All I have to do is dream? The role of aspirations in intergenerational mobility and well-being

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ABSTRACT

We study the determinants and consequences of educational and occupational aspirations. Basing our enquiry on the British NCDS 1958 cohort data, we assess the importance of aspirations for social mobility above and beyond other established determinants. We document educational and occupational inequalities in young individuals' aspirations, whereby parental aspirations are a strong predictor of children's aspiration-levels. Following individuals over the life cycle shows that aspirations are positively correlated with later achievement. However, there is evidence for reduced well-being in adulthood when actual achievements later in life fall below aspirations in adolescence.

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1. INTRODUCTION

Intergenerational mobility has become an important topic of policy discussion around the world. Labour market success and, in turn, intergenerational mobility are widely documented to be driven by capabilities and constraints, such as innate ability, financial resources and available opportunities (e.g., Carneiro and Heckman 2002, Corak, 2013, Chetty et al. 2014, Elliot Major and Machin 2018). Recent complementary views emphasize that behavioural biases may hinder success, especially among the poor (Banerjee and Mullanaithan 2010, Bernheim et al. 2015), and underline the role of subjective expectations (e.g., Manski 2004, Attanasio and Kaufmann 2014, Devalande and Zafar 2019) that may be biased and could lead to sub-optimal investments and outcomes (e.g., Jensen 2010, Zafar 2011, Boneva and Rauh 2018, Dizon-Ross 2019, Papageorge et al. 2020).[1]

Recent theoretical insights argue for the distinct role of aspirations as another important driver of social mobility (e.g., Dalton et al, 2016, Besley 2017, Genicot and Ray 2017, or see Ray and Genicot 2020 for a review). On the one hand, aspirations are motivational and might shape actual achievements later in life by raising effort level and investment decisions. If aspirations are positively correlated with socio-economic background, young adults from less privileged backgrounds would systematically have lower aspirations, and subsequently attain lower occupational and educational outcomes. On the other hand, unreachable aspirations may lead to disappointment or frustration when aspirations and actual achievement are far apart (e.g., Ray 2006). Yet, the empirical evidence on these arguments remains scarce and, to our knowledge, there is no study that empirically assesses them all together in a comprehensive setting.

In this paper, we study the extent to which low aspirations, along with a lack of financial and human capital capacities, are factors that hinder intergenerational mobility. Following previous literature, we conceptualise aspirations as distinct from expectations, mirroring what a person wishes to achieve and not what he or she realistically expects to achieve (e.g., Reynolds and Pemberton 2001, Khattab 2015, La Ferrara 2019). Our stylised conceptual framework highlights the underlying trade-off in holding high aspirations between being positively related to future outcome versus being an overly ambitious benchmark with potential consequences for disappointment. Based on rich information from the 1958 UK cohort of the National Child Development Study (NCDS), we empirically assess the predictions regarding driving factors of aspiration formation, and the relationship between aspirations at young ages and later life outcomes. The data comprise a set of measures of cohort members' educational and occupational aspirations, as well as actual educational and occupational achievement and subjective well-being later in life. The NCDS further contains detailed information on the cohort members' ability and socio-economic environment since childhood, enabling us to control for many potentially confounding factors.

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[1] There is a substantial body of literature in economics that discusses the relevance of subjective expectations. They are studied mainly in relation to the expected value of educational attainment (e.g., Montmarquette et al. 2002, Arcidiacono et al. 2012, Beffy et al. 2012, Stinebrickner and Stinebrickner 2014). Related literature looks at the influence of individual information provision on belief updates regarding costs and benefits of education (e.g., Bleemer and Zafar 2018, Lergetporer et al. 2018).

As a first contribution of our paper, we explore the extent to which educational and occupational inequalities already exist in young adults' aspirations. To do so, we convert the categorical occupation and aspiration measures into a cardinal measure based on occupation prestige scores. This allows us to construct an alternative measure of intergenerational mobility – the intergenerational correlation of aspirations. This measure correlates occupational aspirations of the cohort member at age 16 with their father's actual occupation, offering an insight into what intergenerational persistence might have been in a hypothetical scenario in which every individual fully attained her childhood aspirations. We find that aspirations in childhood differ along the distribution of the father's background, suggesting the prevalence of limited mobility even in aspirations. However, intergenerational mobility based on the children's aspired occupations is higher compared to the standard measure of intergenerational mobility which is based on the father's and children's actual occupations.

As a second contribution of this paper, we provide evidence for the empirical relevance of multifaceted factors in shaping children's and young adults' aspirations that have previously been discussed in the theoretical literature, namely the relevance of the social environment (Genicot and Ray, 2017) or personal experiences (Dalton et al. 2016). While we are not able to exploit exogenous variation in aspirations, the data allow us to apply an exhaustive list of confounding variables and to apply time-lagged specifications to mitigate the issues of endogeneity and reverse causality. The results highlight that parents, or the parental background in general, play a major role for the child's aspirations. Our estimation with parental aspirations for the child shows that parental aspirations are the strongest determinant of a child's aspirations – displaying a much stronger partial correlation than the child's ability and rendering the influence of other family characteristics small and insignificant. We further show that parenting styles and information sources from which the child learnt about the job aspired to serve as potential channels through which parental aspirations influence the child.

On the contrary, we do not find strong or significant relationships between local labour market conditions and children's aspirations. The absence of the significant correlations persists even when we look specifically at a case of the collapse in coalmine industry after 1950s in the UK, and estimate potential effect of local labour market shocks on aspirations of the young generation growing up in the area. These results suggest that the influence of the social environment on aspirations is limited mainly to the children's parents and peers. Our regression specifications are able to tie together the multitude of factors highlighted in previous work that shape differences in aspirations, for instance family background (Bisin and Verdier 2001, Caballe and Moro-Edigo 2014, Caballe 2016, Page et al. 2007), local social influences (Beaman et al. 2012, Janzen et al. 2017, Guyon and Huillery, 2020), cultural background (Gutman and Akerman 2008, La Ferrara 2019), or interventions at the school-level (Carlana et al. 2018, Rizzica 2020).

As a third contribution, we test the relevance of aspirations for actual education attainment and labour market outcomes years afterward. Overall, a child's own aspirations strongly predict labour market outcomes as well as educational achievements later on, over and above other main drivers in the literature, namely childhood cognitive and non-cognitive abilities, birthweight, financial difficulties in young ages, parent's education, parental investments, and school environment. This is correlational evidence that

aspirations serve as a motivating factor for educational and occupational achievements. While we remain cautious in interpreting these results as causal, the estimates are informative - highlighting that the aspiration measures are a stronger predictor of later life achievements in comparison to other established determinants, for instance non-cognitive skills or fathers' occupational background. Furthermore, we show that the aspirations of parents matter for future achievements of the child, even when parental socio-economic status is accounted for. The results are complementary to recent works on the relevance of educational aspirations of pupils and their parents for actual future educational achievements (e.g., Attanasio and Kaufmann 2014, Goux et al. 2017, Carlana et al. 2018) and, more generally, on the relationship between subjective expectations and actual future outcomes (e.g., Boneva and Rauh 2018, Delavande and Zafar 2019, Rizzcla 2020, Kunz and Staub 2020).[2]

As the last contribution, we investigate the potential downside in having high aspirations. In effect we test whether excessive aspirations are related to lower well-being later in life what could be interpreted as disappointment (e.g., Ray 2006). Aspirations may act as a threshold in a reference-dependent utility function. A discrepancy between aspirations set since childhood and actual outcome realisation can lead to disappointment, and subsequently reduce subjective well-being later in life (e.g., Reynolds et al. 2006).[3] While in the existing literature the focus is on the negative relationship of people's income aspirations with their well-being (e.g., Stutzer, 2004, Luttmer 2005, Clark et al. 2008, 2015), the empirical evidence for the role of educational and occupational aspirations on subjective well-being remains scarce (an exception is Wrosch et al. (2007), who relate stress and anxiety to unmet educational aspirations). We utilise measures of life satisfaction and mental health along the adulthood life cycle in our British cohort sample, and find negative effects of aspiration gaps on subjective well-being in adulthood. In particular, the results highlight negative consequences when the cohort members do not reach the occupational outcomes aspired to in their lives. However, over the life cycle, the negative effects fade away. We detect gains in life satisfaction among those whose achievements go beyond their aspirations later in life. In addition, an excess between parental aspirations and child's own aspirations is also negatively related to measures of child's well-being in the early stage of working life.

The rest of the paper is structured as follows. Section 2 provides a summary of stylised theoretical arguments linking aspirations, intergenerational mobility, and well-being. Section 3 describes our data and Section 4 reports a descriptive comparison between intergenerational mobility using aspirations and actual attainments. Sections 5-7 document the estimates of determinants and consequences of aspirations, with Section 5 looking at the formation of aspirations during childhood, Section 6 linking aspirations with actual

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[2] Sociologists have also explained inequalities in educational outcomes as the result of differences in aspiration levels (Page et al. 2007). Early papers that established the link between aspirations and educational outcomes implemented models in which the determinants of aspirations are also discussed (e.g., Sewell et al. 1969 and 1970, Jencks et al. 1983, Schoon and Polek 2011, Trebbels 2015). However, previous studies often rely on limited measures of social status and aspirations, such as a binary measure for the expectation to pursue a professional or managerial occupation.

[3] A long-standing argument in psychology literature shows a negative link between a large gap between aspirations and achievement to people's well-being (Mason and Faulkenberry 1977, Michalos 1985, Higgins 1987).

adult outcomes, and Section 7 investigating the relation to adult well-being outcomes. Section 8 provides concluding remarks.

2. FORMALISING THE CONCEPT OF ASPIRATIONS WITH REFERENCE-POINT UTILITY

In this section, we outline a stylised conceptual framework that summarises and integrates recent theoretical work on aspiration formation and its implications for intergenerational mobility (see Dalton et al. 2016, Besley 2017, Genicot and Ray 2017, La Ferrara 2019). Subsequently, we will draw key implications for our empirical analysis on (i) the driving factors of aspiration formation, (ii) the role of childhood aspirations in later life achievements, and (iii) the relationship between unmet aspirations and subjective well-being. We present empirical evidence supporting these results in Sections 4-7.

Following Appadurai (2004) and La Ferrara (2019), we conceptualise aspirations to be a subjective view each individual has regarding what she wishes to attain in the future, which is distinct from expectations.[4] We further outline the concept of aspirations by formalizing a reference-dependent utility function based on a model of aspiration failure in Dalton et al. (2016). In this model, the decision maker is a child whose utility function, shown in Equation 1, has three additive components: final achieved wealth (y_1), reference-dependent utility that hinges on the aspirations, a_1, in relation to y_1, and the cost function of exerting effort $c(e_1)$ that satisfy standard assumptions.[5]

$$(1) \quad Max_{e=\{0,1\}} \ U_1 = b(y_1) + v\left(\frac{y_1 - a_1}{y_1}\right) - c(e_1)$$

Producing y_1 requires both effort (e_1) and initial endowment (θ_0). The child inherits θ_0 exogenously from her parents. The complementarity of effort and initial endowment is embedded in the production function of later achievement, $y_1 = (1 + e_1)\theta_0$, where the cross derivative of y_1 with respect to e_1 and θ_0 are positive. The *aspiration gap* is defined as the discrepancy between lifetime achievement (status, income, education) in adulthood, and the childhood aspirations regarding later achievements ($y_1 - a_1$). We refer to disappointment when the gap is negative.

We define the production function of aspirations in Equation 2 as a weighted average of the internal and the external elements of aspiration influences. The role of endogenous effort choice in the aspiration formation depends on ϖ.

$$(2) \quad a_1 = \varpi(1 + e_1)\theta_0 + (1 - \varpi)a_1^{EX}$$

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[4] See La Ferrara (2019) for the distinction of aspirations from further concepts such as hope, goals, or locus of control. One difference is that individuals' aspirations are less dependent on the probability of its occurrence in reality, in comparison to expectations. Expectation formation generally reflects a more realistic perception of the degree of plethora of constraints surrounding an individual.

[5] As stated in Dalton et al (2016) that b(.) and v(.) are increasing and concave; c(1) > c(0) = 0. And let ability (s) such that $s' > s''$ then $\frac{\partial c}{\partial s'} < \frac{\partial c}{\partial s''}$.

In the case where $\varpi = 1$, aspirations are fully determined by effort choice and initial endowment. This corresponds to the main model structure in Dalton et al. (2016).[6] As actual outcome and aspirations are formed under a common function, there is no aspiration gap and consequently no disappointment by construction. Utility maximisation implies two optimal pairs of (e_1^*, a_1^*) with both elements either being both high or both low, i.e., $(1, 2\theta_0)$ or $(0, \theta_0)$. Thus, an individual either chooses to exert effort with high aspirations, or not to exert effort with low aspirations.

In the case of $\varpi < 1$, an individual takes into account external aspirational influences (a_1^{EX}). In this case, the aspiration formation becomes less dependent on the decision the exert effort, and an aspiration gap can occur under certain conditions. More specifically, for $0 < \varpi < 1$, disappointment gets more likely the higher a_1^{EX} is relative to θ_0. For instance, we see that when $a_1^{EX} > 2\theta_0 = y_1^{e=1}$, disappointment is larger in the case of exerting costly effort. Additionally, the higher the weight assigned to external influences (i.e., ϖ gets closer to zero), the bigger the disappointment. Individuals with lower marginal cost of effort or higher marginal utility of income are more likely to exert effort even if they end up facing an aspiration gap. Note, however, that for the extreme case of $\varpi = 0$, the positive relationship between effort and aspiration no longer exists.

The social environment becomes a prominent external factor that drives aspirations when $\varpi < 1$. This formulation resembles the seminal models outlined in Genicot and Ray (2017) and later in La Ferrara (2019).[7] It hinges on the idea that the social environment perceived through the 'aspiration window' of an individual shapes her or his ambitions and goals (Ray 2006). Aspirations are formed based on information about the income, achievements, or ideals, which may be heterogeneous as each individual may hold a different set of subjective perceptions of the social environment (Ray, 2006; Genicot and Ray, 2017).[8] Consequently, individuals might not correctly perceive an actual distribution of opportunity in their aspiration formation. The narrower the aspiration windows, the more aspiration levels are influenced by the immediate social environment of the child, such as the socio-economic status of the parents. Hence, aspirations might be biased towards the child's socio-economic background, which subsequently hinders intergenerational mobility in aspirations. Nonetheless, how narrow individuals' aspiration windows are is an empirical question.

Based on the features of the stylized model discussed above, the following predictions will be considered in the empirical analysis:

(i) **Determinants of aspirations**: In the model, high initial endowment is associated with high probability of exerting effort, and therefore with high aspirations. We thus predict that children's aspirations positively depend on the financial resources of the family. Consequently, lower aspirations from individuals from a lower socio-economic background will be observed as a result of lower θ_0. The model

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[6] In their model, a *rational* individual, by choosing a consistent effort-aspirations pair, never faces an aspiration gap, i.e., they never mis-predict their future achievement, nor do they have 'excessive' aspirations. For any given θ_0, a rational solution gives way to $v(0) = 0$ (see their Definition 1).

[7] Note that the main solutions in Dalton et al. (2016) hold too when ϖ deviates only a little from 1 (see their extension in Appendix C of their paper).

[8] For example, a child may only consider a local range of the distribution, or a truncated distribution of society-wide achievements.

further predicts the aspirations to positively depend on children's ability, which is implied by the lower cost of exerting effort. On the other hand, if $\varpi < 1$, the model implies that the social environment is predictive of individual aspirations above and beyond the mentioned determinants.

(ii) **Relationship of aspirations and achievements**: In the case of $\varpi > 0$, effort and aspirations are jointly and endogenously determined. As a result, the influence of the aspiration level on lifetime achievement is predicted to be positive as high aspirations reflect high effort. Moreover, as θ_0 and effort are complementary inputs in the production of final wealth, we also predict a stronger relationship of aspirations and achievements among individuals from higher socio-economic background who are more likely to receive higher θ_0.

(iii) **Aspiration gaps:** We predict that failing to reach the aspired occupation level later in life is negatively related to individuals' experienced utility, over and above other key determinants of subjective well-being. Aspiration gaps occur under two conditions: (i) ϖ is close to zero and aspirations are mainly determined by external environment, and (ii) the external aspiration influences exceed the highest possible outcome individually achievable (i.e., when effort is exerted).

3. DATA DESCRIPTION

Our analysis uses the dataset of the National Child Development Study (NCDS), which follows the lives of over 17,000 people in England, Scotland and Wales born in a single week of 1958. Since the first survey in 1958, there have been nine more Sweeps of all cohort members at ages 7, 11, 16, 23, 33, 42, 46, 50 and 55. The NCDS collects information on childhood environments, background of parents, employment, skills and well-being, as well as expectations and aspirations. The data contains 18,558 cohort members in 1958. However, there are 5,919 observations with missing information on actual occupations, and 11,416 observations with missing child's own and parental aspirations at age 16. Consequently, our non-imputed sample consists of 5,859 observations or 32% of the original birth cohort.[9] Table A2 provides the descriptive statistics of childhood and adult characteristics used in the analyses and further described below. The main sample in our analysis (cohort members who we observe their aspirations at age 16) comes from marginally better-off background than an average NCDS cohort

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[9] A common issue in most cohort studies is the problem of sample attrition and missing information, which might cause problems concerning validity. However, Case et al. (2005) show that attrition in the NCDS is not systematically associated with socio-economic status. In line with this finding, there is no statistical difference in fathers' average CAMSIS score between our sample and the excluded sample. A further issue when working with these cohort data is that there are many missing values for the variables we exploit in the estimations. To address this problem and to maintain a reasonable sample size, we apply mean imputation, whereby we replace a missing variable for each observation with the average value from the non-missing sample (i.e., missing indicator method). Note that we do not impute our key covariates, namely the aspiration variables, father's actual occupation and the realised occupation of cohort members. See Table A3 in the appendix for a comparison of characteristics in the analysis sample and the full sample.

member. Nonetheless, the regional and social class composition of the main sample is comparable to that of the full NCDS sample (Table A3).[10]

Occupational aspirations: Information on childhood aspirations for future achievement is extensive in the NCDS. We utilise a set of questions about occupational aspirations at age 16, where the cohort members were asked about the type of work they would *ideally* like to do. Importantly, the survey elicited aspirations not only from the cohort members themselves, but from the cohort members' parents (mainly from the mothers) and their classroom teachers as well. Note that this is different from the question about occupational expectations that asked about the type of work they would in fact be likely to do.[11] For the teachers, however, we observe only their occupational expectations for the cohort members. Table A1 in the appendix provides an overview of the questions regarding the key variables for occupational aspirations that are available in the NCDS. The original survey responses to occupational aspirations questions were given in the form of occupational titles, and subsequently converted from raw responses on occupations to 9 job groups (broader classifications) and 71 job types (detailed job label), respectively. We recode the latter categorical occupations into the 2000 Standard Occupation Classification (SOC 2000) in order to create further occupational code crosswalks (for details see Section 4.2 below). Job groups coded as 'unclassifiable', and 'imprecise' are excluded from the analysis (6.3 % of the observations). At this stage, we retain 7,873 observations for which we find occupational aspirations responded to by both children and their parents.

Educational aspirations: For educational aspirations, we rely on a set of questions on views of educational prospects. Variations of the questions were probed to the cohort members, as well as their parents and class teachers. Based on the available information, we construct an indicator variable which is equal to 1 if the child aspires to stay at school beyond minimum schooling age and 0 otherwise. We derive a common set of variables from the responses given at age 7, 11 and 16, which will help us to track patterns of educational aspirations throughout the childhood ages. In addition, the educational aspiration variables at age 16 allow for the comparison of educational aspirations for higher education between the child and her parent as well as her teacher.[12] We retain 9,517 observations (51% of the sample) for whom we observe educational aspiration responses at age 16 from the cohort members and their parents (see Tables A1 and A2 for details).

Educational attainments and actual occupational status: Realised labour market achievements of the cohort members cover their whole working lives (ages 23 to 55). We exploit the information about occupations throughout the life cycle to distinguish between the roles of *first job* and *best job* our cohort members have experienced. We use fathers'

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[10] In the regression analysis, we also run additional specifications where we reweigh the distribution of our sample using probability weight. The weight is to correct the share of NCDS cohort members in each cell of (father's social class in 1958) x (birth region) in the main sample to be the same as the original sample. The estimations remain robust.

[11] The feature is used in tackling a key debate on whether there are fundamental differences between what one aspires and what one realistically expects to achieve (Reynolds and Pemberton 2001, Khattab 2015).

[12] Again, for the teachers, we only observe the realistic aspect of educational aspirations.

occupation when the child is aged 11 (in 1969) as the main measure of parent's employment.[13]

Childhood and adult characteristics: Our analysis relies on an extensive list of variables that captures childhood environment and life outcomes in adulthood. The NCDS consistently tested cohort members for their cognitive skills and behavioural traits. To obtain an objective measure of cognitive skills at age 11, we use the composite score, which is calculated from the mean of standardised scores from four tests (General Ability Test, Reading Test, Maths Test and Copy-Design test).[14] For non-cognitive traits, we utilise the teacher-assessed Bristol Social Adjustment Guide (BSAG) at age 11.[15] We standardise the composite ability scores to have a mean of 0 and a standard deviation equal to 1. For early financial difficulties faced during childhood, we exploit a set of repeated questions at ages 7, 11 and 16 on whether the family reported financial difficulties as a life event. We construct an indicator variable equal to 1 if financial difficulties occurred at least once between ages 7 and 11, and 0 otherwise.

Other available measures include a set of variables on parental time investments (and the home learning environment), physical and psychological health conditions in childhood (Goodman et al. 2011), and childhood motor skills. Basic family variables at early ages are parent's education, birth weight, mother's marital status, age of mother at child's birth, maternal smoking habit during pregnancy, antenatal visits, whether the child is Caucasian, and region of residence. For school and classroom environment, we add a set of binary variables that indicate if the child was in an ability-streamed class (at ages 11, 16) (La Ferrara 2019).

For other dimensions of life achievements in adulthood aside from education and employment, key variables, at various ages, include whether the cohort member has a partner, a (positive) emotional health score (a reversed Malaise score), and their physical health condition (self-rated). Additionally, we will exploit well-being questions (self-rated life satisfaction scores) when assessing the impact of the aspiration gap discussed earlier (for previous applications of these measures, see for instance Flèche et al. 2019; Frijters et al. 2014).

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[13] The original father's employment in the NCDS comes in two social class measurements: the Registrar General's Social Classes (RGSC); and Socio-economic Groups (SEG). We use a supplementary data file 'Occupational Coding (SOC2000) NCDS and BCS70' created by Paul Gregg from the UK Data Service in order to construct the Standard Occupation Classification 2000 (SOC 2000) for fathers (Gregg 2012). Information on mothers' employment is also available in the NCDS. We follow the conventional measure for intergenerational correlation and focus primarily on fathers' employment.

[14] Age 11 is the last elicitation of test scores before key aspiration questions are asked. The General Ability Test contains two sub-scales: verbal and non-verbal scores. The 40-item Arithmetic/Mathematic Test at age 11 measures numerical and geometric work. The reading score is calculated from the Southgate Group Reading Test, which measures word recognition and comprehension, and is particularly suited for identifying backward readers. One mark was awarded to each correct answer of 30 items. And the Copying-Design test assesses visual-motor coordination. The child was asked to make two copies of eight shapes under no time limit. For each drawing, a score of 0 or 1was allocated.

[15]The BSAG scale can be grouped into externalising and internalising scores. In detail, the externalising score is calculated from the sum of the scores from the BSAG (i) hostility towards children (ii) hostility towards adults, (iii) inconsequential, (iv) restlessness, (v) anxiety about acceptance by adults, and (vi) anxiety about acceptance by children syndromes. The internalising score is the sum of the scores from (i) depression, (ii) withdrawal, (iii) unforthcoming, (iv) writing off adults, (v) and adults' standards syndromes. We reverse the scale so that the higher the score, the more positive the behaviour. We prioritise the assessments provided by teachers over parents.

4. DESCRIPTIVE EVIDENCE ON LIMITED INTER-GENERATIONAL MOBILITY IN ASPIRATIONS

4.1. Mapping aspirations to occupation prestige scores

In order to make aspirations comparable with actual outcomes, we convert the categorical occupation and aspiration measures (i.e., occupation titles) into a cardinal measure based on occupation prestige scores.[16] In particular, we utilise the Cambridge Social Interaction Scale (CAMSIS) (Stewart et al. 1980).[17] It is a continuous measure of occupational status based on patterns of social interaction, such as marriage, friendship, or parent-child relationships. A score is assigned to each occupation to indicate its position within the empirical dimension(s) of social interaction. CAMSIS has been used to explore occupational inequalities and offers a robust, well-documented, and empirically feasible means of exploring data from earlier time periods (e.g., Savage et al. 2013, Bell et al. 2019).[18]

The conversion of categorical occupation into cardinal occupation prestige scores allows us to directly compare different measures of aspired occupation and to put levels of aspired status in relation to the status of the occupation of the adolescent's father and the actual status achieved later in life. Figure 1 displays distributions (violin plots) by quintile of father's CAMSIS score, comparing child's occupational aspirations, her realised occupational status (by age 55), and father's occupation at child's age 11 (all measured in occupational status). The figure displays some interesting patterns. First, children's aspirations and actual achievements are noticeably higher than the father's position. It is most pronounced for children from the bottom quintile of father's occupation. This is highly suggestive of some degree of intergenerational mobility - both in aspirations as well as in actual achievements.

However, aspirations and actual achievements increase along the father's occupation quintiles (shift to the right), indicating that the cohort members' aspirations and achievements are not independent of the father's occupational background. For children of fathers in the highest quintile of their occupation score, the aspired occupational status lies close to the actual achieved status at age 50. In contrast, we can observe an aspirations gap among children of the bottom quintile, as their aspirations are above their actual achievement at age 50. For further comparisons between cohort member's aspirations, parental aspirations and teacher expectation along the quintiles, see Figure A2 in the appendix.

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[16] First, we crosswalk the occupational titles using the SOC 2000 codes, and subsequently convert them into occupational prestige scores.

[17] See http://www.camsis.stir.ac.uk.

[18] Occupation prestige scores are generally preferred to social class measures when aiming for a continuous measure (Braun and Stuhler 2018 or). Alternatively, a measure of average income in an occupation can be exploited. However, given the limited availability of historical income data during the period analysed, we prefer using the prestige score. For robustness checks, we apply the International Socio-Economic Index of Social Status (ISEI) (Ganzeboom and Treiman 1996). ISEI assigns scores to occupations with respect to the occupation's average education and income levels. The index is built as an attempt to show how occupational structure influences the ability to convert education qualifications into income. Note that we use the CAMSIS scale for males throughout the paper. Our results are robust to the application of the gender-specific scale.

Figure 1: Comparison of aspired status, achieved status, and father's occupation.
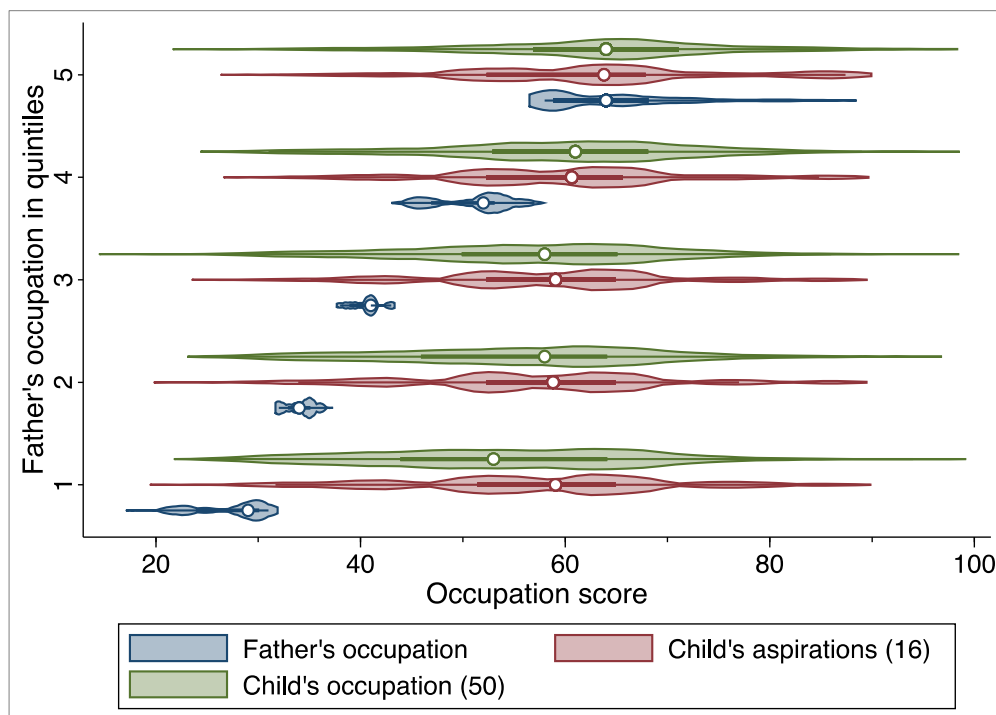
Notes: Violin plots of the CAMSIS score of father's occupation and cohort member's aspired and achieved occupation, for each quintile of father's CAMSIS score (occupational aspirations measured at age 16, actual adult occupation at age 50, and father's occupation at cohort member's age 11). Violin plots combine box plots with kernel density plots, the white circles indicate the medians.

4.2. Estimates of intergenerational mobility with realised and aspired occupation

The described data allows us to test the degree to which the distribution of occupational achievement and aspirations differ among children from different socio-economic backgrounds. Seminal work on the topic literature have demonstrated measures of intergenerational mobility in a plethora of economic variables, including wealth (Black et al. 2015), consumption (Attanasio and Pistaferri 2016), income (e.g. Blanden et al. 2004, Black and Deveraux 2011, Chetty et al. 2014), occupational status and educational achievement (Hertz et al. 2007, Braun and Stuhler 2018).[19] A common finding is that there is persistence to various degrees, i.e., intergenerational correlation between father's and child's actual achievements is larger than zero (e.g. Grawe and Mulligan 2002, and see Blanden 2013 for a cross-country comparison of intergenerational mobility). Estimations of the intergenerational elasticity from several countries are 0.3 for the UK (Dearden et al. 1997, Blanden et al. 2004), 0.25 for Nordic countries (Jantti and Jenkens 2015) and around 0.4 for the US (Solon 1992, Chetty et al. 2014).

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[19] Economists tend to apply earnings while sociologists prefer to use social class or an index of occupational ranking as a proxy for status (Bell et al. 2019). For the UK, the difference in variable choices has led to two opposing findings. Blanden and Machin (2007) compare income mobility between a cohort born in 1958 (National Child Development Study (NCDS)) with a cohort born in 1970 (British Cohort Study (BCS)), and find that the UK's intergenerational mobility decreases over time. In contrast, Goldthorpe and Jackson (2007) find no change in mobility when they use discrete social class as the key measure from the same data sets. To reconcile the debates, Blanden et al. (2013) use decomposition analysis and focus on the contribution of transitory and permanent components of changes in within-social class income variance. A recent study by Blundell and Risa (2019), using machine learning methods with multiple predictors, shows that different factors occurring during childhood are strong predictors of the large unexplained variation found in Blanden et al. (2013).

Table 1 provides the intergenerational correlations between father's and child's outcomes, deriving from the child's actual occupation (as a standard measure), and occupational aspirations at age 16. The correlation based on the father's CAMSIS score (at the child's age of 11) and the child's maximum CAMSIS score (in adulthood during ages 33-55). We use all 6,434 observations from our baseline NCDS sample (with columns 2 and 3 for an only male and only female sample, respectively). The correlation is equal to 0.28 for the full sample, meaning that a one unit increase in the father's occupation score corresponds to a 0.28 increase in the child's occupation score. At a value of 0.31, the correlation is higher for males than for females, who show 0.254. These estimates are slightly lower compared to a recent study by Bell et al., 2019, who find a correlation of 0.36 for the 1954-63 cohort of the Longitudinal Study of England and Wales – with lower values for females.[20]

Table 1. Raw correlation of father's and NCDS cohort member's occupation (actual and aspired), measured by CAMSIS score.

	(1)	(2)	(3)
	All	Males	Females
Actual occupation (by age 50)	0.28	0.31	0.25
Aspired occupation at age 16	0.20	0.18	0.24

Notes: Number of observations is 3,343 females and 3,091 males. The statistics are calculated from the baseline sample. It consists of the NCDS cohort members with no missing values for the variables: father's occupation, measures of occupation aspirations (age 16), and actual adult occupation (at least one occupation between age 33 to 55 years old.).

To compare intergenerational mobility in actual achievements with how intergenerational mobility might have developed, had childhood aspirations been completely realised, we replace the CAMSIS score of cohort members' achieved outcome with the CAMSIS score from the occupational aspirations (at age 16). Our *aspirational* intergeneration correlation is 0.204. There is also a noticeable gender difference in the correlations (0.18 for males; 0.24 for females). Social mobility is higher for males in the hypothetical, aspiring scenario, than in actuality. In contrast, hypothetical mobility for females does not depart much for actual mobility.

We provide a further comparison between intergenerational mobility calculated on the basis of actual achievement or childhood aspirations in the appendix. Figure A1 displays the transitional probability of cohort members from each quintile of the father's occupation score to a different occupational quintile (actual achievement in adulthood, and occupational aspirations at age 16). It shows that children from better-off backgrounds achieve higher in the labour market than those from lower backgrounds (see panel a), but also that those with fathers in lower occupation score quintiles have systematically lower aspirations than those whose fathers are in higher occupation score quintiles. In sum, these descriptive statistics suggest that educational and occupational inequalities exist already in young adults' aspirations.

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[20] In Blanden et al. (2013), the headline results on the intergenerational *income* elasticity with the male-only NCDS sample is 0.211.

5. ESTIMATES OF DETERMINANTS OF ASPIRATIONS

In the following, we will empirically assess the causes of the inequalities in aspirations documented in the previous section, guided by the theoretical arguments summarised by equations (2) in Section 2. The theoretical framework lends itself to the hypothesis that factors associated with initial endowment, i.e., financial resources, are positively associated with aspirations. On the other hand, abilities are predicted to have positive effects on aspirations. In addition, if aspiration formation is influenced by social and economic circumstances, as suggested by the model (see Section 2, when $\varpi < 1$), we expect to observe significant relationships between measures of the local economic environment and a child's aspirations. The rich data set thus allows us to take into account further well-founded mediating factors of intergenerational mobility such as cognitive and non-cognitive ability (Blanden et al. 2007), early-life financial constraints (Carneiro and Heckman 2002), parental beliefs about the process of skill production (Cunha et al. 2013, Lekfuangfu et al. 2018) and parental early investments (Cunha and Heckman 2007).

5.1. Estimation strategy

To investigate the roles of ability, family background, and financial constraints on the formation of aspirations empirically, we estimate variations of linear regressions of the following basic form:

$$(3) \qquad aspire^c_{i,16,l} = \beta_1 child_{i,a} + \beta_2 family_{i,a} + \beta_3 local\_econ_{a,l} + \beta_4 X_{i,a} + F_l + \varepsilon_{i,16,c}$$

The dependent variable ($aspire^c_{i,16,l}$) is a child's (i) own educational or occupational aspiration at age ($a = 16$) in county (l). To investigate the roles of ability, family background, and financial constraints on the formation of aspirations, we include a series of explanatory variables: the group of variables ($child_{i,a}$) consist of individual characteristics, which are the child's cognitive and non-cognitive abilities at an early age. For the education specification, we are able to account for aspirations in earlier ages (7 and 11 years). Further, we include a set of variables ($family_{i,a}$) that capture the family background of the child, such as the experience of financial difficulties in the family during childhood, the father's occupation level, family income as well as parental aspirations for the child. The category ($local\_econ_{a,l}$) captures variation in the local labour market characteristics, which are constructed from UK census data at district and county-level.[21] We focus on local unemployment in 1971 and local employment growth of the father's broad occupation (1951-1971)[22] as proxies for wide and narrow windows of society-wide distribution of economic circumstance when NCDS children were young. In

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[21] Main sources of UK census come from (i) the 1931-1962 Census reports in A Vision of Britain through Time, University of Portsmouth (https://visionofbritain.org.uk/census), which is made available by Great Britain Historical GIS Project (2017) at University of Portsmouth.; (ii) CASWEB of UK Data Service (1971-1991) (http://casweb.ukdataservice.ac.uk). The labour market related variables are available at county level and district level, including number of employed by occupation, industry (SIC) and socio-economic groups. We map local-level labour market data to NCDS' local authority level, provided by the UK Data Service under a special license.

[22] The broad occupational groups are agriculture, mining, manufacturing, construction, utilities and transport, distributive services (including sales and services), national and local government services (including defense).

the specifications with educational aspirations as the dependent variable we are further able to include aspirations at ages 7 and 11. The regressions further include birth region fixed effects (F_l).

Other control variables, captured by the vector $X_{i,a}$, account for the child's background at early ages - including gender, mother's age at birth, if born with low birthweight, whether the first-born, whether child was ever breastfed, whether father was present, father's social status, parental education (whether the child's mother stayed in school beyond the minimum required age, the father's highest qualification), household income, housing tenure, whether mother worked, region of residence at birth, and whether the child is white.

5.2. Results on the determinants of *occupational* aspirations

We report the results from the estimations of the determinants of occupational aspirations at age 16 and of educational aspirations at age 16 in Tables 2 and 3, respectively.

Column (1) of Table 2 compares the importance of established determinants of intergenerational mobility, namely ability and financial constraints, with the role of the father's occupation. Note that all continuous variables including the dependent variable are standardised in order to facilitate the comparison of the size of the coefficients. Cognitive ability has by far the strongest correlation with a child's aspiration. A one standard deviation increase of cognitive ability raises aspiration by 0.246 standard deviations. Conditional on abilities, family income and father's occupation (in CAMSIS score) display a small but statistically significant correlation with aspirations (at 0.035). Experience of financial difficulty in childhood is negatively correlated with aspirations, but with a large standard error.

Column (2) includes parental aspirations as an additional determinant. We observe an increase of almost 0.6 sd. in occupational aspirations when parental aspiration increases by one standard deviation. This is a sizeable correlation. Interestingly, all the variables capturing the family income and father's occupation status lose their explanatory power, indicating that they are partly mediated by the aspirations that parents had concerning the future occupation of their children. Notably, the coefficient on ability more than halves when parental aspirations are accounted for.

To empirically assess different widths of aspiration windows a child may take into consideration, we next consider the possible influence of local labour market characteristics, such as local unemployment in 1971 or the growth of father's occupation in column (3). While parental factors are strongly correlated with a child's aspirations, we do not observe statistically significant relationships between aspirations and local labour market characteristics. The same conclusion can be drawn when considering variety of further specifications focusing on a plethora of local labour market measures including historic employment growth of different main sectors in Table A5 (panel A). Moreover, to investigate the role of a negative exogenous shock in the local labour market on child's aspirations, we exploit the case of the collapse in coalmine production and employment in

the UK between 1950 and 1970.[23] Still, we do not observe statistically significant correlations of all these other measures with occupational aspirations of the young generation growing up locally. The lack of correlation in terms of magnitude and statistical significance of child's aspirations and various local labour market measures is suggestive that the aspiration window among the NCDS cohort is relatively narrow, as their aspiration formation is mainly driven by within-family characteristics.

Given that parental aspirations are highly determinant of the NCDS cohort member's aspirations, we further explore potential channels of this relationship. The next estimation in Column (4) includes variables on parenting style and a set of information sources from which a child learnt about the job she aspired to. For parenting style, we use three dummy variables capturing how definite parents are about their aspirations for the child: i) if they have a precise job choice for the child, ii) if they have a precise job choice but leave the decision to the child, and iii) if they have no precise job choice (as the reference category).[24] The interactions of each variable with parental aspirations allow us to assess heterogeneous effects of parenting style among low and highly aspirational parents. For parents with low aspirations, the parental determination is not systematically related to the child's aspirations. Conversely, among high aspirational parents, we observe an additional positive effect of parental aspirations when parents have a precise job choice. We also observe a higher increment when high aspirational parents have a precise job choice but leave it to the child to decide what to become.

Regarding information sources, the estimates show that learning about the job from the parents and the teacher is positively related to the child's aspirations (0.06 and 0.08, respectively), while other sources (the media, peers and other family members) do not display a systematic influence on the child. To account for potential unobserved skill differences, the specification includes a set of teacher's evaluations of the child's ability (age 16) and teacher's occupational expectations for the child. Teacher's occupational expectations show a strong and statistically significant relationship with the child's aspirations, whilst we observe no additional explanatory power from the teacher's evaluation of the child's cognitive abilities.[25]

In columns (5) and (6) we run the regression separately for children from the bottom and top quintile of the father's occupational ranking. This is to assess whether there are heterogeneities along the socio-economic spectrum. The results point to the family resources being strongly related to the child's aspirations for those of lower socio-economic background. Children from families with financial difficulties systematically set

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[23] We considered this variation in local labor market conditions via the exogenous shock to the mining industry as a potential instrumental variable. In particular, we would run a specification with the non-coalminer subsample to account for cofounding effects of mass layoff via other channels, especially a direct reduction in family income among coalmine's families (see the specification for non-miners in Table A5). However, aside from potential threats to the exclusion restriction, the partial correlation and the F-statistic is not high enough to pursue an instrumental variable approach.

[24] While we interpret the second dummy as indicating a permissive parenting style, we evaluate the first dummy as relating to an authoritative or even authoritarian parenting style (for a discussion and definition of these parenting styles, see Doepke and Zilibotti 2017).

[25] The estimations here acknowledge that on the one hand, teachers play an important role in shaping students' beliefs about their academic prospects (for instance Burgess and Greaves 2013, Ouazad 2014, Dee 2015). On the other hand, since teacher assessments and evaluations of a student's ability might be systematically biased towards their socio-demographic background (Dee 2005, Gershenson et al. 2016), we decided not to include these measures in earlier specifications.

lower aspirations. Homogeneously, aspirations are strongly related to parental aspirations. With parenting styles, the role of parental aspirations is stronger if parents have high aspirations and are definite about their aspirations for the child. The most pronounced difference across the samples occurs for the permissive parenting style when parents have low aspirations. In this case, there is only a strong correlation among children from the bottom quintiles. Regarding information sources, most notably, there is a stronger positive impact of hearing about a job from the teacher for children from a lower socio-economic background, indicating that teachers might have a stronger influence as mentors in this group (potentially correcting the systematically lower aspirations of parents compared to parents from the top quintile, shown in Figure A2 in the appendix).

Table 2. Determinants of occupational aspirations.

Dependent variable: Occupational aspirations at age 16 (CAMSIS score)

	Full sample				Bottom quintile	Top quintile
	(1)	(2)	(3)	(4)	(5)	(6)
Cognitive score (11)	0.246***	0.111***	0.111***	0.025	0.037	0.039
	[0.021]	[0.017]	[0.017]	[0.020]	[0.053]	[0.051]
Non-cognitive score (11)	0.047**	0.017	0.017	-0.013	-0.056*	0.000
	[0.020]	[0.017]	[0.017]	[0.015]	[0.032]	[0.037]
Experienced financial difficulty (11)	-0.037	-0.058	-0.058	-0.013	-0.120*	-0.041
	[0.050]	[0.044]	[0.044]	[0.041]	[0.070]	[0.167]
Family income (16)	0.035**	0.013	0.013	0.007	0.051*	-0.007
	[0.016]	[0.013]	[0.013]	[0.011]	[0.028]	[0.017]
Father occupation score (11)	0.035*	0.013	0.013	-0.006	-0.085	0.054
	[0.019]	[0.015]	[0.015]	[0.014]	[0.114]	[0.061]
Parental aspirations (16)		0.589***	0.590***	0.260***	0.311***	0.299***
		[0.021]	[0.021]	[0.036]	[0.103]	[0.077]
Growth rate father's occupation (1951-71)			-0.002	-0.005	-0.009	-0.044
			[0.006]	[0.005]	[0.010]	[0.070]
Local unemployment (1971)			0.013	0.009	-0.024	0.024
			[0.015]	[0.013]	[0.049]	[0.036]
Parent: Precise job choice for child				-0.034	0.068	-0.224***
				[0.029]	[0.101]	[0.065]
Parent: Child's own choice				0.029	0.280***	-0.213***
				[0.026]	[0.078]	[0.069]
Parental aspirations X Precise job choice				0.251***	0.289***	0.324***
				[0.042]	[0.106]	[0.103]
Parental aspirations X Child's own choice				0.504***	0.504***	0.469***
				[0.039]	[0.098]	[0.087]
Job info: parent				0.063**	0.116	0.168***
				[0.025]	[0.077]	[0.057]
Job info: other family members				0.012	0.089	0.058
				[0.027]	[0.084]	[0.045]
Job info: teacher				0.080***	0.172**	0.089*
				[0.023]	[0.069]	[0.051]
Job info: friends				-0.018	-0.106	0.021
				[0.026]	[0.073]	[0.059]
Job info: media				0.028	-0.01	0.01
				[0.026]	[0.070]	[0.053]
Teacher's expectation				0.224***	0.251***	0.222***
				[0.018]	[0.041]	[0.045]
Teacher's skill evaluation (16)				0.026	0.007	0.085
				[0.022]	[0.058]	[0.052]
Child characteristics	x	x	x	x	x	x
Parental background	x	x	x	x	x	x
Birth region fixed effects	x	x	x	x	x	x
Parental investments (ages 7,11)	x	x	x	x	x	x
School class streaming (ages 11,16)	x	x	x	x	x	x
Teacher skill evaluations (ages 7,11)				x	x	x
Observations	3,278	3,278	3,278	3,278	475	674
Adjusted R-squared	0.152	0.441	0.441	0.525	0.586	0.564

Notes: Standard errors are robust, and clustered at local authority level (*** p<0.01, ** p<0.05, * p<0.1). Note that all continuous variables, including the dependent variable, are standardised in order to facilitate the comparison of the size of the coefficients. All specifications control for region of birth, whether firstborn, race, birthweight, living arrangement in childhood, parent's education, parent's employment, parental time investments (age 11), peer environment at school (age 16), whether in ability-streamed classes (ages 11,16)

5.3. Results on the determinants of *educational* aspirations

In the next step, we examine the extent to which the determinants of occupational aspirations discussed in Table 2 are relevant for the cohort member's educational aspiration at age 16, i.e., the ambition to go on to higher education. Educational aspirations can be considered as a crucial component in the link between occupational aspirations and later labour market achievements, as educational choices are an intermediate step towards labour market choices. We run an equivalent set of specifications as in Table 2, but with the dependent variable being a binary variable concerning whether the child aspires to a higher education qualification or not, responded to at age 16. Table 3 presents the results.

Column (1) of Table 3 focuses on a regression capturing established determinants of intergenerational mobility such as ability, financial constraints, and father's occupation. As expected, high cognitive ability is positively related to the aspiration to continue with higher education. A probability of aspiring to have a college education increases by 6% when a child's cognitive ability is one standard deviation higher. Non-cognitive ability, however, is not statistically related to educational aspirations. Among family background covariates, analogous to results in occupational aspirations, parental aspirations are the strongest predictor of aspirations for higher education. A child is 31% more likely to aspire to attending university when her parent also desires the same educational goal. This is after controlling for family income, childhood experience of financial difficulty and father's occupation.

Unlike the findings for occupational aspirations, the past growth rate of the father's occupation is systematically positively related to the child's educational aspiration. A 1% higher growth rate from 1951 to 1971 is related to a 1% higher probability of aiming for a college degree. While these narrowly defined labour market prospects for the father's occupation display a strongly significant partial correlation, there are no relationships with local employment prospects as measured by the unemployment rate, and other additional proxies of different widths of aspirational windows in terms of labour markets. We present the additional results, with the supplementary case of the 1950-1970 coalmine employment shock at local level in panel B of Table A5.

Table 3. Determinants of educational aspirations.

Dependent variable: Whether or not to aim to go on to higher education (age 16)

	Full Sample			Bottom quintile	Top Quintile
	(1)	(2)	(3)	(4)	(5)
Cognitive score (11)	0.061***	0.054***	-0.004	0.008	-0.011
	[0.007]	[0.008]	[0.011]	[0.024]	[0.031]
Non-cognitive score (11)	0.001	0.004	-0.008	-0.028*	0.004
	[0.006]	[0.007]	[0.007]	[0.016]	[0.018]
Experienced financial difficulty (11)	-0.028*	-0.029	-0.012	-0.019	0.027
	[0.017]	[0.018]	[0.017]	[0.042]	[0.072]
Family income (16)	0.022***	0.020***	0.015**	0.015	0.025**
	[0.006]	[0.007]	[0.007]	[0.016]	[0.011]
Father's occupation score (11)	0.013*	0.013	0.008	-0.008	-0.041
	[0.008]	[0.009]	[0.009]	[0.069]	[0.038]
Parental aspirations (16)	0.311***	0.292***	0.246***	0.207***	0.209***
	[0.020]	[0.021]	[0.021]	[0.055]	[0.039]
Growth rate of father's occupation (1971-51)	0.012***	0.010***	0.010***	0.020***	0.028
	[0.003]	[0.003]	[0.003]	[0.004]	[0.017]
Local unemployment (1971)	-0.001	-0.002	-0.004	-0.005	0.03
	[0.007]	[0.007]	[0.008]	[0.022]	[0.020]
Child aspirations (11)		0.088***	0.079***	0.064	0.103***
		[0.017]	[0.017]	[0.045]	[0.038]
Child aspirations (7)		-0.02	-0.013	0.046	0.173**
		[0.036]	[0.035]	[0.046]	[0.077]
Teacher's expectation			0.197***	0.384***	0.194***
			[0.030]	[0.094]	[0.049]
Teacher's skill evaluation (16)			0.074***	0.064**	0.095***
			[0.012]	[0.030]	[0.029]
Child characteristics	x	x	x	x	x
Parental background	x	x	x	x	x
Birth region fixed effects	x	x	x	x	x
Parental investments (ages 7,11)	x	x	x	x	x
School class streaming (ages 11,16)	x	x	x	x	x
Teacher's skill evaluations (ages 7,11)			x	x	x
Observations	3,841	3,258	3,258	434	777
Adjusted R-squared	0.29	0.289	0.319	0.264	0.259

Notes: Standard errors are robust and clustered at local authority level (*** p<0.01, ** p<0.05, * p<0.1). Note that all continuous variables, including the dependent variable, are standardised in order to facilitate the comparison of the size of the coefficients. All specifications control for region of birth, whether firstborn, race, birthweight, living arrangement in childhood, parent's education, parent's employment, parental time investments (age 11), peer environment at school (age 16), whether in ability-streamed classes (ages 11,16).

We next consider the trajectory of educational aspirations, i.e., the relationship of within-person educational aspirations across different ages during childhood. This acknowledges that aspirations might change or be adjusted over time, as the literature on aspiration-based reinforcement learning suggests (e.g., Börgers and Sarin 2000, Bendor et al. 2001). The estimation in column (2) thus adds past educational aspirations (stated at

age 7 by a parent, and at age 11 by the child).[26] Aspirations at age 7 (a dummy variable equal to 1 if the parent wishes the child to have a higher education, and zero otherwise) shows low magnitude and insignificant relationship. On the contrary, educational aspirations expressed at age 11 (a dummy variable equal to 1 if the child wishes to go on to higher education, and zero otherwise) is related to an 8.8% higher probability of aspiring to go to the college. If aspirations remain fixed over time, adding past aspirations would have captured all the variations of current aspirations. While past aspirations are indeed able to fully explanatory power of the cognitive score at age 11, estimates of other contemporaneous covariates are robust to the inclusion of past educational aspirations. The estimates in column (3) account for the teacher's cognitive evaluation, and teacher's education expectations for the child at age 16. The strong partial correlation of the teacher's variables with the child's aspirations fully absorbs the positive relationship between the child's cognitive ability and her aspirations. The other variables, however, remain robust.

In columns (4) and (5), we run separate regressions for children from the bottom, and the top quintiles of father's occupation distribution. While the influence of parental aspirations is almost identical for the two groups, the coefficient of teacher's expectations has only half the magnitude for the group with the highest socio-economic background compared to the group with lowest socio-economic background. Similar to the results of occupational aspirations, teachers' expectations are more strongly related to the child's aspirations for children from lower socio-economic backgrounds. The partial correlation shows a higher magnitude than that of parental aspirations. Moreover, we observe a stronger relationship between past aspirations and family income, with the child's aspirations among children in the top quintile.

6. ASPIRATIONS AS DRIVERS OF ACHIEVEMENTS

6.1. Estimation strategy

In the following, we will assess the theoretical prediction from Section 2 that aspirations are positively related to actual educational and occupational achievements. To assess the link between childhood aspirations and adult outcomes, we exploit the longitudinal feature of the NCDS, which tracks cohort members up to 55 years of age. This provides us with information on actual labour market achievements of the cohort members that we can use as a dependent variable. In particular, to formally document the role of childhood aspirations in shaping adult outcomes, we run variations of linear regressions of the following basic form:

(4) $\qquad achieve_{i,55,l} = \beta_1 aspire^c_{i.16} + \beta_2 aspire^p_{i.16} + \beta_3 \boldsymbol{X}_{i,a} + F_l + \varepsilon_{i,a,l}$

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[26] At age 7, 95.2% in our baseline sample stated their intention of continuing their schooling. By age 11, only 31.5% indicated that they planned to stay after the minimum school leaving age. At age 16, 29.5% wished to continue beyond the school leaving age.

The dependent variable ($achieve_{i,55,l}$) is the actual adult outcome of a cohort member (i), measured by the maximum occupation status score achieved at age (a) in county (l). The main explanatory variable is the occupation aspiration ($aspire^c_{i,16}$) stated at age 16. The stylized model in Section 2 predicts a positive relationship between aspirations in young age and later achievement, *ceteris paribus*. We further consider occupation aspirations for the child, stated by a parent ($aspire^p_{i,16}$). In the regression in which we focus on educational aspirations, we replace the dependent variable by a dummy variable equal to 1 if the cohort member has attained a college education, and zero otherwise. The regressions control for an extensive set of potential confounding factors. The vector ($X_{i,a,l}$) consists of family background at birth (analogous to $X_{i,11}$ in equation 3), parental investment and home environment (book reading, family activity, library visits) (age 11), peer environment at school (age 16) (proportion of students going on to higher education, proportion of students with fathers from higher social classes, proportion of students obtaining good GCSEs), child's skills at age 11 (cognitive skills, non-cognitive skills, motor skills), GCSE in math and science (age 16), child's health at age 16 (physical and emotional health), log of family income (age 16) and family financial difficulties (age 11). The regressions again include birth locality fixed effects (F_l).

6.2. Results on the predictors of occupational and educational achievements

Table 4 provides the results for the regression described in equation (4), where we investigate the extent to which aspirations formed during childhood are related to adult outcomes. Columns (1) to (5) look at the conditional relationship between occupational aspirations and adult occupation by age 55 (all in standardised units); columns (6)-(8) investigate the relationship of educational aspirations to educational outcome, i.e., whether the cohort member attained a college education.

In column (1), we observe a strong positive and statistically significant relationship between aspirations (age 16) and the occupational status reached (by age 55). One standard deviation increase in aspirations is related to an increase of 0.103 standard deviation of actual occupational achievement. This is sizeable, as the effect is more than twice the magnitude of other significant predictors such as father's occupation or non-cognitive ability (at age 11). Notably, this relationship is robust to controlling for the large set of variables known to influence labour market success described above. We thus observe a link between aspirations and later life outcome even after controlling for the plethora of inputs that can explain a substantial part of the variation in aspirations.

Moreover, aspirations appear half as influential as cognitive skill (age 11). Including parental aspirations reduces the partial correlation of the child's aspiration with the occupational outcome slightly (column (2)). With a coefficient of 0.05, parental aspirations are a relevant and significant predictor of actual achievement. In column (3), once the teacher's expectation is included, the correlation of child's and parent's aspirations with the occupational outcome is further reduced. The estimation emphasises that among our measures of subjective beliefs about the future, teacher expectations are

the strong predictor of actual achievement (0.1 std.), while child's and parent's aspirations remain significant predictors of occupational outcomes, with half the magnitude of the teacher's belief.

Estimates in columns (4) and (5) check for heterogeneous effects of aspirations on achievement by comparing children from the bottom and the top quintiles. In line with the literature, cognitive ability is a stronger predictor of actual outcomes for individuals from lower socio-economic backgrounds. We find a strong and significant positive relationship between children's aspirations and adult outcomes only for cohort members from high socio-economic backgrounds. In contrast, we do not observe predictive power of children's aspirations on occupational achievement among individuals with low socio-economic status. For the role of teacher's expectations, the opposite is observable. There is a strong and statistically significant correlation only for individuals from a low socio-economic background. This fits in with the finding from the regressions on the determinants of educational aspirations, where teachers appear to matter more for this group. For parental aspirations, no systematically different relationship can be observed, as the standard errors of the estimates are large.

To see if aspirations are transmitted in the same pattern in schooling outcomes, we repeat the analysis and replace the dependent variable with actual educational attainment. The actual education attainment is a dummy variable equal to one if the cohort member has completed college by age 55, and zero otherwise. Overall, we find that higher schooling aspirations are strongly positively correlated with higher actual schooling achievement. Controlling for a large set of other covariates, the coefficient on child's own schooling aspiration is 0.178 (column (6)). If a child intended to continue her schooling, it is approximately 18% more likely for her to eventually obtain a higher education qualification. This is a sizeable partial correlation, corresponding to an increase in cognitive ability of 2 standard deviations. The size of the relationship is reduced to 12%, but remains sizeable even when parental aspirations are accounted for (column (7)). With a coefficient of 0.183, the influence of parental aspirations on child's education appears strong in comparison with those of the child. The result is robust to the inclusion of the teacher's expectation of the child's education, as a proxy for additional measure for a child's ability.

Table 4. Predictors of achievements.

Dependent variable:	Occupation Score by age 55 (maximum)					College education attained		
	(1)	(2)	(3)	(4) Bottom quintile	(5) Top quintile	(6)	(7)	(8)
Child's aspirations (16)	0.103***	0.073***	0.041*	-0.014	0.134***	0.176***	0.124***	0.109***
	[0.016]	[0.022]	[0.022]	[0.053]	[0.044]	[0.021]	[0.021]	[0.020]
Parental aspirations (16)		0.053**	0.043**	0.038	-0.034		0.183***	0.174***
		[0.021]	[0.020]	[0.052]	[0.055]		[0.019]	[0.018]
Teacher's expectation (16)			0.099***	0.241***	0.072*			0.138***
			[0.019]	[0.055]	[0.041]			[0.020]
Cognitive score (11)	0.194***	0.192***	0.182***	0.207***	0.130***	0.087***	0.080***	0.074***
	[0.017]	[0.017]	[0.017]	[0.063]	[0.040]	[0.010]	[0.009]	[0.009]
Non-cognitive score (11)	0.050***	0.048***	0.042**	0.015	0.001	0.005	0.002	0.001
	[0.016]	[0.016]	[0.017]	[0.042]	[0.039]	[0.007]	[0.007]	[0.007]
Experienced financial difficulty (11)	-0.065*	-0.066*	-0.056	-0.068	0.029	-0.002	-0.006	-0.008
	[0.037]	[0.037]	[0.036]	[0.085]	[0.118]	[0.018]	[0.018]	[0.018]
Log of family income (16)	0.013	0.012	0.012	-0.081*	0.018	0.001	-0.002	-0.004
	[0.011]	[0.011]	[0.011]	[0.048]	[0.020]	[0.006]	[0.006]	[0.006]
Father's occupation score (11)	0.043***	0.042***	0.036**	0.056	0.055	0.020**	0.015*	0.014
	[0.015]	[0.015]	[0.015]	[0.122]	[0.061]	[0.009]	[0.009]	[0.009]
GCSE (math) (16)	0.075***	0.074***	0.071***	0.009	0.097***	0.021**	0.016	0.018*
	[0.020]	[0.019]	[0.019]	[0.051]	[0.036]	[0.010]	[0.010]	[0.010]
GCSE (science) (16)	0.084***	0.082***	0.079***	0.118**	0.048	0.091***	0.083***	0.072***
	[0.019]	[0.019]	[0.019]	[0.058]	[0.036]	[0.010]	[0.011]	[0.011]
Child characteristics	x	x	x	x	x	x	x	x
Parental background	x	x	x	x	x	x	x	x
Birth region fixed effects	x	x	x	x	x	x	x	x
Parental investments (ages 7 and 11)	x	x	x	x	x	x	x	x
School characteristics (age 16)	x	x	x	x	x	x	x	x
Observations	3,981	3,981	3,981	566	866	3,839	3,839	3,839
Adjusted R-squared	0.272	0.273	0.279	0.235	0.212	0.33	0.35	0.356

Notes: Standard errors are robust and clustered at local authority level (*** p<0.01, ** p<0.05, * p<0.1). Note that all continuous variables, including the dependent variable, are standardised in order to facilitate the comparison of the size of the coefficients. All specifications control for region of birth, whether firstborn, race, birthweight, living arrangements in childhood, parent's education, parent's employment, parental time investments (age 11), peer environment at school (age 16).

7. UNATTAINED ASPIRATIONS AND SUBJECTIVE WELL-BEING

7.1. Descriptive results on aspiration gaps and estimation strategy

As the last contribution, we investigate the potential downside of having high aspirations, namely whether excessive aspirations are related to well-being later in life, as suggested by the theoretical literature. As outlined in equation (1) in the conceptual framework, aspirations can act as a reference point in the utility function, where a discrepancy between aspirations and actual outcomes can lead to disappointment, and, hence, reduced subjective well-being later in life. In this section we investigate, first, if there is a systematic aspiration gap, and, second, if it is systematically related to individual well-being.

Figure 2 descriptively displays the aspiration gaps, defined as the difference between the cohort member's occupational aspirations at age 16 and her highest occupational status by age 55 (both measured in occupational score). The value of this within-person measure is negative (positive) when an individual's achieved occupation is lower (higher) than her childhood aspirations. If the realised occupational score matches her aspirations, the gap is zero. Figure 2 plots the distribution (violin plots) of the aspiration gaps, separately for each quintile of father's occupation (in the CAMSIS score). This allows us to trace the degree of aspiration-realisation gaps, as well as to identify the direction of the gaps – whether children exceed their intended goals in real life or not. The figure reveals variation in aspiration gaps, across as well as within each father's occupation quintile. For instance, in the bottom quintile, the median is below zero, indicating that the majority of children achieve below their aspirations. Overall, 44.6 percent of the baseline sample achieve a lower status than the one they had aspired to.[27]

In the next step, we assess the relationship between the aspiration gap and subjective well-being. In particular, we hypothesise, based on the prediction from the theoretical model in Section 2, a positive relationship between having a positive gap (achieving higher than aspirations) and life satisfaction in adulthood; and a negative relationship if the gap is negative. We do so by applying a slight modification of the regression equations above:

(5) $$LS_{i,l,33} = \beta_1 neg\_gap_{i,33} + \beta_2 pos\_gap_{i,33} + \beta_3 \boldsymbol{X}_{i,child} + \beta_4 \boldsymbol{X}_{i,33} + F_l + \varepsilon_{i,l,33}$$

To start, we use cohort members' life satisfaction at age 33 as the dependent variable ($LS_{i,l,33}$), as this is the nearest age where we can observe life satisfaction in the NCDS cohort. Moreover, we exploit the variation derived from the difference between the occupation status achieved at age 33 and the occupation status aspired to reported at age 16. We use this information by including two variables, first, a variable

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[27] The aspiration gaps also exist when we look at education. We can measure it by comparing the education aspiration at age 11 (and also at age 16) and their actual highest education attainment by age 50. Overall, 9.4% of the baseline sample achieve a lower level than their aspiration, with slightly larger proportions among the female sample and for individuals from less privileged childhood backgrounds.

($neg\_gap_{i,33}$) capturing the absolute value of the negative gap (occupation score at age 33 < aspiration at age 16), and, second, a separate variable ($pos\_gap_{i,33}$) capturing all positive values of the gap (occupation score at age 33 > aspiration at age 16). Both variables range from 0 to 100. An extensive set of covariates include childhood demographics and socio-economic status variables ($X_{i,child}$) (corresponded to $X_{i,a}$ of equation (4)), and various life aspects in adulthood at age 33 ($X_{i,33}$), namely, educational attainment, marital status, log of income, and employment status.[28]

Figure 2: Aspiration gaps in occupation (achievement minus aspirations) by quintile of socio-economic background.
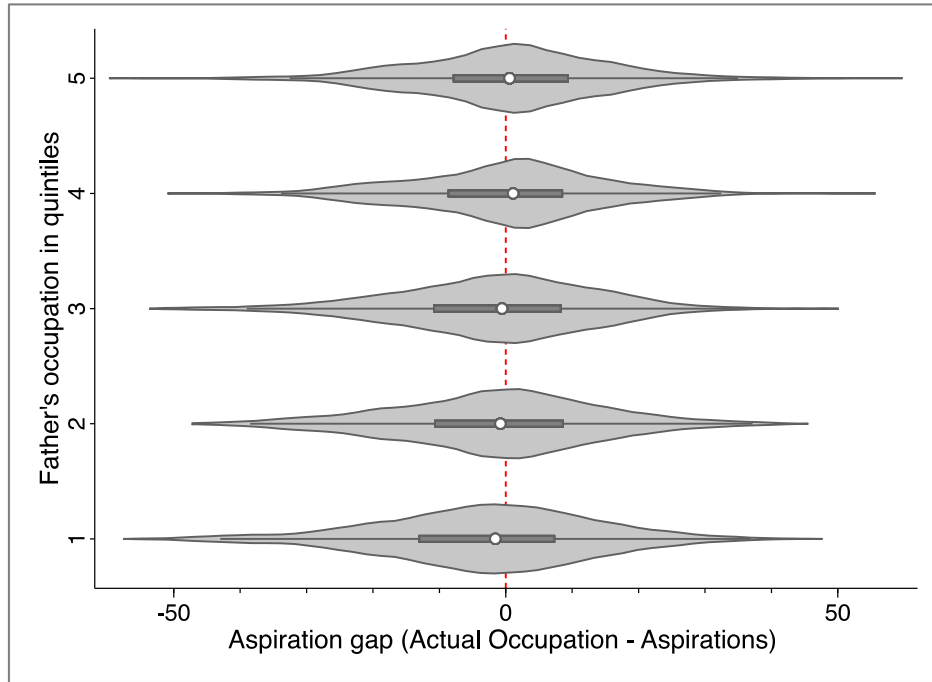
Notes: Violin plots are displayed. Aspiration gap is the (directional) difference between actual CAMSIS score and the aspired CAMSIS score. The vertical dashed line is at the gap size equal to zero, indicating no difference between aspiration and actual occupation score.

7.2. Results on the link between aspiration gaps and subjective well-being

Table 5 summarises the regression results for different specifications of the control strategy. Specification (1) displays the raw correlation between positive and negative aspiration gaps and life satisfaction at age 33. It shows a strong negative correlation between *unmet* aspirations and standardised adult life satisfaction (at -0.007). For a change in the negative gap of one standard deviation (around 11 points), this corresponds to a sizeable effect of almost -0.08 standard deviations of life satisfaction. This is a sizeable correlation that is comparable with the estimates of adult life satisfaction on income or being employed in adulthood (see Fleche et al. 2019; Frijters et al. 2014 for

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[28] As in previous estimations, we apply mean imputation for missing information and include mussing information indicators in the regressions.

analysis using NCDS). For those individuals with a positive aspiration gap (i.e., occupation at age 33 exceeds childhood aspirations), there is a smaller, but negative, correlation at the 10% significant level. The coefficients remain fairly stable when we account for childhood characteristics, parental investments, and ability measures (see columns (2) and (3)).

Specification (4) further controls for occupation fixed effects for the occupation at age 33 so that the coefficient is estimated based on within-occupation variation. First, this accounts for the fact that the gap is likely systematically related to the level of occupation status, with positive gaps more likely occurring for individuals who achieve a high occupation status and vice versa for negative gaps. Second, with reference to the utility function specified in equation 2, the inclusion of occupation fixed effects allows us to analyse the well-being effects of the aspiration gap ($v\left(\frac{y_1 - a_1}{y_1}\right)$), while holding constant the direct well-being effects from occupation achievement ($b(y_1)$). We thus can interpret the estimates for the negative gap displaying the change in the reference-dependent utility or "disappointment". The coefficients of the aspiration gap remain robust. In the last specification (5) we add potentially endogenous contemporaneous variables at age 33, namely education, marital status, income and employment status. This controls further for the direct well-being effects from occupation achievement. Even with these contemporaneous control variables at age 33, the correlations remain very similar, providing empirical evidence for the reference-dependent utility model discussed in Section 2.

Table 5. Unmet aspirations and life satisfaction at age 33.

Dependent variable: Life satisfaction at age 33

	(1)	(2)	(3)	(4)	(5)
Negative gap (occupation < aspiration)	-0.007***	-0.006***	-0.006***	-0.006***	-0.005***
	[0.002]	[0.002]	[0.002]	[0.002]	[0.002]
Positive gap (occupation > aspiration)	-0.005*	-0.005	-0.005	-0.005*	-0.003
	[0.003]	[0.003]	[0.003]	[0.003]	[0.003]
Child & family characteristics		x	x	x	x
Cognitive & non-cognitive skills			x	x	x
Parental investments			x	x	x
Occupation fixed effects age 33				x	x
Education age 33					x
Marital status age 33					x
Income age 33					x
Employment status age 33					x
Observations	3,618	3,618	3,618	3,618	3,618
Adjusted R-squared	0.007	0.012	0.019	0.021	0.102

Notes: Standard errors are robust, and clustered at local authority level (*** p<0.01, ** p<0.05, * p<0.1). As in previous specifications, the dependent variable is standardised. The variables "Negative gap" and "Positive gap" are continues variables and capture the size of the gap in the respective direction (0-100).

In the next step, we continue to analyse how the relationship between aspiration gap and adults' subjective well-being may evolve over their working life, as our cohort members progress in their career and events in childhood becomes more distanced. To do so, we exploit the consistent measure of life satisfaction in the NCDS in multiple waves across the cohort members' adulthood. We re-estimate specification (5) from Table 5 by replacing the dependent variable with life satisfaction at ages 42, 46, and 50, controlling for marital status, income and employment status at each respective age. Figure 3 presents the results for the negative and positive aspiration gaps (see estimation outputs in Table A6 in the appendix). The negative effects of having a negative gap are noticeable only at age 33, and subsequently converge towards zero at later ages. On the other hand, having exceeded one's own childhood aspiration appears to be positively associated with life satisfaction in later ages. By age 50, a change in positive aspiration gap by one point is related to a 0.01 standard deviation increase in the stated subjective well-being.

Figure 3: Unmet aspirations and life satisfaction at different ages.
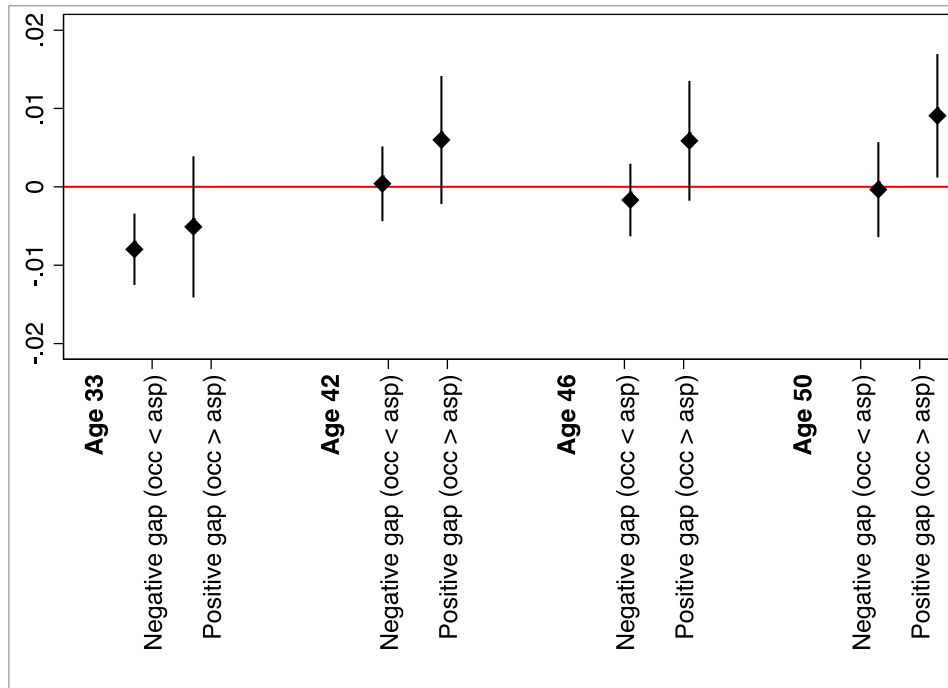
Notes: 90% confidence intervals displayed. The figure shows the coefficients for the negative and positive aspiration gap of four separate regressions, one for each age group, respectively. The regressions are based on specification (5) in Table 5, where the dependent variable is the life satisfaction at respective ages. Corresponding regression results can be found in Table A6 in the appendix.

7.3. Linking parental pressure and subjective well-being

In this last section, we test a further potential channel through which aspirations might impact subjective well-being. In particular, we look at parental aspirations in more detail and test whether parental pressure negatively affects young adults' well-being. To do so, we construct a new variable that captures a degree of discrepancy between what the child

aspires for herself and the aspiration of parents for their child. In the same vein as for the aspiration gap, we define a 'child-parent aspiration gap' as the difference between the child's and the parent's aspiration when the child is 16. Parental pressure is represented by negative values in this gap measure, signifying that the parental aspiration exceeds the child's.

To assess how the variation in such a gap matters to cohort members' well-being, we run a set of regressions similarly to the previous section. In particular, we use the same set of control variables. Precisely, the specification for the analysis uses the proxy measure for parental pressure as the main explanatory variable, with a measure for mental health at age 23 as the dependent variable. Note that this is the earliest well-being measure available in the NCDS. Specifically, we construct the measure of mental well-being based on a set of itemised malaise scores (9 items). The total score is inverted so that a high score indicates a better mental health condition and then standardised (Fleche et al. 2019).

Table 6. Parental pressure at age 16 and mental health at age 23.

Dependent variable: Mental health age 23 (malaise 9)

	(1)	(2)	(3)	(4)	(5)
Negative gap (child < parental aspiration) (age 16)	-0.006**	-0.007***	-0.005**	-0.006**	-0.005**
	[0.002]	[0.002]	[0.002]	[0.002]	[0.002]
Positive gap (child > parental aspiration) (age 16)	0.003	-0.001	0.000	0.000	0.001
	[0.002]	[0.002]	[0.002]	[0.002]	[0.002]
Child wish (age 16)				-0.001	-0.002
				[0.002]	[0.002]
Child & family characteristics		x	x	x	x
Cognitive & non-cognitive skills			x	x	x
Parental investments			x	x	x
Education age 23					x
Marital status age 23					x
Income age 23					x
Employment status age 23					x
Observations	4,037	4,037	4,037	4,037	4,037
Adjusted R-squared	0.001	0.072	0.102	0.102	0.110

Notes: Standard errors are robust, and clustered at local authority level (*** p<0.01, ** p<0.05, * p<0.1). As in previous specifications, the dependent variable is standardised. The variables "Negative gap" and "Positive gap" are continues variables and capture the size of the gap in the respective direction (0-100).

Table 6 summarises the estimation results of the relationship between parental pressure at age 16 and mental health at age 23. The measures for positive and negative gaps between the child's and parent's aspirations are simultaneously included (both measured at child's age 16) as the main explanatory variables in all regressions. Therefore, the comparison is not having a gap in child-parent aspiration. Specification (1) displays the unconditional correlation between each of the gaps and the reversed malaise score at age 23. There is a significant, negative correlation of parental pressure (parental

aspirations exceed the child's aspirations) and mental well-being. This negative correlation is robust to the inclusion of various child and family characteristics in specifications (2) and (3).

The negative relationship in specification (4) remains unchanged when we hold the child's own aspirations constant. This control strategy exploits only the variation in the size of the child-parent aspiration gap driven by parental aspirations. The coefficient of -0.006 again indicates a sizeable effect of almost -0.7 standard deviations of the mental health score for a change in the negative gap of one standard deviation (around 11 points). In the last specification (5), we again include a range of potentially endogenous contemporaneous variables at age 23, such as education, marital status, income and employment status. Doing so does not alter the correlations much. On the other hand, when the gap is positive (child's aspirations exceed the parent's), our estimations cannot confirm any systematic correlation with mental health in all specifications.

8. CONCLUSIONS

In attempts to raise upward social mobility, many policy interventions aim at promoting access to opportunities, tackling financial barriers as well as correcting behavioural biases. In this paper, we draw attention to the important role of occupational and educational aspirations, formed since childhood, as another channel for leveraging the persistence of intergeneration inequality.

We show that intergenerational occupational mobility would have been higher if adults in our NCDS cohort sample had completely realised the occupational aspirations elicited when they were 16 years old. Still, we observe that the socio-economic status of the family is systematically related to the child's aspiration-levels, which cannot fully be explained by the difference in family income, or their own abilities. Instead, aspirations of parents regarding the educational and occupational achievements of their children are highly influential on how far a child aspires to achieve. Furthermore, we present correlational evidence that aspirations in childhood drive educational and occupational achievements later in life. Given the strong correlation between parental and child aspirations, the role of parents in the intergenerational transmission of aspirations deserves its position in the current discourse on possible interventions needed to close the gaps in the achievements of children from different socio-economic backgrounds and to enhance upward social mobility.

Nonetheless, our results highlight that 'dreaming big' is not without cost. Aspiration gaps, resulting from individuals achieving less than what they aspired to, are shown to be negatively related to subjective well-being in adulthood. Moreover, the results document that parental pressure, measured by the degree to which parental aspirations exceed their child's aspirations, is negatively related to the mental health of their offspring. Thus, our results also encompass a cautionary note that any policy intervention aiming at raising children's aspirations should also incorporate the fact that there is a trade-off between

aspirations and lifetime well-being. Therefore in order to mitigate aspiration gaps and consequently achieve social welfare gains, such policy programs must be accompanied by complementary interventions on a societal level to remove of barriers, namely easing financial constraint or fairer access to job and educational opportunities.

Finally, we are fully aware that the estimates generated in our analysis are correlational in nature and not to be interpreted as causal. Nevertheless, our estimation approach exploits an exhaustive list of variables available in the NCDS, accounting for key confounding factors, such as parental investments, skills and test scores, and other life outcomes in adulthood, implemented in a careful control strategy that mitigates the issues of endogeneity and reverse causality wherever possible. A challenge for future research designs that intend to causally pinpoint drivers of aspirations is to identify policy interventions that shift a single determinant without altering other moving channels or changing beliefs held by other relevant counterparts. Analogously, to causally identify the effect of aspirations on achievements and later well-being, a novel research design needs to exploit exogenous variation in aspirations while keeping other related factors constant. This is a challenging task as a factor that influences aspirations may be correlated with other determining drivers of the final outcome, which in effect hinders the assumptions necessary for an instrumental variable approach. Even in a randomized control trial that specifically targets aspirations it remains highly challenging to assure that the treatment does not lead to any spillover effects that might influence later life outcomes through other channels than aspirations. In the light of these challenges, we consider our comprehensive empirical assessment an important step towards a better understanding of potential determinants and consequences of educational and occupational aspirations.

REFERENCES

Appadurai, A. (2004). The Capacity to Aspire. In *Culture and Public Action*, M. Walton and V. Rao (Eds.). Stanford, CA: Stanford University Press.

Arcidiacono, P. V., J. Hotz, and S. Kang (2012). Modelling College Major Choices Using Elicited Measures of Expectations and Counterfactuals. *Journal of Econometrics*, 166, 3–16.

Attanasio, O. P., and K. M. Kaufmann (2014). Education Choices and Returns to Schooling: Mothers' and Youths' Subjective Expectations and their Role by Gender. *Journal of Development Economics,* 109, 203-216.

Attanasio, O. P., and L. Pistaferri (2016). Consumption Inequality. *Journal of Economic Perspectives*, 30(2), 3-28.

Banerjee, A., and S. Mullainathan (2010). The Shape of Temptation: Implications for the Economic Lives of the Poor. NBER Working Paper No. 15973. Cambridge, MA: National Bureau of Economic Research.

Beaman, L., E. Duflo, R. Pande and P. Topalova (2012). Female Leadership Raises Aspirations and Educational Attainment for Girls: A Policy Experiment in India. *Science*, 335(6068), 582-586.

Beffy, Magali, D. Fougere, and A. Maurel (2012). Choosing the Field of Study in Postsecondary Education: Do Expected Earnings Matter? *Review of Economics and Statistics*, 94, 334–347.

Bell, B., J. Blundell, and S. Machin (2019). Where is the Land of Hope and Glory? The Geography of Intergenerational Mobility in England and Wales. CEP Discussion Paper No. 1591. London: Centre for Economic Performance.

Bendor J., D. Mookherjee, and D. Raj (2001). Aspiration-Based Reinforcement Learning in Repeated Interaction Games: An Overview. *International Game Theory Review*, 3(2&3), 159-174.

Bernheim, B. D., D. Ray, and Ş. Yeltekin (2015). Poverty and Self-Control. *Econometrica*, 83(5), 1877-1911.

Besley, T. (2017). Aspirations and the Political Economy of Inequality. *Oxford Economic Papers*, 69(1), 1–35.

Bisin, A., and T. Verdier (2001). The Economics of Cultural Transmission and the Dynamics of Preferences. *Journal of Economic Theory* 97(2), 298–319.

Black, S. E., and P. J. Devereux (2011). Recent Developments in Intergenerational Mobility. *Handbook of Labor Economics*, 4, 1487-1541.

Black, S. E., P. J. Devereux, P. Lundborg, and K. Majlesi (2015). Poor Little Rich Kids? The Determinants of the Intergenerational Transmission of Wealth. NBER Working Paper No. 21409. Cambridge, MA: National Bureau of Economic Research.

Blanden, J. (2013). Cross-Country Rankings in Intergenerational Mobility: A Comparison of Approaches from Economics and Sociology. *Journal of Economic Surveys*, 27(1), 38-73.

Blanden, J., A. Goodman, P. Gregg, and S. Machin (2004). Changes in Intergenerational Mobility in Britain. *Generational Income Mobility in North America and Europe*, 122-46.

Blanden, J., P. Gregg, and L. Macmillan (2007). Accounting for Intergenerational Income Persistence: Noncognitive Skills, Ability and Education. *Economic Journal*, 117(519).

Blanden, J., and S. Machin (2007). *Recent Changes in Intergenerational Mobility in Britain*. London: Sutton Trust.

Blanden, J., P. Gregg, and L. Macmillan (2013). Intergenerational Persistence in Income and Social Class: The Effect of Within- Group Inequality. *Journal of the Royal Statistical Society: Series A (Statistics in Society)*, 176(2), 541-563.

Bleemer, Z., and B. Zafar (2017). Intended College Attendance: Evidence from an Experiment on College Returns and Costs. *Journal of Public Economics*, 157, 184-211.

Blundell, J., and E. Risa (2019). Income and Family Background: Are we Using the Right Models? *Available at SSRN 3269576*.

Boneva, T., and C. Rauh (2018). Parental Beliefs about Returns to Educational Investments – The Later the Better? *Journal of the European Economic Association*, 16(6), 1669–1711.

Börgers, T., and R. Sarin (2000). Naïve Reinforcement Learning with Endogenous Aspirations. *International Economic Review,* 41(4), 921-950.

Braun, S. T., and J. Stuhler (2018). The Transmission of Inequality Across Multiple Generations: Testing Recent Theories with Evidence from Germany. *Economic Journal*, 128(609), 576-611.

Burgess, S., and E. Greaves (2013). Test Scores, Subjective Assessment, and Stereotyping of Ethnic Minorities. *Journal of Labor Economics*, 31(3), 535-576.

Caballé, J. (2016). Intergenerational Mobility: Measurement and the Role of Borrowing Constraints and Inherited Tastes. *SERIEs*, 7(4), 393-420.

Caballé, J., and A. I. Moro-Egido (2014). Effects of Aspirations and Habits on the Distribution of Wealth. *Scandinavian Journal of Economics*, *116*(4), 1012-1043.

Carlana, M., E. La Ferrara, and P. Pinotti (2018). Goals and Gaps: Educational Careers of Immigrant Children. CreAM Discussion Paper Series 1812, Centre for Research and Analysis of Migration (CreAM), University College London.

Carneiro, P., and J. J. Heckman (2002). The Evidence on Credit Constraints in Post-Secondary Schooling. *Economic Journal*, 112(482), 705-734.

Case, A., A. Fertig, and C. Paxson (2005). The Lasting Impact of Childhood Health and Circumstance. *Journal of Health Economics*, 24(2), 365-389.

Chetty, R., N. Hendren, P. Kline, and E. Saez (2014). Where is the Land of Opportunity? The Geography of Intergenerational Mobility in the United States. *Quarterly Journal of Economics*, *129*(4), 1553-1623.

Clark, A. E., Kamesaka, A., and Tamura, T. (2015). Rising Aspirations Dampen Satisfaction. *Education Economics*, 23(5), 515-531.

Clark, A. E., P. Frijters, and M. Shields (2008). Relative Income, Happiness and Utility: An Explanation for the Easterlin Paradox and Other Puzzles. *Journal of Economic Literature,* 46 (1), 95-144.

Corak, M. (2013). Income Inequality, Equality of Opportunity, and Intergenerational Mobility. *Journal of Economic Perspectives*, 27(3), 79-102.

Cunha, F., Heckman, J.J., 2007 The Technology of Skill Formation. *American Economic Review* 97(2), 31-47.

Cunha, F., I. Elo, and J. Culhane (2013). Eliciting Maternal Expectations About the Technology of Cognitive Skill Formation, NBER Working Paper No. 19144. Cambridge, MA: National Bureau of Economic Research.

Dalton, P., S. Ghosal, and A. Mani (2016). Poverty and Aspirations Failure. *Economic Journal*, 126(590), 165-188.

Dearden, L., Machin, S., and Reed, H. (1997). Intergenerational Mobility in Britain. *Economic Journal*, 107(440), 47-66.

Dee, T. S. (2005). A Teacher Like Me: Does Race, Ethnicity, or Gender Matter? *American Economic Review*, 95(2), 158-165.

Dee, T. S. (2015). Social Identity and Achievement Gaps: Evidence from an Affirmation Intervention. *Journal of Research on Educational Effectiveness*, 8, 149-168.

Delavande, A., B. Zafar (2019). University Choice: The Role of Expected Earnings, Nonpecuniary Outcomes, and Financial Constraints. *Journal of Political Economy*, 127(5), 2343-2393.

Dizon-Ross, R. (2019). Parents' Beliefs About Their Children's Academic Ability: Implications for Educational Investments. *American Economic Review*, 109(8): 2728-65.

Doepke M., and F. Zilibotti (2017). Parenting with Style: Altruism and Paternalism in Intergenerational Preference Transmission. *Econometrica*, 85 (5), 1331–1371

Elliot Major, L., and S. Machin (2018). *Social Mobility and Its Enemies*, Pelican Books.

Flèche, S., W. N. Lekfuangfu, and A. E. Clark (2019). The Long-Lasting Effects of Family and Childhood on Adult Wellbeing: Evidence from British Cohort Data. *Journal of Economic Behavior & Organization*.

Frijters, P., D. W. Johnston, and M. A. Shields (2014). Does Childhood Predict Adult Life Satisfaction? Evidence From British Cohort Surveys. *Economic Journal*, 124(580), F688-F719.

Ganzeboom, H. B., and D. J. Treiman (1996). Internationally Comparable Measures of Occupational Status for the 1988 International Standard Classification of Occupations. *Social Science Research*, 25(3), 201-239.

Genicot, G., and D. Ray (2017). Aspirations and Inequality. *Econometrica,* 85(2), 489–519.

Gershenson, S., S. B. Holt, and N. W. Papageorge (2016). Who Believes in Me? The Effect of Student–Teacher Demographic Match on Teacher Expectations. *Economics of Education Review*, 52, 209-224.

Goldthorpe, J. H., and M. Jackson (2007). Intergenerational Class Mobility in Contemporary Britain: Political Concerns and Empirical Findings. *British Journal of Sociology*, 58(4), 525-546.

Goux, D., M. Gurgand, and E. Maurin (2017). Adjusting Your Dreams? High School Plans and Dropout Behaviour. *Economic Journal,* 127(602), 1025–1046.

Goodman, A., P. Gregg, and E. Washbrook (2011). Children's Educational Attainment and the Aspirations, Attitudes and Behaviours of Parents and Children Through Childhood. *Longitudinal and Life Course Studies*, 2(1), 1–18.

Grawe N. D., and C. B. Mulligan (2002). Economic Interpretations of Intergenerational Correlations. *Journal of Economic Perspectives,* 16 (3), 45-58.

Gregg, P. (2012). *Occupational Coding for the National Child Development Study (1969, 1991-2008) and the 1970 British Cohort Study (1980, 2000-2008).* [data collection]. University of London. Institute of Education. Centre for Longitudinal Studies, [original data producer(s)]. UK Data Service. SN: 7023.

Gutman, L.M., and R. Akerman (2008). Determinants of Aspirations. Research Report 27, Centre for Research on the Wider Benefits of Learning. University of London.

Guyon N., and E. Huillery, (2020). Biased Aspirations and Social Inequality at School: Evidence from French Teenagers. *Economic Journal,* forthcoming.

Hertz, T., T. Jayasundera, P. Piraino, S. Selcuk, N. Smith, and A. Verashchagina (2007). The Inheritance of Educational Inequality: International Comparisons and Fifty-Year Trends. *The BE Journal of Economic Analysis & Policy*, 7(2).

Higgins, E. (1987). Self-Discrepancy: A Theory Relating Self and Affect. *Psychological Review*, 94(3), 319.

Janzen, S. A., N. Magnan, S. Sharma, and W. M. Thompson (2017). Aspirations Failure and Formation in Rural Nepal. *Journal of Economic Behavior & Organization* 139, 1–25.

Jäntti, M., and S. P. Jenkins (2015). Income Mobility. In *Handbook of Income Distribution*, Vol. 2A, pp. 807-935. Elsevier.

Jencks, C., J. Crouse, and P. Mueser (1983). The Wisconsin Model of Status Attainment: A National Replication with Improved Measures of Ability and Aspiration. *Sociology of Education*, 56(1), 3–19.

Jensen, R. (2010). The (Perceived) Returns to Education and the Demand for Schooling. *Quarterly Journal of Economics*, 125(2), 515-548.

Khattab N. (2015). Students' Aspirations, Expectations and School Achievement: What Really Matters? *British Educational Research Journal*, 41(5), 731–748.

Kunz, J. S., and K. E. Staub (2020). Early Subjective Completion Beliefs and the Demand for Post-Secondary Education. *Journal of Economic Behavior and Organization*, 177, 34–55.

La Ferrara, E. (2019). Aspirations, Social Norms and Development. *Journal of the European Economic Association,* 17(6), 1687–1722.

Lambert, P.S., and Prandy, K. (2008). *CAMSIS Project Webpages: Cambridge Social Interaction and Stratification Scales*, retrieved on 1 July 2018 from http://www.camsis.stir.ac.uk/.

Lekfuangfu, W. N., N. Powdthavee, N. Warrinnier, and F. Cornaglia (2018). Locus of Control and Its Intergenerational implications for Early Childhood Skill Formation. *Economic Journal*, 128(608), 298-329.

Lergetporer, P., K. Werner, and L. Woessmann (2018). Does Ignorance of Economic Returns and Costs Explain the Educational Aspiration Gap? Evidence from Representative Survey Experiments. IZA DP No. 11453, Bonn: Institute of Labor Economics.

Luttmer, E. (2005). Neighbors as Negatives: Relative Earnings and Well-Being. *Quarterly Journal of Economics* 120(3), 923-1002.

Manski, C. F. (1993). Adolescent Econometricians: How Do Youth Infer the Returns to Education? In C. T. Clotfelter, and M. Rothschild (Eds.), *Studies of Supply and Demand in Higher Education* (pp. 43-57). Chicago: University of Chicago Press.

Manski, C. F. (2004). Measuring Expectations. *Econometrica*, 72(5), 1329-1376.

Mason, R., and Faulkenberry, G. D. (1977). Aspirations, Achievements and Life Satisfaction. *Social Indicators Research*, 5 (1-4), 133–150.

Michalos, A. C. (1985). Multiple Discrepancies Theory (MDT). *Social Indicators Research,* 16(4), 347–413.

Montmarquette, C., K. Cannings, and S. Mahseredjian (2002). How Do Young People Choose College Majors*? Economics of Education Review,* 21, 543–556.

Ouazad, A. (2014). Assessed by a Teacher Like Me: Race and Teacher Assessments. *Education Finance & Policy*, 9(3), 334-372.

Page, L., L. Levy Garboua, and C. Montmarquette (2007). Aspiration Levels and Educational Choices: An Experimental Study. *Economics of Education Review*, 26(6), 747–757.

Papageorge, N. W., Gershenson, S., and Kang, K. (2020). Teacher Expectations Matter. *Review of Economics and Statistics*, 102(2), 234-251.

Ray, D. (2006). Aspirations, Poverty, and Economic Change. In A. V. Banerjee, R. Benabou, and D. Mookherjee (eds.), *Understanding Poverty*. Oxford: Oxford University Press.

Ray D., and G. Genicot (2020). Aspirations and Economic Behavior. *Annual Review of Economics,* forthcoming.

Reynolds, J. R., and J. Pemberton (2001). Rising College Expectations Among Youth in the United States: A Comparison of the 1979 and 1997 NLSY. *Journal of Human Resources*, 36(4), 703– 726.

Reynolds, J., M. Stewart, R. MacDonald, and L. Sischo (2006). Have Adolescents Become Too Ambitious? High School Seniors' Educational and Occupational Plans, 1976 to 2000. *Social Problems,* 53, 186-206.

Rizzica, L. (2020). Raising Aspirations and Higher Education: Evidence from the United Kingdom's Widening Participation Policy. *Journal of Labor Economics*, 38(1), 183-214.

Savage, M., F. Devine, N. Cunningham, M. Taylor, M., Y. Li, J. Hjellbrekke, B. Le Roux, S. Friedman, and A. Miles (2013). A New Model of Social Class? Findings from the BBC's Great British Class Survey Experiment, *Sociology*, 47(2), 219-250.

Schoon, I., and E. Polek (2011). Teenage Career Aspirations and Adult Career Attainment: The Role of Gender, Social Background and General Cognitive Ability. *International Journal of Behavioral Development*, 35(3), 210-217.

Sewell, W. H., A. O. Haller and A. Portes (1969). Educational and Early Occupational Attainment Process. *American Sociological Review*, 34 (1), 82-92.

Sewell, W. H., A. O. Haller and G. W. Ohlendorf (1970). Educational and Early Occupational Status Attainment Process: Replication and Revision. *American Sociological Review*, 35(6), 1014-1027.

Stinebrickner, R. and T. R. Stinebrickner (2014). A Major in Science? Initial Beliefs and Final Outcomes for College Major and Dropout. *Review of Economic Studies*, 81, 426–472.

Stewart, A., R. M. Blackburn, and K. Prandy (1980). Social Stratification and Occupations. Springer.

Stutzer, A. (2004). The Role of Income Aspirations in Individual Happiness. *Journal of Economic Behavior & Organization* 54(1), 89-109.

Solon, G. (1992). Intergenerational Income Mobility in the United States. *American Economic Review*, 393-408.

Trebbels M. (2015). *The Transition at the End of Compulsory Full-Time Education*. Wiesbaden: Springer.

Wrosch, C., G. E. Miller, M. F. Scheier and S. Brun de Ponte (2007). Giving Up on Unattainable Goals: Benefits for Health? *Personality and Social Psychology Bulletin*, 33: 251-65.

Zafar, B. (2011). How Do College Students form Expectations? *Journal of Labor Economics*, 29(2), 301-348.

Table A1: Itemised questions on occupation aspiration in the NCDS, answered by child, parent or teacher.

Item	Respondent	Age	N	(% of N as undefinable occupation)
Occupation: Aspirations				
I. Type of work child would like to do.	Cohort member	16	11,614	(6.3%)
	Parent	16	9,276	(18%)
Occupation: Expectations				
II. Type of work child likely to do.	Cohort member	16	11,016	(13.5%)
	Parent	16	11,443	(11.7%)
	Teacher	16	11,603	(12.3%)
Education: Aspirations				
I. Hope to go on to take GCE A-level or higher: yes; no; uncertain	Cohort member	16	12,026	N/A
II. When leaving secondary school, you will: find job; study full time; don't know.	Cohort member	11	13,760	N/A
III. I would like my child to: leave at minimum schooling age; stay in full-time education but not beyond 18; continue after 18, uncertain.	Parent	16	11,617	N/A
IV. I would like my child to: leave school as soon as possible; stay longer.	Parent	11	13,791	N/A
V. I would like to my child stay in school: yes; no.	Parent	7	12,638	N/A
Education: Expectations				
VI. Which, in fact, is the child likely to do: leave at minimum schooling age; stay in full-time education but not beyond 18; continue after 18; uncertain.	Cohort member	16	12,067	N/A
	Parent	16	11,630	N/A
VII. Type of further education the child is more suited for: university; other higher edu; certificate; other full-time; part-time edu; none of these.	Teacher	16	12,933	N/A

Table A2: Summary statistics.

Variable	Mean	(sd)	Min	Max	N
Panel A: Main outcomes (age)					
Child occupational aspirations (16)	59.16	(13.56)	21.9	89.4	6434
Child occupational expectation (16)	57.12	(13.82)	21.9	89.4	5501
Parent occupational aspirations (16)	59.77	(13.33)	21.9	89.4	6434
Child aspirations of having college degree (16)	0.29	(0.45)	0	1	6434
Child aspirations of having college degree (11)	0.31	(0.46)	0	1	5626
Parent aspirations of child having college degree (7)	0.96	(0.19)	0	1	5068
Parent aspirations of child having college degree (16)	0.35	(0.48)	0	1	6407
Teacher's expectation of child having college degree (16)	0.11	(0.31)	0	1	6169
Highest occupation score (55)	58.12	(12.87)	15.0	96.0	6434
Whether college education (55)	0.40	(0.49)	0	1	5693
Life satisfaction (33)	7.48	(1.69)	0	10	5443
Positive malaise (23)	7.84	(1.5)	0	9	5639
Panel B: Childhood characteristics (age)					
Female (0)	0.52	(0.5)	0	1	6434
Cognitive score [std] (11)	0.14	(1)	-3.6	3.1	6434
Non-cognitive score [std] (11)	0.15	(0.98)	-6.6	1.1	6434
Experienced financial difficulty (11)	0.17	(0.38)	0	1	6109
Log of family income (16)	5.10	(0.65)	2.3	6.6	5796
Father occupation score (11)	44.61	(13.61)	18.3	87.4	4724
Whether first born (0)	0.40	(0.48)	0	1	6167
Caucasian (0)	0.98	(0.14)	0	1	5688
Whether breastfed (7)	0.63	(0.48)	0	1	6396
Whether low birth weight (0)	0.06	(0.22)	0	1	5977
Mother's age at birth (0)	27.53	(5.52)	14	47	6164
Whether single parent (0)	0.03	(0.16)	0	1	6432
Father had college degree (7)	0.05	(0.22)	0	1	6179
Home ownership (11)	0.47	(0.47)	0	1	5702
Whether mother worked (11)	0.44	(0.47)	0	1	5672
Whether father present (7)	0.30	(0.45)	0	1	6261
Whether father present (11)	0.92	(0.25)	0	1	5713
Freq. mother reads to child (7)	1.37	(0.72)	0	2	5717
Freq. father reads to child (7)	1.12	(0.8)	0	2	5573
Rating mother's interest in child's edu (7)	1.35	(0.74)	0	3	5456
Rating father's interest in child's edu (7)	1.25	(0.79)	0	3	3828
Freq. mother takes child on outing (7)	1.86	(0.38)	0	2	5740
Freq. father takes child on outing (7)	1.68	(0.56)	0	2	5612
Freq. mother used library (11)	1.28	(0.81)	0	3	5393
Freq. mother takes child outing (11)	1.50	(0.6)	0	2	5633
Freq. father takes child outing (11)	1.44	(0.64)	0	2	5466
Whether mother had library card (11)	0.44	(0.5)	0	1	5627
Whether father had library card (11)	0.43	(0.5)	0	1	5436
Teacher's evaluation [std] (7)	0.11	(0.93)	-2.7	2.8	5851
Teacher's evaluation [std] (11)	0.14	(0.94)	-2.6	2.7	5704
Teacher's evaluation [std] (16)	0.13	(0.94)	-1.8	1.8	6240
Child hears of job from parent (16)	0.37	(0.48)	0	1	6171
Child hears of job from others (16)	0.22	(0.42)	0	1	6171
Child hears of job from teacher (16)	0.44	(0.5)	0	1	6171
Child hears of job from friends (16)	0.27	(0.44)	0	1	6171
Child hears of job from media (16)	0.35	(0.48)	0	1	6171
Whether parent has precise wishes (16)	0.44	(0.5)	0	1	6210
Whether parent let child decides (16)	0.28	(0.45)	0	1	6210
% change in father's employment from 1951-71 [std]	0.00	(0.88)	-0.5	37.8	4559
% jobs in high-skilled services in 1971 [std]	-0.10	(0.93)	-1.7	2.2	6160
Unemployment rate in 1971 [std]	0.01	(1.01)	-1.8	3.6	6160
% fathers from non-manual class (16)	36.59	(23.05)	5	85	5482

% girls have GCSE (16)	23.72	(31.8)	0	100	5361
% boys have GCSE (16)	23.99	(32.62)	0	100	5234
% girls have A-level (16)	14.98	(20.98)	0	100	4750
% boys have A-level (16)	12.76	(17.32)	0	100	4854
% pupils stay after age 16 (16)	60.85	(26.57)	0	100	5961
% boys continue to degree (16)	9.97	(15.59)	0	100	4641
% girls continue to degree (16)	6.33	(10.12)	0	100	4709
Whether in ability-stream class (7)	0.12	(0.32)	0	100	6299
Whether in ability-stream class (11)	0.33	(0.47)	0	1	5650
Whether in ability-stream class (16)	0.34	(0.47)	0	1	6296
Panel C: Main adulthood variables (age)					
GCSE Maths (16)	1.24	(1.45)	0	4	5783
GCSE Science (16)	1.74	(1.78)	0	4	5783
Have college degree (23)	0.21	(0.41)	0	1	5642
Have college degree (33)	0.20	(0.4)	0	1	6431
Have a partner (23)	0.46	(0.5)	0	1	5642
Have a partner (33)	0.82	(0.38)	0	1	5595
Log of net income (23)	8.16	(0.39)	5.1	9.9	4111
Log of net income (33)	8.89	(0.85)	0.0	17.8	4537
Whether employed (23)	0.77	(0.42)	0	1	5635
Whether employed (33)	0.81	(0.39)	0	1	5765

Table A3: Sample selection check.

Variable	Sample Mean	(SD)	Not Sample Mean	(SD)	Difference
Panel A: Childhood characteristics (age)	N = 6434		N = 12124		
Female (0)	0.52	(0.5)	0.46	(0.5)	0.06***
Cognitive score [std] (11)	0.14	(1)	-0.08	(0.99)	0.22***
Non-cognitive score [std] (11)	0.15	(0.98)	-0.08	(1)	0.22***
Experienced financial difficulty (11)	0.17	(0.38)	0.19	(0.39)	-0.02***
Log of family income (16)	5.10	(0.65)	5.05	(0.69)	0.05***
Whether first born (0)	0.40	(0.48)	0.37	(0.47)	0.03***
Caucasian (0)	0.98	(0.14)	0.95	(0.16)	0.02***
Whether breastfed (7)	0.63	(0.48)	0.49	(0.5)	0.14***
Whether low birth weight (0)	0.06	(0.22)	0.09	(0.27)	-0.03***
Mother's age at birth (0)	27.53	(5.52)	27.42	(5.56)	0.12
Whether single parent (0)	0.03	(0.16)	0.04	(0.2)	-0.01***
Father had college degree (7)	0.05	(0.22)	0.05	(0.13)	0
Home ownership (11)	0.47	(0.47)	0.45	(0.41)	0.02**
Whether mother worked (11)	0.44	(0.47)	0.45	(0.42)	-0.01
Whether father presence (7)	0.30	(0.45)	0.26	(0.43)	0.04***
Whether father presence (11)	0.92	(0.25)	0.89	(0.26)	0.03***
Father occupation score (11)	44.61	(13.6)	43.94	(13.7)	0.66**
Panel B: Father's Social class (fraction)					
I. Professional	4.80		5.16		-0.36
II. Manager	14.74		14.15		0.59
III. Skilled	10.68		10.75		-0.07
IV. Semi-skilled	56.44		56.40		0.04
V. Unskilled	13.35		13.54		-0.19
Panel C: Region of birth (fraction)					
North	7.91		6.71		1.20
North West	12.13		13.75		-1.62
E & W.Riding	7.91		8.54		-0.63
North Midlands	8.21		7.07		1.14
Midlands	9.64		9.37		0.27
East	7.78		6.83		0.95
South East	16.07		21.47		-5.40
South	6.13		5.16		0.97
South West	6.48		5.00		1.48
Wales	5.77		5.07		0.70
Scotland	12.00		11.03		0.97

Table A4: Aspiration intergenerational correlation (alternative measures).

	(I) All	(II) Males	(III) Females
Child's aspirations	0.204	0.180	0.238
Child's expectations	0.208	0.163	0.273
Parental aspirations	0.182	0.154	0.223
Parental expectations	0.211	0.177	0.250
Actual occupation (by age 50)	0.280	0.310	0.254

Notes: Raw correlation of father's and child's occupation (actual and aspired). Occupation aspirations from the child or for the child at cohort member's age 16 measured by CAMSIS score. The statistics are calculated from the baseline sample. It comprises the NCDS cohort members with no missing values for the variables: father's occupation, measures of occupation aspirations from the child or for the child at cohort member's age 16, and actual adult occupation (at least one occupation between age 33 to 55).

Table A5: Local labour market conditions and aspiration formation

Panel A: Dependent variable is child's occupational aspirations at age 16

	Full	Low	Top	Miner	Non-Miner
Local unemployment (1971)	0.015	0.065**	-0.023	0.060*	0.009
	[0.011]	[0.032]	[0.026]	[0.036]	[0.012]
Change in local share: father's job (71-51)	-0.001	0.003	-0.064	0.105	-0.003
	[0.013]	[0.019]	[0.078]	[0.134]	[0.013]
Change in local share: mining (71-51)	-0.003	-0.002	-0.081	-0.023	0.004
	[0.008]	[0.021]	[0.074]	[0.019]	[0.009]
Change in local share: agriculture (71-51)	-0.026	-0.012	-0.03	-0.004	-0.028
	[0.020]	[0.089]	[0.035]	[0.135]	[0.020]
Change in local share: manufacturing (71-51)	0.025**	0.029	0	0.014	0.029**
	[0.012]	[0.032]	[0.026]	[0.032]	[0.013]
Change in local share: services (71-51)	-0.003	0.024	-0.005	0.005	-0.009
	[0.011]	[0.026]	[0.026]	[0.025]	[0.012]
Change in local share: skilled services (71-51)	0.008	-0.035	0.012	-0.009	0.007
	[0.012]	[0.034]	[0.021]	[0.060]	[0.012]
Change in local mine closure (71-51)	0.009	0.017	0.003	-0.038	0.019
	[0.012]	[0.033]	[0.024]	[0.037]	[0.012]
Observations	3,278	475	674	565	2,698

Panel B: Dependent variable is child's educational aspirations at age 16

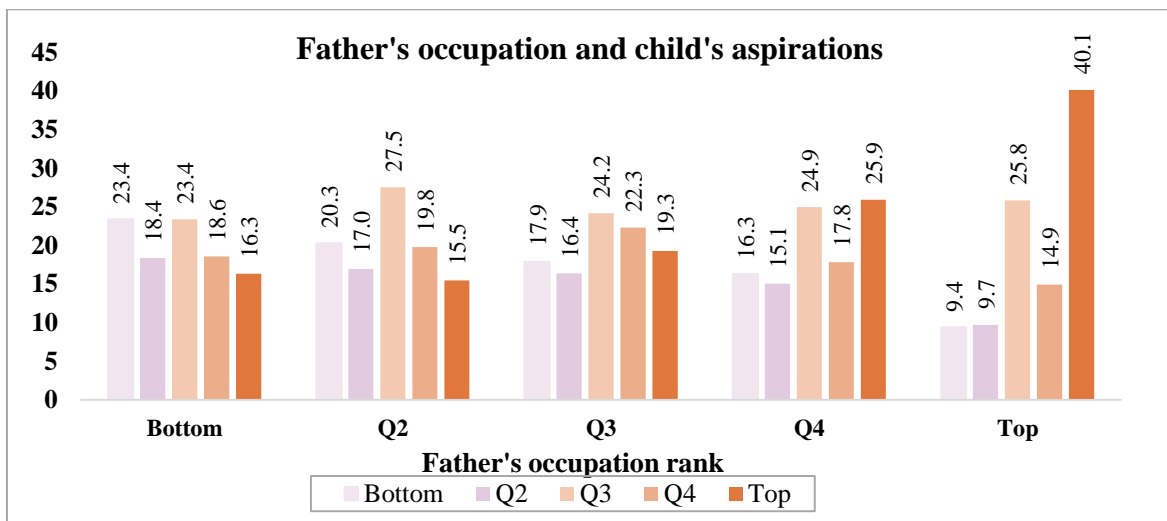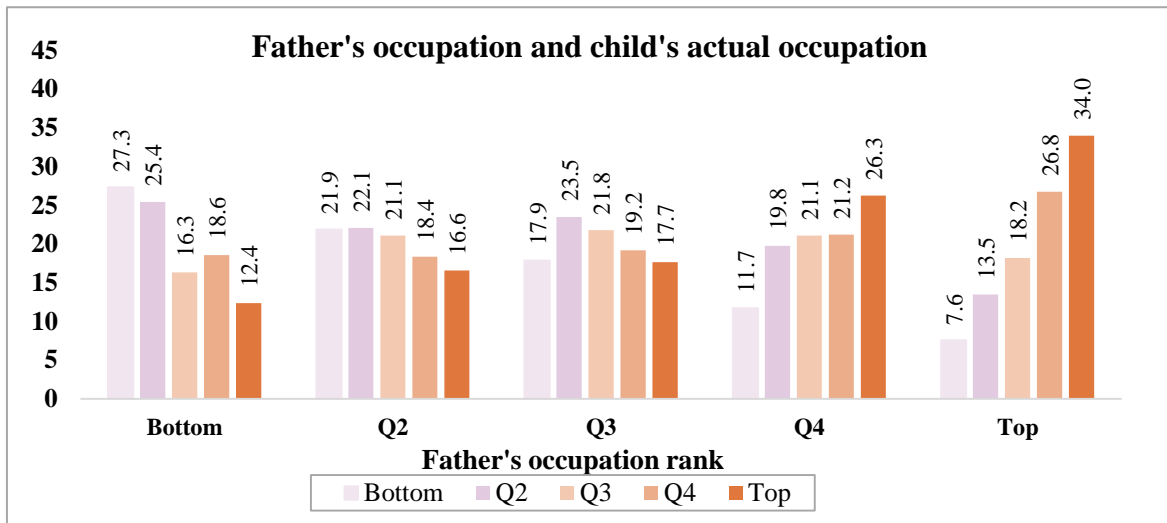|	Full	Low	Top	Miner	Non-Miner
Local unemployment (1971)	-0.001	0.005	-0.014	0.006	0.001
	[0.006]	[0.014]	[0.015]	[0.015]	[0.006]
% Change in local share: father's job (71-51)	0.012*	0.025***	0.032	0.034	0.01
	[0.007]	[0.009]	[0.026]	[0.023]	[0.007]
% Change in local share: mining (71-51)	0	-0.005	0.008	0.003	-0.001
	[0.004]	[0.009]	[0.046]	[0.009]	[0.005]
% Change in local share: agriculture (71-51)	0.003	-0.025	0	0.037	0.002
	[0.010]	[0.037]	[0.019]	[0.052]	[0.010]
% Change in local share: manufacturing (71-51)	0.004	0.018	0.012	0.031**	-0.002
	[0.006]	[0.013]	[0.015]	[0.014]	[0.007]
% Change in local share: services (71-51)	-0.001	-0.012	-0.01	0.002	0
	[0.005]	[0.011]	[0.015]	[0.011]	[0.006]
% Change in local share: skilled services (71-51)	-0.002	-0.005	0.009	-0.008	-0.002
	[0.006]	[0.015]	[0.013]	[0.025]	[0.006]
% Change in local mine closure (71-51)	0	0.032**	-0.011	0.009	-0.001
	[0.006]	[0.014]	[0.014]	[0.016]	[0.006]
Observations	3,841	528	857	651	3,174

Note: Each cell represents a separate regression with each specific local labour market covariate, controlling for all the variables included in column (2) in Table 2. Each column represents the estimates from different sub-samples: *Low* are cohort members with fathers at the bottom quintile of occupational score; *Top* are cohort members with fathers at the top quintile of occupational score; *Miner* are cohort members with family members (parents or grandparents) engaged in mining activities; *Non-miner* are cohort members without family engaged in mining activities.

Table A6: Unmet aspirations and life satisfaction over the life course.

|	(1)	(2)	(3)	(4)
Dependent variable: Life satisfaction	Age 33	Age 42	Age 46	Age 50
Negative gap (occupation < aspiration)	-0.005***	0.000	-0.001	-0.000
	[0.002]	[0.002]	[0.002]	[0.002]
Positive gap (occupation > aspiration)	-0.003	0.003	0.004	0.005*
	[0.003]	[0.003]	[0.003]	[0.003]
Child & family characteristics	x	x	x	x
Cognitive & non-cognitive skills	x	x	x	x
Parental investments	x	x	x	x
Occupation fixed effects	x	x	x	x
Education age 33	x	x	x	x
Marital status (contemporaneous)	x	x	x	x
Income age (contemporaneous)	x	x	x	x
Employment status (contemporaneous)	x	x	x	x
Observations	3,618	3,497	3,027	3,099
Adjusted R-squared	0.102	0.060	0.061	0.098

Notes: Standard errors are robust, and clustered at local authority level (*** p<0.01, ** p<0.05, * p<0.1). As in previous specifications, the dependent variable is standardised. The variables "Negative gap" and "Positive gap" are continues variables and capture the size of the gap in the respective direction (0-100).

Figure A1: Transition matrix calculated based on either achieved or aspired occupation.

Father's occupation and child's actual occupation

Bars (Father's occupation rank on x-axis; child's occupation quintile by color: Bottom, Q2, Q3, Q4, Top):

- Bottom: 27.3, 25.4, 16.3, 18.6, 12.4
- Q2: 21.9, 22.1, 21.1, 18.4, 16.6
- Q3: 17.9, 23.5, 21.8, 19.2, 17.7
- Q4: 11.7, 19.8, 21.1, 21.2, 26.3
- Top: 7.6, 13.5, 18.2, 26.8, 34.0

Father's occupation rank

Father's occupation and child's aspirations

Bars (Father's occupation rank on x-axis; child's aspiration quintile by color: Bottom, Q2, Q3, Q4, Top):

- Bottom: 23.4, 18.4, 23.4, 18.6, 16.3
- Q2: 20.3, 17.0, 27.5, 19.8, 15.5
- Q3: 17.9, 16.4, 24.2, 22.3, 19.3
- Q4: 16.3, 15.1, 24.9, 17.8, 25.9
- Top: 9.4, 9.7, 25.8, 14.9, 40.1

Father's occupation rank

Notes: The statistics are calculated from the baseline sample as in Table 1. Child's aspiration is taken from the stated occupation in the question of what type of work the child wished to do (asked at age 16). Father's occupation is taken from the father's current occupation in Sweep 2 (1969, child aged 11 years old). Occupations coded in the UK's Socio-Economic Classification-2000 are converted into a CAMSIS occupational status score (see http://www.camsis.stir.ac.uk/ for full details). Five quintile groups are derived from within-sample ranking for each of the measures.

Figure A2: Comparison of aspired status by cohort members and their parent's occupation aspiration with teacher expectation.
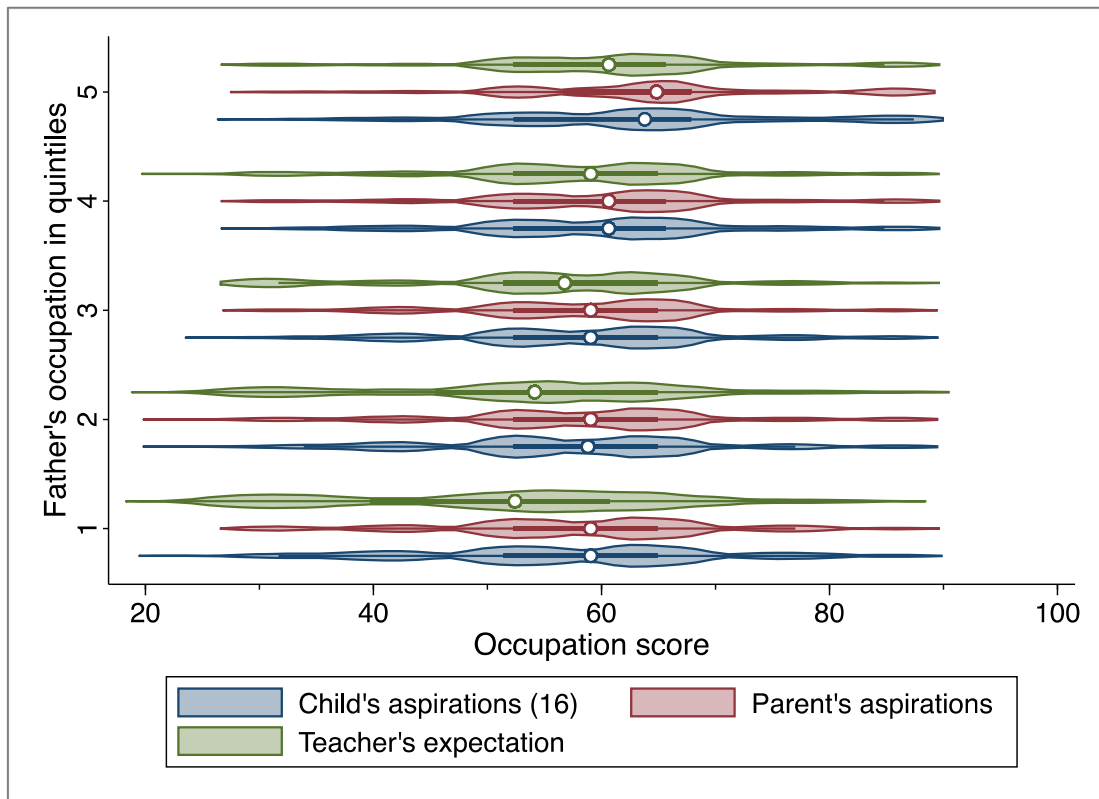
Notes: Violin plots of the CAMSIS score of cohort members' and their parent's aspired occupation, for each quintile of father's CAMSIS score (occupational aspirations measured at cohort member's age 16 and father's occupation at cohort member's age 11).
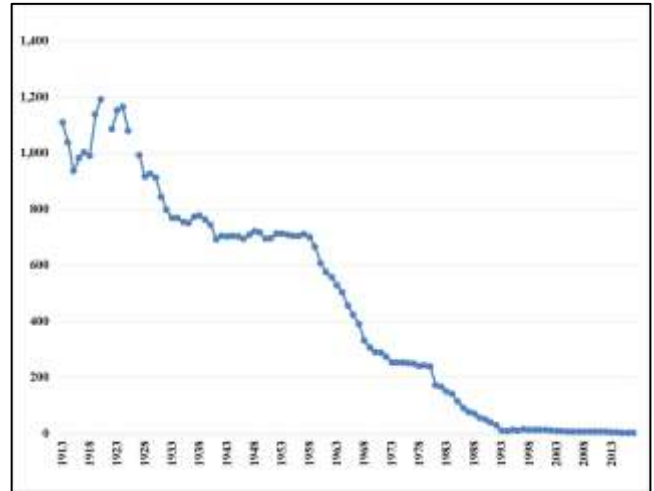
Figure A3: Mine closure in Britain

Panel A: Location of British Collieries (since 1854)
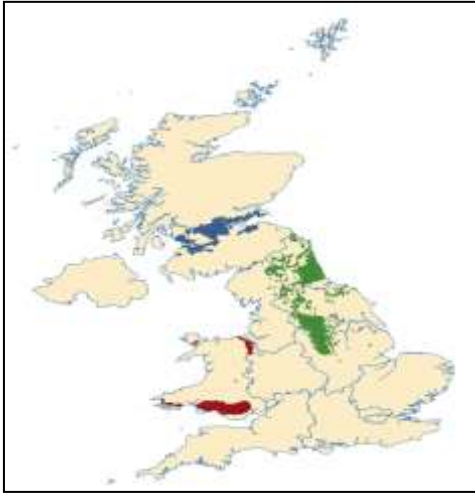
Source: Authors' reproduction from Mike Gill's Gazetteer of British Collieries

Panel B: Employment in coalmine industry (thousands)

Source: UK Historical Census and Department for Business, Energy and Industrial Strategy (UK), unit of 1000s