Social inequalities in educational attainment. The changing impact of parents' social class, social status, education, and family: England 1986 and 2010

Nicola Pensiero UCL Institute of Education, UK
Ingrid Schoon UCL Institute of Education, UK

Abstract

There is controversy regarding trends over time in the association between social origins and educational outcomes in the UK. An explanation may lie in different methods of analysis. This article provides new evidence about trends in inequality between the 1980s and 2010s and informs the debate about the conceptualisation and operationalisation of social origins. It expands the multidimensional conceptualisation of social origins proposed by Bukodi and Goldthorpe (2013) by adding a separate indicator of family income to those of class, status, and education of parents. Results from two UK age cohorts born in 1970 (BCS70) and 1989/90 (Next Steps) show that social class, social status, education and income all have independent effects on educational attainment and can show different patterns of stability or variability over time. Moreover, the study highlights the importance of transitions to upper secondary education for a more comprehensive

understanding of inequalities in educational progression and attainment.

1 Introduction

A series of longitudinal studies has confirmed social origins as important determinants of educational attainment. However, there is still controversy about the trend across British cohorts in educational inequalities, that is in the association between social origins and educational attainment (Blanden, Gregg & Macmillan, 2013; Goldthorpe, 2013; Bukodi and Goldthorpe, 2016). The UK seems to have followed an equalising trend in educational attainment in the first half of the 20th century (Breen, Luijkx, Müller, & Pollak, 2009), while throughout the second half, when radical changes in educational policy occurred, it is not clear whether educational inequality was falling, rising or on a flat line (Goldthorpe, 2013, 2016).

Plausible explanations of the diverging evidence concern differences in methodology and conceptualisation of constructs. Some researchers model education outcomes as the highest level of qualification attained (for example Breen et al., 2009), whilst others consider a sequence of transitions from lower to higher levels (Mare, 1981; 1980). The definition of individuals' educational attainment can also differ in respect to absolute versus relative value assigned to education (the latter treating education as a 'positional' good (Bukodi & Goldthorpe, 2016).

This article argues that the uncertain direction of trends has another cause that has received relatively little attention: the incomplete

conceptualisation and measurement of social origins (Bukodi, Eibl, Buchholz, Marzadro, Minello, Wahler & Schizzerotto, 2018; Bukodi, Erikson & Goldthorpe, 2014; Bukodi & Goldthorpe, 2013). We use four distinct indicators of social origin, i.e. social class, social status, family income and parental education.

We conceptualise educational attainment as a series of three transitions of increasing difficulty up the qualification ladder up until A-levels, the higher set of school leaving exams which are the gateway to university. Our analysis of these transitions examines variations in the influence of social origins at different stages of the education progression instead at a distinct outcome.

In analysing the effect of social origins on the probability of obtaining qualifications in England, the present article advances existing research in three ways. First, it includes four key indicators of social origins: social class, parental education, social status and family income. Second, it updates evidence on recent trends, using cohorts born in 1970 and 1989/1990. Third, viewing educational attainment as progress transitions, it explores variations in the influence of social origins at different stages of education progression instead of one distinct outcome. The results should help inform interventions to boost education equality at critical windows of development.

2 The conceptualisation of social origins

By social origins we refer to different strata of hierarchy in society, which can be conceptualised in different ways. Traditionally, among

sociologists, social origins have been seen through a one-dimensional lens, focusing primarily on parental social class (Breen et al., 2009; Goldthorpe, 2016; Shavit, Arum, & Gamoran, 2007). The notion of social class identifies the worker's position within the relationships of production in firms and labour markets (Erikson & Goldthorpe, 1992; Erikson, Goldthorpe, & Portocarero, 1979). Parental education has been also included to complement the definition of social origins, especially when the outcome of interest is the child's education. Economists have mostly used family income instead of parental social class, as for example in the literature on educational inequalities in Britain (Blanden, Gregg & Machin, 2005; Blanden & Macmillan, 2016; Gregg & Macmillan, 2010). Others suggested that the predominantly one-dimensional treatment of social origins is inadequate and might partly explain the divergent findings on trends in educational inequalities (Bukodi, Erikson, & Goldthorpe, 2014; Bukodi & Goldthorpe, 2013; Goldthorpe, 2013; Jæger, 2007).

Jæger (2007), following Bourdieu (1984), proposes that in analysing the effect of social origins on educational outcomes, social class should be accompanied by other factors aiming at capturing the resources that social class might proxy – parental economic, cultural and social capital. In this way he argues the effect of social class can be decomposed into more specific effects.While Bukodi and Goldthorpe (2013) endorsed the multi-dimensional treatment of social origins, they criticised Jæger's approach from a Weberian perspective. In particular they contend that commonly used social class schemata such as such as the Erikson-Goldthorpe-Portocarero (EGP) or the Comparative Analysis of Social Mobility in Industrial Nations (CASMIN) (Erikson & Goldthorpe, 1992; Erikson et al., 1979) are not designed to proxy other kinds of resources, but rather are intended to

distinguish occupations in terms of social relations in labour market and in the production process. Social class thus defined, it is argued, is a valid indicator of income levels, security and prospects (Chan & Goldthorpe, 2007; Goldthorpe & McKnight, 2006) and therefore it well covers parental economic resources, making the use of an additional indicator of economic resources unnecessary. Furthermore, social class is at the same level of abstraction of socio-cultural resources rather than serving as a proxy for them and is, similarly, a relational concept. Thus, Bukodi and Goldthorpe (2013) suggest decomposing social origin instead of decomposing social class. They would complement social class with social status as an indicator of socio-cultural resources. Social status is understood as an indicator of a structure of relations of perceived social superiority, social equality, and social inferiority, as expressed in selective intimate relationships and in distinctive lifestyles. While the class structure is grounded in relationships within labour markets and production units (Erikson & Goldthorpe, 1992; Erikson et al., 1979), the social status order refers to relations of perceived social standing. It distinguishes between those who, by virtue of their higher position and ascribed attributes, behave as superiors and those who have a less advantaged position and consequently behave with deference. Although the expression of social status is less overt and more implicit nowadays, it is still recognisable in social networks (Chan & Goldthorpe, 2007; 2010).

Another indicator considered is parental education, understood as an indicator of "educational resources", providing a supportive home learning environment and knowledge about how to navigate the educational system (Bukodi & Goldthorpe, 2013; Erikson & Jonsson, 1996;). Although they did also find some very small independent effect of family income in one cohort, Bukodi and Goldthorpe (2013) conclude

that social status in combination with social class and parental education should comprehensively account for social origin effects on educational attainment.

In this article we follow Bukodi and Goldthorpe (2013) and Bukodi et al. (2014) in decomposing social origins into social, occupational and educational components, but add family income as a separate indicator. A substantial portion of permanent income, in fact, is unrelated to social class, which therefore might not be a sufficient proxy of the variation in economic status between families (Blanden et al., 2013; Grusky and Weeden, 2001; McIntosh and Munk, 2009). Furthermore, the relevance of social class for children's educational attainment is not limited to the opportunities that income entails. More generally, social classes specify the social relations within the labour market and can determine standards of living and life chances. Apart from the opportunities for income, social class also determines the quality of work conditions (job security, career opportunities, working hours and stress) which in turn have a specific relevance for children's educational attainment by influencing the quality and quantity of the relationship between family members including family disruptions (Furstenberg & Kiernan, 2001; Menning, 2002, Perry-Jenkins, Goldberg, Pierce & Sayer, 2007; White & Keith, 1990).

3 Changes in the educational system

In considering trends in educational inequality it is important to take account of the changing socio-historical context. Both of our cohorts faced a compulsory school leaving age of 16 (introduced in 1973), but this

study covers a period of further educational expansion and major changes in the education system from the late 1980s onwards. In 1988 there was a switch from GCE O-levels system (General Certificate of Education, Ordinary levels) to GCSEs (General Certificate of Secondary Education), see Table 1. Under the former regime, more academically oriented students took O(Ordinary)-levels at age 16 and A(Advanced)-levels at age 18. A-levels are the requirement for entering higher education. Less "academic" pupils could take the Certificate of Secondary Education (CSE) at 16 (which we treat as the lowest academic qualification) or vocationally oriented programs. The 1970 cohort was one of the last to be educated under the GCE O- level system. The 1988 reform combined O- level and CSE exams into General Certificate of Secondary Education (GCSEs), which were usually taken at age 16 Students no longer had to decide whether to take the less academic CSE or the more academic O- level exams. This, in turn, is thought to increase the participation of those in the middle of the skill distribution and in particular of those at the borderline between academically oriented and less academically oriented students. Moreover, the GCE O-level system was based exclusively on exam performance whilst the GCSEs also take into account the coursework.

Table 1 here

GCSEs turned out to be more accessible than the O- levels and the result of the reform was that a higher proportion of students – 93% of members of the Next Steps (1990) cohort against 76% of the 1970 cohort – left the school with at least some academic qualifications. Focusing on the post-compulsory phase, 38% of the more recent cohort attained an A-level qualification, against 16% of the previous (Table 2). Level 2

academic qualifications were reached by 58% of the more recent cohort. The previous cohort's attainment of level 2 appears higher (64%), but this could reflect an overstatement of GCSEs qualifications as discussed later.

Table 2 Around here

In the 1980s, participation in post-compulsory education in the UK was low by international standards. In an attempt to raise it, two other major policies were introduced. The first was designed to enhance the labour market value of vocational qualifications. The second was the introduction of an Education Maintenance Allowance (EMA), which paid individuals from disadvantaged backgrounds a small means-tested allowance if they stayed on in full-time education beyond the age of 16. Evaluations of the EMA suggest that the subsidy increased participation not only in full-time education beyond the compulsory school leaving age but also in full-time education subsequently. Started in 1999 on a pilot basis, EMA was rolled out throughout the UK in 2004 and would have been available to the Next Steps cohort. Research suggests that it is one the factors that have enhanced the post-compulsory participation (Dearden, Emmerson, Frayne, & Meghir, 2005).

The most recent reforms of the vocational education system, the development of the General National Vocational Qualifications (GNVQs), introduced in 1992 and National Vocational Qualifications (NVQs) from 1998, have not, overall, been successful in terms of enhancing the labour market value of vocational qualifications (Dearden, McIntosh, Myck. & Vignoles, 2002; Machin & Vignoles, 2006). The system of vocational training and qualifications in the UK

is complex and is not unified, as in other countries such as Germany or Austria. Regulation and governance is generally more liberal and market-oriented than in other systems, with much diversity in programmes and types of providers, including private training organisations (Crawford-Lee, 2016; Green, 2002; Raffe, Brannen, Fairgrieve, & Martin, 2001; Wolf, 2011). The perennial attempts to enhance the attractiveness of vocational qualifications have not succeeded in increasing the esteem of the different vocational qualifications available. Despite the confusion that this has generated regarding the value of vocational qualifications, full-time vocational education represents a substantial part of the UK education system and the proportion of children choosing it has risen from 15% in the mid-1980s to around 25% of all 16- and 17-year olds in the 1990s in the UK (West & Steedman, 2003). Research documents that NVQs and GNVQs have little value in the labour market and in the case of NVQs they are even detrimental to wages (Dearden et a., 2002; Dieckhoff, 2008). Given the variability of the content and economic value of vocational qualifications across subsequent reforms, we decided to exclude vocational qualifications from the definition of children's educational attainment and to focus exclusively on the academic ones. Academic qualifications have a higher status and have retained their esteem and labour market value in the period of expansion of education that is under investigation (Machin & Vignoles, 2006).

Another major transformation of the UK education system that might have affected social inequality in educational attainment is the introduction of market mechanisms. In response to widespread concerns about falling standards in UK education, Conservative as well as Labour governments in the 1980s and 1990s set up "market mechanisms" in the UK education system, including parental choice, parent representation on governing bodies and linking school funding with student enrolment numbers (Gregg & Macmillan 2010; Heath, Sullivan, Boliver & Zimdars 201; Lupton, Heath & Salter, 2009). Alongside greater parental choice,

the reforms also made more information about the effectiveness of schools available to parents and the public, in the form of publicly available test score information, known as' League Tables' (Hansen & Vignoles, 2005; Machin & Vignoles, 2006). Increased competition among schools and decentralisation of school finance can potentially enhance attainment, but can raise inequality as well because advantaged families are better able to take advantage of the diverse opportunities created by a more market-oriented system (Blanden, Gregg & Machin, 2005; Galindo-Rueda & Vignoles, 2005; Gibbons & Machin, 2008). While the 1970 cohort was educated in the period prior to the market-oriented reforms, the 1990 cohort experienced a system that was already transformed by those reforms. Whether the reforms are reflected in a change in social class differentials in attainment is explored in the next section.

4 Previous research

Previous evidence suggests that the dependence of educational attainment on household income has increased over time in the UK at the tertiary level, while it has gone down for secondary qualifications after the introduction of GCSEs in 1988. Blanden and Gregg (2004) found that the relationship between family income and final educational outcome has been strengthening across cohorts born in 1958 and 1970. By contrast, Gregg and Macmillan (2010) showed that the gradient of educational attainment at age 16 by social origins (income or class) has lessened between generations born in the 1970s and those born in the 1980s and early 1990s. They relate the improvement in equality of educational opportunity in educational attainment at age 16 to the 1988 reform introducing GCSE qualifications.

Blanden, et al., (2005) confirmed an initial increase in inequality in post-16 participation by family income, followed by a decline after the introduction of GCSEs in 1988, and an increase at the tertiary level. The rapid expansion of higher education, they argue, had benefited children from wealthier families, disproportionately. The argument is supported by Galindo-Rueda and Vignoles (2005). They examined the relative importance of family background and ability and found that the importance of ability in accounting for educational attainment has declined over time, whilst that of parental class and parental education has increased. They attribute this partly to the fact that less able children from advantaged backgrounds have benefited most from the largest increase in educational participation.

Boliver (2011) has shown that educational expansion, in and of itself, has not caused educational inequalities to decline in the UK. Instead, she found that social class inequalities in British higher education (HE) have been maintained both quantitatively, in terms of persistence of social class differentials in HE enrolment, and qualitatively, in terms of differential access to higher status courses. Similarly, Schoon (2010) confirmed that the association between academic attainment and a composite index of family social background comprising parental education and social class has remained stable over time, while the association between academic attainment and general cognitive ability decreased for the 1970 cohort compared to the 1958 and 1946 cohorts. Social background (whether as class or parental education) also showed persisting associations with transitions at 16 to A-levels and at age 18 to university in cohorts born from 1958 to 1991 (Jackson, 2013).

Most of these studies examined a limited variety of family background factors. Bukodi and Goldthorpe (2013) have dealt with the

omission of relevant factors from a conceptual perspective, by decomposing social origins into parental class, parental status and parental education. Using evidence from the 1946, 1958 and 1970 British birth cohorts, they found that these three components of social origins have independent and distinctive effects on children's educational attainment. In detail they found a stable effect of parental class, a weakening effect of parental status and a stronger effect of parental education. From this follows that if any of these factors was chosen as the sole indicator of social origin, it would cause an overestimation of the effect of that factor and an underestimation of the total effect of social origins.

5 Research questions

This article contributes to the debate over trends in educational inequality by addressing the following questions. Do parents' class, education, social status and family income show an independent effect on children's educational attainment? If so, which of the different socio-economic family resources are implicated in producing educational inequalities. Does one set of resources become more important compared to another? Do the different indicators show similar or different trends?

For the younger cohort, we include information on highest qualifications attained by 2010, as collected at age 19/20. By then most cohorts members will already have attained level 3 qualifications (entry to university qualifications), but not all of them will have decided whether to enter university. For this reason we focus on level 3 qualifications as the final educational outcome, which enables us to assess inequalities before making the step to university.

6 Data and operationalisations

6.1 Data

We use data from two cohort studies, the 1970 British Cohort Study (BCS70) and Next Steps, formerly the Longitudinal Study of Young People in England (LSYPE). The BCS70 has collected rich information from a sample of around 17,000 individuals, all of whom were born in one week in 1970 (Elliott & Shepherd, 2006). Subsequent surveys took place when the cohort members were aged 5, 10, 16, 26, 30, 34, 38 and 42 years. Our study sample comprises around 8,500 study members who lived in England at age 10 and participated in both the 10-year survey (for the social origins indicators) and 30-year survey (when education history was collected through self-reports).

Next Steps is a cohort study of pupils in England born between September 1989 and August 1990 and their parents (or carers). Data were collected annually between 2004 and 2010 (waves 1–7), with data currently available up to wave 8, collected in 2015 at age 25/26. A sample of around 15,800 members participated in wave 1. Next Steps uses a complex survey design to over-sample deprived areas, thus requiring the use of sample weights in order to restore population representativeness. The data on educational qualifications are taken from administrative records, the National Pupil Data (NPD) which were linked to the survey members by the Department of Education. This study sample comprises 12,264 individuals who participated in the 13/14 years-old survey and had non-missing values on educational attainment by age 20/21 (from the NPD).

6.2 Variables

In operationalising cohort members' highest educational attainment, we focus on academic qualifications (ie excluding vocational qualifications). The coding of educational qualifications reflects the step structure of the UK education system. Our sequence of qualifications has a baseline of no academic qualifications (level 0); Level (1) is attainments immediately above this GCSE grades D-G; and CSE grades 2-5; Level (2) is /O-levels / CSE grade1/ and, for the second cohort, GCSE grades A*–C. Level (3) for both cohorts is A-levels (see table 1). Data on completed qualifications in the Next Steps are available up age 20/21, using NPD. In order to generate a comparable indicator for the BCS70, we used the history data of qualifications reported by the BCS70 members at age 30. From the retrospective self-reported information regarding qualifications, we were able to derive the A-level qualifications obtained at age 20. The definition of the qualifications implies that if cohort members have not gained A-levels by age 20 they are assigned a level 2 qualifications (if they have one) regardless of qualifications attained later on. It should be noted that in the BCS 30-year-old survey, level 2 qualifications are likely to be biased upward. More than 1000 cohort members reported having obtained one or more GCSEs before the introduction of GCSEs examinations (1988) (Shepherd 2001 p 42), possibly due to confusion of CSE and GSCE qualifications (the former are more likely to have been level 1 than GCSE). On the other hand, in Next Steps, there is a possible small downward bias to records of Level 2+ qualifications due to under-reporting of students attending independent schools (personal communication, Dr Morag Henderson).The variables available in the datasets on parental social class allow us to code class origins in the Goldthorpe schema, seven-category version. The BCS70 contains

information on the Socio-Economic Group of both parents (SEG) at respondents' age 10. Following the recoding procedure described in Goldthorpe and Jackson (2007) we recoded the SEG to the Goldthorpe class schema. In the Next Steps cohort we coded parental class using the National Statistics Socio-economic Classification (NS-SEC), which represent the Goldthorpe class schema for Britain (Goldthorpe, 2007) (see also Office of National Statistics – The National Statistics Socio-economic classification (NS-SEC)). In cases where both parents are employed we select the higher of the parents' class in line with the dominance approach (Erikson, 1984).

Our indicator of parental social status is based on the scale proposed by Chan and Goldthorpe (2004), which is derived from the occupational structure of close friendship relations. Cohort members' parents are coded to the 31 categories of the scale on the basis of the allocation to Standard Occupational Classification 1990 (SOC90) occupational unit-groups. Where both parents can be allocated to the scale, we adopted the dominance approach. In the first wave of the Next Steps, there was insufficient detail on both parents' occupational unit group, so we used data from the second sweep to construct the social status indicator.

Parental education is defined as the highest academic qualification of either parent (dominance approach). It has been shown that the commonly used qualifications variable, which treats vocational and academic qualifications (NVQ) as equivalents has less predictive power of children's educational outcomes than a variable giving prominence to academic qualifications (Sullivan, Ketende & Joshi, 2013). Accordingly we classified parental education on the basis of academic-qualifications in the same way as the cohort members, adding a level (4) for degree level qualification or higher.

Information on family income is banded in both in the BCS and Next Steps, therefore income cannot be directly operationalised as an interval variable (or percentiles). We constructed an indicator of four groups that is the finest-grained possible given the limits imposed by those bands. The resulting variable distinguishes between the bottom 7% of families, a second group comprising the next 30%, a third group of 34%, and finally the top 29% of families. We did not attempt to construct a continuous estimate of income because the covariates that would be used to impute values within intervals might introduce multicollinearity.

In order to deal with the potential issue of multicollinearity arising from the use of different indicators of social origins we used two main diagnostic procedures: regressing each of the independent variables on the others (and a dummy variable indicating the cohort) and calculating the (pseudo)- R-squared value; and secondly, latent class analysis of the different indicators, assuming that they are manifestations of a single latent factor (Hagenaars & McCutcheon, 2002; Muthén, 2001). The findings disconfirm that multi-collinearity is an issue that might bias the estimates of our models. The (pseudo)-R-squared value for the multinomial logistic regression estimating social class is 0.2, the adjusted R-squared value for the OLS regression estimating social status is 0.39, and the pseudo-R-squared values of the ordinal logistic regression estimating parental education and family income are respectively 0.16 and 0.12. The magnitude of the (pseudo)-R-squared values does not reach the threshold of 0.8 one would expect in the case of large communality. The highest R-squared value found in the case of social status (0.39) indicates a low level of multicollinearity. If multicollinearity were an issue and the use of a common factor were the best fitting strategy, then the results from the latent class analysis would show the number of classes to be “limited”,

most cases would be found in classes representing consistent combination of indicators, for example a class comprising cases with high scores on all indicators, a class with middling scores on all and one with low scores on all indicators. Inconsistent classes in which indicators behave differently (high scores on one indicator and low scores on other indicators) should not emerge or would only contain a residual proportion of cases in such a hypothesis. The results show that the solution with 8 classes including inconsistent classes fits better the patterns of relationships between the indicators than the consistent 4 class solution. The sample-size adjusted Bayesian Information Criterion (BIC), in fact, equals 328693.437 in the first case and 343358.265 in the second.

7 Results

Table 2 shows that a considerable number of cohort members did not achieve level 2 qualifications by age 20, 42% of the 1990 cohort compared to 36% in the 1970 cohort, pointing to persisting low levels of achievement. However, it has to be taken into account that while BCS70 data is based on self-report, information about qualifications in Next Steps is taken from the NPD. We also see that there had been an increase in level 3 qualifications for the later born cohort and a decrease in children not attaining any academic qualification.

Table 2 around here

Do social status, parental class and education and family income show an independent effect on children's educational attainment? We adopt a sequence of logit models that reflect the ladder structure implied by the English education system (Mare, 1981; 1980) to estimate the likelihood of attaining 1) at least level 1 qualifications versus

none; 2) at least level 2 versus staying at level 1; and 3) attaining level 3 qualifications versus staying at level 2. The results of logistic regression model are presented in Table 3.

The estimates show a monotonic relationship between parental social class and educational attainment of their offspring at the first transition: the social class advantage of completing the first transition becomes, as expected, stronger as we compare the routine class (VII) with more advantaged classes. At the second transition, the same monotonic pattern is observed, yet, this time, the attainment gap between classes becomes significant from the small employers (IV and below).

Table 3 here

Whether cohort members have parents with semi-routine occupations (VI) or lower supervisory occupations (V) rather than the routine class (VII) makes no significant difference for the transition to level 2 qualifications. At the higher transition (to level 3), social class differentials are like those observed at the lower transition, except for intermediate occupations whose chances this time are not different from the most disadvantaged classes. Social status shows a significant and moderate association across all transitions. The findings confirm that the categories of social class and social status indicate distinct and non-overlapping constructs.

Parental education shows generally a significant and monotonic relationship with children's educational attainment at each of the three transitions. Children of parents with level 2 qualifications have higher chances of educational progression across all transitions than children of parents with no qualifications. Children of parents with levels 3 or 4 qualifications have even higher relative chances. However, children of

parents with level 1 qualifications do not have a significant relative advantage over parents with no qualifications.

Family income shows some independent association with both earlier transitions, over and above the other social origins' indicators. There is a significant difference between children from families at the bottom income group and children from families at the third and at top income group at transitions 1and 2, At the third transition, the likelihood of success does not seem to be associated with family income.

To assess the relative importance of the predictors, we looked at the proportion of correctly predicted cases in the full model and then remove one predictor at a time to assess how much predictive power is lost each time. The full model for progressing to A-levels correctly predicts 68% of cases; parental education is the most important variable (predicted cases drop to 67.2%), followed by income (predicted cases drop to 67.8%), social status (predicted cases drop to 67.9%) and social class (predicted cases do not drop).

In summary, Table 3 suggests that when considered together, parental social class, social status, education and family income each exerts an independent effect on educational attainment. Consequently social origins indicators should be regarded as distinct aspects of social origins, with the implication that if one or more of them were missing, the total effect of social origins would be underestimated.

We now turn to the question of whether the effects of parental class and education, social status and family income on children's educational outcomes changed across the two birth cohorts, addressed by adding an interaction term between cohort and each of the social origins indicators into the logistic models.

Table 4 shows various patterns of change and stability of inequality in educational attainment across the social origins indicators.

Table 4 here

The social class attainment gap had a prevailing pattern of stability, there is no clear indication of reducing inequality, although it widened somewhat for specific groups at certain transitions. The differentials between class VII (routine) and class III (intermediate) in attaining at least level 1 qualifications have widened across cohorts, there is no support for a change in the gap between class VII and other classes at that transition. At transition 2, the gap between class VII and class IV has widened. At transition 3, only the attainment gap between class VII and class VI (semi-routine) has widened across cohorts.

The social status attainment gap appears to have slightly increased across the three transitions, reaching statistical significance only at transition 2.

With respect to parental education, the gap in the first transition has become wider when comparing children of parents with levels 1 and 2 qualifications with those of unqualified parents. The pattern is reversed at the next transition (to 'O-level'), where the differentials between no parental qualification and parental qualifications at levels 1 or 2 are significantly narrower. Similarly, at the transition to A-level, among those qualified to level 2, the trend over time is equalising for all parental education categories.

Household income: the attainment gap between the least affluent income group and the (two) more affluent income groups enlarged at transition 1. At transition 2, the progression gap in academic

qualifications has widened in a significant way only between the two extreme income groups. At transition 3 there is no evidence of a significant change inequality in attainment over time.

In summary, the most salient patterns of changes in inequality are that at transition 1, from no to any qualifications, there has been a widening or persisting attainment gap between children from families with different socio-economic resources, while at transitions 2 and 3 there has been a reduction regarding the role of parental education. This means that the different socio-economic groups have taken advantage of the expansion of the access to and attainment of academic qualifications at different paces. The later born cohort experienced a generalised increase in the rates of completion of the first transition: the proportion of children without any qualification at age 20 declined from 23% to 7% roughly (Table 2). Yet, children from advantaged parents have experienced a more rapid decline, indicating that the expansion of educational attainment at the first transition has benefited the advantaged groups more than the disadvantaged. At transition 2 (attainment of at least 'O-level-type' academic qualifications at age 20), there does not appear to have been expansion and, at face value, the proportion of children completing this transition declined from 64% to 58% (Table 2). This decline may be overstated or even artefactual, given the possible biases noted above of overstatement of GCSEs reported BCS (Shepherd, 2001) and a possible small downward bias to records of Level 2+ qualifications in Next Steps. Even considering this caveat, many of the Next Steps cohort still found the second transition beyond their reach. Assuming that the overstatement of GCSEs reported in BCS is not systematically related to cohort members social origin's indicators, we argue that the results regarding the variation of inequality of opportunity in educational attainment are not affected by

the likely upward bias in level 2 qualifications in BCS.At the third transition another major expansion has occurred, which more than doubled the proportion of children who have attained an A- level academic qualification, which increased from 17% to 38%. At this point, the expansion was accompanied by a reduction of inequality associated with parental education and by stable inequality in relation to social class, social status and family income.

8 Conclusions

This article addresses a vexed question about change or stability in social inequalities in educational attainment. We compared two British age cohorts born in 1970 and 1989/90. We argue that the controversy regarding trends in social inequalities arises partly because parental social class or income should not be the sole indicators of social origins. A multidimensional conceptualisation of social origins should embrace, social class, social status, parental education and family income. Each of these factors shows independent associations with offspring's educational attainment, suggesting independent mechanisms by which growing up in different families leads to diverging educational outcomes. When social class is used as the sole indicator of social origins the extent of social inequality in educational attainment is underestimated and the extent of social class inequality is overestimated. The findings also suggest that omitting family income from a more differentiated and comprehensive conceptualisation of social origins would still lead to incomplete conclusions. in that family income has an independent effect on educational attainment.

The multidimensional treatment of social origins has not only methodological implications but also substantive ones, advancing the interpretation of the social processes generating educational inequalities across generations. Educational attainments in the two cohorts are associated in different ways with parental social class, education, family income and social status. Overall the results regarding social class provide support for a stable trend of inequality across the three transitions. The role of family income strengthened at transition 1 and 2, while remaining stable at transition 3. Social status has become more important over time for educational attainment only at transitions 1 and 2. Parental education shows different patterns of influence at different transitions. It has become somehow more important at transition 1, and less important at transitions 2 and 3. This latter pattern is the only clear sign of declining inequality over time.

The stability - in case of parents' social class - or even strengthening – in case of family income – of the association between social origins and educational transition 1 and 2 are at odds with previous research showing an improvement of equality of opportunity in the attainment of GCSE qualifications (Gregg and Macmillan, 2010). A reason may be differing the definitions of social background. Gregg and Macmillan use either family income or class. The use of a single indicator of social origins is likely to capture the trend of inequality of opportunity in respect to social origins in general, hiding potentially diverse trends for each dimension of social origins.

The findings point to the importance of specifying each transition when analysing trends in inequality in social origins indicators. The increase or persistence in social inequality at transition 1 and 2 can

potentially be explained by the large proportion of underachieving students in the UK context. The so-called "tail of poor achievers" is a persistent problem in the UK and is particularly relevant in the discussion around inequality because it is particularly pronounced among the poor and disadvantaged students (Brooks, Pugh and Schagenl., 1996; Machin & Vignoles, 2005; Marshall, 2013). This aspect is clearly shown in our data, with about 42% of young people in the 1989/90 cohort leaving education with below level 2 qualifications. Indeed, our findings suggest that the importance of early educational transitions should not be dismissed especially when they are quite selective. While government policy since the late 1990s is focused on getting more disadvantaged students into tertiary education, it might be even more important to ensure that young people have more equal chances to get level 2 qualifications. Our findings point to the importance of improving support for achieving lower level qualifications, which are a springboard for later achievements.

The reforms discussed in section 3 probably did little to reduce social inequality in poor achievement. The introduction of market-oriented mechanisms might have even exacerbated it. It is plausible in fact that advantaged and more educated parents benefit the most from increased choice in the provision of education. They have better information on, and understanding of, school performance, via league tables and, in general, provide better guidance in navigating the education system (i.e. making intelligible the examination procedures and helping to distinguish between the high number of courses and qualifications to take and the institutions to attend (Bukodi & Goldthorpe, 2013; Erikson & Jonsson, 1996)). The persistence over time of large strata of low achievers among disadvantaged children is a plausible explanation of the persistent inequality at the first transitions. Other plausible explanations of the

strengthened impact of family income at the first two transitions is the marked rise in income inequality (Johnson & Webb, 1993) and child poverty in the UK during the 1980s (Department of Social Security, 1998:1999; Gregg, Harkness & Machin, 1999).

The stable impact of social class indicates that the advantages that the concept of class captures have changed little during the time period considered. Relating this finding to the results from Bukodi and Goldthorpe (2013) regarding the stability of class-related inequality for older cohorts, a long-term trend emerges indicating that the social class inequalities in educational attainment have not changed since the 1950s up to 2000s. The increasing gap across cohorts in attainment at the second transition associated with social status might reflect the increasing return to information associated with social status. It might also indicate that social networks have become more important in facilitating access and progression in the educational system.

Among our four aspects of social origins, only parental education had a generalised expansion and equalisation, due to the educational expansion at the secondary and higher level that occurred since the late 1960s. The parents of the 1990 cohort benefited from the rapid increase in participation in secondary and higher education that was determined by this expansion. Other dimensions of social stratification have not changed in this equalising and expansive way. This is probably the reason why inequalities in relation to parents' education have reduced over time at transition 3, while there hasn't been a reduction in inequality in relation to other factors. Another aspect to be considered is that the students who have passed level 2 qualifications are a selected group with relatively high skills. At transition 3 part of the effect of parents' education on skills is captured by previous attainments; once past the hurdle of obtaining at least level 2

qualifications, the expansion of education among the parental generation can finally lead to an improvement in equality of opportunity. By contrast, at transition 1, the expansion of education participation has mostly benefitted advantaged children from well-educated parents because of the persistent inequality in the long tail of low achievement.

In summary, the results suggest that social class, social status, education and income all have independent effects on educational attainment. Furthermore, their effects can vary in different ways, i.e. they show different patterns of stability or variability over time and for different qualification levels. When they vary, they can trend in either direction. What is needed for a better understanding of these independent effects is to hypothesise and test the specific social processes or mechanisms that underlie the observed associations.

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Table 1: Education qualifications of cohort members across the 1970 and 1990 cohorts

	Less than level 1	Level 1	Level 2	Level 3
1970 cohort (BCS70)	No academic qualifications	CSE grades 2-5	Ordinary(O) -levels/ CSE grade 1	Advanced (A)-levels
1990 cohort (Next Steps)	No academic qualifications	GCSE level grades D-G	GCSE level grades A*-C	Advanced (A)-levels

Table 2: Descriptive statistics:: row percentages unless otherwise specified

	Academic qualifications									
	1970 cohort					1989/90 cohort (weighted values)				
	None	Level 1	Level 2	Level 3	Total	None	Level 1	Level 2	Level 3	
Sex										
Male	24.97	13.54	44.94	16.55	100.00	8.70	37.64	20.38	33.28	100.00
Female	20.69	13.19	48.52	17.60	100.00	5.35	31.99	20.84	41.82	100.00
Total	22.77	13.36	46.78	17.09	100.00	7.05	34.85	20.60	37.50	100.00
N					8480					12264
Social class										
Routine occupations	34.18	18.72	39.29	7.80	100.00	19.21	53.22	14.61	12.96	100.00
Semi-routine occupations	31.84	17.09	45.31	5.76	100.00	12.63	48.52	18.66	20.19	100.00
Lower supervisory occupations	29.22	16.39	47.51	6.89	100.00	8.39	52.94	20.86	17.81	100.00
Small employers	25.29	15.69	45.69	13.33	100.00	5.41	40.30	22.09	32.19	100.00
intermediate occupations	23.77	15.24	50.66	10.33	100.00	4.04	34.60	25.41	35.95	100.00
Lower managerial and professionals occupations	15.41	9.95	49.23	25.41	100.00	2.93	26.14	22.50	48.43	100.00
Higher managerial and professional occupations	9.29	5.52	44.53	40.66	100.00	2.27	14.29	18.47	64.97	100.00
Total	22.86	12.56	48.30	16.28	100.00	6.26	34.34	20.88	38.52	100.00
N					7638					11214
Social status (mean)	-0.33	-0.38	-0.10	0.50	-0.10	-0.52	-0.15	0.32	0.74	0.26
N					7682					11686
Parental education										
No qualifications	30.55	19.18	43.83	6.45	100.00	18.54	49.38	14.67	17.41	100.00

Level 1	27.75	15.76	48.43	8.06	100.00	11.07	53.82	17.43	17.68	100.00
Level 2	20.82	12.52	49.69	16.98	100.00	5.53	40.94	24.55	28.98	100.00
Level 3	15.53	8.82	54.61	21.05	100.00	3.39	25.98	23.78	46.85	100.00
Level 4	8.70	3.98	43.18	44.14	100.00	2.19	11.58	17.79	68.45	100.00
Total	22.48	13.33	46.79	17.40	100.00	7.01	34.62	20.62	37.76	100.00
N					7771					12029
Family income (percentile)										
I group (7%)	29.27	19.27	42.93	8.54	100.00	15.23	42.72	15.87	26.18	100.00
II group (30%)	30.00	15.39	45.30	9.30	100.00	13.15	45.30	18.57	22.98	100.00
III group (34%)	22.07	14.36	50.29	13.28	100.00	5.37	39.78	21.63	33.22	100.00
IV group (29%)	18.14	10.63	47.22	24.00	100.00	2.11	19.64	22.04	56.21	100.00
Total	22.50	13.29	47.10	17.11	100.00	7.12	34.52	20.53	37.82	100.00
					7283					9468

Table 3

Transitions through three academic levels by age 20/21 by cohort, parental class, social status and education, and family income:

Main effects, binary logistic models, odds ratios

	Level 1 and higher vs No qualifications	Level 2 and higher vs Level 1	Level 3 vs Level 2
Cohort (Ref.: 1970)			
1989/90 cohort	3.93***	0.24***	4.37***
	(0.265)	(0.013)	(0.230)
Female	1.45***	1.42***	1.20***
	(0.079)	(0.063)	(0.058)
Parental Class (Ref.: Routine occupations (VII))			
Semi-routine occupations (VI)	1.19*	1.11	0.90
	(0.119)	(0.103)	(0.125)
Lower supervisory occupations (V)	1.32**	0.98	0.86
	(0.156)	(0.099)	(0.131)
Small employers and own account workers (IV)	1.68***	1.35***	1.28*
	(0.219)	(0.144)	(0.189)
Intermediate occupations (III)	1.80***	1.52***	1.06
	(0.171)	(0.145)	(0.140)
Lower managerial and professional occupations (II)	2.17***	1.50***	1.30*
	(0.238)	(0.149)	(0.174)
Higher managerial and professional occupations (I)	2.76***	2.00***	1.71***
	(0.427)	(0.248)	(0.248)
Family social status	1.07**	1.16***	1.13***
	(0.030)	(0.031)	(0.031)
Parental education (Ref.: No qualifications)			
Level 1	1.09	1.04	0.97
	(0.082)	(0.075)	(0.096)
Level 2	1.47***	1.63***	1.36***

	(0.113)	(0.110)	(0.116)
Level 3	2.12***	2.57***	1.72***
	(0.237)	(0.213)	(0.162)
Level 4 and higher	2.52***	5.31***	2.89***
	(0.306)	(0.536)	(0.276)
Family income (Ref.: I group (7%)			
II group (30%)	1.00	1.15	0.97
	(0.125)	(0.113)	(0.138)
III group (34%)	1.33**	1.23**	0.99
	(0.169)	(0.120)	(0.137)
IV group (29%)	1.54***	1.78***	1.19
	(0.209)	(0.184)	(0.167)
Constant	1.08	1.57***	0.16***
	(0.146)	(0.189)	(0.028)
Observations	15,466	13,524	9,797

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 4: Transition analysis with interactions by cohort, binary logistic models: odds ratios

	Level 1 and higher vs No qualifications	Level 2 and higher vs Level 1	Level 3 vs Level 2
Cohort (Ref.: 1970)			
1989/90 cohort	1.21	0.19***	5.89***
	(0.351)	(0.046)	(2.086)
Female	1.35***	1.10	1.03
	(0.081)	(0.083)	(0.075)
Female*1989/90 cohort	1.27*	1.46***	1.27**
	(0.167)	(0.136)	(0.124)
Parental Class (Ref.: Routine occupations (VII))			
Semi-routine occupations (VI)	1.12	1.04	0.56***
	(0.125)	(0.152)	(0.125)
Lower supervisory occupations (V)	1.14	1.08	0.73
	(0.161)	(0.198)	(0.193)
Small employers and own account workers (IV)	1.39**	0.99	1.09
	(0.202)	(0.179)	(0.254)
Intermediate occupations (III)	1.51***	1.25*	0.88
	(0.156)	(0.166)	(0.164)
Lower managerial and professional occupations (II)	1.95***	1.54***	1.34
	(0.232)	(0.232)	(0.248)
Higher managerial and professional occupations (I)	2.81***	1.76***	1.48*
	(0.479)	(0.367)	(0.298)
Semi-routine occupations (VI)*1989/90 cohort	1.12	1.11	2.13**
	(0.236)	(0.217)	(0.631)
Lower supervisory occupations (V)*1989/90 cohort	1.30	0.94	1.36
	(0.317)	(0.213)	(0.450)
Small employers and own account workers (IV)*1989/90 cohort	1.55	1.55*	1.33
	(0.452)	(0.354)	(0.406)
Intermediate occupations (III)*1989/90 cohort	1.78*	1.37	1.50
	(0.528)	(0.273)	(0.415)

Lower managerial and professional occupations (II)*1989/90 cohort	1.19	0.97	1.01
	(0.337)	(0.202)	(0.275)
Higher managerial and professional occupations (I)*1989/90 cohort	0.87	1.18	1.31
	(0.336)	(0.315)	(0.385)
Family social status	1.00	1.09**	1.12***
	(0.030)	(0.042)	(0.042)
Family social status*1989/90 cohort	1.15*	1.11**	1.04
	(0.091)	(0.060)	(0.062)
Parental education (Ref.: No qualifications)			
Level 1	1.01	1.32***	1.08
	(0.081)	(0.132)	(0.157)
Level 2	1.28***	1.86***	1.95***
	(0.106)	(0.196)	(0.241)
Level 3	1.90***	2.68***	1.97***
	(0.241)	(0.420)	(0.282)
Level 4 and higher	2.43***	5.17***	3.70***
	(0.327)	(0.919)	(0.483)
Level 1*1989/90 cohort	1.43*	0.65***	0.64**
	(0.266)	(0.096)	(0.140)
Level 2*1989/90 cohort	1.59***	0.78*	0.41***
	(0.278)	(0.111)	(0.077)
Level 3*1989/90 cohort	1.36	0.86	0.57***
	(0.343)	(0.163)	(0.119)
Level 4 and higher*1989/90 cohort	1.24	0.95	0.46***
	(0.379)	(0.207)	(0.096)
Family income (Ref.: I group (7%)			
II group (30%)	0.81	1.18	0.98
	(0.114)	(0.195)	(0.227)
III group (34%)	1.02	1.17	0.94
	(0.144)	(0.193)	(0.214)
IV group (29%)	1.08	1.23	1.25
	(0.164)	(0.219)	(0.288)
II group (30%)*1989/90 cohort	1.71**	0.99	0.95

	(0.418)	(0.205)	(0.279)
III group (34%)*1989/90 cohort	2.06***	1.09	1.09
	(0.531)	(0.225)	(0.315)
IV group (29%)*1989/90 cohort	3.01***	1.68**	0.92
	(0.903)	(0.370)	(0.268)
Constant	1.66***	1.91***	0.16***
	(0.248)	(0.346)	(0.039)
Observations	15,466	13,524	9,797

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1