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Citation for published version:

Paterson, L 2020, 'Schools, policy and social change: Scottish secondary education in the second half of the twentieth century', *Research Papers in Education*. <https://doi.org/10.1080/02671522.2020.1849370>

Digital Object Identifier (DOI):

[10.1080/02671522.2020.1849370](https://doi.org/10.1080/02671522.2020.1849370)

Link:

[Link to publication record in Edinburgh Research Explorer](#)

Document Version:

Peer reviewed version

Published In:

Research Papers in Education

Publisher Rights Statement:

This is an Accepted Manuscript of an article published by Taylor & Francis in Research Papers in Education on 3 December 2020, available online: <https://www.tandfonline.com/doi/full/10.1080/02671522.2020.1849370>.

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Schools, policy and social change: Scottish secondary education in the second half of the twentieth century

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Accepted for publication in *Research Papers in Education*, 6 September 2020

Acknowledgements

The research was funded by a Leverhulme Major Research Fellowship (grant number MRF-2017-002). I am grateful to Dr Linda Croxford, of the Centre for Educational Sociology, Edinburgh University, for data from the surveys 1974-6 to 1998, to Professor Ian J. Deary, director of the Lothian Birth Cohorts, University of Edinburgh, for data from the 1952 survey, to the MRC Unit for Lifelong Health and Ageing, University College London, and the principal investigators of the MRC National Survey of Health and Development (doi: 10.5522/NSHD/Q101,) for data from the 1962 survey, and to the UK Data Archive for data from the 1974 and 1986 surveys and from the 'Education and Youth Transitions' series. I thank the study participants in all these surveys for their data, and also members of the scientific and data collection teams who have been involved in the data collection. I am grateful to Professor Andrew McPherson and Professor J. D. Willms for information on when each school made the transition to comprehensive education.

Abstract

The analysis uses a unique series of surveys of school students in Scotland, covering the whole of the second half of the twentieth century, to investigate whether educational reforms can reduce inequalities of educational progress and attainment, and the role of school history in mediating these intentions. This period included the policy reforms that ended selection for public-sector schools between the mid-1960s and the early 1980s. Information on school attended enables the analysis to investigate whether and how the histories of schools interact with national policy. The main conclusions are that inequality of attainment and progression fell throughout the half century, but that the change was slow. Although policy may have created the conditions under which this equalisation took place, it probably was not its main cause, and the ways in which policy had its impact was modified by schools' histories. The paper also illustrates the ways in which a series of surveys can be used to understand social change, and the compromises which have to be made to achieve comparability over a long period of time.

Key words

Opportunity; social class; sex; comprehensive school; school history.

Introduction

The academic debate about socio-economic inequality of educational attainment in developed countries has gone through three phases since the 1960s. In the 1970s, modernisation theory proposed that inequality would decline as the social structure became more meritocratic (Treiman 1970). When that initial prediction seemed not to have been realised in the 1980s, academic discussion turned to why inequality persisted (Shavit and Blossfeld 1993). One explanation was that change came about only through the independent evolution of social structure: as society became better-educated through general expansion of education, benefits would slowly be handed on to children regardless of how schools were organised (Heath and Clifford 2000). The final stage of debate is with us today. The conclusion has become that inequality has changed, though in complex ways that can be revealed only with the right quality of data and statistical method (Breen et al. 2009). The trajectory of the discussion of sex inequality has been similar, but simpler – from a belief that it was quite impervious to change, to an understanding that female attainment has now firmly surpassed male attainment (Buchmann et al. 2008).

In these debates, attention has largely been on policy at the level of the state or on social change happening across whole societies. Few national data sets have enabled the investigation of the role of schools in mediating policy and social change. We use a unique series of surveys of students in Scotland – stretching from people who left school in the early 1950s to those who left at the end of the century – to investigate whether inequalities in secondary school progression and attainment changed in that period, and what the role of policy and of institutional history might have been.

Educational inequality

The original source of the belief that there would be a decline in socio-economic inequality in education was the idea that a society increasingly dependent on technology required it (Treiman 1970: 216-8; see also Breen 2010; Shavit and Blossfeld 1993: 1-2). Beliefs of this kind then became a core part of education policy, leading in many countries to the ending selection for secondary school (Halsey, Heath and Ridge 1980; Heath and Clifford 1990). The discovery by sociologists that inequality persisted undermined the theories, and induced pessimism about the effectiveness of institutional reform (Barone 2009; Dronkers 1993; Garnier and Raffalovich 1984; Goldthorpe 1996; Heath 1990; Jonsson, Mills and Müller 1996; Lindbekk 1998; Shavit and Blossfeld 1993; Shavit and Westerbeek 1998). Nevertheless, the consensus among sociologists has changed in the past decade. Breen et al. (2009) concluded that, although socio-economic inequality remained large, it was not impervious to change over a long period. Conclusions of this kind have been reached for France, England and Wales or the UK as a whole, Germany, Ireland, Italy, the Netherlands, Poland, Sweden, Finland, and the USA (Barone 2009; Ballarino et al. 2009; Breen et al. 2009; Devine and Li 2013; Erikson and Jonsson 1996; Feathermann and Hauser 1978: 238-52; Heath 2000; Ichou and Vallet 2011; Kuo and Hauser 1995; Pekkarinen et al. 2009; Schindler and Lorz 2012; Sieben, Huinink and de Graaf 2001; Sirin 2005; Triventi et al. 2016; Vallet 2004).

Most, though not all, of this research has concentrated on social class as the measure of social circumstances. Gugushvili, Bukodi and Goldthorpe (2017) and Bukodi and Goldthorpe (2013) show the importance of including parental education (Ganzeboom

and Treiman 1993; Pfeffer 2008; Shavit et al. 2007: 4; Triventi et al. 2016). Sex differences, in almost all countries, have been reversed in recent decades (Buchmann et al. 2008; van Hek, Kraaykamp and Wolbers 2016), and changes in socio-economic inequalities generally have been similar for women and men (Breen et al. 2010).

Economists have reached similar conclusion about changes in the effects of family income on filial attainment (Blanden and McMillan 2016). Some of this research has used entitlement to free school meals as a surrogate for family income, which, for Scotland, Croxford (2000) has shown to be an imperfect measure. However, the conclusions also hold where income is measured directly. In the UK, inequality of attainment at secondary level first widened and then fell, whereas inequality at post-school levels continued to rise (Blanden and Gregg 2004: 255; Blanden and McMillan 2016: 597-8; Gregg and McMillan 2010). These conclusions are consistent with those found for the USA (Sirin 2005).

Educational studies of particular types of school have reached the conclusion that selective schools tend to widen social inequality. Some of this work belongs to the sociological traditions noted above (Boliver and Swift 2011; Kerckhoff et al. 1996; McPherson and Willms 1987; Walford 1988). During the transition to comprehensive education in the 1960s-1980s, there were also many ethnographic studies of individual schools, most showing small effects on inequality (Ball 1984; Hargreaves 1982). Most of the educational research comes from psychology and educational studies, being part of a more general investigation of the effect on inequality of grouping students by measured ability (Boaler et al. 2000; Gamoran 1986; Oakes et al. 1992). The more recent creation of autonomous academies in England – which are permitted to select a small proportion of their students – may have led to some reduction of inequality, but the evidence is not conclusive and any effect is slight (Gorard 2014; Machin and McNally 2012).

We consider four theories that might give some shape to our conclusions. The first is that of maximally maintained inequality (Raftery and Hout 1993). It proposes that inequality at a particular level of education grows until the most advantaged classes reach a plateau, after which any further expansion reduces inequality even without deliberate intent. The second theory is effectively maintained inequality (Lucas 2001): when participation at an educational level is high, the advantaged class maintain their distinction by dominating the highest-status versions of that level. The third theory is rational choice (Breen and Goldthorpe 1997): because students balance risk and opportunity, students of low socio-economic status opt for lower-status educational routes to avoid high risks of failing. The final theory claims that education simply reproduces inequality (Bourdieu and Passeron 1977). Looking only at educational outcomes at the end of schooling does not allow us to say anything directly about the question of whether education is an absolute or a positional good, because that would require some independent criterion (such as success in the labour market). However, our data will allow us to say whether all social groups value education, for whatever reason, as measured by their participation in successive levels of it.

Our intention here is partly to add the case of Scotland to these assessments of long-term trends, considering the country over a longer period of time than previously considered. But the main distinctiveness of our data is that they allow the role of schools to be examined. This is a core question for education policy, because it provides a test of the extent to which educational change is brought about by policy change, or,

alternatively, as an indirect consequence of social change. Few of the previous studies of inequality have investigated, across an entire education system, or over a long period of time, the effects of specific kinds of institutions. Yet schools can modify policy through their histories, rituals and myths (Meyer 1977: 74; Meyer and Rowan 1977), their ‘historically situated webs of meaning and significance’ (Ocasio et al. 2016: 676).

Nikolai (2019: 377) suggests that institutional effects arise because ‘accumulated commitments and investments in the selected path make it difficult to effect any profound change’. For example, these can be a school’s legacy of particular buildings, so that a prior investment in a library or in well-equipped scientific laboratories can encourage studies of particular kinds. It can be what Nikolai calls ‘administrative routines’, such as the relative attention which a school gives to students’ progression to university or direct entry to the labour market, such choices facilitating particular pathways and proclaiming the school’s ethos. The school’s character and thus relationship to policy can also be shaped by the kind of training which its teachers have had. By the middle of the twentieth century in Scotland, teachers’ initial professional education had become less of a constraint, because almost all secondary-school teachers had to be graduates of universities or higher-education colleges (Paterson 2003), but there was a clear career route through the highest-status schools and into local and national policy making which shaped the character of these schools (McPherson 1983).

However, traditions can also help to bring about change. Institutional practices and teacher careers interact with what Clemente et al. (2017: 24) call ‘critical events’ or ‘turning points’. Change might be particularly likely if the traditions embody contradictory tendencies, as (MacIntyre 2007: 188) notes: ‘traditions, when vital, embody continuities of conflict’. In Scotland, the long-standing belief in competitive meritocracy, ultimately due to the educational structures put in place by the Protestant Reformation of the sixteenth century, left a legacy that could be shaped by astute policy makers towards wider democratic reform. The 1960s reformers understood that point and shaped the meritocratic character of the Scottish comprehensive system to take advantage of it (McPherson 1983; Paterson 2003: 137-9).

Some previous sociological research has investigated such questions empirically over short periods or in relation to specific sectors. The classic study is by Ringer (1979), showing the persistence of school traditions through the modernisation that took place in France and Germany as secondary education was being established in the early twentieth century. Steedman (1987) noted the power of the English Public schools in setting the model for the grammar schools of the middle of the twentieth century. McPherson and Willms (1986) investigated the persistence of inequalities in Scotland related to school origin. Kerckhoff et al. (1996: 234) found similarly, in England and Wales, that the history of schools before the ending of selection affected how they responded to that reform. Generally, though, the studies of changing inequality in the second half of the twentieth century have not had detailed information on the school that sample members have attended. Thus any inferences that were drawn about the likely effects of policy have been based mainly on comparisons of nation-wide inequality before and after a reform.

Investigating the legacies of institutional history needs information not only about schools attended, but also about how these schools changed over a long period of time. The data available for the present research allow the study of a half century of reform and social change (1952-98), and the linking of that period back to the origins of schools

in the first half of the century. We build on investigation of particular shorter periods in Scotland by previous researchers who have shown some reduction of socio-economic and sex inequality, in relation to attainment between the mid-1970s and the mid-1980s (McPherson and Willms 1987), to access to the curriculum in the 1980s (Croxford 1994; Gamoran 1996), and to attainment between the mid-1980s and the late-1990s (Raffe et al. 2006; Iannelli 2008).

As in most developed education systems in the second half of the twentieth century (Meyer et al. 1977), the main attention of Scottish policy until the last decade was on secondary schooling (Anderson 1985; Gray, McPherson and Raffe 1983; Murphy et al. 2015). From the beginnings of the idea in the 1920s that some kind of secondary education might be for everyone, through the formal setting in place of the selective secondary system in the 1930s, to the later ending of selection, Scottish policy has concentrated on the importance of universal secondary schooling in preparing people for democratic citizenship (McPherson 1992; Paterson 2003: 60-71). However important subsequent education might be, the most common route into it has been through successful completion of secondary schooling (Burnhill et al. 1988; Tinklin 2000). Reforms mainly involved the structure of secondary schools, and so our analysis takes account of the histories and legacies of institutions. The categories described here are summarised in Table 1.

At the beginning of the twentieth century, Scotland had only around 60 full secondary schools. However, there was also a tradition of teaching some advanced classes to a few boys (and an even smaller but growing number of girls) in the parish schools that had been established throughout the country by the late-eighteenth century, some of which continued to do so until the 1920s (Anderson, 1985; McPherson and Willms 1986; Paterson 2004). Between the beginning of the new century and the early 1920s, the government department responsible for Scottish education sought to extend the opportunity for a full secondary education by creating a new category of around 200 'Higher Grade' schools, many of which were extensions of rural parish schools, but some of which were also new foundations to provide secondary schooling in urban districts that were populated by lower middle-class and upper working-class families. The government also sought to regulate the quality of the secondary courses from 1888 by a leaving certificate based on external examination for the minority who completed courses of secondary schooling. The expansion was halted after 1921 because of the economic problems facing the UK exchequer, but this left essentially three sectors of schools providing secondary education (Paterson 2004: 61): these are categories 1-3 and part of 5 in Table 1.

By the mid-1930s, the former Higher Grade category had split into two. Around two thirds were still presenting candidates for the leaving certificate in courses that lasted five years. They had been joined by about 40 new, full secondaries (category 4). Most of the remainder were still recognised as secondaries, which meant being equipped and staffed to full secondary standards, but their courses lasted only three years, so that students would have to transfer to a full secondary if they wanted to take the leaving certificate. Along with some other former parish schools that had some experience of the leaving certificate, these make up category 5 in Table 1.

The 1936 Education (Scotland) Act brought all post-primary courses into a common framework of secondary education for all. In that legislation, there would be two kinds of secondary course: senior secondary (5 years) and junior secondary (3 years). In

practice, this tended to lead to two kinds of school. A handful of schools acquired full certificating status in the 1950s; these are grouped here with category 4 in Table 1, because they were founded as full secondary schools. The main further reform was the ending of selection for secondary school, which took place between 1965 and the late 1970s; thereafter the only selection was into independent schools (McPherson and Willms 1987; Paterson 2003: 136-44). Approximately one third of the secondaries after the reform had formerly offered only 3-year courses (category 6 in Table 1). A couple of dozen schools were founded after the mid-1970s (category 7). In many small towns, where there was only one secondary school, the transition to comprehensive education changed little so far as the allocation to distinct institutions was concerned. The final phase of reform was the extension in the late-1980s and 1990s of a new curriculum and examination system to almost all students (Croxford 1994; Gamoran 1996).

Thus, with reference to the half century from the early 1950s, our research questions are:

1. Has inequality of attainment and progression in school with respect to social class, parental education and sex changed?
2. Are there sex differences in any patterns of change with respect to class or parental education?
3. Does the trajectory of class, parental education, or sex differences vary by the history of schools during successive waves of reform? That means:
 - a. Is the origin of schools in the first half of the century or earlier associated with levels and inequalities of attainment and progression in the second half?
 - b. Do levels of attainment and inequalities of attainment and progression vary by the trajectory of schools during the transition to comprehensive secondary schooling?

Methods

The previous research, in Scotland as elsewhere, has used three kinds of data. One is to construct synthetic cohorts from cross-sectional surveys, basing cohort on age. There are disadvantages to this: selective mortality, selective emigration, and selective memory for educational experiences that might be many decades earlier (Breen et al. 2009; Ganzeboom and Treiman 1993). The second method uses birth-cohort studies (Bukodi and Goldthorpe 2016; Dronkers 1993; Gugushvili et al. 2017; Kerckhoff et al. 1996; Lindbekk 1998). Cohort analysis avoids problems of memory, and, at school ages, largely avoids the problem of selective migration and mortality, but birth cohort studies, being expensive, are rarely available with a frequency that can record the immediate effects of policy and over a long enough period to capture social change. Surveys of school leavers – the third method, used here – are a kind of cohort study, insofar as they interview people at approximately the same age. Very few of the previous research studies have had long enough time series of leavers' surveys to model changes of inequality. A rare exception is Ichou and Vallet (2011: 176), who analysed surveys of people who entered lower secondary school in France in 1962, 1980, 1989 and 1995. Breen (1998) analysed annual surveys of school leavers in Ireland between 1984 and 1993.

None of these series has the chronological range of the data used here, based on 12 surveys of people around the time that they left school, and which we refer to by the

year when their members turned 16: 1952, 1962, 1974-6, 1976-8, 1978-80, 1980-2, 1984, 1986, 1988, 1990, 1996, and 1998. These surveys have been used in several of the publications cited above, but not hitherto as a single series. The 1952 survey was a birth-cohort study (Paterson, Pattie and Deary 2011). The 1962 data are from those people who were resident in Scotland at age 16 in the Britain-wide cohort study of people born in 1946 (Kuh et al. 2011). The surveys 1974-6 to 1980-2 were leavers surveys. The 1974-6 survey covered pupils with the full range of attainment only in five regions of Scotland, which included around three quarters of all pupils (Gray et al. 1983: 16-23); only that part of the survey is used here. The surveys from 1984 onwards were cohort surveys, based on a sample of students in the fourth year of secondary school who were then followed up over the subsequent years (Croxford, Iannelli and Shapira 2007: 7). The surveys had response rates at the relevant sweeps ranging from 98% in the 1952 survey, through around 80% for the leavers' surveys between 1974-6 and 1980-2 (McPherson and Willms 1987), to around 65% for the surveys from 1984 onwards (Croxford et al. 2007).

The surveys for 1952 and 1974-6 to 1998 recorded information on the last school attended. There were around 400 schools in each year. These have been grouped into the seven historical sectors described above and shown in Table 1 along with their average relative sizes over the series. The shares of respondents in each survey year were generally within 2 percentage points of these averages; the greatest changes were that the old secondaries (category 1) rose from 9% in 1952 to 13% in 1998, and that the junior secondaries in category 6 fell from 40% to 35%. We have removed from the second category 16 schools whose curricula were based mainly on non-Scottish examinations (A-levels from elsewhere in the UK): this removed 0.8% of all pupils in the surveys. To capture any potential legacy of a long history of being the sole school in a community, we use an indicator of whether a school provided secondary courses in 1924 or 1935, and also was the only such school that, in 1908, had served the area governed by one of the then approximately 900 school boards (Paterson 2004; SED 1908).

Although some previous analysis of school attainment in the 1980s has considered the history of schools (for example, McPherson and Willms 1986; Paterson 1991), the present classification is more detailed (for example, in distinguishing categories 3 and 4, and 5 and 6). It is also based on analysis of the trajectories of schools between 1911 and the 1950s, rather than on their status mainly at one point in time (1918) which was the core of these earlier classifications (McPherson and Willms 1986: 291; Paterson 2004, 2011; Paterson et al. 2011).

All but one of the outcome variables in the models record attainment in public examinations. The highest-status is achievement in the Higher Grade examinations, usually taken by students in the final two years of a six-year secondary course. (This name is not to be confused with the category of school explained above.) We use three measures based on these: the proportion of students with at least one pass, with three or more passes (informally the threshold for university entry in most of this period), and (from 1976 onwards) with at least one pass at the top (A) grade. Part of the process of expansion involved various forms of certificate at stages lower than this. For the surveys from 1962 until the early 1990s, these courses led to the Ordinary Grade, taken by most pupils in the fourth year of secondary school, but with the option to re-take or take further such courses in fifth and sixth year. The new Standard Grade examination,

from 1986 onwards, widened the range of courses at this level with the aim of encompassing almost the whole range of ability. For the oldest survey, there was a category of attainment below that of Higher which was called Lower Grade. For the purposes of long-term analysis, we equate a pass in Lower Grade, an award at levels A-C in Ordinary Grade, and an award at levels 1-3 in Standard Grade. We model at least one pass defined in these ways, and (except in the 1962 survey) at least one attempt at examinations of these kinds. For each of these measures of attainment at Lower Grade, Ordinary Grade, or Standard Grade, we also assume that anyone who passed at least one Higher Grade had in effect passed at least one course in these lower certificates, and likewise for attempts; the reason we have to do this is that some students by-passed the lower grades of examination on the way to attempt Higher Grades.

Because there is no temporal ordering between these two levels of attainment, it would not be appropriate to distinguish sharply between attainment and progression, as is recommended by Mare (1981). But we do also model whether the student stayed on voluntarily beyond the fourth year of secondary school, when the modal age is 16. The minimum leaving age was raised from 15 to 16 in 1972.

A variable recording sex is available in all surveys. Parental education, for each parent, is summarised into: left full-time education at 15 or younger, at 16, or at 17 or older. For the 1962 survey, we approximate this by equating primary education to 15 or younger, secondary education to 16, and advanced education to 17 or older. For social class, we use the Registrar General scheme. This measure is not ideal sociologically, but is all that is available for the surveys in 1952 and 1962, and so using some other measure (such as the Goldthorpe scheme) would force the length of the series to be cut in half. Because mother's class is not available for four of the 12 surveys, we use only father's class.

In the sex variable, all proportions were 49-51% except in 1952, when 48% were male. The socio-economic measures changed over time in familiar ways, and so we do not show the details. For example, the proportion of students who had at least one parent educated to age 17 or older was 4% in 1952, 11% in 1980 and 34% in 1998. The proportion with a father who worked in classes I or II (professional or semi-professional) was 12% in 1952, 21% in 1980 and 30% in 1998. The base of all the tables omits respondents for whom sex, attainment, or the school name were not known (3% of all respondents). In the analysis, missing information on social class or parental education is included as a category in the corresponding variable. The proportion missing for social class was between 13% and 23%, except in 1952 when it was 1%. The proportion missing education for both parents ranged from 5% to 16%.

These surveys did not collect data on ethnicity, mainly because, until after the 1990s, numbers in minority ethnic groups in Scotland were so small that they could not have been reliably represented in surveys of these sizes (though see, for example, McPherson and Willms (1986), on students of Irish origin). However, there was a final survey in 2002 which did collect this. That survey cannot be included in our main analysis because it did not record social class in a way that is consistent with the longer series. We briefly report comparisons of people identified as 'Scottish' with people identified as being in any non-white ethnic group. There were 2,710 sample members who were Scottish and 111 who were in a minority group (55% with family origins in the Indian sub-continent or China, and a further 29% with mixed ethnic background).

We model the outcomes by logistic regression, and report the results as analysis of deviance (in an online appendix) and as predicted proportions attaining the specified threshold. The modelling was done in R using the package ‘svyglm’. This allowed weights to be taken into account. For all the surveys from 1974-6 to 1998, there were post-stratification weights to compensate for varying rates of response; the weighting categories were sex by attainment (Gray et al. 1983; Croxford et al. 2007: 7). For several surveys, the sampling fraction also varied by attainment and by region, and so the weights take account of this design. The sampling fraction varied by year, and so the weights were standardised to have the same sum in each year (which affects the predicted proportions but not the effective sample sizes for the analysis of deviance). We include school as a clustering variable, which is equivalent to using a multilevel model where the intercept term varies among schools. Analysis of deviance tables are shown using Type II tests, which are the results of dropping each term in turn from the model shown in the table. Where mean predictions are compared, the appropriate standard errors are derived from the full covariance matrix of the predictions (‘vcov’ in R).

Results

Table 2 shows the change in the outcome measures from 1952 to 1998 (though only from 1974-6 for the measure of A passes at Higher grade). All the indicators have risen strongly so that, by the mid-1990s, one half of students were gaining some aspect of a full secondary education, in the sense of passing at least one Higher grade, and one third were reaching the threshold to university entry.

Table A1 (online Appendix) and associated graphs show the results of modelling the outcomes in terms of class and parental education. For all the outcomes, there is strong evidence of change over time. There is clear evidence of average differences with respect to sex, class and parental education. Our main interest, however, is in the interactive effects with year. For all outcomes, there is strong evidence that inequality with respect to sex, class and parental education changed over time, and that the change in the class differences varied by sex. For lower-level attainment, and for staying on, there is also evidence that there was sex variation in the change with respect to parental education.

We can illustrate these changes of inequality by graphing the proportions which the models predict for combinations of sex, class and parental education. To avoid excessive complexity, but for this purpose of presentation only, we combine the class and parental education levels into three levels of socio-economic status (SES), high, medium, or low, defined respectively to be people in classes I, III or V whose parents had the modal level of education for that class in that year. It must be emphasised that the models in Table A1 represent social class and parental education separately (in line with the literature cited earlier). The two are combined only for the purposes of succinct summary.

For sex, the main change in all the outcomes was an almost equal rise for males and females. In most of the outcomes, there was no sex difference at high SES. At medium SES, there was a general tendency for females to move ahead of males by about 1980; at low SES, this happened in the late 1980s. Across all the outcomes, the only exceptions to these patterns for sex were for sitting low-level examinations, where, at

low-SES, the sexes remained similar right through to 1998, and for gaining one or more A pass at Higher, where there was no sex difference in any year at any level of SES.

On socio-economic status, the main general point is that attainment and progression in all groups rose markedly. In most respects, inequality fell quite steadily from the 1970s. For passing one or more lower-level examination (Figure 1), the high-SES group reached almost complete coverage by the 1960s, thus initially widening inequality. The low-SES and medium-SES groups then gradually converged with the high-SES group. That pattern was very similar for males and females. Although the rate of upward movement of the medium-SES group may have been shallower in the 1980s than before or after, especially for males, the upward convergence resumed from the late-1980s. Similar patterns were evident for attempting courses at this level, and for staying on beyond fourth year.

The trajectory for passing one or more Higher grades is shown in Figure 2. (The pattern for three or more was similar.) Females in the high-SES group reached very high levels as early as 1962; males caught up by the mid-1970s. Compared with the other SES groups, there was a slow reduction of inequality after the initial rise in the period 1950s-70s. For gaining an A pass, both sexes in the high-SES group rose from around 40-50% in the late-1970s to around 65-70% in the late-1990s. The other two groups were under 10% until the 1990s, when they move up to about 10-20%. Compared to the other outcomes, this measure of high attainment thus showed little convergence, but it was not absent.

In short on socio-economic status, inequality widened sharply at first, between the early 1950s and the mid-1970s, as high-SES students moved ahead. There was then strong SES convergence at low levels of attainment and for staying on beyond the fourth year of secondary schooling, consistent with the pattern of maximally maintained inequality. That convergence was weaker at higher levels of attainment, although at no level was it absent.

We now turn to whether schools' institutional history played any role in the convergence. If it does not, then we would be able to conclude that the changes in attainment and in the social distribution of attainment owed more to broad social and educational change than to policy on school structures. The history that might be expected to be most immediately relevant here is the ending of selection between the 1960s and the early 1980s. McPherson and Willms (1987), using this same survey series between the mid-1970s and the mid-1980s, showed that the ending of selection between schools did lead to a small reduction of inequality in relation to SES and sex. Gamoran (1996) did likewise for the mid-secondary courses, using surveys between 1984 and 1990. We now bring together these approaches, and extend them to the whole period from 1952 to 1998 to allow any immediate effects of policy change to be set in the context of half a century of social change.

For the reforming period, we omit the schools that were not managed by local authorities (category 2 in Table 1), and also schools that were founded as wholly new institutions after the 1970s (category 7). We then classify schools according to the rate at which they became comprehensive by the late-1970s, restricting attention initially here to those schools which were fully comprehensive when respondents in at least one of the surveys of 1974-6, 1978-80 and 1984 entered secondary school (containing 77% of all sample members in the surveys at these dates). In this restricted sample, 61% of

students were in schools which were comprehensive in all three of these surveys (which we refer to as ‘early comprehensives’), 33% in schools which were not comprehensive for the 1974-6 survey but were comprehensive in 1978-80 and 1984 (‘middle comprehensives’), and 6% in schools which became comprehensive between the 1978-80 and 1984 surveys (‘late comprehensives’). The relevant parts of the models are shown in Table A2. The terms associated with the reform phase had much lower deviance than the terms relating to the controls (details not shown, but similar to Table A1). There is consistent evidence that the phase of reform was associated with different patterns of change over time (the interactive effects of reform phase and year).

Table 3 provides detail on these patterns for the criterion of at least one mid-secondary pass, classified by SES and sex. It relates to the 1974-6 and 1980 dates, comparing schools that changed their status between these two surveys (the middle comprehensives) with the control group which were not comprehensive until after the second survey (the late comprehensives). For male students, the reduction of inequality in the schools which became comprehensive was greater than the reduction in the schools that did not (71% to 53%, compared to 68% to 62%; $t=2.2$ for the difference of these two differences; $p=0.026$). For female students, inequality increased in the control group and fell in the group that became comprehensive ($t=2.1$ for the difference of differences; $p=0.037$). This analysis suggests that some part of the reduction of inequality might be attributable to the change of status from selective to non-selective, analogously to the finding by McPherson and Willms (1987).

However, the table also shows that this was mainly because the high-SES group were already at a ceiling of nearly 100%. That was not the case at the senior-secondary level (Table 4). In the middle comprehensives, the percentage in the high-SES groups in 1974-6 left plenty of room for further improvement, which then happened by 1980. The low-SES group also improved ($t=2.25$ ($p=0.025$) for males, and $t=1.78$ ($p=0.075$) for females), but the gap widened, while it remained unchanged (at an even higher level) in the late comprehensives. (The evidence for the widening is only tenuous, however: the difference of differences had $t=1.79$ ($p=0.073$) for male students, and $t=1.43$ ($p=0.15$) for females.)

So inequality at mid-secondary level probably narrowed as an immediate result of the ending of selection, by a localised version of maximally maintained inequality. But during the period of reform, there was no narrowing of inequality at this higher level, and probably there was a widening. Moreover, whatever happened in this short span of the reforming period, the change directly associated with structural reform can be seen to be quite small in the longer context of half a century. Figure 3 illustrates the differences, for the outcome of having at least one mid-secondary pass, and for each of the three groups of schools that we have been considering. The reforming period that was the subject of Table 3 is marked by the vertical lines. There is quite a lot of random variation here, especially for the small group of late comprehensives. Inequality did decline in all three groups of school, following the national pattern of Figure 1, but in a long process that continued over the half century as a whole. The differences among the three groups associated with the reforming period was small.

The same point may be made about the probable widening of inequality at senior-secondary levels during the reforming period, as was seen in Table 4. When set in the long-term perspective analogous to Figure 3, the widening for one senior-secondary pass between the mid-1970s and the early 1980s was compensated for by the narrowing

which took place a decade or two later, regardless of the history of the school during the reforming period: all these categories of reform showed a trajectory similar to that shown in Figure 2. In the category of ‘middle comprehensive’ in Table 4, the proportion having at least one pass at Higher in the male low-SES group rose from 11% in 1978-80 (as in Table 4) to 23% in 1998, while the high-SES male group in these schools was stable at around 83%; thus inequality, though rising (in Table 4) between 1976 and 1980 from 64% to 72%, fell to 60% by 1998. Likewise for female students: the low-SES female group in these schools rose from 11% in 1978-80 to 38% in 1998, while the high-SES female group went from 86% to 94%, and so the rise of inequality between 1976 and 1980 from 69% to 75% was followed by a fall to 56% by 1998.

So the policy of ending selection may be thought of as an intervention in a historical trajectory. This is seen even more clearly if we then examine how that policy interacted with the older legacies in Table 1. One effect of the comprehensive reforms was to make the historical sectors more similar socio-economically, as Figure 4 illustrates for their social-class composition in the 1952, 1976-8 and 1998 surveys. At the first date, the old secondaries had much higher percentages of pupils in the top two classes than the others, and the non-academic junior secondaries had far lower. The differences were much less in 1976-8, and had all but vanished in 1998. The success of the early-twentieth-century reforms is reflected in the closeness of the ‘secondary by 1920s’ category to the national-average class distribution as early as 1952.

Before we consider the interaction with the reforming period, we look at the summary results of the statistical effects of origin (Table A3). To achieve greater statistical power for the interactive effects, the class variable has been simplified into three categories: I and II; III; and IV, V and other. There was not enough information in the data to fit the three-way effect of origin-by-year-by-parental-education as well as those shown in the table. For each outcome, there is strong evidence in Table A3 of an interactive effect of origin and year, because the ending of selection enabled the junior secondary schools to offer full secondary courses. Even these strong effects were much smaller than the overall trends and other interactive effects for each outcome, which are not shown in the table. Nevertheless, change did happen at different rates in the schools of different origins. For the criterion of passing at least one Higher, Table A3 shows that the change over time with respect to sector varied by class, but not by sex.

In most respects, the differences among these historical sectors lasted to the early 1980s, with the old secondaries ahead of the others (as reported by McPherson and Willms 1986), and then vanished by the end of the century. But there were also some persisting legacies. Figure 5 illustrates this for the categories of old secondaries and academic junior secondaries. For high-SES and medium-SES students, the academic junior secondaries not only caught up with the old secondaries: in the aftermath of the reforming period, up to the mid-1990s, they also overtook them, after which the older sector caught up in turn. (In t-test comparisons of the two sectors in 1988 and 1990 combined, for high-SES: $p=0.006$ for males and $p<0.001$ for females; for medium-SES using 1990 and 1996 combined: $p=0.027$ for males and $p=0.028$ for females.) For low-SES students, there was no overtaking, but these former academic junior secondaries caught up with the older schools in the early 1980s and maintained that parity. There was a similar but weaker trajectory for the non-academic junior secondaries (not shown): there was no overtaking for any SES group, but they did catch up with the older secondaries.

Explaining the distinctive trajectories of the academic junior secondaries would require knowledge of their pedagogical practices that is not available from the data sets. If the theories on institutional persistence that we summarised earlier are relevant, we would also need information about institutional myths and how these affected pedagogy. However, one clue to how the legacies operated during the 1970s reforms may be found through bringing together the classification of school by origin and the classification by reform phase in the 1970s. Table A4 shows that there was strong evidence of interactive effects of these two classifications. Detailed examination of the predicted proportions from the models showed that this interactive effect appeared most strongly in schools that were early comprehensives (as defined above), and with students of medium SES. This is illustrated in Figure 6 for passing one or more Higher, confining attention to early comprehensives and to students of medium SES. The lines for the academic junior secondaries cross the lines for the old secondaries in the late 1970s. From 1982 to 1998, the mean difference of former academic junior secondary minus old secondary for medium-SES students was, for males, 0.072 (s.e. 0.029; $p=0.015$), and, for females, 0.082 (s.e. 0.033; $p=0.013$). The analogous differences in these early comprehensives for other SES groups were insignificant. For middle and late comprehensives, all such differences were similarly negligible. The suggestion here therefore is that those academic junior secondaries which became comprehensives soon after the reform were particularly effective with students of middling socio-economic status.

A further hint in explanation of this interaction of policy with institutional legacies may be had from the typical geographical location of the former academic junior secondaries. Earlier in the twentieth century, fully 80% of those which survived to the 1980s had been the only school in their community that had provided any kind of secondary course, compared to one third of surviving schools overall (and only two thirds in the next-highest categories – old secondaries, and secondaries founded by the early 1920s). It could be that a community with a single school that had a record of providing academic study while also serving the needs of the full range of students would be likely to be most committed to maintaining that combined tradition into the comprehensive era (Gray et al. 1983: 248-66; McPherson and Willms 1986: 261-7).

Our final analysis is briefly to investigate how ethnicity interacted with school history, which we can do only for the survey in 2002. Models with sex, school origin, and ethnicity showed statistically significant interactive effects of ethnicity and origin. (There were too few in the minority group to allow socio-economic status to be included reliably.) On average, minority attainment was ahead of attainment in the Scottish group: for example, 49% of minority students had passed three or more Highers, compared to 36% of Scottish students. Mostly that difference did not vary by sector, but there was some evidence that, at relatively high attainment, minority students had higher average attainment in the schools classed as ‘other junior secondary’. For male minority students, 54% in these schools passed three or more Highers, compared to 34% in the former senior secondaries ($p=0.04$). For females, these percentages were 61% and 38% ($p=0.04$). For Scottish students, there was almost no difference between these sectors. Somewhat distinctly from socio-economic status and the academic junior secondaries, then, these other former junior secondaries may have been particular open to encouraging the attainment of minority students.

Conclusion

This analysis has used a unique time series of surveys of students in their mid-adolescent years to investigate trajectories of social inequality in school education in Scotland. The strengths of the design are that the surveys cover the whole of the second half of the twentieth century, and were contemporaneous with the experiences described. The schools which students attended could be identified, which allowed modelling the effects of the history of schools during several periods of reform. The main weaknesses of the design is the absence of any measure of intelligence upon entry to secondary school, and so the analysis is best thought of as descriptive rather than causal. Using surveys covering a long period of time also suffers from the disadvantage that important variables were not coded in the same way throughout. We have had to compromise on some of our measures as a result, notably in relation to socio-economic status, and even then we had to omit the final survey in the series. Information about ethnic group was not recorded in all but that final survey, and yet our tentative findings in relation to it show that ethnicity is as potentially important in studying institutional legacies as information about sex and socio-economic status.

We have shown firm evidence of a reduction of inequality with respect to socio-economic status, consistent with the sociological, economic and educational literature on the trajectory of educational inequality cited earlier. That reduction happened at all levels – from gaining access to formal certification to passing the highest level of certification at the highest level. The analysis also found that the sex differences were small throughout the period. There was a switch in favour of female students (in the rising upward trend), but earlier than has been found in other countries – in the 1970s or even, at high SES, perhaps the 1960s. This may reflect a culmination of the growth between the first and fourth decades of the century of opportunities for female students to enter most certificate courses (Paterson, Pattie and Deary 2011). As McPherson and Willms (1987) noted from investigation of the period between the mid-1970s and the mid-1980s, these sex-related changes were happening in a system that was merging the few existing public-sector, single-sex schools into co-educational comprehensive schools. There were no official programmes of sex equality in education until well into the 1980s (Croxford 1994). As with the changes for SES, the sense here is of educational change being driven, not by policy, but by wider social transformation.

We have not investigated students' trajectories after leaving school, but improving their experience of secondary school was a consistent goal of policy from the 1920s to the 1980s. We have presented evidence that the goal of a proper secondary education for all students came close to being realised some eight decades after it first was debated. The analysis thus adds a further national instance relating to long-term trajectories of educational inequality, grounded in uniquely high-quality and pertinent data.

The research also contributes institutional evidence that has not been available from elsewhere. On the one hand, the strength of the longer-term changes over-rode any institutional differentiation. There was no evidence that varying rates of schools' ending of selection had more than a small and transitional effect. This finding is not inconsistent with that by McPherson and Willms (1987), who concluded that the ending of selection led to some reduction of inequality with respect to SES and sex, because our results suggest that the ending of selection was one means by which long-term social changes had their effect. Our results are also consistent with those reached by

Gamoran (1996), who found that the reform to the mid-secondary assessment in the late-1980s led to some reduction of socio-economic and sex differences in the early 1990s: our results suggest that the narrowing was already happening before the late-1980s and continued thereafter. At the very end of the period, there may also be evidence that former low-status schools were particularly effective at raising the attainment of students of Asian family origin. Conclusions of these kinds are also consistent with previous research on other countries, where a trajectory of steady change has been more commonly found than change forced by institutional reform. We can also conclude that change was not driven solely by exogenous social change, because period differences remain large in all the models in Table A1 even after controlling for parental education and social class. If, for example, rising levels of parental education had explained the changes over time, then the period effects would have vanished in these models. Policy on the structure of the school system almost certainly played some role, but not necessarily immediately, and waves of policy many decades apart interacted with each other.

The theory that comes closest to explaining the patterns is maximally maintained inequality. In most of our measures, inequality started to reduce only when the most advantaged class reached a plateau. Rational choice probably also has something to add in explaining why inequality at successively higher levels of education took successively longer to start reducing. This would make sense if low-SES students came to accept the risks of attempting higher levels of education only when they had become accustomed to the next level down. The other two theories seem less cogent here. Effectively maintained inequality might have led us to expect a growing concentration of high-SES students in the old, high-status schools, but that was not observed (Figure 4). Social reproduction is implausible in the face of the very large change of inequality which we have observed (as Goldthorpe (1996; 488) has noted), which is indeed an advantage of having half a century of data. Whatever may be said about any of these theories, we may certainly say that education was seen as a desirable good, insofar as all social groups have participated to an increasing extent in progressively higher levels of it.

There are implications of the analysis also for how to understand the ways in which policy operates. Policy can take a very long time to have its intended effect, and in the short term might even seem to have failed. For example, we noted that during the initial shift to comprehensive schooling the socio-economic gap in attainment at high levels widened (Table 4). But, twenty years later, there had been a clear narrowing. No short-term evaluation could have picked this up. Indeed, by the 1990s, the political arguments about comprehensive schooling in Scotland were long past (Murphy et al. 2015), and so any evaluation of it then would have had little effect on policy. The analysis also suggests that policies which work with the grain of a school's ethos are more likely to succeed in that school than policies which seek to transform it. The academic junior secondaries were perhaps closer than any other group of schools to the national Scottish policy of a comprehensive education that was firmly based on widening access to academic courses.

That then brings us to the final policy conclusion, which is also a conclusion about history. Policy is rarely cast in isolation: it proceeds incrementally (Lindblom 1980; Hill 2004: 147-50). The institutional effects of the 1960s and 1970s could be understood only by paying attention also to the legacies of older reforms. The legacies of

secondary-school foundation early in the century persisted to the early 1980s, and in some respects to the 1990s in the success of the former academic junior secondaries. These schools had provided access to fully secondary-level courses as long ago as the early 1920s, at times in the face of discouragement from government. Our data cannot provide an explanation of how this probable academic ethos prepared them for a non-selective era, but, in the light of the statistical findings, it seems plausible that the schools had built up a tradition based on the core Scottish liberal premise that secondary education for all meant academic education for all (Gray et al. 1983: 235-9). If that is the explanation, then it would be an instance of the power of what Meyer and Rowan (1977) call institutional myth, the collective belief that a distinguished record of academic success can offer advice on how to deal with successive waves of modernising policy.

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Tables

Table 1
School sectors, defined by origin

<i>Category</i>	<i>Short description¹</i>	Percentage share of pupils over the survey series ²	Percentage share of average number of schools over the survey series ³
1	Old secondaries, dating from before 1900	11	10
2	Independent	4	7
3	Full secondaries founded as Higher Grade schools, 1900-early 1920s	22	19
4	Full secondaries founded late 1920s or later	11	9
5	Academic junior secondaries: former Higher Grade schools offering only short courses, and former parish schools with experience of leaving certificate	12	15
6	Other junior secondaries: no experience of leaving certificate	36	36
7	New schools after 1970s	4	4
	Total	79,526	415

¹ For full description, see text.

² Percentages weighted, total unweighted.

³ Unweighted.: total is the average number of schools per year.

Table 2
Distribution of dependent variables

<i>% of sample</i>	Attempt 1+ Lower/O/S	Pass 1+ Lower/O/S	Stay on voluntarily beyond 4 th year	Pass 1+ Higher	Pass 3+ Higher	Achieve 1+ A pass at Higher	<i>Sample size</i>
<i>Year when respondent was aged 16</i>							
1952	11	11	14	10	6	NA	1,158
1962	NA	34	30	22	16	NA	514
1974-6	61	49	30	22	15	7	16,376
1976-8	68	58	33	26	17	8	8,823
1978-80	75	59	45	27	18	8	21,506
1980-2	80	64	45	27	16	8	7,149
1984	80	67	45	32	20	10	3,954
1986	87	69	46	33	21	10	4,009
1988	88	72	52	37	25	13	3,516
1990	89	69	55	41	30	15	2,692
1996	97	85	67	50	36	22	2,372
1998	97	85	68	52	39	24	4,751

Percentages weighted; sample sizes unweighted.

Table 3
Percentage passing one or more Ordinary Grade,
by sex, socio-economic status, and stage of becoming comprehensives, 1974-6 and 1980

	1974-6 survey		1980 survey	
	Middle comprehensive ¹	Late comprehensive ²	Middle comprehensive ¹	Late comprehensive ²
Male				
High SES	95.8	99.4	96.3	99.0
Low SES	24.4	31.9	43.1	37.5
Difference	71.4	67.5	53.2	61.5
Female				
High SES	95.1	99.5	97.4	99.5
Low SES	29.9	47.9	35.9	39.6
Difference	65.2	51.6	61.5	59.9

Source: predicted values from Model 2 in Table A2.

¹ *Middle comprehensive: not comprehensive for 1974-6 survey, comprehensive for 1980 survey.*

² *Late comprehensive: not comprehensive in either 1974-6 or 1980 survey.*

Table 4
Percentage passing one or more Higher Grade,
by sex, socio-economic status, and stage of becoming comprehensives, 1974-6 and 1980

	1974-6		1980	
	Middle comprehensive ¹	Late comprehensive ²	Middle comprehensive ¹	Late comprehensive ²
Male				
High SES	69.2	94.0	82.8	94.0
Low SES	5.6	4.5	10.8	4.3
Difference	63.6	89.5	72.0	89.7
Female				
High SES	75.8	95.9	85.8	95.5
Low SES	7.1	6.2	11.2	4.8
Difference	68.7	89.7	74.6	90.7

Source: predicted values from Model 4 in Table A2.

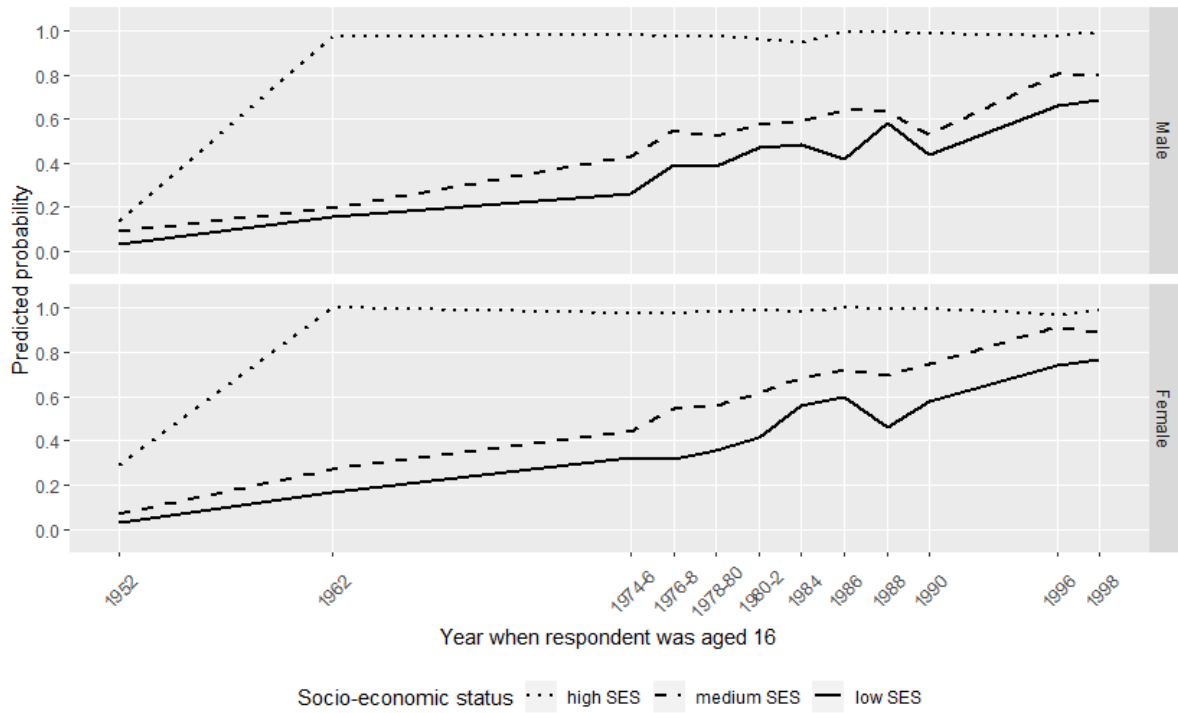
¹ *Middle comprehensive: not comprehensive for 1974-6 survey, comprehensive for 1980 survey.*

² *Late comprehensive: not comprehensive in either 1974-6 or 1980 survey.*

Figures

Figure 1

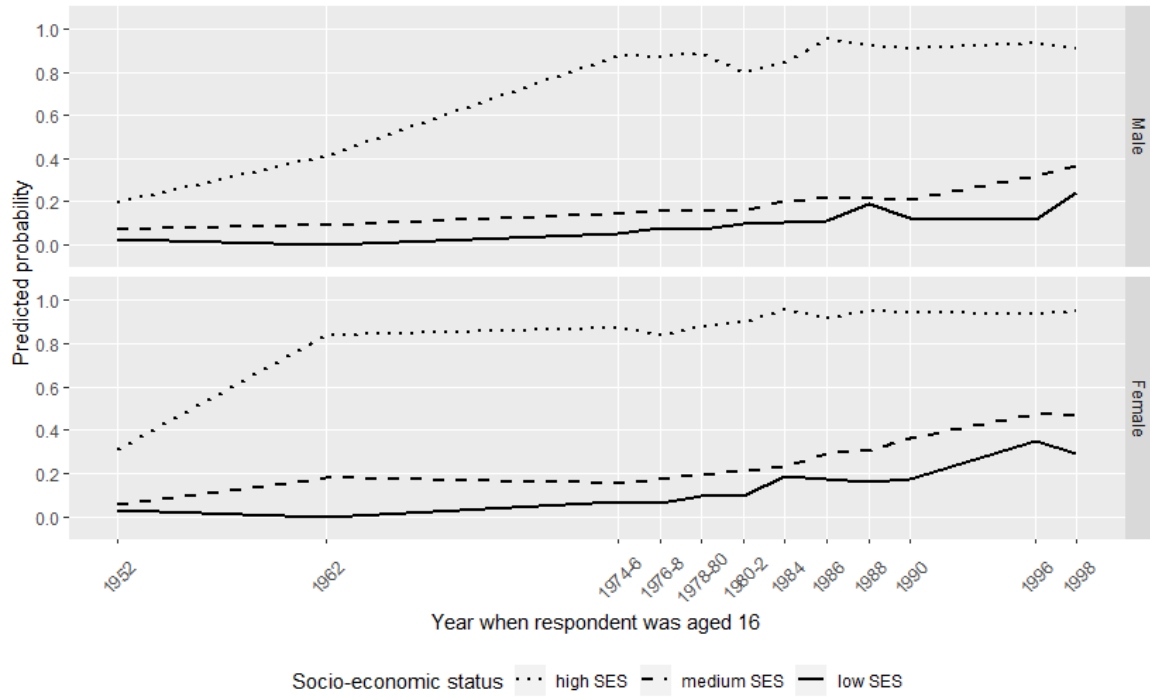
Passing one or more Lower Grade, Ordinary Grade or Standard Grade,
by year, sex and socio-economic status



Source: predicted values from Model 2 in Table A1.

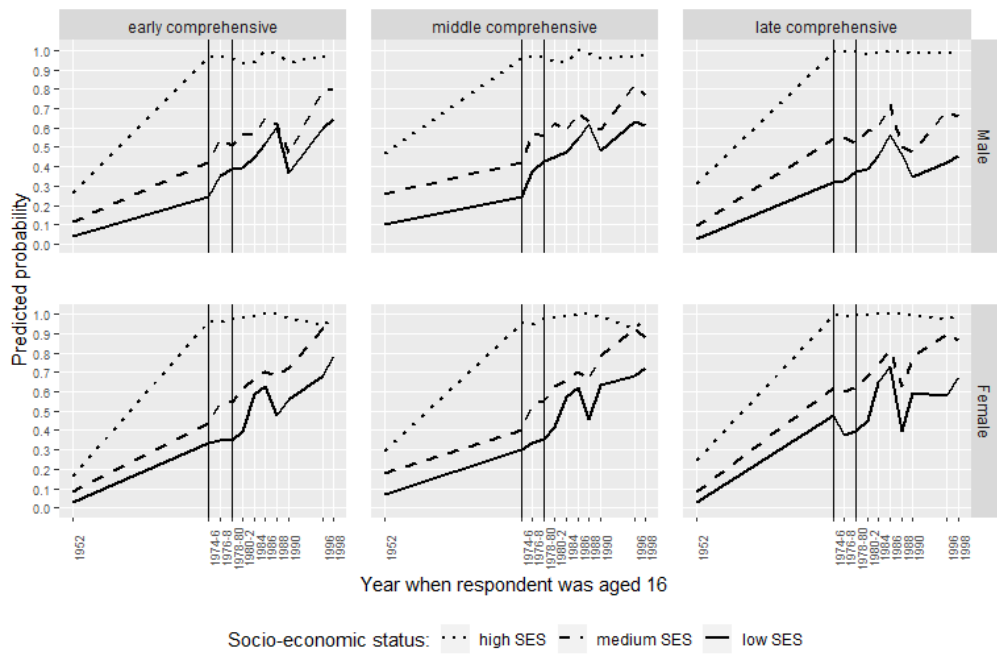
Figure 2

Passing one or more Higher Grade,
by year, sex and socio-economic status



Source: predicted values from Model 4 in Table A1.

Figure 3
Passing one or more Lower Grade, Ordinary Grade or Standard Grade,
by stage of becoming comprehensive, year, sex and socio-economic status



The vertical lines indicate the main reforming period.

Source: predicted values from Model 2 in Table A2.

Figure 4

School origin by social class, 1952, 1978 and 1998

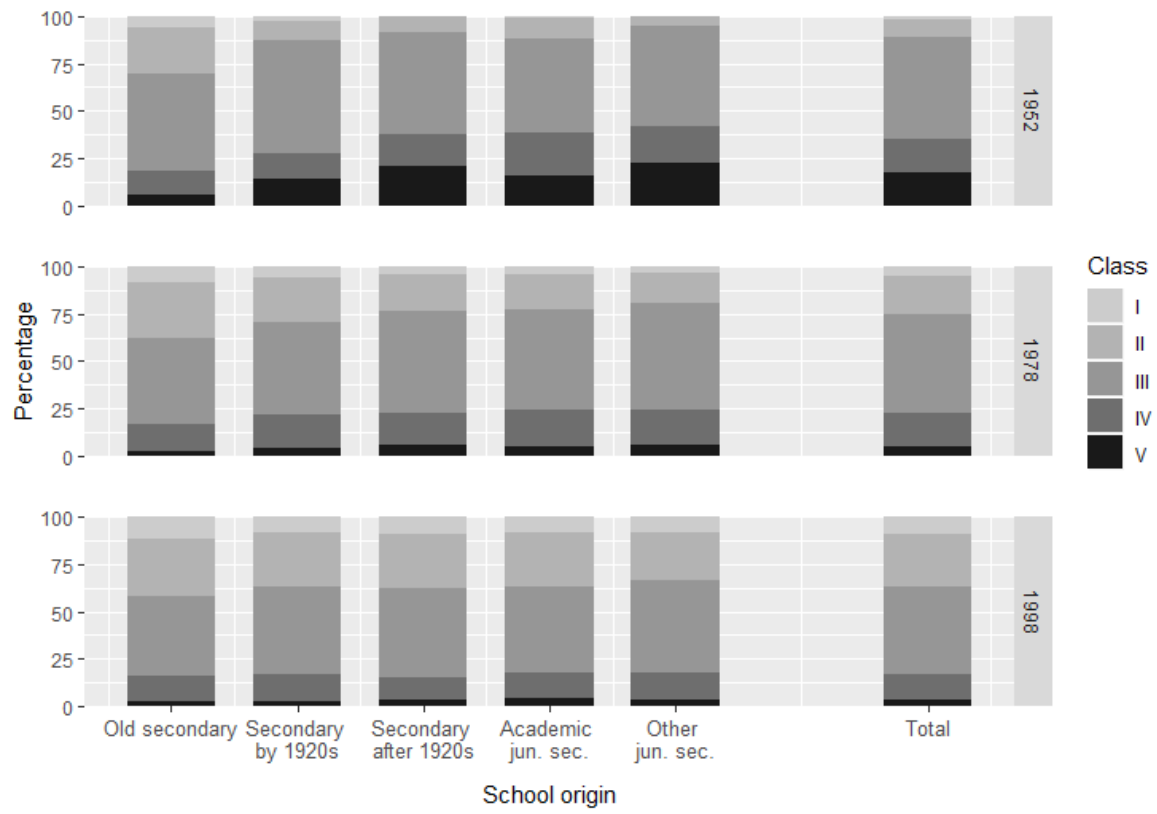


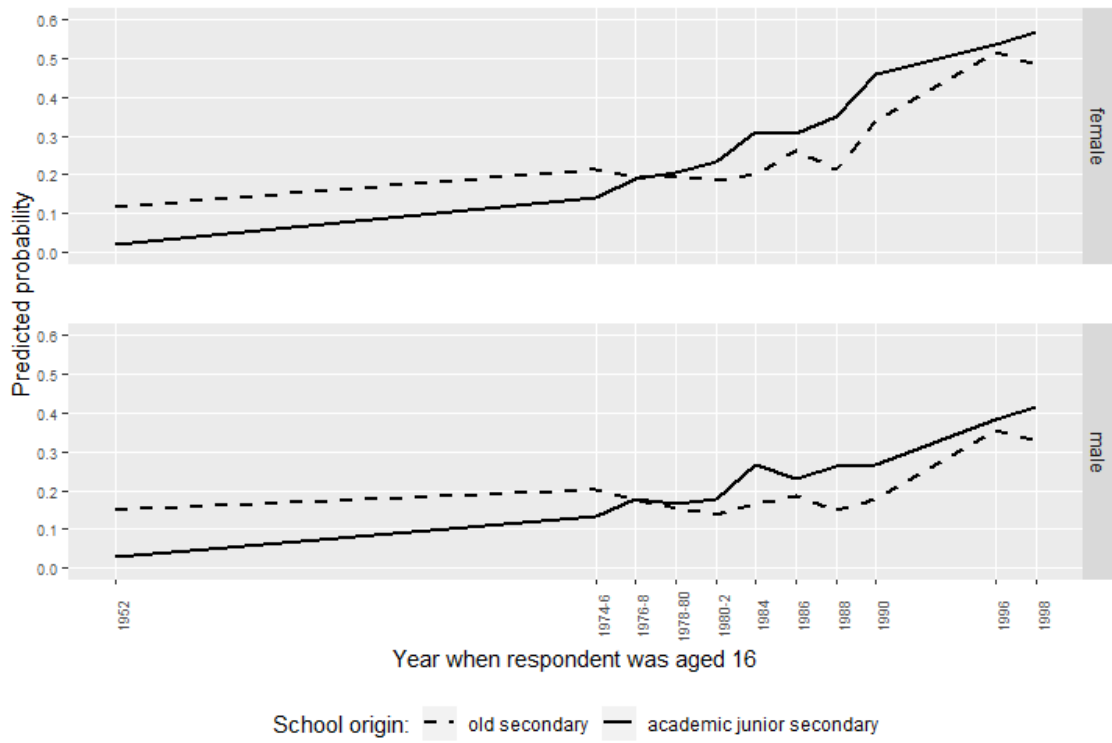
Figure 5

Passing one or more Higher Grade,
by socio-economic status, year, sex and selected school origin



Source: predicted values from Model 4 in Table A3.

Figure 6
Passing one or more Higher Grade,
by year, sex, and selected school origin:
schools which were early comprehensives only, and medium-SES only



Source: predicted values from Model 4 in Table A4.

Appendix: supplementary tables for ‘Schools, policy and social change: Scottish secondary education in the second half of the twentieth century’

Table A1
Binomial logistic models with year, sex, class and parental education: Type II analysis of deviance

<i>Term in model</i> (: is interactive effect)	Degrees of freedom ⁺	1 Attempt 1+ Lower/O/S	2 Pass 1+ Lower/O/S	3 Stay on beyond 4 th year	4 Pass 1+ Higher	5 Pass 3+ Higher	6 Achieve 1+ A pass at Higher
Year	10,11,9	68,053**	2,766**	2,476**	1,774**	5,459**	1,389**
Sex	1	194**	35**	235**	144**	22**	9**
Class	5	10,658**	3,151**	3,588**	4,574**	5,058**	4,004**
Parental education	4	4,757**	2,956**	2,681**	3,373**	3,457**	2,352**
Sex: class	5	33**	16**	19**	28**	31**	61**
Sex: parental education	4	67**	26**	38**	36**	35**	21**
Class: parental education	20	54**	53**	60**	83**	97**	68**
Year: sex	10,11,9	518**	86**	121**	110**	270**	106**
Year: class	50,55,45	11,721**	915**	1,639**	2,479**	3,169**	1,784**
Year: parental education	40,44,36	8,898**	2,265**	397**	217**	165**	141**
Sex.year.class	50,55,45	1,539**	493**	548**	308**	469**	284**
Sex.year.parental education	40,44,36	1,325**	306**	159**	52	45	42

⁺Number of years (as shown in Table 2 in main text): 11 for column 1, 12 for columns 2-5, 10 for column 6.

The table shows the type-II tests associated with each term.

Key for statistical significance levels: ** $p < 0.01$; * $0.01 < p < 0.05$; (*) $0.05 < p < 0.10$.

Table A2
Binomial logistic models of school sector according to their trajectory during the transition to comprehensive schooling
Type II analysis of deviance

<i>Term in model</i> (: is interactive effect) ¹	Degrees of freedom	1 Attempt 1+ Lower/O/S	2 Pass 1+ Lower/O/S	3 Stay on beyond 4 th year	4 Pass 1+ Higher	5 Pass 3+ Higher	6 Achieve 1+ A pass at Higher
Reform phase ²	2	21**	3	17**	13**	4	6*
Reform phase: year	20 ³	62**	64**	81**	45**	53**	47**
Reform phase: sex	2	8*	11**	0.6	1	0.5	0.02
Reform phase: class	10	10	4	11	26**	14	15
Reformphase: parental education	8	23**	5	14	10	11	5

¹ All the models control for the terms shown in Table A1.

² Time at which became comprehensive: see main text.

³ 18 for column 6.

The table shows the type-II tests associated with each term.

Key for statistical significance levels: ** $p < 0.01$; * $0.01 < p < 0.05$; (*) $0.05 < p < 0.10$.

Table A3
Binomial logistic models of school sector according to origin
Type II analysis of deviance

<i>Term in model</i> (: is interactive effect) ¹	Degrees of freedom	1 Attempt 1+ Lower/O/S	2 Pass 1+ Lower/O/S	3 Stay on beyond 4 th year	4 Pass 1+ Higher	5 Pass 3+ Higher	6 Achieve 1+ A pass at Higher
School origin ³	4	1,782**	940**	871**	2,017**	1,843**	306**
School origin: year	40 ³	20,845**	9,756**	10,961**	16,308**	15,220**	295**
School origin: sex	4	78**	6	8(*)	4	3	0.9
School origin: class	8	349**	133**	35**	11	31**	19*
School origin: parental education	16	14	24(*)	38**	29*	26(*)	25(*)
School origin: year: sex	40 ³	1,588**	218**	148**	48	380**	42
School origin: year: class	80 ⁴	3,752**	1,287**	268**	116**	553**	127**

¹ All the models control for the terms shown in Table A1, but with class in three groups: I,II; III; IV,V,other.

² Origin of school before 1960s (Table 1 in main text).

³ 36 for column 6.

⁴ 72 for column 6

The table shows the type-II tests associated with each term.

Key for statistical significance levels: ** $p < 0.01$; * $0.01 < p < 0.05$; (*) $0.05 < p < 0.10$.

Table A4
Binomial logistic models of school sector according to origin and trajectory during the transition to comprehensive schooling
Type II analysis of deviance

<i>Term in model (: is interactive effect)¹</i>	Degrees of freedom	1 Attempt 1+ O/S/Lower	2 Pass 1+ O/S/Lower	3 Stay on beyond 4 th year	4 Pass 1+ Higher	5 Pass 3+ Higher	6 Achieve 1+ A pass at Higher
School origin	4	76**	65**	117**	342**	89**	106**
School origin: year	40 ³	1,535**	82**	109**	1,697**	1,031**	42
School origin: sex	4	8.8(*)	9.4(*)	3.8	5.8	8.5(*)	0.72
School origin: class	20	28	31(*)	27	24	28	26
School origin: parental education	16	17	21	28(*)	29*	23	27*
School origin: reformphase	8	53**	142**	161**	195**	75**	22**

¹ All the models include the terms in Tables A1 and A2.

³ 36 for column 6.

The table shows the type-II tests associated with each term.

Key for statistical significance levels: ** $p < 0.01$; * $0.01 < p < 0.05$; (*) $0.05 < p < 0.10$.