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# Maximally Maintained Inequality: Expansion, Reform, and Opportunity in Irish Education, 1921-75

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*Secondary education in Ireland has expanded steadily in the 20th century, with a big surge in the late 1960s. In 1967, tuition fees for secondary education were removed and other egalitarian reforms were implemented. This article analyzes the changes in the effect of social origin on educational transitions for the 1908-56 birth cohorts. The results show that overall class differences in educational attainment declined, but class barriers were not removed; they simply became less consequential because the educational system expanded to the point where it could afford to be less selective. The results lead to the hypothesis of maximally maintained inequality and an explanation of it in terms of rational choice. The 1967 reforms appear to have had no effect on equality of educational opportunity. A closer study of the economic incentives for education at that time suggests why and suggests alternative reforms that might have been more effective without costing more money.*

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**E**ducation expanded dramatically in the Republic of Ireland during this century. The expansion resembled expansion elsewhere and probably occurred for similar reasons (Cobalti 1990; Garnier and Raffalovich 1984; Hauser and Featherman 1976; Mare 1980). Students leaving school in the 1970s and 1980s were in school much longer than were those who left in earlier eras. Although the average student has received far more education in the second half of the 20th century than the average student of 50 years ago, the young person who left school at age 18 in 1975 passed through the same sequence of educational gateways as did his or her counterpart who left school at age 18 in 1930.

Before the reforms of 1967, entry into any secondary school required not only passing an entrance examination but also money. Primary schooling was free, but secondary schools charged tuition

until 1967. For that reason, a major focus of this research was on the extent to which the effect of social origins on educational outcomes differed among cohorts. Considering the important change in the economic conditions of secondary schooling, it seems reasonable to expect a weaker effect for social-class origins among the members of the most recent cohort.

Secondary education has been expanding steadily since 1920, at a higher rate since 1945 and with a strong surge in the late 1960s. This expansion may also lead to a loosening of class barriers to educational achievement. In Britain and the United States, expansion has worked to the advantage of formerly excluded groups, notably students from working- and lower-class backgrounds (Halsey, Heath, and Ridge 1980; Heath 1981, Mare 1981).

Of course, actual experience occasionally confounds expectations, even those

as reasonable as expecting class differences in secondary schooling to decrease when the financial burden of secondary education is reduced and enrollments increase. Most notably, the expectation of falling class barriers in British education guided the research of Halsey et al. (1980), who expected the establishment of free secondary schooling in the United Kingdom to reduce class differences in educational attainment. Initial calculations indicated that the overall correlation between origins and education fell after the 1944 Education Act (Halsey 1977), but further analyses showed that the effect of origins on the transitions that constitute educational achievement remained unchanged (Halsey et al. 1980).

How could such a logical relationship between egalitarian educational reforms and egalitarian educational outcomes fail to materialize? Although overall enrollment rates in selective secondary education increased from 29 percent for the 1913–22 cohort to 38 percent for the 1933–42 cohort (Halsey et al. 1980), there was little growth in the proportion of sons attending selective secondary schools *within* any of the classes in Britain (Halsey et al. 1980). Apparently all the growth in attendance at selective secondary schools was due to a redistribution of the social origins in a way that favored educational attainment.<sup>1</sup> Ironically, instead of creating new opportunities for the working class by removing financial burdens, the Education Act of 1948 appears to have expanded the number of positions available to meet the demand for educating the offspring of the rapidly growing British middle class.

The data from Ireland are presented in detail next. By way of summary, however, it can be said that these data support a hypothesis of *maximally maintained inequality*, which means that transition rates and inequality (as mea-

sured by odds ratios) remain constant unless forced to change by increasing enrollments. This overall pattern can be simply explained by the assumption that students and their families make choices about continuing in education that are *rational* in the technical sense of being based on evaluations of costs and benefits. A study of the actual economic incentives to Irish students in 1967 suggests why the removal of tuition fees did little for educational inequality and what kinds of alternative policies might have had a greater effect.

## THE IRISH EDUCATIONAL SYSTEM

### The Educational Transitions

Irish education follows the pattern of age-graded schooling found in many parts of the world. Students entered primary school at age 4, 5, or 6, depending on the era, because part of the expansion of education included a decrease in the age when schooling starts. For the older people in the Irish mobility study (those who left school before 1959), the modal age at first schooling was 6 years; for younger people (who left school since 1959), the modal age was 5 years. Most Irish primary schools offered classes for 4 year olds in the 1980s, so the starting age for the next generation will probably be younger still. Students stay in primary school until they are aged 12–14. Throughout the period covered by our study, the minimum legal school-leaving age was 14, at which age many children in our study left primary school.

Those who complete their primary education follow one of three channels. Some terminate at the end of primary school, some enter an academic program in a secondary school, and the remainder receive specialized technical training and general course work at a vocational school.

Admission to most secondary schools (all until 1966) is based on entrance examinations run by the individual schools. Although these examinations are competitive, in practice the standard has tended to be low, and not many students are excluded from secondary

<sup>1</sup> Because a larger proportion of the post-1944 cohort was from the kinds of backgrounds that led to high educational attainment, the cohort itself achieved higher average achievement despite the lack of change in the underlying parameters.

education by them. More important barriers to continuing include the opportunity cost in terms of lost wages and, until 1967, tuition fees. Also, the geographic distribution of secondary schools was uneven for much of the study period, so that in many parts of the country students could not attend a secondary school while living at home. Until 1960, about half the secondary schools accepted boarders, and as much as one-third of the students boarded; these proportions have decreased considerably in the past 30 years.

During the course of secondary education, there are several opportunities to drop out. At the end of the third year of the five-year secondary-school curriculum, students take the state-run Intermediate Certificate Examination, and many drop out at that point. At the end of the five-year curriculum, students take the Leaving Certificate Examination, also state run, on which admission to universities and many nonmanual occupations is based. In vocational schools the general curriculum is two years, at the end of which most students take the state-run Group Certificate Examination; these students have had little opportunity to complete the second-level curriculum. Students who pass the Leaving Certificate Examination face a limited number of openings in third-level institutions, such as academic universities, training colleges for teachers and other professionals, and technical colleges.

### The Educational System

The Irish educational system is, for the most part, an aided rather than a public system. Almost all the primary schools are denominational and parochial, but most of the funds come from the state, which also determines the curriculum and fixes teachers' salaries. Secondary schools are run mostly by religious orders and are also largely state funded, although until 1967 tuition fees covered part of the cost and until 1964 there was no public funding of the site or construction costs of new schools. The administrative autonomy of secondary schools led to a concentration of them in cities, a geographic imbalance that was not cor-

rected until the 1970s. Vocational schools, in contrast, are publicly run and financed.

Although Ireland has long had one of the lowest income levels in Europe, its educational system is highly developed, with higher participation rates than in many other, much richer, European countries. One reason for these high rates is that the goal of education has traditionally been religious, moral, and intellectual instruction, not economic growth or the preparation of students for careers. As a result, the education of girls has been considered to be as important as that of boys, thus accounting for higher female, and hence total, participation rates than in many other countries.<sup>2</sup>

How could Ireland afford such a system? There seem to be four answers. The schools have been operated in a spartan and frugal manner, the Catholic Church has channeled a large amount of money to education, individual members of religious orders have made substantial contributions of their services, and the curriculum has emphasized subjects that are less technical and hence less costly (Tussing 1978).<sup>3</sup>

This somewhat unusual system is a product of history. Starting in 1831, when Ireland was part of the United Kingdom, the colonial government attempted to set up a public nondenominational system. This attempt was resisted by the Catholic Church and by much of the population, who saw it as

<sup>2</sup> Official statistics indicate that male and female participation levels were similar at each level of the system (*Statistical Abstract of Ireland 1930-88*). In Raftery and Hout (1985) we found no significant association between participation and gender at any level.

<sup>3</sup> Italy has also historically maintained an extensive educational system that led to an oversupply of highly qualified people. Italy's educational system has, however, been much less dominated by the church than that of Ireland, and different explanations have been advanced in the Italian case (Barbagli 1982). What is interesting is that Cobalti's (1990) results from applying a model identical to ours to Italian data are nearly identical with respect to the lack of change in underlying stratification parameters.

part of a wider colonial policy of cultural assimilation. By 1883 this effort was abandoned and a compromise arrived at whereby the (British) state gave minimal financial support to denominational schools.

Ireland became independent in 1921, and during the 1920s the new government instituted the system of state aid to and supervision of the denominational schools. Teachers' registration was introduced, the state started to pay teachers' salaries and pensions and to contribute to the costs of running schools via a capitation grant system, attendance became compulsory to age 14, the Intermediate and Leaving Certificate Examinations were set up, the vocational school system was founded, a scholarship scheme was started, and one-teacher schools were consolidated into larger units. The resulting system was unchanged for over 40 years until the 1960s, and most of the students in our study went through it.

### The 1967 Reforms

In 1959, Ireland's economic policy changed dramatically from one based on economic nationalism, protectionism, self-sufficiency, and state support for small farming to one aimed at encouraging industrial growth and attracting foreign investment. The educational policy also changed, with an emphasis on increasing overall access to second-level education and on reducing class inequalities in access.

In 1964, the state started to finance the construction of new secondary schools. In 1967, tuition fees were abolished and replaced by state grants, free school transportation was provided, vocational schools started to offer classes covering the full five-year second-level curriculum, and in 1968 a means-tested grants scheme for university students was introduced. As a result, public spending for education more than doubled as a proportion of the gross national product.<sup>4</sup> Further details of the evolution of

the system are presented in Coolahar (1981), Lyons (1971), and Tussing (1978).

### Overall Participation Rates

Throughout the period of our study, participation in primary education remained close to 100 percent, according to the official sources. Figure 1 indicates that the rate of expansion in participation in secondary education was steady throughout the period of our study. The absolute number of students, graphed on the log scale, appear as a nearly straight line, indicating a constant rate of growth. The participation rates (graphed on the logit scale) went from 8 percent in 1924 to 60 percent in 1975, and to 75 percent in 1986, with a surge in 1967 and 1968.<sup>5</sup> The rate of increase in absolute numbers was somewhat higher after 1948 than before (Figure 1a).

Participation in universities also increased steadily from a low base level (the lighter line in Figure 1a). The rate went from 1.5 percent in 1924 to 11 percent in 1969, after which it stagnated (the lighter line in Figure 1b). Thus, having completed secondary education in larger numbers than before, the youngest cohorts were faced with an almost unchanging number of university places. Although this un-

on those in our study. The minimum legal school-leaving age was raised from 14 to 15 in 1972, but our youngest students were 16 in that year. Also, from 1966 the state started building public secondary schools, called community and comprehensive schools, mainly in areas that did not already have secondary schools. However, only 1 percent of our youngest cohort went to such schools, and even by 1987 only 8 percent of all second-level students were enrolled in them.

<sup>5</sup> Figure 1 defines secondary students to include students from comprehensive and community schools, but not students from vocational schools; it defines university students to include only university students, not students at other postsecondary institutions. Figure 1a shows raw numbers of students (logged). Figure 1b shows the participation rates, that is, the number of students divided by the total population in the corresponding age groups (on the logit scale). The data are taken from the *Statistical Abstract of Ireland, 1937-88*.

<sup>4</sup> There were several other reforms, but they came later and probably had little effect

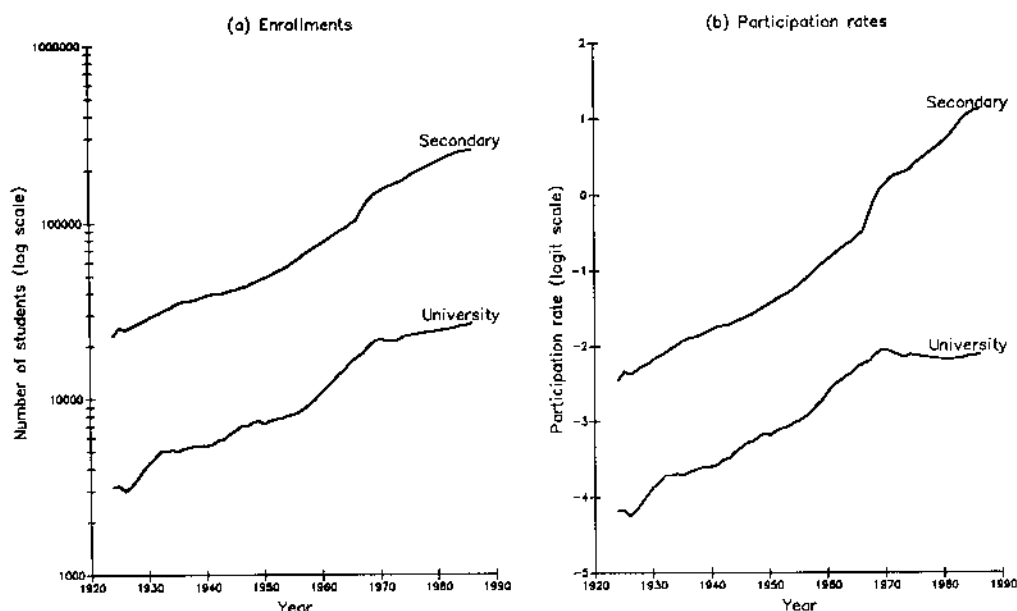


Figure 1. Participation in Secondary Schools and Universities, Republic of Ireland, 1924-86

changed number of places was partly offset by an increase in the number of non-university third-level places, our data show a large drop in transition rates to higher education for the youngest cohort.

#### DATA AND METHODS

We used data from the Irish Mobility Study (Hout 1989) and the Drumcondra Study of Educational Achievement (Greaney and Kellaghan 1984). The Irish Mobility Study is a survey of men aged 18-65 living in Ireland in the winter of 1973-74. We restricted the sample to men ( $N = 2,269$ ). The Drumcondra study originally sampled all students born in 1956 from a stratified sample of all primary schools in Ireland. A sample of 500 students was randomly selected from within the strata of the original design for the purposes of follow-up. Attrition of four cases in the sample and missing data on the fathers' occupations in 29 cases reduced our sample to 467.<sup>6</sup>

<sup>6</sup> The Drumcondra data include women. Previous analyses showed no interaction between gender and either educational attainment or class (Raftery and Hout 1985), so we used all the data in this analysis as a way of maintaining a larger case base. This and other evidence suggests that there was little

In both samples social origins are coded the same way according to procedures specified in Erikson, Goldthorpe, and Portocararo (1979), Goldthorpe and Hope (1974), and Hout and Jackson (1986). The result was a 16-category classification scheme (see Table 1). In modeling educational transitions, we used these 16 categories as dummy variables and applied scales of prestige (scores on the Hope-Goldthorpe scale, Goldthorpe and Hope 1974) and educational credentialing (the proportion of occupational incumbents with more than a primary education) that are also shown in Table 1.

In our cohort analysis we used four birth cohorts: 1909-20, 1921-35, 1936-55, and 1956. The first cohort ended primary school during the early years of the independent Irish state, the second ended it during the depression of the 1930s and World War II, the third was affected by the wave of economic expansion that fol-

lowed the war. The difference between the educational transition rates of men and women, and so in this article we refer to the respondents in our surveys in a gender-neutral way. However, it must be borne in mind that we have data on men only for three of our four cohorts, and so the generalization to women of our results for these cohorts, although plausible, has not been conclusively established.

Table 1. Social Origin Classification Scheme and Social Origin Scales

| Code <sup>a</sup> | Description   | Scales                |                        |
|-------------------|---|-----------------------|------------------------|
|                   |   | Prestige <sup>b</sup> | Education <sup>c</sup> |
| Ia                | Professionals, higher grade, and proprietors with 25 or more employees <sup>d</sup> | 76                    | 96                     |
| Ib                | Professionals, higher grade, and managers in large firms                            | 69                    | 93                     |
| II                | Professionals, lower grade, and managers in small firms                             | 60                    | 91                     |
| IIIa              | Clerical and sales workers  | 42                    | 89                     |
| IIIb              | Service workers   | 31                    | 52                     |
| IVa               | Proprietors with 1-24 employees <sup>d</sup>  | 51                    | 61                     |
| IVb               | Proprietors without employees <sup>d</sup>  | 48                    | 38                     |
| V                 | Technicians and foremen   | 47                    | 64                     |
| VI                | Skilled manual workers  | 38                    | 55                     |
| VIIss             | Semiskilled manual workers  | 30                    | 36                     |
| VIIus             | Unskilled manual workers  | 18                    | 18                     |
| IVc               | Farmers with employees  | 58                    | 44                     |
| IVd               | Farmers without employees   | 37                    | 18                     |
| VIII              | Farm laborers   | 31                    | 6                      |
| VIII              | Unpaid helpers, farm  | 31                    | 36                     |
| VIII              | Unpaid helpers, nonfarm   | 31                    | 70                     |

<sup>a</sup> The roman numerals refer to the scheme developed by Goldthorpe (1980).

<sup>b</sup> Mean on the Hope-Goldthorpe scale (Goldthorpe and Hope 1974).

<sup>c</sup> Proportion of men in the occupation who completed primary school.

<sup>d</sup> Self-employed.

lowed the 1959 economic reforms, and the fourth ended primary education soon after the 1967 educational reforms.<sup>7</sup> The raw data are presented in Table 2.

## CHANGES IN ATTAINMENT AND TRANSITION RATES

### Trends in Completed Education

The upward trend in Irish education can be clearly seen in Figure 2, which

<sup>7</sup> We could have made slightly different decisions about how to divide the data into cohorts. The 1956 cohort is distinct in any event. Our choice of 1935-36 as the breakpoint was motivated by the fact that the expansion of secondary education (in absolute numbers) accelerated markedly in 1948, when those born in 1936 entered secondary schools. From 1924 to 1947, the number enrolled in secondary schools increased gradually by about 1,000 per year, while from 1948 to 1966, the average annual increase was over 3,000. We carried out exploratory analyses using other cohort divisions, and these confirmed that the increase in the probabilities of class-specific transitions started in 1948. The division of those born 1909-35 into two cohorts illustrates the immobility of the system until the end of World War II.

shows the educational attainment for each cohort. The share of each cohort that stopped after primary schooling (indicated by the black areas) fell for each origin class. The two levels of secondary education (the light and dark gray areas) expanded commensurately. The share of each cohort with at least some higher education (indicated by the very light areas) shows an uneven growth pattern across different origin classes.<sup>8</sup>

More than two-thirds of those born before 1936 received no more than a primary education. In contrast, more than three-quarters of those born between 1936 and 1955 received at least some postprimary education; the remaining quarter followed the older pattern of early school leaving. Postprimary education was more likely to be academic in Ireland than in other countries with comparable data (Halsey et al. 1980; Hout 1989); 62 percent of those who continued their education went to academic secondary schools. After 1967, secondary schooling in Ireland was free,

<sup>8</sup> The percentage-change calculation is a crude measure of change. We focus on the parameters of the models we present later, but we report these percentages as simple descriptive statistics recognizing that they mix marginal and conditional changes.

Table 2. Input Data for Logit Regression Analysis of Educational Transitions<sup>a</sup>

| N   | S  | O       | C | T | N  | S  | O       | C | T | N  | S  | O       | C | T |
|-----|----|---------|---|---|----|----|---------|---|---|----|----|---------|---|---|
| 9   | 9  | Ia      | 1 | 1 | 9  | 7  | Ia      | 1 | 2 | 7  | 6  | Ia      | 1 | 3 |
| 9   | 6  | Ib      | 1 | 1 | 6  | 2  | Ib      | 1 | 2 | 2  | 1  | Ib      | 1 | 3 |
| 26  | 21 | II      | 1 | 1 | 21 | 11 | II      | 1 | 2 | 11 | 8  | II      | 1 | 3 |
| 18  | 13 | IIa     | 1 | 1 | 13 | 8  | IIa     | 1 | 2 | 8  | 3  | IIa     | 1 | 3 |
| 9   | 4  | IIb     | 1 | 1 | 4  | 0  | IIb     | 1 | 2 | 0  | 0  | IIb     | 1 | 3 |
| 33  | 17 | IVa     | 1 | 1 | 17 | 8  | IVa     | 1 | 2 | 8  | 4  | IVa     | 1 | 3 |
| 45  | 9  | IVb     | 1 | 1 | 9  | 1  | IVb     | 1 | 2 | 1  | 0  | IVb     | 1 | 3 |
| 80  | 29 | IVc     | 1 | 1 | 29 | 9  | IVc     | 1 | 2 | 9  | 5  | IVc     | 1 | 3 |
| 283 | 41 | IVd     | 1 | 1 | 41 | 10 | IVd     | 1 | 2 | 10 | 7  | IVd     | 1 | 3 |
| 19  | 9  | V       | 1 | 1 | 9  | 2  | V       | 1 | 2 | 2  | 1  | V       | 1 | 3 |
| 68  | 24 | VI      | 1 | 1 | 24 | 6  | VI      | 1 | 2 | 6  | 5  | VI      | 1 | 3 |
| 68  | 17 | VIIss   | 1 | 1 | 17 | 5  | VIIss   | 1 | 2 | 5  | 3  | VIIss   | 1 | 3 |
| 69  | 8  | VIIus   | 1 | 1 | 8  | 2  | VIIus   | 1 | 2 | 2  | 0  | VIIus   | 1 | 3 |
| 87  | 8  | VIIIf   | 1 | 1 | 8  | 0  | VIIIf   | 1 | 2 | 0  | 0  | VIIIf   | 1 | 3 |
| 2   | 1  | VIIIIf  | 1 | 1 | 1  | 1  | VIIIIf  | 1 | 2 | 1  | 1  | VIIIIf  | 1 | 3 |
| 1   | 1  | VIIIInf | 1 | 1 | 1  | 0  | VIIIInf | 1 | 2 | 0  | 0  | VIIIInf | 1 | 3 |
| 8   | 8  | Ia      | 2 | 1 | 8  | 6  | Ia      | 2 | 2 | 6  | 5  | Ia      | 2 | 3 |
| 10  | 8  | Ib      | 2 | 1 | 8  | 8  | Ib      | 2 | 2 | 8  | 6  | Ib      | 2 | 3 |
| 45  | 40 | II      | 2 | 1 | 40 | 27 | II      | 2 | 2 | 27 | 15 | II      | 2 | 3 |
| 29  | 26 | IIa     | 2 | 1 | 26 | 15 | IIa     | 2 | 2 | 15 | 7  | IIa     | 2 | 3 |
| 14  | 7  | IIb     | 2 | 1 | 7  | 2  | IIb     | 2 | 2 | 2  | 2  | IIb     | 2 | 3 |
| 56  | 45 | IVa     | 2 | 1 | 45 | 22 | IVa     | 2 | 2 | 22 | 12 | IVa     | 2 | 3 |
| 39  | 25 | IVb     | 2 | 1 | 25 | 7  | IVb     | 2 | 2 | 7  | 5  | IVb     | 2 | 3 |
| 82  | 44 | IVc     | 2 | 1 | 44 | 12 | IVc     | 2 | 2 | 12 | 9  | IVc     | 2 | 3 |
| 209 | 68 | IVd     | 2 | 1 | 68 | 20 | IVd     | 2 | 2 | 20 | 13 | IVd     | 2 | 3 |
| 28  | 20 | V       | 2 | 1 | 20 | 9  | V       | 2 | 2 | 9  | 3  | V       | 2 | 3 |
| 91  | 65 | VI      | 2 | 1 | 65 | 15 | VI      | 2 | 2 | 15 | 7  | VI      | 2 | 3 |
| 86  | 42 | VIIss   | 2 | 1 | 42 | 8  | VIIss   | 2 | 2 | 8  | 5  | VIIss   | 2 | 3 |
| 99  | 26 | VIIus   | 2 | 1 | 26 | 8  | VIIus   | 2 | 2 | 8  | 3  | VIIus   | 2 | 3 |
| 57  | 11 | VIIIf   | 2 | 1 | 11 | 3  | VIIIf   | 2 | 2 | 3  | 1  | VIIIf   | 2 | 3 |
| 1   | 0  | VIIIIf  | 2 | 1 | 0  | 0  | VIIIIf  | 2 | 2 | 0  | 0  | VIIIIf  | 2 | 3 |
| 3   | 2  | VIIIInf | 2 | 1 | 2  | 1  | VIIIInf | 2 | 2 | 1  | 0  | VIIIInf | 2 | 3 |
| 7   | 7  | Ia      | 3 | 1 | 7  | 6  | Ia      | 3 | 2 | 6  | 4  | Ia      | 3 | 3 |
| 8   | 8  | Ib      | 3 | 1 | 8  | 6  | Ib      | 3 | 2 | 6  | 4  | Ib      | 3 | 3 |
| 26  | 26 | II      | 3 | 1 | 26 | 17 | II      | 3 | 2 | 17 | 8  | II      | 3 | 3 |
| 26  | 25 | IIa     | 3 | 1 | 25 | 16 | IIa     | 3 | 2 | 16 | 6  | IIa     | 3 | 3 |
| 11  | 9  | IIb     | 3 | 1 | 9  | 3  | IIb     | 3 | 2 | 3  | 3  | IIb     | 3 | 3 |
| 33  | 30 | IVa     | 3 | 1 | 30 | 18 | IVa     | 3 | 2 | 18 | 5  | IVa     | 3 | 3 |
| 23  | 19 | IVb     | 3 | 1 | 19 | 6  | IVb     | 3 | 2 | 6  | 2  | IVb     | 3 | 3 |
| 36  | 27 | IVc     | 3 | 1 | 27 | 8  | IVc     | 3 | 2 | 8  | 3  | IVc     | 3 | 3 |
| 125 | 82 | IVd     | 3 | 1 | 82 | 28 | IVd     | 3 | 2 | 28 | 10 | IVd     | 3 | 3 |
| 32  | 27 | V       | 3 | 1 | 27 | 7  | V       | 3 | 2 | 7  | 5  | V       | 3 | 3 |
| 79  | 56 | VI      | 3 | 1 | 56 | 13 | VI      | 3 | 2 | 13 | 4  | VI      | 3 | 3 |
| 68  | 46 | VIIss   | 3 | 1 | 46 | 14 | VIIss   | 3 | 2 | 14 | 9  | VIIss   | 3 | 3 |
| 80  | 38 | VIIus   | 3 | 1 | 38 | 4  | VIIus   | 3 | 2 | 4  | 1  | VIIus   | 3 | 3 |
| 29  | 16 | VIIIf   | 3 | 1 | 16 | 2  | VIIIf   | 3 | 2 | 2  | 0  | VIIIf   | 3 | 3 |
| 1   | 1  | VIIIIf  | 3 | 1 | 1  | 0  | VIIIIf  | 3 | 2 | 0  | 0  | VIIIIf  | 3 | 3 |
| 1   | 1  | VIIIInf | 3 | 1 | 1  | 0  | VIIIInf | 3 | 2 | 0  | 0  | VIIIInf | 3 | 3 |
| 8   | 8  | Ia      | 4 | 1 | 8  | 8  | Ia      | 4 | 2 | 8  | 2  | Ia      | 4 | 3 |
| 19  | 19 | Ib      | 4 | 1 | 19 | 14 | Ib      | 4 | 2 | 14 | 6  | Ib      | 4 | 3 |
| 32  | 32 | II      | 4 | 1 | 32 | 24 | II      | 4 | 2 | 24 | 11 | II      | 4 | 3 |
| 23  | 23 | IIa     | 4 | 1 | 23 | 17 | IIa     | 4 | 2 | 17 | 5  | IIa     | 4 | 3 |
| 11  | 11 | IIb     | 4 | 1 | 11 | 6  | IIb     | 4 | 2 | 6  | 1  | IIb     | 4 | 3 |
| 20  | 20 | IVa     | 4 | 1 | 20 | 13 | IVa     | 4 | 2 | 13 | 4  | IVa     | 4 | 3 |
| 62  | 59 | IVb     | 4 | 1 | 59 | 26 | IVb     | 4 | 2 | 26 | 6  | IVb     | 4 | 3 |
| 23  | 19 | IVc     | 4 | 1 | 19 | 12 | IVc     | 4 | 2 | 12 | 1  | IVc     | 4 | 3 |
| 88  | 86 | IVd     | 4 | 1 | 86 | 44 | IVd     | 4 | 2 | 44 | 14 | IVd     | 4 | 3 |
| 13  | 13 | V       | 4 | 1 | 13 | 7  | V       | 4 | 2 | 7  | 3  | V       | 4 | 3 |
| 26  | 24 | VI      | 4 | 1 | 24 | 7  | VI      | 4 | 2 | 7  | 1  | VI      | 4 | 3 |
| 44  | 39 | VIIss   | 4 | 1 | 39 | 10 | VIIss   | 4 | 2 | 10 | 2  | VIIss   | 4 | 3 |
| 56  | 41 | VIIus   | 4 | 1 | 41 | 20 | VIIus   | 4 | 2 | 20 | 3  | VIIus   | 4 | 3 |
| 42  | 40 | VIIIf   | 4 | 1 | 40 | 2  | VIIIf   | 4 | 2 | 2  | 1  | VIIIf   | 4 | 3 |
| 0   | 0  | VIIIIf  | 4 | 1 | 0  | 0  | VIIIIf  | 4 | 2 | 0  | 0  | VIIIIf  | 4 | 3 |
| 0   | 0  | VIIIInf | 4 | 1 | 0  | 0  | VIIIInf | 4 | 2 | 0  | 0  | VIIIInf | 4 | 3 |

<sup>a</sup> N = number of cases; S = number of successes; O = origin/father occupation; C = cohort (1 = 1908-25, 2 = 1936-45, 3 = 1946-55, 4 = 1956); T = transition (1 = entered secondary, 2 = completed secondary, 3 = entered higher education).



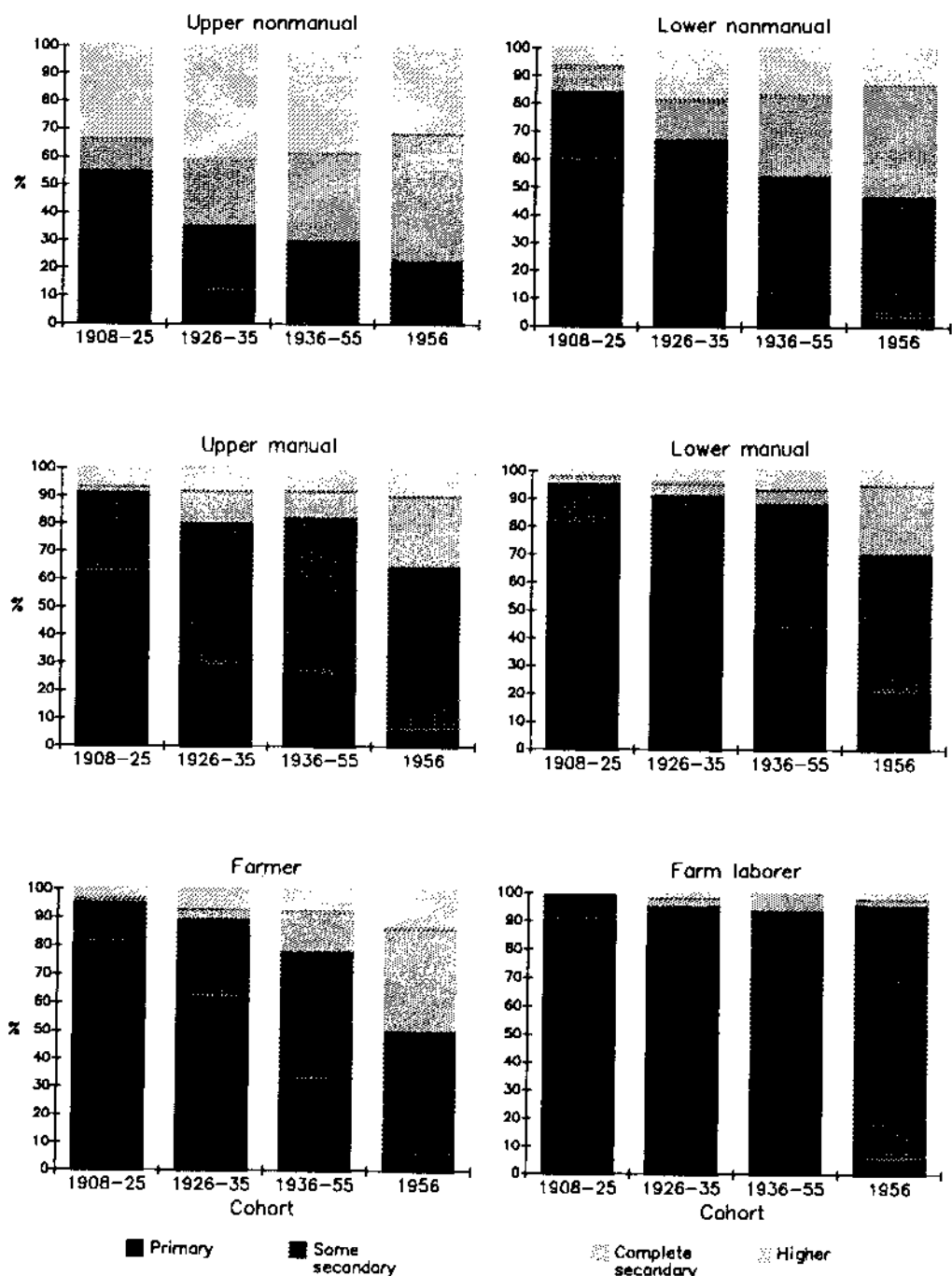


Figure 2. Educational Levels, by Origin and Cohort: Republic of Ireland, 1921-75

but 8 percent of those in the youngest cohort did not continue their education after primary school. Overall, the proportion with no second-level education fell by 64 percent.

By comparison, in Northern Ireland,

46 percent of the men who left school from 1945 to 1958 enrolled in academic schools. Considering that secondary education was free in Northern Ireland but not in the Republic of Ireland when these men were ready to move from

primary to secondary school, it is surprising that the Republic of Ireland kept up with the expansion of secondary schools in Northern Ireland and in a way that favored academic over technical-vocational education.

We have reviewed some of the possible reasons for this finding in our description of the system in the Republic of Ireland. One other possible explanation needs to be examined. It could be that selective emigration, which was extremely high during these years, drew off a large share of primary school leavers from the Republic. If the poorly educated were more likely to leave Ireland than were their better-educated counterparts, then their absence from our sample of Irish residents would lead to an upward bias in our estimate of the education received by those who left school in the postwar era. The best evidence on this point is from the Oxford Mobility Study (Goldthorpe 1980). The 42 Irish-born workers born from 1921 to 1940 (roughly the same cohort) drawn from the Oxford data tapes show only 40 percent with no secondary education. That figure suggests that if any difference exists between emigrants and other men, it is the emigrants who were better educated than the men they left behind.

The educational distributions of lower origin classes changed more than did those of the upper classes. The proportion with at least some secondary education and with completed secondary education increased more, in raw percentages, for the children of small farmers, farm laborers, and lower manual workers than for workers from white-collar or larger-farm backgrounds.

Higher education did not expand as rapidly as did secondary education. There was little change in the proportion of each origin group with at least some higher education.

An indicator of the association between social origins and educational attainment—the linear-by-linear association parameter (Haberman 1974) for father's prestige and offspring's educa-

tional level<sup>9</sup>—shows no significant change across cohorts.<sup>10</sup>

### Trends in Transition Rates

Educational achievement is a process of accumulation, not a simple, single placement on a scale. To separate the effects of social origins and cohort, a statistical model must correctly specify this sequence (Mare 1980). The building block of this kind of model is the transition rate, namely, the proportion of students at some level  $k$  who go on to the next level,  $k+1$ . Origins and cohort affect some transitions more strongly than they do others. In this section, some descriptive statistics shown in Table 3 are discussed. The models are described in the next section.

The most prominent change in Irish education has been the increase in transition rates to secondary school. The proportion of children who continued from primary to secondary school rose from 28 percent of the earliest cohort to 92% of the youngest cohort. The differences in transition rates among all classes were huge. The range of transition rates into secondary school was 60 points in the first cohort, 71 points in the second cohort, 36 points in the third cohort, and 20 points in the last cohort. Ceiling

<sup>9</sup> This statistic is derived from a log-linear model of the origin ( $i$ ) by education ( $j$ ) by cohort ( $k$ ) table:

$$\log F_{ijk} = \lambda_o + \lambda_i + \lambda_j + \lambda_k + \lambda_{ij} + \lambda_{ik} + \theta_k X_{1i} X_{2j}$$

where  $F_{ijk}$  is the count from the origin  $\times$  education  $\times$  cohort table, the  $\lambda$  terms are the usual log-linear parameters,  $X_{1i}$  is the prestige or educational credential score of father's occupation  $i$ , and  $X_{2j}$  is a score from 1 to 4 for each educational level (i.e.,  $X_{2j} = j$ ).

<sup>10</sup> It decreased from .0345 (.0040) for the 1908–20 cohort to .0310 (.0032) for the 1921–35 cohort, increased to .0340 (.0042) for the 1936–55 cohort, and went back down to .0317 (.0048) for the 1956 cohort. These differences are not significant. Similar calculations using the educational credential score for father's occupation show a nonsignificant monotonic decrease from .0224 (.0021) to .0208 (.0018) to .0181 (.0021) to .0158 (.0023) across the same cohorts.

Table 3. Educational Transition Rates by Cohort, for All Respondents and by Origin: Republic of Ireland, 1921-75

| Educational Transition           | Birth Cohort |         |         |      |
|----------------------------------|--------------|---------|---------|------|
|                                  | 1908-20      | 1921-35 | 1936-55 | 1956 |
| <i>All</i>                       |              |         |         |      |
| Entered secondary education      | 28           | 32      | 77      | 92   |
| Completed secondary education    | 26           | 43      | 29      | 52   |
| Entered higher education         | 71           | 57      | 62      | 29   |
| <i>Upper Nonmanual</i>           |              |         |         |      |
| Entered secondary education      | 68           | 82      | 94      | 100  |
| Completed secondary education    | 50           | 65      | 69      | 78   |
| Entered higher education         | 79           | 60      | 72      | 41   |
| <i>Lower Nonmanual</i>           |              |         |         |      |
| Entered secondary education      | 44           | 50      | 82      | 97   |
| Completed secondary education    | 43           | 51      | 39      | 55   |
| Entered higher education         | 63           | 55      | 62      | 26   |
| <i>Upper Manual</i>              |              |         |         |      |
| Entered secondary education      | 35           | 31      | 77      | 95   |
| Completed secondary education    | 33           | 30      | 18      | 38   |
| Entered higher education         | 62           | 62      | 44      | 29   |
| <i>Lower Manual</i>              |              |         |         |      |
| Entered secondary education      | 12           | 21      | 77      | 80   |
| Completed secondary education    | 7            | 22      | 21      | 38   |
| Entered higher education         | 0            | 67      | 60      | 17   |
| <i>Farmers with Employees</i>    |              |         |         |      |
| Entered secondary education      | 36           | 33      | 74      | 83   |
| Completed secondary education    | 30           | 42      | 38      | 63   |
| Entered higher education         | 83           | 63      | 67      | 8    |
| <i>Farmers without Employees</i> |              |         |         |      |
| Entered secondary education      | 8            | 11      | 65      | 98   |
| Completed secondary education    | 43           | 25      | 15      | 51   |
| Entered higher education         | 0            | 33      | 64      | 32   |
| <i>Farm Laborers</i>             |              |         |         |      |
| Entered secondary education      | 17           | 14      | 58      | 83   |
| Completed secondary education    | 29           | 33      | 8       | 20   |
| Entered higher education         | 50           | 0       | 50      | 50   |

effects may be responsible for the compressed range in the last two cohorts because all students from 7 of the 16 origin groups went on to at least some form of secondary education. In each cohort, the offspring of large proprietors, professionals, managers, clerks, and salesmen (Classes Ia, Ib, II, and IIIa) were most likely to continue their education beyond the primary level; the children of small farmers (Class IVd) and laborers on and off farms (Classes VIIus and VIIf) were most likely to drop out at this point. Not shown but noteworthy is the fact that the children of employers did significantly better than did the children of men with the same occupation who had no employees. Proprietors of small businesses with employees (Class IVa) gave their children as much as a 33-

point advantage over the children of proprietors of small businesses without employees (Class IVb); the advantage of children of employing farmers (Class IVc) over children of small holders (Class IVd) ranged from 10 to 25 points. Internal stratification of the working class in Ireland has also been pronounced; children of skilled manual workers (Classes V and VI) had a 10-25 point advantage over children of semi-skilled and unskilled manual workers (Classes VIIss and VIIus).

Among those who started secondary school, the probability of attaining a complete secondary education increased from 36 percent to 52 percent. The differences among classes at this level may not have been as large as the differences at the primary level, espe-

cially in the earliest cohort, but there is no sign of a decrease in the class effect over time.

The probability of making the transition from complete secondary to higher education dropped suddenly in the most recent cohort. As more students finished secondary education, the modest expansion of the higher education system in Ireland maintained a pace that could accommodate a constant fraction of each successive cohort (each cohort being larger than the last), but Irish higher education could not expand enough to admit the same fraction of qualified secondary school leavers from the 1956 cohort as it had from the 1936–55 cohort.

Evidence of class effects at this level is somewhat tenuous, given the small number of observations, especially in the first two cohorts. The effect of class is probably weaker here, considering the small differences among the selected origin classes shown in Table 3. Scanning the table is insufficient to decide whether class differentials varied by level of education. Some detailed tests were required to determine what was going on at the transition to higher education.

### MODELS OF TRANSITION RATES

The modeling of transition rates proceeds with a sequence of logistic regressions. In each model considered, the dependent variable is the probability of success in the transition from level  $k$  to  $k+1$  for individual  $i$  ( $p_{ik}$ ), transformed to its logit from ( $y_{ik}$ ). The general form of the model is as follows:

$$y_{ik} = \ln \left( \frac{p_{ik}}{1 - p_{ik}} \right) = \beta_{0k} + \sum_j \beta_j X_{ij} \quad (1)$$

There are three independent variables: cohort (4 categories), origin (16 categories), and level of educational transition (3 categories). Note that  $\beta_j$  are not subscripted by either  $i$  or  $k$ , that is, the model appears to constrain the independent variables to have the same linear and additive effect on logits for all

individuals at each transition and, consequently, proportional effects on the probabilities at each transition. This limitation of the model is remedied by including some interaction terms among the  $X_{ij}$ . For many of the models, origin is scaled according to the prestige of the father's occupation (Goldthorpe and Hope 1974) and the proportion of occupational incumbents who completed their primary education (Hout 1989), rather than being treated as a categorical variable. Fit is gauged by conventional deviance methods (McCullagh and Nelder 1989) and Raftery's *bic* statistic (Raftery 1986a, 1986b). The results of a logistic regression analysis of the transition rates are presented in Table 4.

The null model says that transition rates are the same for all transitions, cohorts, and origins and is clearly contradicted by the data. Model 1 says that the rates are different for each transition, but vary neither by cohort nor by origin and is also rejected. The effect of cohort is fitted next (Models 2–4), and it is clear that the cohort effect is strong (Model 2) and different at each transition (Model 3). However, there is no significant change in transition rates between the two oldest cohorts (Model 4).

The first model to include a term for origins is Model 5. In this model fathers' occupation is scaled according to its educational level. This variate is powerful, reducing  $L^2$  by 354 with a single degree of freedom. The alternative, scaling father's occupation according to its prestige (Goldthorpe and Hope 1974) is also powerful, but not as much so (Model 6), and including both prestige and educational origin measures (Model 7) is only slightly better than using the educational dimension alone. The effect of the educational dimension of origin varies with transition and is not significant for entry to higher education (Model 8). The effect of the prestige dimension operates differently for different classes, and Model 9, in which prestige is recoded to zero for non-farm manual occupations (Classes V, VI, VIIss, and VIIus), fits better than the previous models, indicating a clear manual–nonmanual divide.

Changes in class differentials over

Table 4. Goodness of Fit for Selected Logistic Regression Models of Educational Transitions: Republic of Ireland, 1921-75

| Number Model  | $L^2$ | $df$ | $bic$ |
|---|-------|------|-------|
| 0 Null  | 1860  | 178  | 452   |
| 1 $T$   | 1679  | 176  | 256   |
| 2 $C + T$   | 1233  | 173  | -136  |
| 3 $CT$  | 702   | 167  | -620  |
| 4 $C_{(3)}T$  | 709   | 170  | -637  |
| 5 $C_{(3)}T + E$  | 355   | 169  | -982  |
| 6 $C_{(3)}T + P$  | 446   | 169  | -891  |
| 7 $C_{(3)}T + E + P$                                    | 338   | 168  | -991  |
| 8 $C_{(3)}T + E_{(T1)} + E_{(T2)} + P$                  | 292   | 167  | -1030 |
| 9 $C_{(3)}T + E_{(T1)} + E_{(T2)} + P^*$                | 267   | 167  | -1055 |
| 10 $C_{(3)}T + C_{(2)}E_{(T1)} + E_{(T2)} + P^*$        | 251   | 166  | -1062 |
| 11 $C_{(3)}T + C_{(2)}E_{(T1)} + E_{(T2)} + C_{(3)}P^*$ | 249   | 164  | -1049 |
| 12 $C_{(3)}T + C_{(2)}E_{(T1)} + C_{(3)}E_{(T2)} + P^*$ | 248   | 164  | -1050 |

Note: These are all fits from logistic regressions with "success," that is passing to the next level, as the dependent variable. The independent variables are  $C$  = birth cohort (4 categories),  $C_{(3)}$  = birth cohort with the first two cohorts coded the same (3 categories),  $C_{(2)}$  = birth cohort with the first two cohorts coded the same and the last two cohorts coded the same (2 categories),  $T$  = transition (3 categories),  $P$  = prestige score for father's occupation,  $P^*$  =  $P$  for nonmanual and farm origins and zero for manual origins,  $E$  = education score for father's occupation,  $E_{(T1)}$  =  $E$  for transition 1 and zero otherwise, and  $E_{(T2)}$  =  $E$  for transition 2 and zero otherwise. The preferred model is in boldface.

time are explored in Models 10-12. Cohort interacts with the educational dimension of father's occupation, but only for entry to the second level, with the only change occurring between the second and third cohorts (Model 10). There are no further significant interactions between cohort and origin (e.g., Models 11 and 12). Thus, Model 10 is the preferred model for these data.<sup>11</sup>

The parameter estimates in Table 5 highlight the effects of origin on success.

<sup>11</sup> This conclusion is based on a comparison of  $bic$  values, but the same conclusion would be reached by carrying out a succession of  $L^2$  difference tests at a conventional significance level (e.g., .05 or .01). There is some indication of mild overdispersion in these data, in that the value of  $L^2$  for the preferred model is somewhat larger than would be expected, given the number of degrees of freedom. This could be caused by unaccounted-for population heterogeneity, owing to such factors as ability, geographic location, and taste. The results can be adjusted in a simple way to take account of this, at least approximately, drawing on the idea of quasi-likelihood (McCullagh and Nelder 1989). This can be done by dividing all the  $L^2$  values in Table 5 by  $\delta^2 = X^2 / df = 1.5$ , and dividing all the  $t$  values in Table 4 by  $\delta = 1.22$ , where  $X^2$  is the Pearson's  $\chi^2$  value for the preferred model. Carrying out these calculations does not change any of our conclusions.

Comparing lower-grade professionals and managers (Class II) with semiskilled laborers (Class VIIss) covers a range of 55 educational points and 30 prestige points, which is enough to produce a difference of  $.0381 \times 55 + .0094 \times 30 = 2.38$  in the log-odds on moving from the primary to the second level in the two oldest cohorts. This finding implies that if the transition rate to the second level is 20 percent for semiskilled workers, then the expected rate for lower-grade professionals and managers is 73 percent.<sup>12</sup> The corresponding log-odds difference for the two younger cohorts is  $.0204 \times 55 + .0094 \times 30 = 1.40$ .

The effect of the educational dimension of origins is strongest at the transition to secondary school, weaker for completion of the second level, and not significant for the transition to higher education. This finding is surprising, given the evidence of large differences among origin groups in their participa-

<sup>12</sup> To obtain this result, first convert the percentage into a logit, as follows:

$$\text{logit}(20\%) = \log(20/(100-20)) = -1.39.$$

Then add the 2.38 to obtain an expected logit for Class II of  $-1.39 + 2.38 = .99$ . The percentage for Class II is then

$$\text{percentage}(.99) = \exp(.99) / (1 + \exp(.99)) \times 100 = 73.$$

Table 5. Parameter Estimates for the Effects of Origin, Cohort, and Transition Level on Success in Educational Transitions: Republic of Ireland, 1921-75

| Parameter (Code)   | $\beta$ | SE  | t     |
|--|---------|-----|-------|
| <i>Origin</i>  |         |     |       |
| Prestige score [ $P^*$ ] <sup>a</sup>  | .94     | .14 | 6.6   |
| Education score $\times$ enter secondary [ $E_{(T_1)}$ ] <sup>a</sup>                      | 3.81    | .31 | 12.3  |
| Cohort <sub>(2)</sub> $\times$ education score $\times$ enter secondary [ $C_2E_{(T_1)}$ ] | -1.77   | .44 | 4.0   |
| Education score $\times$ complete secondary [ $E_{(T_2)}$ ] <sup>a</sup>                   | 1.90    | .23 | 8.4   |
| <i>Cohort [<math>C_{(3)}</math>]</i>   |         |     |       |
| 1908-35 <sup>a</sup>   | 0.      | —   | —     |
| 1936-55  | 3.01    | .22 | 13.9  |
| 1956   | 4.32    | .26 | 16.3  |
| <i>Transition [<math>T</math>]</i>   |         |     |       |
| Enter secondary education <sup>b</sup>   | 0.      | —   | —     |
| Complete secondary education   | .99     | .23 | 4.2   |
| Enter higher education   | 2.96    | .24 | 22.6  |
| <i>Transition <math>\times</math> Cohort [<math>C_{(3)}T</math>]</i>                       |         |     |       |
| Complete secondary education $\times$ 1936-55  | -3.26   | .25 | -12.8 |
| Complete secondary education $\times$ 1956   | -3.54   | .30 | -11.5 |
| Enter higher education $\times$ 1936-55  | -2.95   | .31 | -9.7  |
| Enter higher education $\times$ 1956   | -5.73   | .35 | -16.4 |
| Constant   | -2.84   | .16 | —     |

<sup>a</sup> Coefficient and standard error multiplied by 100 to show significant digits.

<sup>b</sup> Omitted category.

tion in higher education in Ireland (Clancy 1982; Irish Ministry of Education 1965; Rottman et al. 1982). Our results show that the class differences in third-level enrollments found in other research are attributable to the accumulation of class effects at low levels in the educational system and not to extraordinary class bias in the advancement to higher education. To reach higher education, working-class and middle-class children alike must survive the early cuts—at entry to the second level and during secondary education—that limit the number of would-be higher education students. It is at these early cuts that class has its greatest effects. Working-class students are less likely than are middle-class students to make their way through the entire system of second-level education. The few working-class survivors left at the point of transition to third-level education already surmounted the class barriers that felled most of their contemporaries. When they reach the point of entry to higher education, they encounter a class barrier that is not as steep as the barriers that they passed at lower levels.

Figure 3 shows how the linear effects of father's education and prestige combine to produce differences in educa-

tional transitions among origin classes. Origins are grouped together by stratum: Nonmanual occupations are grouped together, as are manual occupations and farm occupations. Within each stratum, origins are ranked by the sum of their scores on the education and prestige dimensions. The first two cohorts are combined because the difference between them is not significant.

Entering second-level education shows the sharpest class differentials in the oldest cohort: Less than 10 percent of the children of farm laborers and unskilled non-farm workers entered the second-level compared with over 80 percent of the children of upper-level professionals and managers. Completing secondary school shows slightly less class differential than does entering secondary school for the oldest cohort: The range is from slightly less than 20 percent among the children of farm laborers and unskilled manual workers to two-thirds of the upper-level professionals and managers. Entering higher education varies over a narrower range, from 53 percent of unskilled workers' children to roughly two-thirds of upper-level professionals' and managers' children. Prestige affects success at all transitions alike. The shrinking differentials in Figure 3 reflect

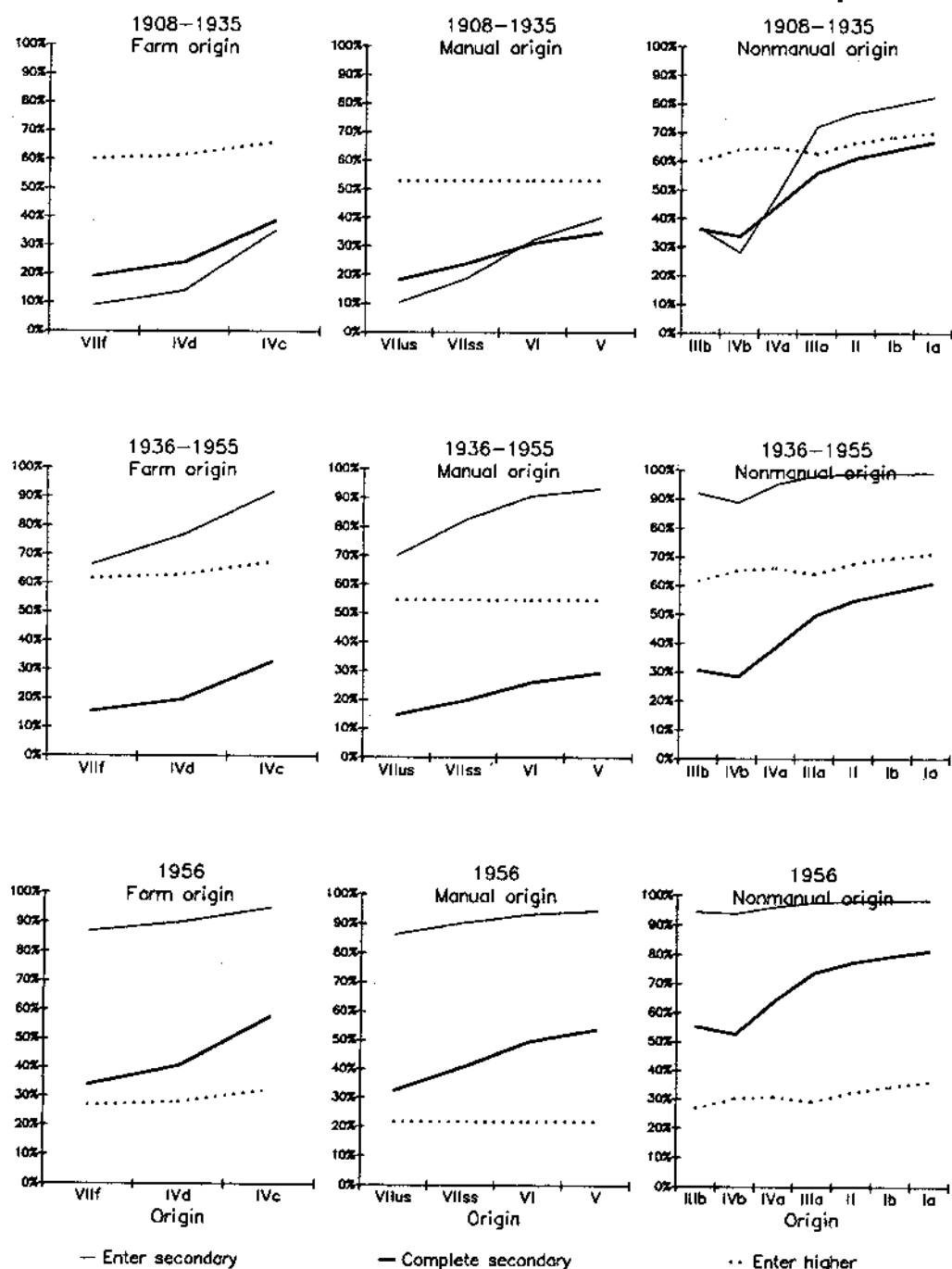


Figure 3. Successful Transition to the Next Level of Education (percentage), by Origin and Cohort: Republic of Ireland, 1921-75

the diminished role of the educational dimension of origins at higher levels of education.

Figure 3 illustrates both the consequences of increased participation in second-level education for class differen-

tials and the operation of ceiling effects on our ability to assess those differentials. In the youngest cohort, all classes enrolled over 85 percent of their offspring in second-level schools. This proportion leaves little margin for class

differentials in success in entering second-level education. If the figure was transformed to a logit scale (as in Figure 4), the lines for entering the second level would be equidistant at each point; on the percentage scale, they are closer for higher prestige classes because enrollment in secondary school cannot exceed 100 percent. The important substantive conclusion regarding entrance to the second level is that despite the masking of class effects brought on by ceiling effects, our logistic regression analysis shows that the expansion of secondary schools in Ireland after World War II affected class differentials not because social class ceased to affect entry to secondary school, but because the process became less selective altogether. With so few students from the most recent cohort dropping out at the end of primary school, most working- and lower-class students received some secondary education. But the declining number of students mustered out at the first hurdle was as disproportionately lower class as ever.

The interaction between cohort and transition level makes it difficult to assess changes in the level of education. Figure 4 aids in interpreting the cohort and transition coefficients. The top panel uses selected origin categories to show the sharp rise in the odds of students from all origin classes entering the second level.

In relative terms, the significant increases in the odds of successfully completing secondary school among those who entered appear modest (see the middle panel). These increases of about 1 point on the logit scale correspond to percentage increases of 15 to 25 points.

The bottom panel of Figure 4 shows how the odds of entering higher education actually fell for those who completed secondary school. These logits do not mean that the proportion attending college was smaller in the most recent cohort than among its predecessors (see Figure 3). They do mean that, for the 1956 birth cohort, a smaller fraction of those who completed secondary education continued on to higher education. Our data do not permit a definitive explanation of this downturn, but we

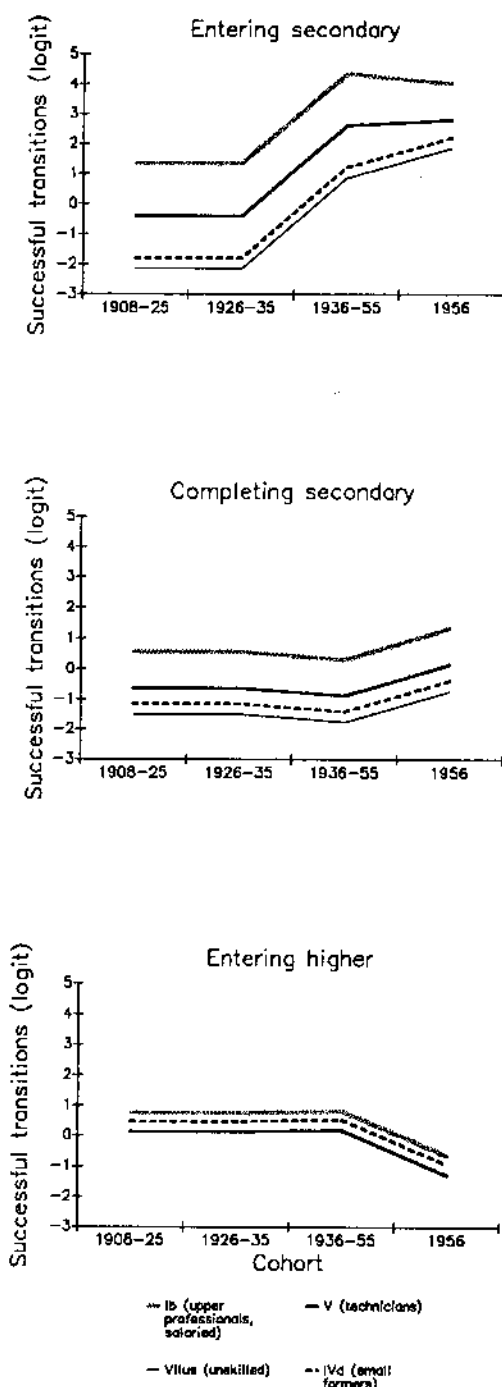


Figure 4. Successful Transition to the Next Level of Education (logit scale), by Cohort and Origin: Republic of Ireland, 1921-75

believe that the enormous growth in participation in second-level education, coupled with the larger size of the 1956



cohort, brought more young people to the admissions offices of the institutions of higher learning than the institutions could accept. Thus, the modest growth of the higher education system failed to keep pace with the burgeoning number of people who completed their secondary education.

### Changes Over Time

Between the two oldest cohorts there were no significant changes in the origin-specific transition rates. Thus, although participation rates increased, they were accounted for by an overall upgrading of social origins, corresponding to upward structural occupational mobility in the fathers' generation. The same situation occurred in England and Wales for all the cohorts studied by Halsey et al. (1980).

Between the second and the third cohort, there were overall increases in transition rates. There was also a decrease in the effect of father's education on entry to the second level. This is the only significant decrease in the association between origin and education in our data. In the third cohort, for the first time, the rates of entry to secondary education were at or close to 100 percent for the highest social origins (Table 3). Thus, the overall expansion in education experienced by the third cohort could have occurred only if the rates of entry to the second level increased among children from lower social origins more than among those from higher social origins. In this sense, this change in association was forced by the overall increases in enrollment.

Between the two youngest cohorts there were changes in the transition rates; on the logit scale, these changes were the same for each origin social class. However, there was no change in the association between origin and destination. The youngest cohort ended primary school after the abolition of tuition fees and other reforms in 1967, while most members of the preceding cohort had passed this point by the time of the 1967 reforms. Hence, the 1967 reforms appear to have

had little, if any, impact on equality of educational opportunity.<sup>13</sup>

### MAXIMALLY MAINTAINED INEQUALITY

We report results that differ among the Irish cohorts of our study and that differ from the experience of England (Halsey et al. 1980). However, all the results arise from the same pattern, for which we suggest the term *maximally maintained inequality*. This term means that transition rates and odds ratios between social origins and educational transitions remain the same from cohort to cohort unless they are forced to change by increasing enrollments. More specifically, we can say the following:

1. All else being equal, growth in the capacity of secondary and higher education will reflect the increased demand occasioned by population growth (if any) and the gradual upgrading of social origins over time (if any). In this case, origin-specific transition rates remain the same over time. This was the case for the two oldest Irish cohorts and for all the English cohorts (Halsey et al. 1980).

2. If expansion raises enrollments faster than demand because of the redistribution of social origins, then transition rates for all social origins increase, but in such a way as to preserve all the transition by class odds-ratios, as hap-

<sup>13</sup> It could be argued that our youngest cohort came too soon for the 1967 reforms to have much impact on them. However, the abolition of tuition fees was announced by Minister for Education Donough O'Malley with great publicity in September 1966, and most members of our youngest cohort who did so went on to the second level in September 1968 or September 1969, two or three years later. Also, September 1967 and September 1968 marked the two greatest increases in secondary school enrollments ever seen, suggesting that the abolition of tuition fees may have had an impact on overall participation rates (although this increase could also have been due to the considerable increase in the capacity of secondary schools in these years because of new construction). We are saying that it appears to have had little impact on class differentials in participation.

pened between the two youngest cohorts in our study.

3. If the demand for a given level of education is saturated for the upper classes, that is, if some origin-specific transition rates approach or reach 100 percent, then the odds-ratios decrease (the association between social origin and education is weakened). This diminished inequality of opportunity occurs only if the expansion in enrollment cannot be accommodated in any other way, as was the case for entry to the second level between our second and third cohorts. Other examples of this phenomenon are cited by Green (1980) and Sussman (1967).

Maximally maintained inequality has been developed here as a generalization of our description of the Irish experience. We suspect that it may be more widely applicable, at least as a baseline, in the same way as the Lipset-Zetterberg hypothesis (Lipset and Zetterberg 1959) and the so-called FJH hypotheses (Featherman, Jones, and Hauser 1975) have served as baselines for comparative studies of social mobility. For maximally maintained inequality to be applicable, it is necessary that (1) higher social origins be associated with higher transition rates, (2) overall participation rates do not decrease, and (3) occupational structural mobility favor higher-prestige or higher-status occupations. These conditions are not restrictive and seem likely to have held in most countries throughout the 20th century (at least).

### A Rational-Choice Explanation

Maximally maintained inequality describes the patterns we have observed in Ireland and generalizes those patterns, but it does not *explain* them. We can, however, explain our findings by some simple rational-choice assumptions. By this term we mean that students and their families base decisions about continuing their education on (necessarily subjective) evaluations of the associated costs and benefits.<sup>14</sup> Our assumption

does not, of course, deny that the economic factors that constrain these choices may be socially inequitable or that decisions to drop out of education may be wrong according to external or "objective" criteria.

The decisions of individual students and their families play a major role in all the transitions. Indeed, it is only for entry to higher education in the most recent cohorts that formal selection by educational institutions clearly played a large role.<sup>15</sup> The decision to continue in education is seen here as being determined by the costs and benefits of continued education, in units of utility, as perceived by the student and her or his family. When the benefits exceed the costs, the individual chooses to continue, if possible. It seems reasonable to assume that when the father has more education, the family and the student attach a higher value to education. It also seems likely that the perceived benefit of education varies among individuals as a function of unobserved factors, such as ability and taste, with the latter becoming more important as the child becomes more autonomous with advancing age. It also seems plausible that the effective cost of an item, in units of utility, is higher for families with lower incomes.

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between the parts played by the student and her or his family in such decisions, assuming that they come to joint decisions. In practice, of course, students' evaluations of the costs and benefits of education and those of their parents may be different, and the role played by the student is likely to increase over her or his educational career. Indeed, this may be one explanation of the declining effect of the father's education as his child's education proceeds. A difference of opinion between parent and child does not invalidate our explanation. If the extent to which the child's role increases over time varies across families, it may be regarded as one component of the unobserved population heterogeneity.

<sup>15</sup> Use of the word *choice* is problematic here because the choices made are often largely constrained by economic factors that are out of the control of the student or her or his family, such as the absence of a secondary school nearby or the lack of money. Thus, what is at work is informal, rather than formal, selection. We use the word *choice* here only in a technical sense.

<sup>14</sup> Here we do not distinguish explicitly

This is the same as saying that marginal utility is a concave function of income, that is, that marginal utility increases as income increases, but at a decreasing rate. We refer to this idea as the "concavity assumption."

These assumptions seem to account for the parts of the observed pattern that are constant across cohorts. If father's education is higher, then the perceived benefits of education are greater, and so students are more likely to choose to continue. As education proceeds, the role of the parents, and hence the effect of father's education, in determining the perceived benefits of education, declines. The decline in the effect of father's education over the educational process is further reinforced by the combined effects of selection and the unobserved heterogeneity of the population (Vaupel and Yashin 1985). Also, prestige is closely associated with social standing, and, according to the concavity assumption, for those with higher standing, the cost of education in terms of utility is less at all stages. Differential costs may explain why the effect of father's occupational prestige is constant across transitions.

Why is there such a clear manual-nonmanual divide? One possible explanation lies in the link between schooling, working-class culture, and work life (Willis 1981). In Ireland, the road to success with which students from manual backgrounds are most directly familiar is through apprenticeships, supplemented by evening classes and part-time release in vocational schools, leading to skilled manual jobs. Thus, their assessment of the benefits of continuing formal full-time education would be lower and they would be less likely to take that route.

The rational-choice perspective also explains the changes among the cohorts. Between the two oldest cohorts there were no changes and transition rates were low, reflecting that the demand for academic skills beyond basic literacy and numeracy was low. Throughout this period, the economy was stagnant at a low level, so the perceived benefits and costs of education changed little.

The third cohort was affected by the

rapid economic expansion that started in 1959, which increased the benefits of education by providing more jobs that required secondary and higher education. Also, the effective costs of secondary education decreased substantially for children of all social origins in some parts of the country as new schools were built to replace the boarding schools as the main possibility for many students.<sup>16</sup> The combination of rising benefits and falling costs explains not only the increase in transition rates for all social origins, but also the reduction in association between origin and entry to the second level because of the ceiling effect. After all, the fact that almost all upper-class children were already going on to secondary education did not prevent working-class children from responding to the greater benefits and lower costs of education.

The youngest cohort also shows an increase in transition rates for all social origins, doubtless because of the same factors that affected the third cohort. But why did the removal of tuition fees, the provision of free transportation, and the other 1967 reforms not reduce inequality in this cohort? After all, these factors directly reduced the cost of education, and in a way that had more impact on families with lower social standing, according to our concavity assumption. Thus, our rational-choice explanation would appear to predict an equalization of outcomes in the youngest cohort, which did not occur.

The answer lies in a closer study of the actual economic incentives that were in operation. For our youngest cohort, the main cost of continuing their education was the opportunity cost represented by foregone wages. During the late 1960s, unemployment in Ireland was historically low,<sup>17</sup> so that a school leaver had a

<sup>16</sup> Up to 1960, about one-third of secondary school students were boarders. By 1968 this proportion had decreased to 18 percent, and by 1978 it had further declined to 9 percent (Coolahan 1981; Greaney and Kellaghan 1984).

<sup>17</sup> Between 1964 and 1969, the unemployment rate oscillated around 6 percent, having declined steadily since 1935 when it reached about 21 percent. It again rose sharply from

good chance of finding a job. The average annual wage was about £615, whereas the most common annual tuition fee in secondary schools was £25. Even if school leavers could expect to earn substantially less than the average wage, it is clear that tuition fees were a small proportion of the true cost of continuing their education. Thus, one would expect the effect of the removal of these fees on inequality of educational opportunity to be small, as indeed it turned out to be.

This finding indicates that instead of improving access to education for the less advantaged, state funding of tuition was largely a "windfall" for families whose children would have entered and continued in secondary education in any event (see also Tussing 1978).<sup>18</sup> The rational-choice perspective suggests that other schemes would have been better at reducing inequality. For example, had a free scheme only for students from low-income families been introduced instead, the remission of fees could have been supplemented by a subsistence grant, at no extra cost to the state. This strategy would have reduced the true cost of education substantially for those whose decisions to drop out were marginal and hence might well have fostered equality of opportunity.

In addition, the high class-based selectivity before the end of secondary education ensured that the grants scheme for low-income students in higher education introduced in 1968 could not have much effect on class disparities in higher education, as subsequent inexperience bore out (Clancy 1982).

Boudon (1973, 1974) also proposed that educational inequality could be explained in terms of the costs and benefits to individuals. However, he was working with disparate and highly aggregated data; made several errors in his modeling and analysis; and focused on survival rates, rather than on transition rates (Hauser 1976). He concluded that

inequality of educational opportunity was declining steadily over time (a conclusion that is not supported by the Irish data, and his own data are "equivocal" on the point, Hauser 1976) and he devoted his efforts to explaining this decline. His deterministic model predicts that survival rates vary by social class background and increase over time for all social origins and that the percentage differences in survival rates among different social classes decline over time. By and large, these predictions were borne out by the Irish data, although the proportions who entered higher education declined for some origins.

However, Boudon did not predict other results, which appear more clearly when one considers transition rates, rather than survival rates. For example, he did not predict that the effect of social class origin on the probability of transition declines over the life course, even though its effect on survival rates increases, or that the effect of origin on the probability of transition does not decline from one cohort to the next except when forced to do so by the ceiling effect.

Although Boudon proposed that educational decisions are based on costs and benefits to individuals, he did not fully specify them or say how the trade-off is made. He did suggest that differences in the *aspirations* of the social classes constitute a key factor. We have considered more concrete the costs and benefits, namely, the wages lost by staying in school, the direct monetary costs of education (tuition, equipment, travel, board, and so forth), and the value attached to the cultural benefits of education. The concavity assumption and the increasing importance of the child in making educational decisions as he or she gets older seem important in the evaluation of costs and benefits. Although we do not assert that aspirations are unimportant, we think that more basic economic factors may explain much of the observed pattern, both static and dynamic. Boudon contended that cultural inequality is not the main factor that produces inequality of educational opportunity, and this contention is supported by our previous work that controlled for verbal ability at the end of primary school (Raftery and Hout 1985). Fur-

1975, reaching 19 percent in 1987 (*Statistical Abstract of Ireland 1937-88*).

<sup>18</sup> This pattern is consistent with the findings of Halsey et al. (1980), but they did not offer this interpretation of it.

ther work is needed to specify and quantify the costs and benefits that determine educational-transition decisions.

### EXPANDING SCHOOLS, PERSISTENT INEQUALITY

These results produce an anomaly. The overall figures on attainment show that class differences in educational attainment were more pronounced in the oldest cohort than in the most recent one. Yet, with a single exception, the results of the logistic regression show no evidence of change in the effect of class on the successful transition through the educational system. The explanation lies in two facets of the process of educational expansion in the Republic of Ireland. First, the expectation of increasing returns to education and the growing capacity of Irish secondary schools (in large part owing to financial support by the state) pushed up secondary-school attendance rates for all social classes. Second, the effect of social origins on educational success was much stronger at this first crucial transition than at subsequent transitions. Together these trends and differentials imply that educational developments independent of social class passed students of all classes over the first big hurdle in the educational system—the one with the highest class barriers. By advancing to secondary education many who might otherwise have been mustered out on the basis of class, expanding schools reduced class differences in the overall distribution of educational attainments without affecting the class selectivity at any particular transition point.

As a result, greater educational opportunities opened up for people of working-class backgrounds, just as the framers of the educational reforms of the 1960s had hoped. The path to reform was undoubtedly not the one they had anticipated, however. Increased attendance at secondary schools by students from all classes promoted equality because continuation in secondary school was not as selective by social class as was entry into secondary education. Once the transition from primary- to second-level school was not as difficult as it had once been, for

*reasons unrelated to social class*, a growing proportion of students from working-class backgrounds could complete secondary school and even proceed to higher education.

We have ignored selection within the secondary level. It may be that although the whole system expanded, the “best” schools—those with the greatest resources and preferential access to the universities—did not. Even if the privileged parts grew more slowly than the whole, two factors in the Irish system imply that differences among schools are not as important as they are elsewhere. First, Ireland has a national curriculum; all secondary students are supposed to be studying the same thing at the same time. Second, entrance to higher education, which is the transition at which one would expect selective schools to have the most effect, is precisely the transition at which the effect of social origins is the weakest; the educational dimension of origins has no effect on the transition to higher education.

What do these findings tell us about meritocracy in Irish education? They show that there is no *necessary* connection between meritocracy and equality among social classes. The equality of outcomes increased not because merit replaced class in the selection of who got ahead, but because selection itself diminished. More pupils went on to secondary education under the same pattern of class selectivity as before. But by including a greater absolute number, the educational system gave rise to greater equality among the social classes.

The politics of an across-the-board increase in access to schools like that undertaken in Ireland is probably easier to implement than a change that requires a reordering of selection criteria. As a general principle, it is easier to apportion a surplus than a deficit. To try to advance merit and retract class advantages as a basis of selection in a system that remains highly selective is likely to rankle too many entrenched interests. Those who lose privileges could be expected to fight to retain them. In the case of Irish educational reform in the 1960s, little conflict ensued because

interests were not threatened. Equality was advanced by offering access to education to those classes that were formerly excluded while the capacity of the secondary system was expanded so much that it also absorbed the growing demand for its services from the traditional clientele.

Our results show one of the complications of such a policy. The burgeoning secondary system generated more inflow than the higher educational system could absorb. Despite the slowly rising overall enrollments in universities and other institutions of higher education, the conditional probability of continuing on to higher education after completing secondary school fell dramatically as the proportion of the population that met the prerequisites for higher education grew.

It is important to keep in mind the substantial effect of social class on educational attainment even after 1959. The period covered by this study witnessed an approach to the goal of equal educational opportunity, but the Irish educational system approached equality from a great distance and did not reach it. Perhaps more important, the approach to equality was made without any increase in the importance of meritocratic selection relative to class selection at any of the crucial educational transitions. Irish education simply became less selective. In the process, the upper and middle classes lost some but not all their competitive advantage.

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