialism and communism because of their lack “of correct class standing, correct class consciousness, and correct class sense.” They should be “reborn”

might be able to use their political leverage to protect themselves and their families, but this generally was not possible for the intelligentsia. Because of this, it is likely that the "cost" of the Cultural Revolution to those from high status origins was not borne equally but was particularly heavy for the children of the intelligentsia.

The Cultural Revolution resulted in a massive disruption of education in China. Although most primary schools continued to operate as usual, almost all secondary and tertiary level institutions were shut down completely from 1966–68 and most tertiary level institutions remained closed until 1972 (Bernstein 1977; Unger 1982). After the secondary schools reopened in 1968, they faced the problem of having two extra cohorts of students to contend with—those whose schooling was disrupted or delayed during the two years in which the schools were closed—and a shortage of teachers, since many had been purged. The solution was to "send-down" (*xiafang*) the older cohorts to work on farms and factories. Problems of too many students and too few teachers continued to plague the schools well into the 1970s, particularly since they were not permitted to recruit new teachers on the basis of "bourgeois expertise" but rather on the basis of political credentials (Unger 1982, p. 155). When the universities were reopened in 1972, they faced similar problems. Recruitment examinations were abolished. The major criteria for college admission became class background and party loyalty rather than academic achievement (Shirk 1982, pp. 45–46). The only eligible applicants were "workers, peasants, and soldiers with two or more years of working experience, having knowledge equivalent to junior middle school graduates or more." The first and most important criterion for admission was political performance. Small quotas (not exceeding 5%) were established for students from undesirable class origins, who were identified as "educable children [of class enemies]" (Mass Criticism Group of the Education Department 1973). Moreover, the universities also faced the problem of multiple cohorts seeking a limited number of openings. One solution to these problems, which was consistent with Maoist notions of combining theory with practice, was to institutionalize a system in which students were not permitted to apply to tertiary level institutions until they had had two or more years of work experience. The effect of this policy is unclear, but whatever the impact it has little consequence for our analysis since

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through continuous criticism and self-criticism. They should "tuck their tails, be obedient pupils to the mass" (*Worker's Daily* 1968). Teachers and professors were driven from their positions at the beginning of the Cultural Revolution with the comment of Mao that "we could no longer to tolerate the ruling of bourgeois intellectuals over our schools" (*People's Daily* 1966).

throughout the period under study only extremely small fractions of each cohort (less than 2%) obtained any tertiary education (see figs. 2–4 below).

Although the disruptions of the Cultural Revolution are generally regarded as continuing for some 10 years, until the death of Mao in 1976, there was a gradual “return to normalcy” throughout the 1970s. There was an explicit program of “return to the team,” by which many professionals (and other workers) resumed the positions they had held before the Cultural Revolution. Some members of the last five pre-Cultural Revolution cohorts of college graduates, who had been assigned nonprofessional jobs during the Revolution, were able to obtain professional jobs. In addition, many cadres returned to the positions they held before the Revolution—although they often had to share their positions with the new cadres promoted during the Revolution. Entrance examinations were reestablished, first at the high school level and finally, in 1977, at the university level (Yang 1978; Li 1978; Unger 1982, pp. 207–17; Du 1992). How complete the recovery was especially for the cohorts most damaged by the Cultural Revolution, remains an open question.

*Summary.*—At various points over its first 30 years of rule but particularly during the Cultural Revolution, the Chinese government introduced strong policies to favor people of working class and peasant origins. One set of policies structurally expanded the educational system, raising the educational level of the population in general, and of the peasantry and proletariat in particular. In theory, such an expansion of educational opportunities should reduce the effects of social origin on educational achievement (Mare 1980, 1981). Moreover, other educational reforms promoted the educational achievement of the children of peasants and workers at the expense of those from classes normally considered of higher status. By substituting students of “good” class background (which, from a numerical standpoint, was composed mainly of those from working-class backgrounds) for those from “middle” and “bad” class backgrounds (who consisted mainly of the former bourgeoisie and intelligentsia), this set of reforms was specifically designed to reduce the effect of social class origins on educational attainment.

Because these reforms were more thoroughgoing than state interventions in Eastern Europe, we should expect a smaller effect of social origins on educational attainment than is characteristic of the countries studied to date. However, the character of the state intervention, in which political criteria played a major role in determining opportunities, leads to two additional expectations: (1) the strength of the political effect should vary over time and should be most pronounced during the Cultural Revolution, and (2) the brunt of the effect should be borne by the sons of the intelligentsia while the sons of cadres—the other group of equally high status (Lin

and Xie 1988)—should have been somewhat protected from the ravages of the Cultural Revolution. Before turning to tests of these hypotheses, however, we first must describe our data and demonstrate that they are suitable for our task.

## DATA

We exploit the 1% Public Use Sample from the 1982 census of China (China Statistical Information and Consultancy Service Center 1989). This is a hierarchical file, containing information on the household and on each member of the household for a systematic sample of every hundredth household included in the 1982 census. We first describe these data and then assess the magnitude and consequences of bias introduced by our restriction of the data to men living in multiple generation households (MGHs).

## Sample and Variables

The analysis is based on four variables, measures of father's and son's educational attainment, father's occupation, and year of birth.<sup>12</sup> We also distinguish the farm and nonfarm populations on the basis of industry and restrict much of our analysis to the nonfarm population.

*Education.*—In the 1982 Chinese census, educational attainment is measured by a six-category classification, shown with the percentage of males, ages 18–69 years old in 1982, who had attained each level: illiterate or semiliterate (21.0%), primary (37.4%), lower secondary (27.5%), upper secondary (12.6%), some tertiary (.4%), and completed tertiary (1.1%). It is clear that the level of education in China is very low, with about 20% of the male population illiterate in 1982 and fewer than 2% with any tertiary education. Trends in educational attainment, shown in figures 1–4, are discussed below. We analyze educational attainment in two ways: with a summary measure of “years of schooling,” which we construct by recoding the education categories to “0,” “6,” “9,” “12,” “14,” and “16,” respectively; and with a dichotomous measure, distinguishing those with

<sup>12</sup> In an earlier version of the article, we also included a dichotomous variable for urban vs. rural residence, on the ground that urban residence is an important advantage in China (Hannum and Xie 1994). However, since the census variable refers to current residence and since education often is sought in order to escape from rural residence, rendering the causal order somewhat problematic, we omitted this variable in the present analysis. In the analysis including the residence variable, urban residence creates the expected advantage and the impact of father's education and father's occupation differs little from what is reported in the present analysis.

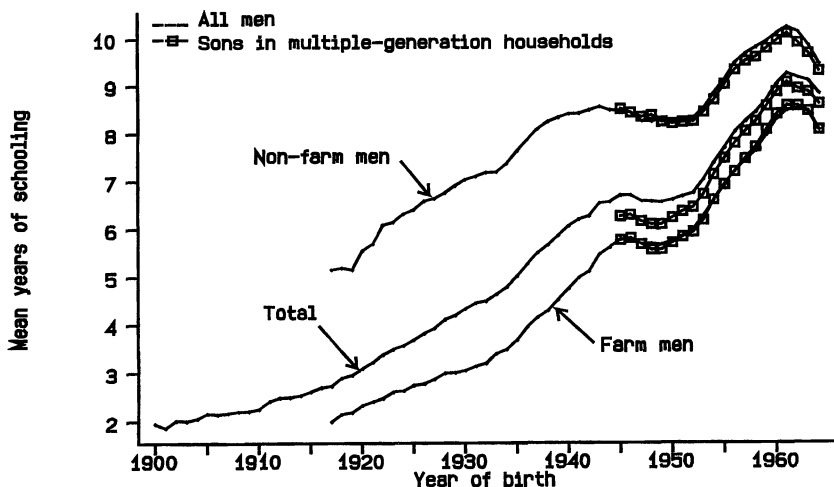


FIG. 1.—Mean years of schooling obtained by Chinese men, by year of birth

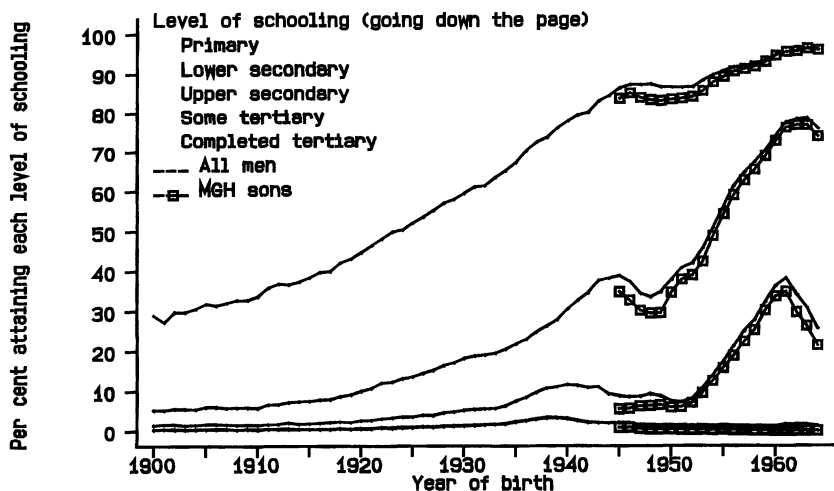


FIG. 2.—Percentage of Chinese men obtaining successive levels of schooling, by year of birth (total male population). (Since almost no one has incomplete tertiary education, the trend lines for "some tertiary" and "completed tertiary" are indistinguishable.)

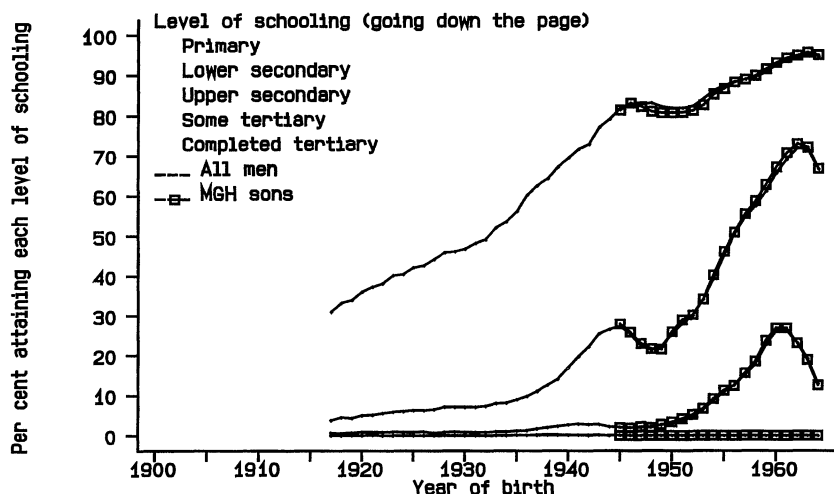


FIG. 3.—Percentage of Chinese men obtaining successive levels of schooling, by year of birth (farm population). (Since almost no one has incomplete tertiary education, the trend lines for “some tertiary” and “completed tertiary” are indistinguishable.)

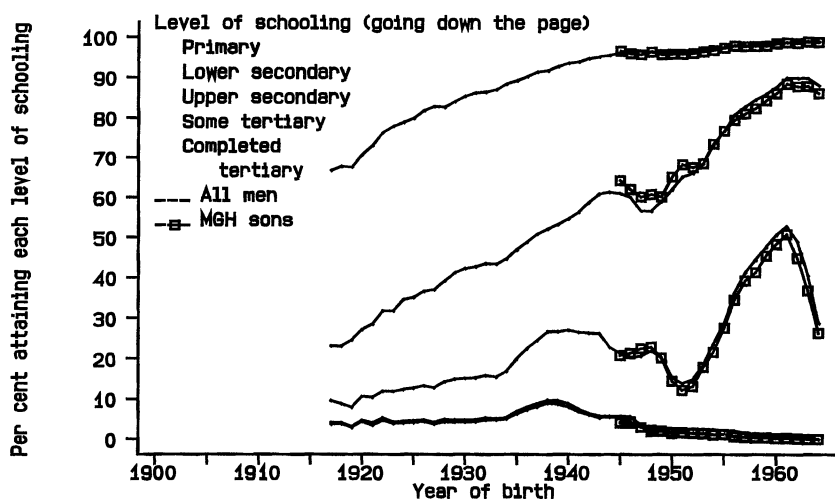


FIG. 4.—Percentage of Chinese men obtaining successive levels of schooling, by year of birth (nonfarm population). (Since almost no one has incomplete tertiary education, the trend lines for “some tertiary” and “completed tertiary” are indistinguishable.)

“upper secondary” or more from those with less education. Father’s education is measured by the “years of schooling” scale.

*Occupation.*—In the Chinese census, occupation is coded into a three-digit classification that closely resembles and therefore was readily converted into the categories of the *International Standard Classification of Occupations, Revised Edition 1968* (ISCO; International Labour Office 1969) as enhanced in a previous publication (Treiman 1977, app. A). To assess the adequacy of the sample, we assigned International Socio-Economic Index of Occupations (ISEI) scores (Ganzeboom, De Graaf, and Treiman 1992) to the ISCO categories for respondent’s occupation. To analyze the effect of father’s occupation, however, we devised an eight category scheme by modifying the major group classification used by the Chinese census (shown with the percentage of males, ages 18–69, in each category):<sup>13</sup> scientific and technical staff (5.5%); administrators in govern-

<sup>13</sup> Note that “father’s occupation” refers to the father’s present occupation, not to the father’s occupation when the respondent was completing school and about to enter the labor force. Fortunately, this should not introduce too much bias, since men’s careers tend to stabilize by middle age. Since the mean age at paternity for the fathers of sons in MGHs was 31, the mean age of the fathers when the sons were 14 years old was 45 years. The mean age of fathers at the time of the census was 56 years, so evidence of stability in occupational status between ages 45 and 56 years would give substantial assurance that using father’s occupation at the time of the census is a reasonable approximation for father’s occupation when the respondent was 14 years old. While we have no data for China, there is some pertinent evidence from other countries. For example, in Japan, the correlation between the prestige of men’s occupations when they were 45 years old and when they were 55 years old was .91, based on data from the 1975 National Mobility Survey (we thank Mariah Man-Tsun Cheng, Carolina Population Center, for providing these computations). Hout (1989, p. 260) shows that in Ireland, 73% of men held jobs in the same occupation category (of a 16-category classification) when they were 35 years old and when they were 45 years old; he did not present evidence of mobility among older men, presumably because there was so little. In China, the strict labor allocation system in place until the reforms of the 1980s makes it extremely unlikely that many people shifted jobs late in their careers. The labor allocation system allowed virtually no interfirm shifts, status exchanges among nonmanual, manual, and peasant occupations, or opportunities to return to school to obtain additional education (with the exception of the required work experience between senior high school and university instituted during the Cultural Revolution, which therefore pertain to the sons but not to the fathers). Of course, the possibility remains that there were substantial dislocations during the Cultural Revolution. Although no figures are available, it is probable that most of those who lost their jobs during the Cultural Revolution got their old positions back, during the period of “return to the team” referred to above. Thus, the long-term effects of the Cultural Revolution probably fell most heavily upon those just beginning their careers rather than those in midcareer. Finally, it is uncommon in China (unlike Japan) for men to take “retirement jobs” that are different from the job they held most of their working lives (Din 1985). Those fathers who have retired are shown as not having an occupation, which we treat as a separate category. We are confident that father’s current occupation satisfactorily proxies father’s occupation when the respondent was making schooling and career decisions, when he was about 14 years old.



ment, parties, social organizations, enterprises, and institutions (2.5%); office workers and related staff (1.7%); commercial workers (1.7%); service workers (1.9%); workers in farming, forestry, animal husbandry, and fishery (61.1%); production, transportation, and related workers (17.7%); and those without occupations (7.9%).<sup>14</sup> We made several modifications to the census scheme to create a more sociologically sensible classification. (1) We divided "scientific and technical staff" into two categories, "intelligentsia" and "lower professionals and technicians" on the ground that it was the intelligentsia who were particularly vulnerable during the Cultural Revolution, much more so than lower professionals and technicians.<sup>15</sup> (2) We combined "commercial workers" and "sales workers" into a single category because these are relatively small groups and have similar status. (3) We moved "production brigade leaders" (category 600 in the three-digit occupation classification used by the 1982 census) from the agricultural category into the cadre category and "staff for political affairs and security" except firefighters (321–323, 329) from the office worker category to the cadre category. (4) We moved firefighters (324) into the manual category. (5) We moved buyers (421) and several technical occupations (962–964, 992) into the lower professional category. (6) We moved examiners and inspectors (961) into the office worker category. (7) Finally, we created a new category, "no occupation," which enabled us to retain in the sample the 19.6% of fathers for whom there is no occupational information (presumably because they are retired); by doing this we are able to utilize information we have on their educational attainment (there are no missing data on education in the census file).

*Year of birth and period effects.*—We restrict our attention to men 18–37 years old in 1982.<sup>16</sup> The upper bound was chosen because few men

<sup>14</sup> In an earlier version of the article, we also analyzed the effect of father's occupational status by assigning ISEI scores to father's occupation. The results were substantially similar to those reported here.

<sup>15</sup> "Intelligentsia" occupations include scientific researchers, engineers and engineering technicians, aircraft and ship's pilots, physicians and veterinarians, statisticians, economic planners, legal professionals, secondary and postsecondary teachers, journalists and other writers, translators, librarians and archivists, and similar occupations (CSCO codes 011–064, 071–073, 079–092, 101–112, 119–122, 141–142, 144–149). "Lower professional and technical" occupations include nurses and other health personnel, customs, finance, and accounting staff, primary and preprimary teachers, artists and performers, coaches and athletes, draftsmen and other technicians, and similar occupations (CSCO codes 069, 074–078, 093, 096–099, 113–116, 123–139, 143, 150, 421, 540, 962–964, 992).

<sup>16</sup> Our data are not suited to the analysis of female educational attainment since China is a patrilocal society, which means that a much smaller fraction of adult women live with their parents than do adult men. For an analysis of gender differences in educational attainment, see Hannum and Xie (1994).

more than 37 years old—less than 10% of each cohort—were co-resident with their fathers. The lower bound ensures that, in principle, our respondents either will have completed their education or will have entered upper secondary school.<sup>17</sup> From inspection of figures 1–4, it may appear that the most recent cohorts are severely censored. However, this is not the case, even though for the youngest cohorts with upper secondary education, substantial portions were still in school in 1982: 3.5% of the 1961 cohort, 8.5% of the 1962 cohort, 17.0% of the 1963 cohort, and 31.9% of the 1964 cohort. Rather, starting with the 1962 birth cohort, there was a systematic decline in the fraction of men obtaining upper secondary education and a smaller but also systematic decline in the fraction obtaining lower secondary education starting about 1964.<sup>18</sup> Computations from the 1990 census by birth cohort show annual variations in the mean years of schooling, the proportion obtaining lower secondary education, and the proportion obtaining upper secondary education between 1958 and 1964 that closely mirror those we report here.<sup>19</sup> The seeming inconsistency between the large proportions still in school in 1982 and the similarity in the educational distributions of matching cohorts in 1982 and 1990 is explained by the fact that below the tertiary level the 1982 census did not distinguish between enrollment and completion of education.

Studying the effect of historical events on processes that cover several years, as education does, is difficult, since it is unclear where in the process the impact will be greatest. Should we define cohorts by the age at which people enter school, the age at which they leave school, or some other age? It is not at all obvious, since “period effects” such as the Cultural Revolution are likely to influence the life chances of many cohorts—denying education in some cases, delaying it in others, and devaluing it in still others (see Hannum and Xie [1994] for a similar discussion). Moreover, while the beginning of the Cultural Revolution can be pinpointed quite

<sup>17</sup> Only for the 1964 cohort is this assumption at all problematic. Among those born in 1964, 6.4% of those with lower secondary education were still in school.

<sup>18</sup> Hannum and Xie (1994, fig. 2) show a similar downturn in the transition from primary to secondary school.

<sup>19</sup> Although the response categories for educational attainment changed between 1982 and 1990, we still can achieve an approximately comparable series for 1982 and 1990. In 1990, a category was added for “technical school” and a distinction was made between those who graduated, failed to graduate, and were still enrolled, which may have affected the way respondents answered the question. In the 1990 data, we combined “technical school” with “upper secondary.” As measured in 1982, the proportions attaining upper secondary schooling or more, for the 1958 through 1964 birth cohorts, were .279, .324, .362, .382, .341, .308, .257; as measured in 1990, the corresponding proportions were .294, .323, .357, .344, .320, .285, .241. The proportions attaining lower secondary schooling or more, as measured in 1982, were .675, .704, .742, .776, .783, .786, .760; as measured in 1990, they were .693, .720, .760, .771, .787, .784, .755.

precisely—May 1966—the ending is less clear, as we noted above. Still, it seems evident that the birth cohorts most strongly affected with respect to educational attainment were those of secondary school age during the early years of the Cultural Revolution decade. We operationalize this category as consisting of those born between 1950 and 1957, who thus were between nine and 16 years old in 1966 at the start of the Cultural Revolution and between 19 and 27 years old in 1977 after the disruptions of the Cultural Revolution unambiguously had ended.<sup>20</sup>

### How Representative Are MGHs?

To assess the validity of the Chinese census for studying intergenerational status transmission, we address two specific questions: (1) In what ways and to what extent do men living in MGHs differ from a random sample of the Chinese male population, and (2) how different are patterns of status attainment derived from a random sample of the population and a sample of those residing in MGHs?

We define MGHs as consisting of two or more adult generations living together, organized along parent-child or parent-child-grandchild lineage relationships. In 1982, 39% of men 18–37 years old lived in the same households as their fathers (ranging from 11% of those 37 years old to 73% of those 18 years old). The crucial question is whether these men are similar to the total male population with respect to the characteristics of interest to us. If so, we can legitimately tag them with their fathers' characteristics in the same way that we typically ask representative samples of men in surveys to report on their fathers' characteristics.

It is, of course, obvious that sons residing in MGHs are much younger than a random sample of Chinese men, since the fathers of older men are increasingly unlikely to still be alive. Because they are younger and because education expanded dramatically (see below), sons residing in MGHs will be more highly educated and will have more highly educated fathers than will the average Chinese man. But this is not a problem so long as sons residing in MGHs are not strongly biased with respect to socioeconomic characteristics *within* cohorts.<sup>21</sup> Figure 1 shows the close

<sup>20</sup> In 1977 university entrance examinations were reestablished and were opened to all persons less than 30 years old to accommodate those from the "lost generation" of the Cultural Revolution decade (Pepper 1980, p. 16).

<sup>21</sup> Although it might seem obvious that sons living in MGHs will be less well educated than those living separately because well-educated men are likely to have been assigned jobs in distant parts of the country, a number of factors mitigate against this possibility. First, it is in fact common for persons to be assigned jobs in their home towns. Second, those who do relocate may bring their parents to join them. This is even true of persons from peasant backgrounds who acquire urban residential status through education. In small cities and towns, many households include those with

resemblance in mean years of schooling between sons in MGHs, 18–37 years old in 1982, and all Chinese men of the same ages, within the farm and nonfarm sectors. Sons in MGHs have somewhat lower average schooling than do all Chinese men of the same age; however, this reflects the greater propensity of peasants to live in MGHs (44% of farm men 18–37 years old compared to 29% of nonfarm men) and the lower level of education among peasants than among other Chinese.

The similarity between MGH sons and all men of corresponding age with respect to the mean level of education is mirrored in the similarity in the percentage obtaining each level of schooling (see figs. 2–4). So long as we distinguish between nonfarm and farm men and appropriately control for year of birth, it appears that a sample of MGH sons is, from a practical point of view, indistinguishable from a probability sample of all Chinese men.

Next we ask whether status attainment processes are similar for sons in MGHs and for all Chinese men. Table 1 shows estimates of a simple OLS model in which occupational status (ISEI) is predicted from years of school completed and type of place of residence, by single years of age, for all men in China not employed in agriculture and for sons in the MGH sample not employed in agriculture.<sup>22</sup> It is necessary to study single years of age since OLS estimates are sensitive to the distributional properties of the sample—specifically, in this case, to the very different age distributions of the random and MGH samples, which are not adequately controlled by the introduction of a linear, or even a curvilinear, age variable. Inspecting the coefficients, it is clear that the random and MGH samples yield substantively similar results. This can be seen graphically in figure 5, which shows the expected level of occupational status for urban men with, respectively, 6, 9, and 12 years of schooling, estimated from the coefficients in table 1. Although there is a slight tendency for the MGH-sample predictions to be lower than the random-sample predictions for those with upper secondary education (12 years of schooling), we would arrive at the same substantive conclusions regarding the effect of education on occupational attainment, and trends in these effects, whether we used data from the random or MGH samples.

In sum, several different tests strongly suggest that our sample of sons in MGHs provides a valid basis for inferences about the process of educa-

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both farm and nonfarm jobs and even those with rural and urban residential status (Chen and Zhang 1986).

<sup>22</sup> We combined categories of China's administrative hierarchy with the urban-rural distinction described by Chan (1994) to create a three category variable: residents of cities, residents of towns, and rural residents (the reference category). We restricted the analysis to those not employed in agriculture since there is virtually no variance in occupational status in the peasant population.

TABLE 1

COMPARISON OF RANDOM AND MGH SAMPLES WITH RESPECT TO THE REGRESSION OF  
OCCUPATIONAL STATUS (ISEI) ON YEARS OF SCHOOL COMPLETED (*S*) AND TOWN OR  
CITY (VS. RURAL) RESIDENCE, NONFARM MEN

BIRTH YEAR	SAMPLE	METRIC REGRESSION COEFFICIENTS				<i>R</i> <sup>2</sup>	<i>N</i>
		Constant	<i>S</i>	Town	City		
1945 (37) .....	Random	24.4	2.77	-3.50	-5.70	.279	18,867
	MGH*	22.0	3.00	-5.32	-5.43	.255	1,118
1946 (36) .....	Random	23.0	2.82	-2.73	-5.19	.289	20,502
	MGH	20.9	3.01	-2.29	-5.85	.276	1,245
1947 (35) .....	Random	23.5	2.65	-2.56	-5.26	.258	22,409
	MGH	23.5	2.62	-2.89	-6.36	.224	1,504
1948 (34) .....	Random	23.6	2.58	-2.70	-5.33	.244	22,468
	MGH	21.9	2.77	-4.37	-5.60	.245	1,735
1949 (33) .....	Random	23.7	2.54	-3.41	-5.66	.236	23,154
	MGH	23.7	2.47	-3.44	-6.20	.221	2,053
1950 (32) .....	Random	22.9	2.56	-3.26	-5.09	.227	27,694
	MGH	22.8	2.51	-3.21	-6.15	.200	2,801
1951 (31) .....	Random	22.5	2.51	-2.90	-4.61	.213	25,808
	MGH	22.7	2.47	-4.24	-4.83	.199	2,952
1952 (30) .....	Random	22.2	2.45	-2.77	-4.18	.216	29,459
	MGH	22.3	2.25	-2.69	-3.35	.176	4,072
1953 (29) .....	Random	21.4	2.44	-2.16	-4.23	.218	30,106
	MGH	21.6	2.26	-.37	-3.71	.196	4,928
1954 (28) .....	Random	21.3	2.40	-2.52	-4.64	.208	32,958
	MGH	22.2	2.16	-1.50	-4.65	.181	6,631
1955 (27) .....	Random	20.6	2.38	-2.67	-4.65	.204	35,147
	MGH	21.1	2.19	-2.07	-4.00	.175	8,638
1956 (26) .....	Random	20.3	2.31	-2.48	-4.73	.188	32,606
	MGH	22.2	1.96	-1.74	-4.03	.142	9,871
1957 (25) .....	Random	20.3	2.25	-2.63	-5.18	.179	34,486
	MGH	22.2	1.89	-2.05	-4.30	.135	12,359
1958 (24) .....	Random	21.7	1.99	-2.24	-5.09	.149	36,667
	MGH	23.5	1.61	-1.35	-3.70	.111	14,931
1959 (23) .....	Random	22.7	1.81	-1.81	-4.74	.128	26,529
	MGH	24.5	1.43	-.68	-3.58	.096	12,058
1960 (22) .....	Random	22.6	1.72	-1.54	-4.12	.112	26,715
	MGH	23.8	1.43	-.84	-3.03	.088	13,448
1961 (21) .....	Random	23.1	1.62	-1.40	-3.96	.099	19,310
	MGH	24.7	1.25	-.13	-2.46	.069	10,172
1962 (20) .....	Random	20.9	1.80	-.72	-3.50	.109	21,547
	MGH	23.5	1.32	.46	-2.04	.074	11,844
1963 (19) .....	Random	22.0	1.56	-.14	-2.54	.090	34,161
	MGH	24.2	1.11	.89	-.94	.060	19,763
1964 (18) .....	Random	24.4	1.21	.35	-1.92	.065	25,628
	MGH	26.3	.81	1.14	-.53	.041	15,384

NOTE.—Nos. in parentheses are ages in 1982.

\* The data used in the subsequent analysis consist of these data plus a small number of additional cases that are missing data on occupational status (about 3% of the MGH sample).

## The Impact of the Cultural Revolution

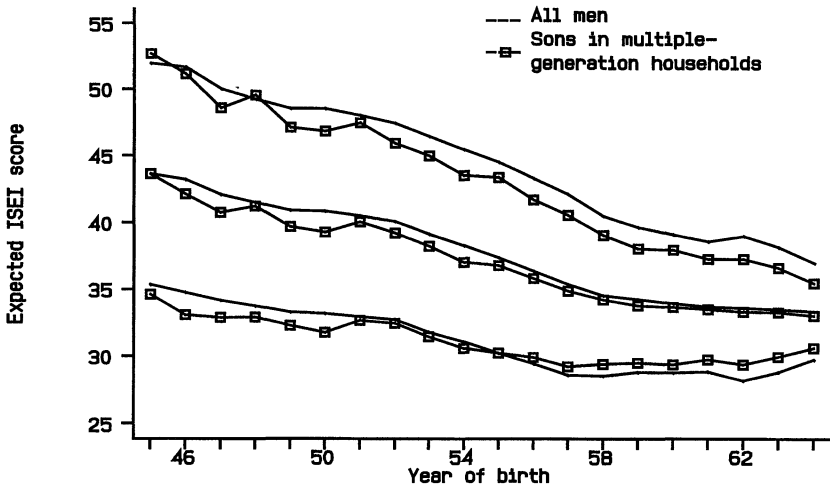


FIG. 5.—Predicted ISEI scores for nonfarm men residing in cities, with 6, 9, and 12 years of schooling, by year of birth.

tional attainment in China, so long as we conduct our analysis within age groups and separately for the farm and nonfarm populations.

### ANALYSIS

In China, as in virtually every country in the world, education has expanded dramatically throughout the 20th century. As is clear from figure 1, the mean years of schooling obtained by Chinese men born between 1900 and 1964 increased in an essentially linear way from a low of about two years for men born in the first years of the century to a high of 9.3 years for men born in 1961.<sup>23</sup> Similar trends are observed for farm and nonfarm men, although the nonfarm men are much better educated (we truncate these distributions at 1917 since for earlier years fewer than half of all men reported an occupation or industry, so the farm/nonfarm distinction could not be made). There are only two exceptions to the linear trend, both of which are evident for all three trend lines. There was no educational expansion and, indeed, a slight reduction in educational attainment among nonfarm men born in the early 1940s to early 1950s and among farm men born from about 1945 to 1950. For farm men this reversal probably reflects the disaster of the Great Leap Forward (1958–61)

<sup>23</sup> The trend line for the first 17 years of the century should be interpreted with caution, since it refers to men 65–82 years old in 1982 and hence is subject to whatever bias may be introduced due to differential mortality by education.

since, as we will see, it is most pronounced with respect to attainment of middle school education. For nonfarm men the period of educational stagnation or decline was much more extended and could as well reflect the chaos associated with the Liberation and the attempt of the Communist government to consolidate power. The second exception is the decline in the mean for the youngest cohorts, which we have already noted. It is likely that this decline reflects the increased opportunity costs of education resulting from the economic reforms that began in the late 1970s, particularly the "household responsibility system" that permitted peasants to sell a portion of their produce directly on the market (White 1993, pp. 53–54, 100–101). However, these deviations are small relative to the overall upward secular trend in average educational attainment.

As is not uncommon, the trends in the means mask a more complex story. Figures 2–4 show the percentage of Chinese men attaining each level of schooling, for the total population, the farm population, and the nonfarm population. These figures reveal a dramatic expansion of primary, lower secondary, and upper secondary education, starting at successively later points in the 20th century. Among those born at the beginning of the century only 30% had any schooling at all whereas among those born in the 1960s more than 96% had at least some primary schooling. Among the farm population the expansion of primary education is particularly marked, from about 30% among those born in 1917 to about 95% among those born in 1964, whereas for the nonfarm population nearly 70% had primary schooling as far back as the 1917 birth cohort. The trend in lower secondary school attendance confirms the disruptive effect of the Great Leap Forward, especially for the peasantry, since there is a more or less continuously upward trend except for cohorts born in the 1940s who would have been of lower secondary school age during the Great Leap Forward (Hannum and Xie 1994, pp. 77–78), and the reversal was much more pronounced for farm than for nonfarm men.<sup>24</sup> There is also a slight tailing off in the proportion with lower secondary education in the most recent cohorts, which is also more pronounced among farm men, as would be expected on the assumption that opportunity costs of continued schooling were greater for farm than for nonfarm families. With respect to the percentage attaining upper secondary schooling, the difference between farm and nonfarm men is quite pronounced. Among farm men, only those born after 1949 had any chance for upper secondary schooling.

<sup>24</sup> According to Hannum and Xie (1994, p. 76), in China children typically began school when they were seven years old, which means they began middle school when they were 13 years old and, by extension, began upper secondary school when they were 16 years old and tertiary education when they were 19 years old, except for those who were required to gain work experience between secondary and tertiary schooling.

For those who came of age just before or during the Cultural Revolution, the chance of attaining upper secondary schooling increased steadily to a peak of greater than 25%, only to fall sharply over the next several years. Among nonfarm men, by contrast, the story is somewhat more complex. The percentage with upper secondary education rose above 25% for those who came of age during the early years of the communist era, between 1954 and 1959, but then fell to a little above 10% by the start of the Cultural Revolution. Despite the disruptions of the period the proportion with secondary education rose steadily until the 1960 cohort, when it began to drop just as precipitously. These shifts result in part from a complex, and frequently changing, set of educational policies put in place by the Ministry of Education (for reviews of these policies, see Bernstein [1977], pp. 33–83; Shirk [1982], pp. 24–62; Unger [1982], pp. 11–65). Finally, it is evident from figures 2–4 that tertiary education was extremely rare in China, enjoyed by virtually no farm men and only small fractions of nonfarm men. Here, however, there clearly is some censoring of the data for the nonfarm population since the 1982 data show no more than 1.2% of nonfarm men born after 1958 with any tertiary education while the 1990 data show fractions ranging from 5.8% for the 1958 cohort to between 10% and 11% for the 1961–64 cohorts. As we have noted above, one important effect of the Cultural Revolution, and of the recovery in its aftermath, was that many men entered tertiary institutions after a period of work experience. This has little impact on our analysis—to which we now turn—since the overall fraction of men with any tertiary schooling was small.

### Trends in the Effect of Social Origins on Educational Attainment

Recall that we wish to address three claims. First, due to government policies promoting education for the children of the peasantry and proletariat, educational attainment in China is less dependent upon parental status than it is in other countries. Second, due to the campaign against elites during the Cultural Revolution, the advantage due to high status origins was diminished during that period. Finally, due to the relative powerlessness of the intelligentsia, the deleterious effect of the Cultural Revolution was felt more strongly by their sons than by the sons of cadres.

We test all three claims simultaneously by estimating a model in which educational attainment is predicted from father's education, father's occupational position, and year of birth, for men 18–37 years old in 1982. Because of the marked differences between the farm and nonfarm populations and because the Cultural Revolution was not at all aimed at the peasant population, we analyze only the nonfarm population.

To assess how the effect of social origins on educational attainment



varies over time and in particular is affected by the Cultural Revolution, we estimate a fixed-effects model of trends in years of schooling in which we posit a discontinuity in the effect of, respectively, father's occupation and father's years of schooling at the beginning of the Cultural Revolution—that is, for those men who were born in 1950 or later (and hence were 16 years old or younger in 1966)—and in which we also allow an abrupt change, but not a discontinuity, in the trend line for men born in 1957 and later. The reason we posit a discontinuity between the 1949 and 1950 birth cohorts but not between the 1957 and 1958 birth cohorts is that, as we have suggested above, the beginning of the Cultural Revolution was massively disruptive, with schools closed and Red Guards rampaging in the streets, but there was no similar “revolutionary” change at the end of the Cultural Revolution; rather, there was a gradual return to normalcy as the schools were reopened, entrance examinations resumed, conventional curricula restored, and political loyalty replaced by academic excellence as the criterion for advancement. While it would be plausible to posit no abrupt change in the slope of the trend line at the end of the Cultural Revolution, we think it historically more sensible to explicitly represent the end of the Cultural Revolution by permitting the trend line to vary for birth cohorts born before and after 1957.

To represent this pattern of trends, we estimate a model of the following form:

$$\begin{aligned}
 \hat{S} = & b_0 + \sum_{i=1}^7 b_i(O_i) + b_8(E) + b_9(Y) \\
 & + \sum_{i=1}^7 b_{9+i}(YO_i) + b_{17}(YE) + b_{18}(D_{49}) \\
 & + \sum_{i=1}^7 b_{18+i}(D_{49}O_i) + b_{26}(D_{49}E) + b_{27}(Y_{49}) \\
 & + \sum_{i=1}^7 b_{27+i}(Y_{49}O_i) + b_{35}(Y_{49}E) + b_{36}(Y_{49}^2) \\
 & + \sum_{i=1}^7 b_{36+i}(Y_{49}^2O_i) + b_{44}(Y_{49}^2E) + b_{45}(Y_{57}) \\
 & + \sum_{i=1}^7 b_{45+i}(Y_{57}O_i) + b_{53}(Y_{57}E) + b_{54}(Y_{57}^2) \\
 & + \sum_{i=1}^7 b_{54+i}(Y_{57}^2O_i) + b_{62}(Y_{57}^2E),
 \end{aligned} \tag{1}$$

where  $S$  is years of school completed by the respondent;  $O_i$  is father's occupation category (1 = intelligentsia, 2 = cadres, 3 = lower professionals and technicians, 4 = clerical workers, 5 = sales and service workers, 6 = manual workers, 7 = fathers without occupations; the omitted category is agricultural workers);<sup>25</sup>  $E$  = father's years of schooling;  $Y$  = year of birth - 1945, so that those in the first birth cohort are scored "0" and so on;  $D_{49}$  is scored "0" for those born in 1949 or earlier and "1" for those born after 1949;  $Y_{49}$  is scored "0" for those born in 1949 or earlier and is  $Y - 4$  for those born after 1949;  $Y_{49}^2$  is the square of  $Y_{49}$ ;  $Y_{57}$  is scored "0" for those born in 1957 or earlier and is  $Y - 12$  for those born after 1957;  $Y_{57}^2$  is the square of  $Y_{57}$ . The remaining variables are products of the just defined variables. The coefficients associated with these product terms indicate how the effects of each father's occupation category and father's years of schooling change over time. This sort of model is known as a "spline" model, although the coefficients are estimated via ordinary least squares (OLS) regression.<sup>26</sup>

The coefficients estimated from this model are shown in table 2. But, as is typical of models that include quadratic and interaction terms, the coefficients are almost impossible to interpret directly. To see how the effects of the social origin variables change over time, we plot these effects against year of birth in figures 6-8. Figure 6 shows the difference in the expected years of schooling between intelligentsia sons and cadre sons, respectively, and the sons of peasants, net of father's education. Figure 7 gives the increment in years of schooling associated with a one-year differ-

<sup>25</sup> One of the *AJS* referees expressed concern about the choice of agricultural workers as the omitted category on the ground that opportunities for mobility out of agriculture varied substantially over time, with high rates in the 1950s and again in the 1980s and lower rates due to more restrictive policies during the intervening years. Apart from the fact that it is not clear what consequences we should expect from variation in mobility opportunities out of agriculture, the referee's concern is based on an incorrect premise. It turns out that the proportion of the sons of agricultural workers leaving agriculture was remarkably constant over the 20-year period studied here, as nearly as we can tell from the MGH sample: for each birth cohort about 15% of the sons of peasants worked outside of agriculture.

<sup>26</sup> Spline functions can be estimated via OLS by writing the model as in eq. (1), where the "trick" is to represent the successive segments by what Smith (1979, pp. 57-62) calls "+ functions." Each line segment is represented by a separate variable, and years are recoded so that for each segment all years up to and including the last year of the previous segment (and thus the first year in the new segment, except where there is a discontinuity) are scored "0," the second year of the new segment is scored "1," etc. For example,  $Y_{49}$  is scored "0" for those born in 1949 and earlier, "1" for those born in 1950, "2" for those born in 1951, etc. For additional discussion on the estimation of spline functions, see Greene (1990, pp. 248-51).

TABLE 2

COEFFICIENTS FOR A MODEL OF THE DETERMINANTS OF YEARS OF SCHOOLING, SONS  
BORN 1945–64, LIVING IN MGHs, AND NOT ENGAGED IN AGRICULTURE

VARIABLE	MAIN EFFECT	INTERACTIONS					
		<i>Y</i> (.006)	<i>D</i> <sub>49</sub> (–.574)	<i>Y</i> <sub>49</sub> (.457)	<i>Y</i> <sup>2</sup> <sub>49</sub> (–.027)	<i>Y</i> <sub>57</sub> (.281)	<i>Y</i> <sup>2</sup> <sub>57</sub> (–.015)
<i>O</i> <sub>1</sub> .....	(2.031)	–.063	–.466	–.222	.037	–.490	–.024
<i>O</i> <sub>2</sub> .....	(2.496)	–.210	.194	–.064	.026	–.270	–.017
<i>O</i> <sub>3</sub> .....	(1.411)	–.135	–.062	.088	.007	–.079	–.008
<i>O</i> <sub>4</sub> .....	(2.267)	–.135	–.305	–.201	.038	–.359	–.032
<i>O</i> <sub>5</sub> .....	(1.155)	–.136	.151	–.012	.018	–.229	–.012
<i>O</i> <sub>6</sub> .....	(.730)	–.190	.639	.032	.020	–.139	–.027
<i>O</i> <sub>7</sub> .....	(.920)	–.061	.559	–.290	.039	–.379	–.030
<i>E</i> .....	(.227)	–.008	–.006	–.026	.003	–.017	–.004
Constant .....	6.826						
<i>R</i> <sup>2</sup> .....	.124						
<i>SEE</i> .....	2.370						

NOTE.—*N* = 157,507; data column headings and the first column are main effects, indicated by parentheses. Definition of variables: *O*<sub>1</sub>–*O*<sub>8</sub> are categories for father's occupation: *O*<sub>1</sub> = intelligentsia; *O*<sub>2</sub> = cadres; *O*<sub>3</sub> = lower professional and technical workers; *O*<sub>4</sub> = clerical workers; *O*<sub>5</sub> = sales and service workers; *O*<sub>6</sub> = manual workers; *O*<sub>7</sub> = fathers without occupations; *O*<sub>8</sub> (the omitted category) = agricultural workers; *E* = father's years of schooling (codes given in text); *Y* = year of birth – 45; *D*<sub>49</sub> = 0 for those born between 1945 and 1949 inclusively and 1 for those born after 1949; *Y*<sub>49</sub> = 0 for those born between 1945 and 1949 inclusively and year of birth – 49 for those born after 1949; *Y*<sub>57</sub> = 0 for those born between 1945 and 1957 inclusively and year of birth – 57 for those born after 1957; and *Y*<sup>2</sup><sub>49</sub> and *Y*<sup>2</sup><sub>57</sub> are the squares of *Y*<sub>49</sub> and *Y*<sub>57</sub>, respectively (see the text for details on the construction of these variables).

ence in father's years of schooling, net of father's occupational position.<sup>27</sup> Figure 8 shows the trend in the intercept, which—because of the way we have defined our variables—is the expected years of schooling for men whose fathers are unschooled peasants, that is, who have zero years of schooling and are in the omitted category of the father's occupation classification. To give some sense of how stable these estimates are, we also have plotted the corresponding coefficients derived from an OLS regression equation that predicts years of schooling from father's years of schooling and father's occupational category separately for each year, that is, an equation of the form:

$$\hat{S} = b_0 + \sum_{i=1}^7 b_i O_i + b_8 E. \quad (2)$$

<sup>27</sup> This graph is derived by generating an expected education variable,  $xed = .227 - .008 Y - .006 \times D_{49} - .026 \times Y_{49} + .003 \times Y_{49}^2 - .017 \times Y_{57} - .004 \times Y_{57}^2$ , which is then plotted against year of birth. The remaining graphs are created in the same way.

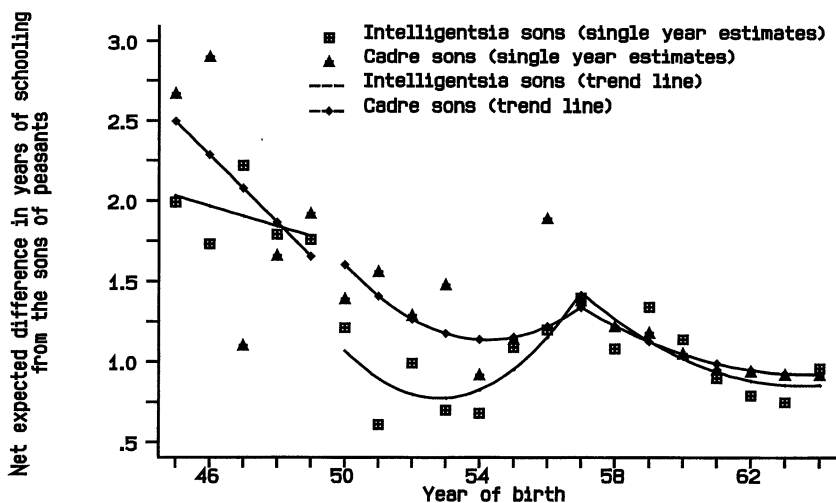


FIG. 6.—Trends in the comparative educational advantage of intelligentsia sons and cadre sons relative to sons of peasants (nonfarm men).

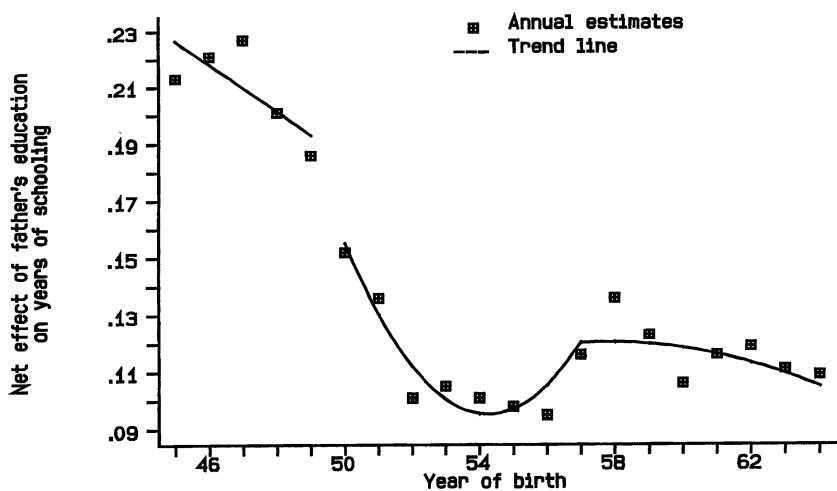


FIG. 7.—Trends in the effect of father's years of schooling on son's years of schooling (nonfarm men).

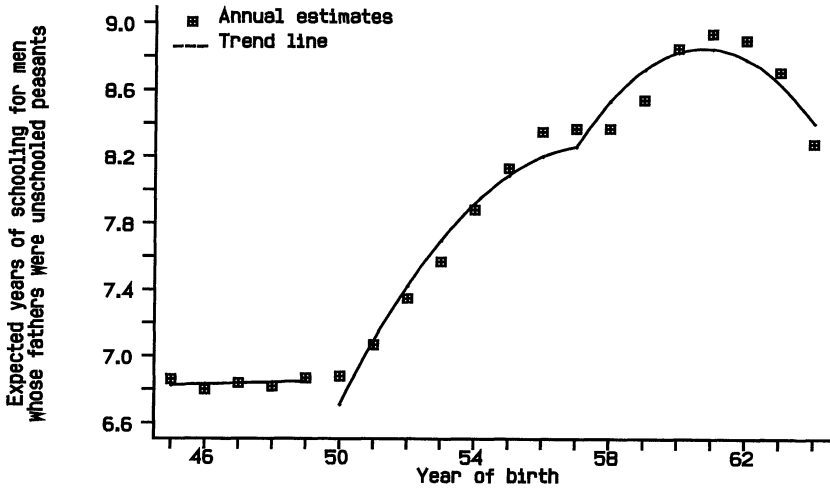


FIG. 8.—Effect of educational expansion, for nonfarm men (trend in the intercept of the educational prediction equation).

Returning to equation (1), note that there is no  $Y^2$  term. Since, as is evident from inspection of figure 7 and especially figure 6, the single-year estimates for birth years 1945–49 are quite unstable, the inclusion of a squared term for these years amounts to little more than a curve-fitting exercise and leads to uninterpretable results. We considered pooling these years to get single point estimates for all pre-Cultural Revolution years combined but in the end decided to get linear trends for the effect of father's occupational position and years of schooling for the pre-Cultural Revolution years. We would caution that the slopes of these linear segments should not be taken too seriously.

Turning now to our hypotheses, we start by noting that, as predicted, the effect of social origins on educational attainment is very weak by international standards, even at the beginning of the period under study. For example, an analysis of 21 countries (Treiman and Yip 1989) and an analysis of 26 countries (Ganzeboom and Treiman 1993) both found that each additional year of father's schooling returned about a half year of education (on average), compared to about .23 years for the oldest cohorts of Chinese men and about .11 years for the youngest. While neither of these studies is precisely comparable to the present one, the large differences in the size of the coefficients strongly suggest that the effect of father's education on educational attainment is weaker in China than in most other nations. Also, both of these studies found a stronger effect of father's occupational status on respondent's educational attainment than appears to

be true for China (although differences in measurement make precise comparisons difficult). Previous research using prestige as the measure of father's status (Treiman and Yip 1989) found an average coefficient of .035, and research using ISEI (Ganzeboom and Treiman 1993) found an average coefficient (for the 1930 cohort) of .058.<sup>28</sup> In an analysis not reported here, in which we use ISEI rather than the occupation classification, the ISEI coefficient ranges downward from .041 to .015. So, all in all, China appears to be an unusually egalitarian society with respect to educational opportunity. This outcome may well reflect the concerted and sustained attempt by the Chinese authorities to promote educational opportunities for the sons of workers and peasants reviewed above, although, absent more direct evidence, we cannot be certain of this inference.

Since education has been expanding steadily in China, and since, as we noted above, this increase is largely the result of the expansion of educational opportunities for the children of peasants, we would expect the effect of social origins on educational attainment to decline over time (Mare 1980, 1981; Shavit and Blossfeld 1993; Ganzeboom and Treiman 1993). That is, educational expansion generally results in greater educational equality.<sup>29</sup> China proves to be no exception. As figures 6–7 clearly show, the net effects of father's occupational status and father's education have both declined dramatically over the 20-year period analyzed here.<sup>30</sup>

Our second expectation is that the effect of social origins declined during the Cultural Revolution period. From inspection of figures 6–7, it is evident that this is so.<sup>31</sup> Beginning with the 1950 birth cohort, there was an abrupt decline in the advantage associated with cadre or intelligentsia

<sup>28</sup> Two studies conducted in the late 1980s in Tianjin, the third largest city in China (Blau and Ruan 1990; Lin and Bian 1991), show results similar to our results for nonfarm men: a small effect of father's education and essentially no effect of father's occupation. Since these findings were from surveys in which information about the father was collected from probability samples of the current population, they lend credence to the results from our sample of sons living in MGHs.

<sup>29</sup> The exception is when educational expansion occurs in such a way as to increase the variance in years of schooling. This seldom happens, since the dominant pattern is to expand education in the least educated sectors of the population, which typically has the effect of reducing rather than increasing the variance in years of schooling. See Ganzeboom and Treiman (1993) for an extended discussion of this issue.

<sup>30</sup> Note that, as Mare (1980, 1981) has shown, this does not imply that the effect of social origins on the likelihood of advancing from any educational level to the next has declined over time. Educational transition probabilities, however, represent a different aspect of educational inequality. Given the length of the current article, we analyze only one such transition (see below).

<sup>31</sup> A formal test of the superiority of the model represented by eq. (1) against a model that simply posits a smooth trend in the parameters may be made via an assessment of the significance of the increment in  $R^2$ ; the increment is significant at beyond the .001 level.

origins, net of father's education, and in the advantage associated with father's education net of father's occupation. Thus, initially the Cultural Revolution had its intended effect—to reduce inequality of attainment on the basis of social origins. After the first few years, however, the decline leveled off and finally was reversed so that for birth cohorts born in the second half of the 1950s the advantage of coming from an educated family or from a high status family began again to increase. Beginning with the 1957 cohort, there appears to have been a “return to normalcy,” with the resumption of a modest downward trend in the effect of social origins on educational attainment, consistent with continuing educational expansion. The weakness of this post-Cultural Revolution trend, however, perhaps reflects the reversal of educational expansion after the introduction of the “household responsibility system” noted above. The gross trends shown in figures 1–4 are mirrored in figure 8, which shows the expected average level of schooling attained by the sons of unschooled peasants. The disaster of the Great Leap Forward is reflected in the flat trend line for the cohorts born in the 1940s and the opportunity costs of education after the introduction of the economic reforms is reflected in the downward trend for cohorts born in 1962 and later.

Our third claim—that the brunt of the attack on elites during the Cultural Revolution was borne by intelligentsia sons and that cadre sons escaped relatively unscathed—may be assessed by comparing the two trend lines in figure 6. From inspection of the figure, our claim appears to be confirmed. Indeed, it is difficult to discern much of a Cultural Revolution effect on the educational attainment of cadre sons, whereas for intelligentsia sons there was a clear decline in advantage relative to the sons of peasants. We can formally test the claim that the two trend lines are different by contrasting the  $R^2$  derived from equation (1) with the  $R^2$  from an otherwise identical model in which intelligentsia and cadre sons are combined into a single category. The increment in  $R^2$  is, indeed, significant at the .01 level.

*Odds of obtaining upper secondary schooling.*—Because, as we have noted, there is some censoring of the data for the youngest cohorts with respect to the proportions attaining any tertiary schooling, we repeat the analysis shown in table 2 and figures 6–8 by estimating trends in the odds of obtaining any upper secondary education, via logistic regression procedures. These results are reported in table 3 and figures 9–11. In general the results are very similar to those discussed above with respect to the average level of educational attainment. There are only two notable differences. First, the impact of the Cultural Revolution on the chances of cadre sons obtaining upper secondary education was nearly as strong as for intelligentsia sons. (Formally, a comparison of the likelihood ratio chi squares for the model shown in table 3 and a model that combines intelli-

TABLE 3

COEFFICIENTS FOR A MODEL OF THE LOG ODDS OF ATTENDING UPPER SECONDARY SCHOOL, SONS BORN 1945–64, LIVING IN MGHs, AND NOT ENGAGED IN AGRICULTURE

VARIABLE	MAIN EFFECT	INTERACTIONS					
		$Y$ (-.020)	$D_{49}$ (-1.124)	$Y_{49}$ (.403)	$Y_{49}^2$ (-.014)	$Y_{57}$ (.138)	$Y_{57}^2$ (-.042)
$O_1$ .....	(1.578)	-.139	-.466	-.211	.051	-.547	-.042
$O_2$ .....	(1.606)	-.183	.182	-.263	.053	-.456	-.048
$O_3$ .....	(1.323)	-.253	-.515	.226	.015	-.200	-.018
$O_4$ .....	(2.166)	-.338	-1.261	.169	.038	-.376	-.045
$O_5$ .....	(.981)	-.178	-.392	-.031	.034	-.350	-.031
$O_6$ .....	(.898)	-.311	-.041	.124	.033	-.244	-.045
$O_7$ .....	(.870)	-.132	.302	-.354	.059	-.520	-.054
$E$ .....	(.167)	-.014	-.015	-.025	.004	-.030	-.004
Constant .....	-1.661						
Model $L^2$ .....	15,679						
$df$ .....	62						

NOTE.—For the definition of variables, see note to table 2;  $N = 157,507$ ; data column headings and the first column are main effects, indicated by parentheses.

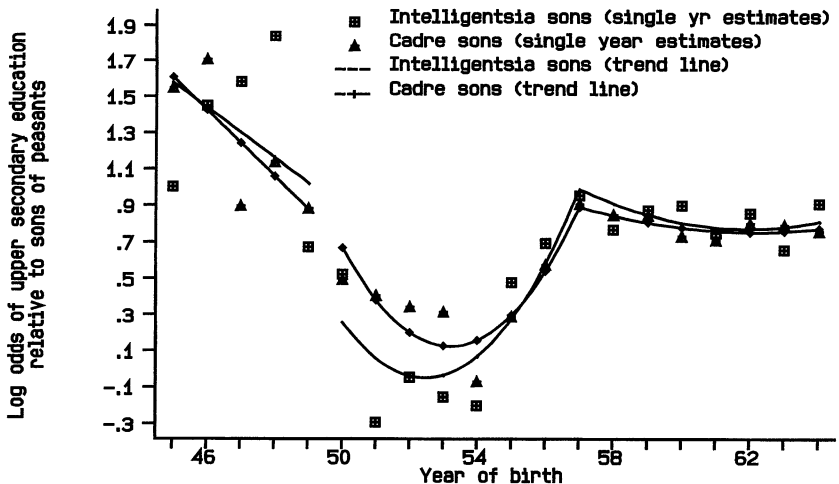


FIG. 9.—Trends in the log odds that intelligentsia sons and cadre sons get upper secondary education relative to the odds that the sons of peasants do so (nonfarm men).



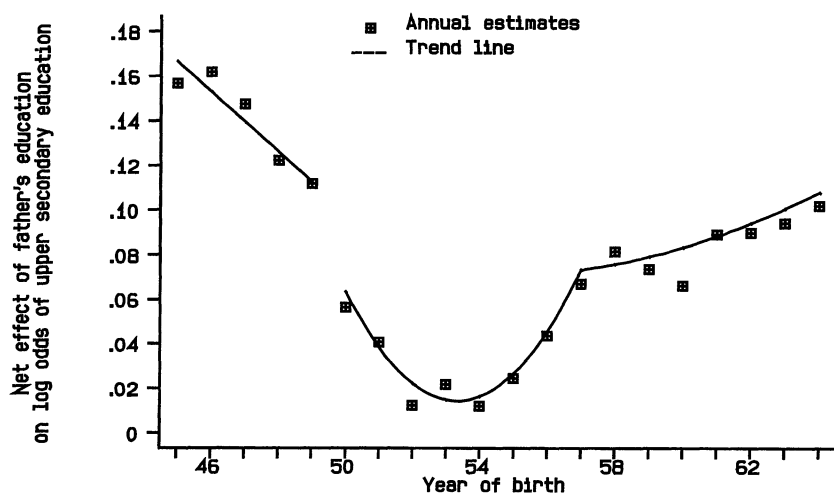


FIG. 10.—Trends in the effect of father's years of schooling on the log odds of getting upper secondary education or more (nonfarm men).

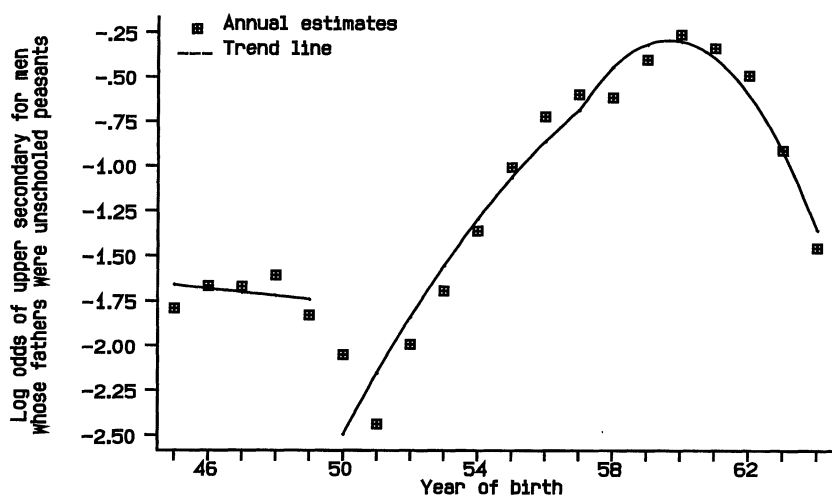


FIG. 11.—Trends in the log odds that the sons of unschooled peasants will get secondary education or more (nonfarm men).

gentsia and cadre fathers into a single category shows that the two categories do not differ significantly from one another—although this outcome may be an artifact of the way we specified the model since the single year estimates for intelligentsia sons are consistently lower than those for cadre sons for the 1951–56 birth cohorts.) For both groups the cost of the Cultural Revolution was very severe; indeed, as we see from the micromodel estimates (the points in fig. 9), for the 1951–54 birth cohorts the odds of obtaining an upper secondary education were actually smaller for intelligentsia sons than for the sons of peasants, net of father's education, and the same was true of cadre sons born in 1954. In contrast, both before and after the Cultural Revolution, both cadre and intelligentsia sons were two to five times as likely as the sons of peasants to obtain upper secondary schooling, again net of father's education. Second, as can be seen in figure 11 (and, of course, in fig. 4 as well), there was a sharp reduction in the odds of obtaining secondary education for the 1950–52 birth cohorts, men who were in lower secondary school at the start of the Cultural Revolution. The single-year estimates in figure 11 show a dramatic drop in the intercept, which means that even for the sons of unschooled peasants, the odds of secondary education were abruptly reduced at the beginning of the Cultural Revolution. It appears that these cohorts were never able to recover from the 1966–68 school closings.

### CONCLUSION

China is a particularly interesting case for students of comparative stratification because it represents an extreme example of state intervention to promote the social mobility of some groups at the expense of others. The educational policies of the Chinese government favored those with "good class backgrounds"—precommunist revolutionaries, workers, and peasants—from the outset of the communist regime until well into the 1980s. But the purity of these policies varied substantially over time. They were most pronounced during the Cultural Revolution, 1966–76. Universities were shut down altogether in 1966, and exclusively political criteria for admission were employed when they reopened in 1972; similar interventions occurred at the secondary school level as well.

The effects of these policies on educational reproduction have remained unknown until now. One possibility was that those from politically incorrect origins eventually were able to find ways around the political criteria and to secure admission to secondary school and then to university. The available evidence suggests that this was exactly the case in Eastern Europe. Although during the 1950s many East European communist regimes had educational policies favoring the children of workers and peasants, just as China did, it is very difficult to find any empirical evidence of

damage to the educational outcomes of those from politically suspect backgrounds or any boost to the educational outcomes of the children of workers and peasants. In light of the East European evidence, China is a crucial test case. If state policies affect educational attainment anywhere, they should do so in China, and, indeed, they did.

We exploited a novel data source, the 1% public use sample of returns to the 1982 census of China. We could use the census to study intergenerational mobility because nearly half of adult Chinese live in MGHs and there is little bias in a sample of sons from MGHs, compared to all Chinese men of the same age, with respect to their socioeconomic characteristics, especially when the farm and nonfarm populations are considered separately. The current analysis was restricted to nonfarm men.

We used these data to test three hypotheses: that the effect of social origins on educational attainment is weaker in China than in other nations, that the advantage of high status origins declined during the Cultural Revolution years, and that the decline was greater for the sons of the intelligentsia than for the sons of cadres. To test these hypotheses, we estimated a simple educational attainment model for men born between 1945 and 1964, in which we posited that educational attainment depends on father's education and father's occupational position but to a varying degree for different cohorts. In particular, we posited a discontinuity in the social origin effects between the 1949 and 1950 cohorts and a sharp change (but no discontinuity) for the 1957 cohort. We estimated our model twice: via an OLS regression in which the dependent variable was a measure of years of school completed and via a logistic regression in which the dependent variable was a dichotomy distinguishing those who did and did not obtain any upper secondary education.

All three hypotheses were supported by the data. First, the dependence of educational attainment on social origins appears to be substantially weaker in China than in other countries for which comparable data are available, even at the beginning of the period under study (and to decline over time as average educational attainment increased). This certainly is consistent with and perhaps results from the concerted attempt of the Chinese government to promote educational opportunities for the children of peasants and workers by creating special schools and short courses and also, from time to time, using political credentials in addition to or instead of examination scores as admissions criteria.

Second, there was a marked decline in the advantage of high status origins during the Cultural Revolution. The Cultural Revolution, from 1966–76 and particularly 1966–72, was a period of extreme reliance on political criteria. For nonfarm men from normally advantageous backgrounds, the Cultural Revolution was a disaster. Specifically, the advantage usually associated with coming from an educated professional or

managerial family was substantially reduced during this period, particularly at the beginning, but there was a return to normalcy toward the end of the Cultural Revolution. In our data, it appears that for the 1957 and younger birth cohorts the effect of the Cultural Revolution has been completely eliminated.

Finally, there is some evidence that the decline was greater and more precipitous for intelligentsia sons than for cadre sons. This clearly was the case with respect to years of school completed; while the prospects of intelligentsia sons were substantially injured, there is little evidence of a decline in the advantage held by cadre sons. With respect to the odds of upper secondary attainment, by contrast, the effect of the Cultural Revolution was felt strongly by both groups of sons, although perhaps more strongly by intelligentsia sons. By contrast, with the exception of the 1950–52 cohorts, who were lower secondary school students in 1966 and thus victims of the massive school closings and disruptions of the first years of the Cultural Revolution, we found no effect of the Cultural Revolution for those from peasant origins, but rather a steadily increasing average level of educational attainment (until the reversal associated with the economic reforms subsequent to 1978). Thus, the Cultural Revolution succeeded—temporarily—in dismantling a reemerging stratification system for the benefit of the peasantry.

The Cultural Revolution was probably the most drastic attempt the world has yet seen to reduce the intergenerational transmission of advantage. Did it succeed? In the short run, the answer is yes but, in the long run, no. While the Cultural Revolution, at the cost of enormous human suffering, managed to temporarily accelerate the trend toward a reduction in intergenerational educational reproduction, it is ironic that within seven years there was a return to the secular trend—a tendency for social origins to matter less and less for educational attainment as the educational system expanded. Even in China, it was policies promoting educational expansion and not policies favoring one social group over another that ultimately had the greatest impact on increased equality of educational opportunity.

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