

# Socioeconomic disadvantage and children's emotional and behavioural problems: the role of early aspirations

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## Abstract

*Using data from the UK's Millennium Cohort Study, we investigated the association of early family socioeconomic disadvantage (measured when cohort children were age three) with children's aspirations and emotional and behavioural problems at age seven (N = 11,656). Aspirations were gauged by children's written responses to the question 'when you grow up, what would you like to be'. Responses were classified to reflect the prestige of the aspired occupation and its sex composition, and the degree of intrinsic/extrinsic motivation inferred from the aspiration. Disadvantage predicted problems both directly and via its association with low prestige and intrinsic aspirations. Children aspiring to more prestigious occupations had fewer emotional and hyperactivity problems, and those with more extrinsic aspirations had fewer emotional symptoms. Both girls and particularly boys with apparently more intrinsic aspirations had more peer problems. The association between hyperactivity and disadvantage was attenuated among children aspiring to more feminised jobs.*

## Keywords

Aspirations, emotional and behavioural problems, MCS, resilience, socioeconomic disadvantage

## Introduction

It is well established that children exposed to family socioeconomic disadvantage are more likely to have problems with emotional and behavioural adjustment than their non-poor counterparts (Bradley & Corwyn, 2002; Conger & Donnellan, 2007). There are several explanations for the association between socioeconomic disadvantage and children's emotional and behavioural adjustment – including transfer of genetic endowments, low availability of resources to support learning and cognitive development, low quality of the home learning environment, and high levels of stress and parental psychological distress (Evans, Gonnella, Marcynyszyn, Gentile, & Salpekar, 2005; Hackman, Farah, & Meany, 2010; Kiernan & Huerta, 2008; Kim-

Cohen, Moffitt, Caspi, & Taylor, 2004). However, some poor children show better than expected emotional and behavioural outcomes (that is, they show emotional and behavioural resilience to socioeconomic disadvantage). Individual factors related to such resilience include effortful control (Obradovic, 2010), executive function skills (Masten et al., 2012) and outgoing temperament (Kim-Cohen et al., 2004). In this study, we investigate whether the type of early aspirations children hold may be related to such resilience. The role of aspirations in children's emotional/behavioural resilience to socioeconomic disadvantage is largely untested. To the best of our knowledge, only one pilot study (using a cross-sectional design and not correcting for confounding) has examined this (Flouri & Panourgia, 2012). There

is also little research examining the role of early aspirations in children's emotional/behavioural adjustment, in general. The present study attempts to fill both gaps – namely to examine the role of aspirations firstly in promoting adjustment and then in promoting resilience in young children. We do this using longitudinal data from a large sample of UK children followed at ages three, five and seven years, when children were asked directly about what they would like to be in the future.

## The development of children's aspirations

According to the theory of circumscription and compromise (Gottfredson, 2002), children's aspirations are developed in stages. At stage one, which can start as early as three years old, children's aspirations are focused on size and power. At stage two (six – eight years), children become aware of gender differences and begin to eliminate occupations from further consideration if they are not typical for their own gender. Aspirations evolve with age from the fantastical to the concrete and so, as children grow into adolescents, they revise their aspirations based on their views of their own abilities and interests, as well as on societal and parental expectations. They begin to think more abstractly about their occupational choices and become more aware of barriers to occupations as well as characteristics of occupations such as status or prestige. Therefore, seven-year-old children would be less aware than older children and adolescents of potential constraints to achieving their aspirations. Thus, aspirations at this age may reflect children's sense of hope and possibilities for the future rather than their assessments of potential barriers, abilities or their parents' expectations. If so, such early aspirations may be a very good proxy for factors that have been associated with resilience to a number of risk factors (Cicchetti & Rogosch, 2009).

Children's aspirations do not vary only by age. Research on adolescents' aspirations, for example, has shown that they are strongly influenced by family background, especially parents' socioeconomic status (SES) – and in particular education and occupation (Jodl, Michael, Malanchuk, Eccles, & Sameroff, 2001). Adolescents' aspirations are also indirectly related to parental SES, via parental expectations and aspirations (Jodl et al., 2001) and parental involvement (Hill et al., 2004). Important individual-level antecedents include self-concept, self-

regulation, locus of control, self-efficacy and expectancy, confidence or agency beliefs (Bandura, 2011; Dweck & Leggett, 1988; Eccles et al., 1983; Ford, 1992; Lefcourt, 1982; Mouratidis, Vansteenkiste, Lens, Michou, & Soenens, 2013; Nagengast & Marsh, 2012), as well as hobbies, activities and interests pursued outside school (Archer, DeWitt, & Wong, 2014), cognitive ability (Creed, Conlon, & Zimmer-Gembeck, 2007; Massey, Gebhardt, & Garnefski, 2008) and academic achievement (Bond & Saunders, 1999). Perhaps the most extensively researched predictors of adolescents' aspirations, however, are gender and ethnicity. Research in the UK and US shows clear gender differences, whereby girls tend to have 'higher' aspirations than boys as well as greater motivation for school (Schoon, 2001), whereas boys tend to be more adventurous in their dreams, more confident in their abilities, and more likely to aspire to unusual jobs (Helwig, 2008). Nonetheless, there are also gender similarities. Both girls and particularly boys tend to express gender-typed aspirations (Croll, 2008), although less so than in the past (Croll, Attwood, & Fuller, 2009). As for the role of ethnicity, ethnic minority adolescents in many countries, including the UK and US, have higher aspirations than other adolescents (Archer et al., 2014; Croll, 2008; Goodman & Gregg, 2010; Strand, 2007). Importantly, their aspirations are high despite a lack of what would typically be seen as 'cultural capital' (Modood, 2004) – arguably because their parents are more likely to want them to stay on at school and attend university, pay for private tuition, supervise them closely and be involved with their schools (Croll, 2008; Strand, 2011). There has been less research on the determinants of aspirations in younger children and most of it has explored the roles of ethnicity, SES and gender. It appears that, as with adolescents' aspirations, there are persistent gender, SES and ethnic differences, but also cohort effects. For example, a recent review (Hartung, Porfeli, & Vondracek, 2005) concluded that, in general, preadolescent girls aspire to a more restricted range of occupations and engage in less career exploration during the primary school years, relative to preadolescent boys. However, later female cohorts aspire to more prestigious occupations, relative to earlier female cohorts. These occupations tend to be currently male-dominated, have higher educational requirements, and involve greater competition and selectivity.

## Children's aspirations and emotional and behavioural problems

Although there has been a fair amount of interest in the role of aspirations in academic outcomes in adolescence (Croll et al., 2009; Eccles, 2009), only a few studies have linked aspirations to emotional/behavioural problems, especially in children. Yet there are reasons to anticipate such a link. Aspirations are related to motivation and self-concept, associated with emotional and behavioural adjustment and psychological wellbeing (Cohen & Cohen, 1996; Lokes, Gingras, Philippe, Koestner, & Fang, 2010; Williams, Cox, Hedberg, & Deci, 2000). For example, 'high' aspirations may be related to emotional and behavioural adjustment in children because achievement motivation, mastery over problems, general 'toughness' or 'hardiness', commitment, self-confidence, optimism, perseverance, self-efficacy and, in general, personal agency beliefs are all associated with both high aspirations and emotional/behavioural adjustment. Additionally, aspirations often reflect the gendered context in which they are reported, and can be indicative of gender role identity – in turn related to psychological adjustment. The direction of the relationship between gender role identity and psychological adjustment, however, is not always clear. Although some studies have found positive links between gender atypical cognitions or behaviours and psychological maladjustment in children (Muris, Meesters, & Knoop, 2005; Young & Sweeting, 2004), others have shown that associations between psychological outcomes and aspects of femininity or masculinity do not differ by gender. For example, Hoffman, Powlisha, and White (2004) found, for both boys and girls, a relationship between masculine elements in adolescent identity (instrumentality) and fewer internalising symptoms. They also found a corresponding association of feminine elements (expressivity) with fewer externalising problems. Finally, aspirations can reflect intrinsic goals that directly satisfy basic human needs (such as affiliation, personal growth or community feeling) or extrinsic goals (such as wealth, fame or image). These goals are linked (positively and negatively, respectively) with adjustment in both adults and adolescents (Ryan & Deci, 2000).

As well as being sparse, however, the empirical evidence for the association between aspirations and

emotional/behavioural problems in youth is somewhat mixed. For example, Beal and Crockett (2010) found that career aspirations in adolescence were not related to either of their measures of problem behaviour (i.e., delinquency and substance use). By contrast, Moulton, Flouri, Joshi, and Sullivan (2015b) found that low career aspirations were related to emotional problems in young children, and Boxer, Goldstein, Delorenzo, Savoy, and Mercado (2011) found that adolescents' high academic aspirations were associated with less antisocial behaviour. Studies taking a psychological theory approach to classifying children's and adolescents' aspirations have been more successful in finding associations with psychological adjustment than those measuring aspirations solely by their prestige. For example, Moulton, Flouri, Joshi, and Sullivan (2015a) linked problem behaviour in young children with the realism and maturity revealed by their aspirations. Children with fantasy aspirations (e.g., 'superhero') were more hyperactive and had more conduct and peer problems, whereas those with ambitions for unusual occupations had fewer emotional and peer problems. Their suggested explanation was that, at that age, aspiring to fantasy occupations may indicate developmental difficulties whereas aspiring to unusual occupations may indicate self-efficacy. Developmental difficulties and self-efficacy are in turn associated, negatively and positively respectively, with emotional/behavioural adjustment. Also successful was the attempt by Dickson and MacLeod (2004a, 2004b) to link adolescents' life aspirations – operationalised as approach or avoidance motivational goals – to depression and anxiety. Approach goals represent the ambition or effort to move from a present towards a desired state, and avoidance goals the ambition or effort to move away from an undesired state. As expected, anxiety was related to avoidance goals, and depression was related positively to avoidance and negatively to approach goals.

As little is known about aspirations in mid-childhood, there is clearly little evidence of their relationship to future outcomes or aspirations. There are some arguments for mid-childhood aspirations being associated with current adjustment in various ways, depending on the aspect of the aspiration considered, the type of adjustment difficulties and the child's circumstances.

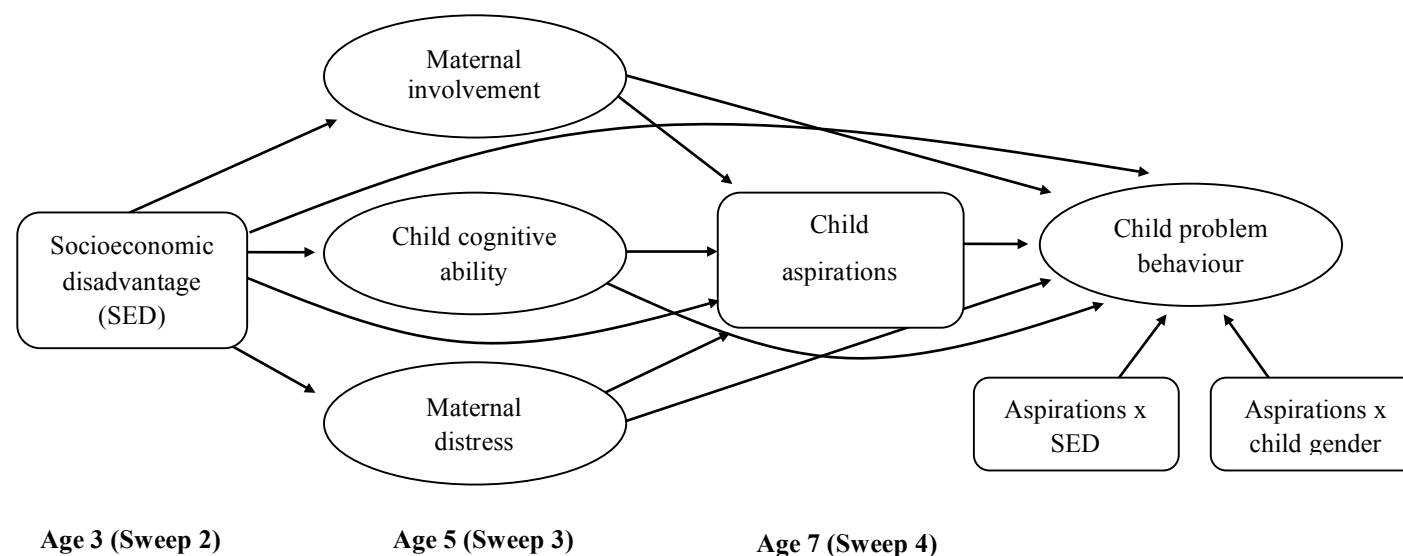
## The present study

This study had two aims, as explained above. The first was to explore whether early aspirations (measured at age seven) may be associated with children's emotional and behavioural problems. The second was to investigate whether early aspirations may be related to emotional/behavioural resilience to socioeconomic disadvantage (measured at age three years) – defined as family poverty, low maternal education and low maternal social class. We gauged aspirations, as far as possible, by the children's written responses to the single question 'when you grow up, what would you like to be?' Within these limits, we attempted to reflect three domains of aspiration that could be related to emotional and behavioural adjustment in children: degree of occupational prestige, gender type of the role aspired to (as a proxy for gender identity) and the child's intrinsic/extrinsic motivation (see Measures). To investigate our two research questions it was necessary to estimate a comprehensive model of the development of children's emotional and behavioural problems, showing direct and indirect effects of socioeconomic disadvantage and estimating interaction effects.

Regarding our first aim, we allowed aspirations to predict emotional/behavioural problems, and be predicted by what previous research has identified as their important family and individual antecedents, so as to rule out potential confounds. In our study, therefore, aspirations were predicted directly by socioeconomic disadvantage and indirectly via cognitive ability and maternal involvement in activities with the child. Cognitive ability and maternal involvement were also allowed to mediate the effect of socioeconomic disadvantage on emotional and behavioural problems, in line with previous research (Hackman et al., 2010). Also in line with research on the role of maternal depression in mediating the effect of poverty on child outcomes (Pettersen & Albers, 2001), we allowed maternal psychological distress to explain the effect of socioeconomic disadvantage on both emotional/behavioural problems and aspirations. All three proposed mediator variables (child cognitive ability, maternal involvement and maternal psychological distress) were measured prior to age seven years, in the previous sweep of the study at age five years. As well as via these mediators, socioeconomic disadvantage was allowed to predict emotional and behavioural problems directly

(Costello, Compton, Keeler, & Angold, 2003; Kiernan & Huerta, 2008; Shanahan, Copeland, Costello, & Angold, 2008). In view of the evidence for gender and ethnic differences in children's aspirations but also cognitive ability (Reynolds, Keith, Ridley, & Patel, 2008; Schoon, 2001; Sullivan, Joshi, & Leonard, 2011) and emotional/behavioural problems (Ford, Goodman, & Meltzer, 2003; Goodman, Patel, & Leon, 2008; Green, McGinnity, Meltzer, Ford, & Goodman, 2005), effects on these variables were adjusted for both gender and ethnicity. Effects on maternal psychological distress were also adjusted for ethnicity (Weich et al., 2004), and those on maternal involvement were adjusted for both gender and ethnicity (Hill et al., 2004).

In investigating our second aim, we expected to see evidence for resilience (i.e., less of an impact of socioeconomic disadvantage) in children holding aspirations that were: i) higher (i.e., for more prestigious occupations) and ii) more intrinsically motivated. Higher aspirations in disadvantaged children could signal optimism and perceived self-competence, both of which have been associated with better than expected outcomes for children at risk (Cicchetti & Rogosch, 2009; Wright & Masten, 2005). Similarly, young children in disadvantaged circumstances with intrinsic aspirations (associated with prosocial behaviour) may be more resistant to the effects poverty and adversity can have on increasing the risk of antisocial or general 'acting-out' behaviour (Flouri & Sarmadi, 2016). We also expected that aspirations for male-dominated occupations would be associated with emotional resilience to socioeconomic disadvantage, whereas aspirations for more feminised jobs or roles would predict behavioural resilience. We put forward this hypothesis on the basis that a preference – expressed by girls or boys – for a job done typically by men might reflect a more 'masculine' gender identity and reveal the protection it offers against the development of emotional problems. A preference for more feminised types of roles might reflect a feminine orientation, found to be protective against behavioural problems (Hoffmann et al., 2004). We allowed for the possibility of the gender atypicality of the aspiration affecting outcomes (Muris et al., 2005; Young & Sweeting, 2004) by testing for an interaction between the gender of the aspiration with the gender of the child. Figure 1 shows our hypothesised model.



**Figure 1. Hypothesised model**

Notes: Family SED comprises three observed variables (family poverty, low maternal social class, and low maternal education). Aspirations comprise three observed variables (prestige, gender type, and intrinsic/extrinsic motivation). Covariances are allowed among all variables within each sweep except for aspirations, which are not allowed to covary with child problem behaviour. Child problem behaviour refers to the four latent variables of emotional symptoms, peer problems, hyperactivity, and conduct problems. Controls for child's gender and ethnicity are included in each regression path with the exception that child's gender is not included in the path from family SED to maternal psychological distress. Problem behaviour is also adjusted for child's age given that MCS children's problem behaviour was assessed at different ages at sweep four (around age seven years).



## Method

We used data from the first four sweeps of the Millennium Cohort Study (MCS), a large longitudinal survey of children born in 2000-2002 in the UK (Plewis, 2007). Sweep one took place when the children were around nine months, and sweeps two, three and four took place at around three, five and seven years respectively. MCS was designed to over-represent areas with high proportions of ethnic minorities in England, areas of high child poverty, and the three smaller UK countries (Northern Ireland, Scotland and Wales). The main respondent was usually the child's biological mother. In total 18,552 families took part at MCS1. At MCS2, MCS3 and MCS4 the number of productive families was, respectively, 15,590 (including 692 new families not interviewed at MCS1), 15,246 and 13,857. A total of 19,519 children (19,244 families) participated in at least one sweep of MCS. MCS4 included a new mode of data collection, the child paper self-completion questionnaire (completed by 13,244 cohort children), which included the item on aspirations ('When you grow up, what would you like to be?'). Children could indicate more than one aspiration but only 960 children did. For those children with multiple aspirations, we used the aspiration written first, under the assumption that it was the primary aspiration. For 1,433 of the 13,244 children, the response to the aspiration item was 'don't know' ( $n = 607$ ), 'nothing' ( $n = 22$ ), uninterpretable ( $n = 171$ ) or missing ( $n = 633$ ). These children were removed from the sample used here. Most aspirations were occupational. The non-occupational aspirations were either fantasy aspirations (e.g., 'fairy' or 'superhero') or descriptions of mental or physical states (e.g., 'happy' or 'tall') and were included where it was possible to classify them to any one of the two remaining domains. The analytic sample ( $N = 11,656$ ) included all children whose first aspiration could be coded to at least one of these categories<sup>1</sup>. The non-analytic sample ( $N = 7588$ ) included children who participated in MCS at some point but who did not provide data on aspirations that could be coded to one of these categories. Both samples excluded the later-born of families who had multiple births (i.e., twins or triplets) in the cohort. This decision enabled us to avoid having to account for clustering of children within families, and resulted in making the number of cohort children equal to the number of cohort families.

## Measures

*Emotional and behavioural problems* (age seven) were the parent's (almost invariably the mother's) scores on the 'difficulties' scales of the Strengths and Difficulties Questionnaire (SDQ; <http://www.sdqinfo.com>). The SDQ is a 25-item three-point screening measure of three to 16 year olds' behaviours, emotions and relationships (Goodman, 1997). It consists of four five-item scales of difficulties – namely conduct problems (e.g., 'often lies or cheats';  $\alpha = .60$ ), hyperactivity/inattention (e.g., 'restless, overactive, cannot stay still for long';  $\alpha = .78$ ), peer problems (e.g., 'gets on better with adults than with other children';  $\alpha = .57$ ), and emotional symptoms (e.g., 'many fears; easily scared';  $\alpha = .65$ ).

Aspirations (age seven) were coded to *prestige*, *gender type*, and level of *intrinsic/extrinsic motivation* (Flouri et al., 2012). After familiarising themselves with all the children's responses and the coding scheme (see below), each of six coders coded a sixth (around 2,200 cases) of the children's responses. The Senior Data Base Manager responsible for MCS assigned custom identity numbers to children's responses, so that coders could not link these responses to any MCS data. Also, each coder was blind to the child's gender and could not identify which of these aspirations formed part of multiple responses. Once this first stage was completed, the six coders formed three pairs and each member of the pair coded a random 25% (around 550) of the other member's cases. Inter-rater reliability was high ( $\kappa > .80$ ), and where there were discrepancies they were resolved by two moderators. A seventh coder reviewed all the coded responses, and refined the coding on the gender type of the aspiration. This was achieved by using (as explained below) as detailed information as possible on the type of occupation aspired to. A random check by a moderator showed that agreement was in excess of 90%.

To rank on *prestige*, the Standard Occupation Classification 2000 (SOC 2000) from the Office for National Statistics was used. SOC 2000 classifies occupations into nine major (and 353 unit) groups from the highest to the lowest level of occupational status, which we aggregated into five: I) Managers and Senior Officials and Professional Occupations; II) Associate Professional and Technical Occupations; III) Administrative and Secretarial and Skilled Trades Occupations; IV) Personal Service and

Sales and Customer Service Occupations; and V) Process, Plant and Machine Operatives and Elementary Occupations. In general, children's aspirations were very high. In the overall sample of 13,244, 80.2% of those children with an aspiration that could be ranked on prestige ( $n = 11,366$ ) aspired to a SOC I or II occupation.

We looked at the *gender type* of an occupation as a way of elaborating the information embodied in occupational prestige scores, and of recognising that children lived in a gendered world and would be looking forward to a gendered world of work. They might already be displaying the sorts of differentiated gender identities that the literature associates with differences in adjustment. We therefore treated prestige and gender type as two separate and identifiable aspects of aspiration. The gender type of each occupational aspiration was coded using the proportion of UK working-age women in that occupation. Using similar methodology to Sullivan et al. (2011), occupations employing more men overall than women were classified as either 'masculine' (those with fewer than 25% women) or 'integrated' (those with 25% to 49.9% women). We split the occupations that were majority women into 'feminine' (50%-74.9% women) and 'ultra-feminine' ( $\geq 75\%$  women) where men were as rare as women in the group classified as 'masculine'. The % value was the proportion of women in that occupation (4-digit SOC 2000 Unit Group, where possible) using the Labour Force Survey data for 2008, the same year the MCS children were asked about their aspirations. Where information about the percentage of UK working-age women in an aspired occupation was not available for a particular unit group in SOC 2000, the most detailed classification available was used. For aspiration categories where no SOC 2000 classification could be given (e.g., for fantasy responses or social roles), an appropriate gender category was allocated where possible. For example, responses such as 'mum' and 'dad' were coded 'ultra-feminine' and 'masculine', respectively. Where no inference could be made about the gender type of the aspiration (for example, 'happy'), the response was coded missing. In general, aspirations were gender-typed, especially in boys. Among the 11,652 children of the overall sample of 13,244 with data on the gender type of their aspirations, over a third (38.2%) of boys aspired to masculine, 51% to integrated, 8.1% to

feminine and 2.7% to ultra-feminine jobs or roles. The respective percentages for girls were 6%, 33.9%, 38.6% and 21.6%.

Finally, each aspiration was classified to 'extrinsic' 'extrinsic-intermediate', 'neutral' or 'intrinsic-intermediate'. Although this classification broadly reflects 'the self-determination continuum' (Ryan & Deci, 2000) we could not code aspirations to a continuum because in MCS4 the children were only asked what they would like to be when they grow up, but not why. We treated as 'extrinsic' aspirations that could reflect materialistic goals or concerns about image, power or popularity (such as 'supermodel', 'billionaire', or 'popstar'). 'Extrinsic-intermediate' goals were those that could reflect concerns about or preoccupations with financial success, image, praise or popularity (e.g., 'actor', 'singer', or 'fashion designer'), but also a degree of intrinsic motivation (therefore, 'singer' was extrinsic-intermediate and 'popstar' extrinsic). Aspirations that could not be identified as extrinsic, extrinsic-intermediate or intrinsic-intermediate (see below), such as 'farmer', were coded 'neutral' but also included in the analysis. There were only a very few children who, unprompted, gave responses reflecting intrinsic goals such as community feeling (e.g., 'look after poor people'). Therefore, these aspirations were merged with those that might be intrinsically motivated as they involved helping or caring for people and animals (such as 'nurse', 'vet', 'teacher', or 'doctor'). All such responses were coded 'intrinsic-intermediate'. In general, most children did not show excessive preoccupation with power, status, wealth or fame. Less than 5% of the aspirations of those with valid data on this aspiration dimension ( $n = 11,811$ ) were coded extrinsic.

*Family socio-economic disadvantage (age three)* was defined as family poverty, and low maternal social class and education. Family poverty was a four-item summary index of overcrowding ( $> 1.5$  people per room, excluding bathroom and kitchen, lack of home ownership, receipt of income support, and income poverty (below the poverty line)). Maternal education was measured with the highest academic qualification the mother had achieved at sweep two. Academic qualifications were: 1) Higher degree, 2) First degree, 3) 'A level' or higher education diploma, 4) General Certificate of Secondary Education (GCSE) a-c, 5) GCSE d-g, 6) Other qualification and 7) No qualification.

Maternal social class (using SOC 2000) was measured with the most prestigious occupation of the mother at either sweep one or two.

*Control factors* were the child-level variables of exact age at sweep four, gender and ethnicity. Ethnicity was measured with the UK government census classification to white, Indian, Pakistani or Bangladeshi, black, mixed and 'other'.

The *age five mediators* of the effect of socioeconomic disadvantage on adjustment were child's cognitive ability and mother's involvement and psychological distress. Cognitive ability was measured with three tests of the British Ability Scales II (BASII): Pattern Construction, Picture Similarities and Naming Vocabulary. The first two tests assess non-verbal ability (spatial realisation and reasoning ability, respectively), and the third language skills. Maternal involvement was measured with seven items of how frequently the mother engaged in the following activities with the child: reading, telling stories, doing musical activities, teaching songs/poems/rhymes, painting/drawing, playing physically active games and playing games/with toys indoors ( $\alpha = .68$ ). All items were measured on a five-point scale from 1 (*every day*) to 5 (*never*). Maternal psychological distress was measured with the 6-item Kessler scale (Kessler et al., 2003;  $\alpha = .87$ ), which assesses the experience of recent non-specific psychological distress.

## Analytic strategy and hypothesised model

First, we investigated whether the families in our analytic sample ( $N = 11,656$ ) were different from those not in it ( $N = 7,588$ ) on the study variables. Then, we inspected the correlations among the study variables, and fitted structural equation models (SEMs) to meet our two research aims. SEMs allowed us to model variables as latent factors, thereby reducing measurement error. We modelled child cognitive ability, maternal involvement, maternal psychological distress and the four specific domains of child problem behaviour as latent constructs loading on their scales' items. We specified regression paths as explained above ('The present study'), and allowed covariances among all variables within each sweep except for aspirations which were specified to predict (not covary with) emotional/behavioural problems. Finally, to explore the role of aspirations in resilience, we included in the model terms for the

effects of the interaction between socioeconomic disadvantage and aspirations on emotional/behavioural problems. A significant aspiration  $\times$  socioeconomic disadvantage interaction term would show that the effect of socioeconomic disadvantage on the outcome (emotional/behavioural problems) differs by the level of the moderator (i.e., aspiration). We also tested for gender differences in a) the effects of aspirations on emotional/behavioural problems and b) any significant effects of aspirations on emotional/behavioural resilience to socioeconomic disadvantage. We therefore tested three two-way interactions of the three aspiration domains by child's gender, and nine two-way interactions of the three aspiration domains by the three socioeconomic disadvantages. To test whether any significant moderated effects of socioeconomic disadvantage by aspirations differed for boys and girls, we carried out a multigroup analysis.

We used Mplus 7 (Muthen & Muthen, 1998-2010) to fit all SEMs, and we accepted  $p < .01$  for all tests given the number and complexity of the models we fitted. We used several criteria to assess goodness of model fit to the data (Brown, 2006). The Comparative Fit Index (CFI) and the Tucker Lewis Index (TLI) measure the proportional improvement in fit by comparing the hypothesised model with a less restricted nested model. The values range from 0 to 1, and a value greater than .90 indicates good fit. The Root Mean Square Error of Approximation (RMSEA) assesses the error of approximation in the population, with a value less than .05 indicating good fit. To account for the clustered stratified sampling design of MCS, we used probability weights with the TYPE = COMPLEX analysis command. This command computes standard errors and a chi-square test of model fit taking into account stratification and unequal probability of selection. For all SEMs, we used the Maximum Likelihood Robust (MLR) estimator. In multigroup analyses comparing boys and girls, we used the MODEL TEST command to obtain a Wald test of parameter constraints, recommended to be used with the MLR estimator.

## Results

Girls and white children were more likely to be in the analytic sample, as were children with higher cognitive ability and fewer emotional and behavioural problems. Also more likely to be in the



analytic sample were children of less poor families and those whose mothers had higher education and social class and lower psychological distress (tables 1 and 2). Table 3 shows the pairwise correlations between our key study variables in the analytic sample. As can be seen, socioeconomic disadvantage, particularly low maternal education and family poverty, was associated with child problem behaviour, as was maternal psychological distress. Aspirations were very weakly related to socioeconomic disadvantage and child problem behaviour, but the aspiration domains showed overlap, as expected. For example, low aspirations

were likely to be extrinsic, and extrinsic aspirations tended to be male-type. Maternal psychological distress was not related to aspirations, cognitive ability was related (positively) to prestigious and female-type aspirations, and maternal involvement was related only to female-type aspirations. Figure 2 shows the results from the SEM (without interactions) fitted to meet our first research aim. The model fitted the data well ( $\chi^2(971) = 6847.326$ ,  $p < .001$ ; RMSEA = .023; CFI = .917; TLI = .904), and most of the path coefficients were significant. The significant coefficients (both those shown in the figure and those of the covariate effects not presented in the figure) are discussed below.

**Table 1. Descriptives of Observed Categorical Study Variables in the Analytic and Non-analytic Samples**

Variable	Analytic sample (N = 11,656)		Non-analytic sample (N = 7588)		Test F
	N	%	N	%	
Girl	5896	50.75	3453	45.28	32.92***
Ethnicity					
White	9815	88.78	5926	84.13	39.90***
Black	379	2.25	350	3.39	11.61***
Indian	301	1.78	196	1.89	0.22
Pakistani/Bangladeshi	691	3.52	659	5.21	15.43***
Mixed	309	2.76	285	3.80	13.43***
Other	155	.91	148	1.58	18.88***

Note: \*\*\*p < .001. F = F statistic for design-based Pearson chi-square that is converted to F test to account for the MCS sampling design. The analytic sample comprises those children whose reported aspirations could be coded using at least one of our three classification systems. The non-analytic sample comprises all other MCS children (see Method). Proportions are weighted to account for sampling design and non-response in MCS. Ns are unweighted.

**Table 2. Descriptives of Continuous Observed Study Variables in the Analytic and Non-analytic Samples**

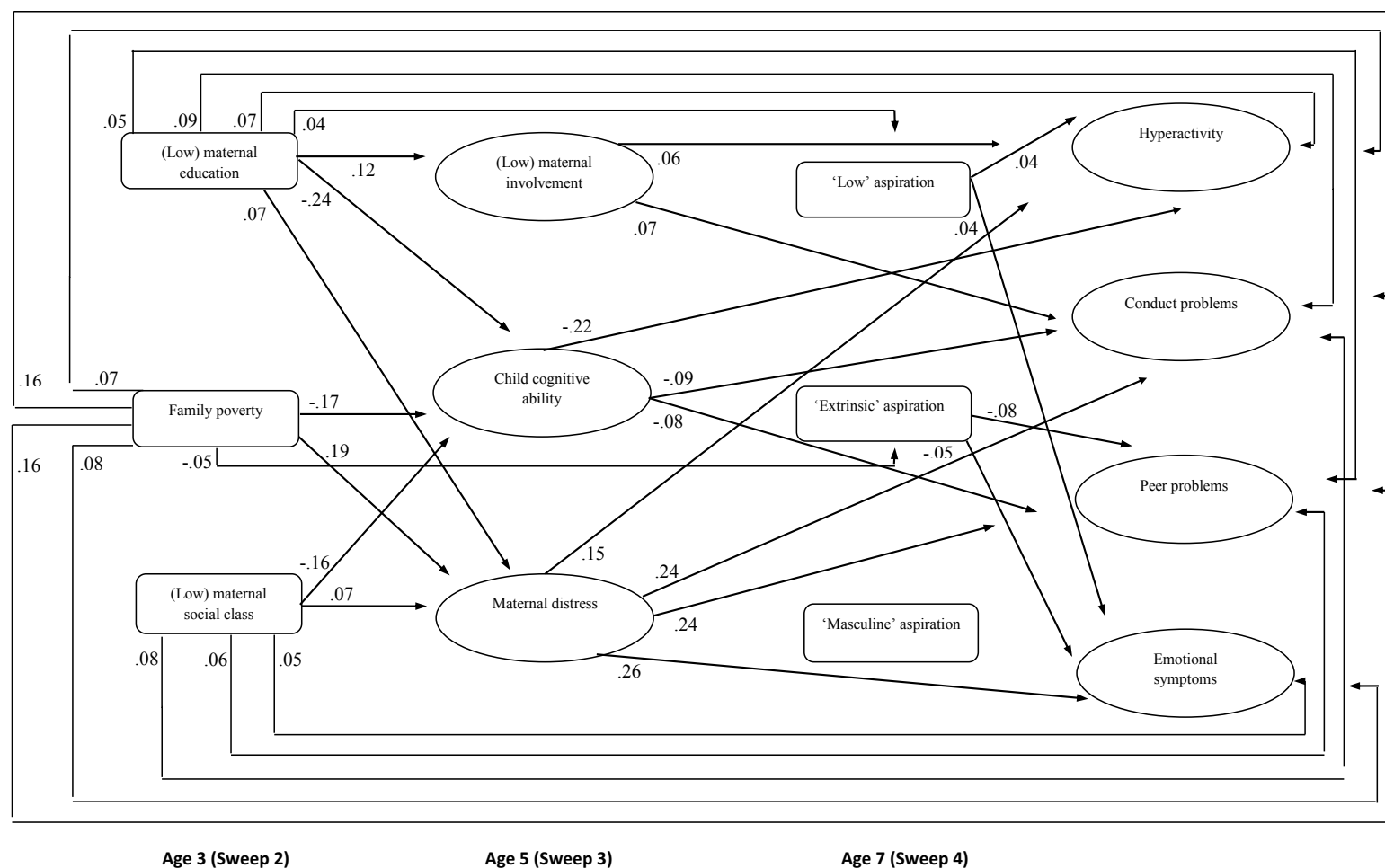
Variable	Analytic sample (N = 11,656)			Non-analytic sample (N = 7588)		
	n	M (SE)	95% CI	n	M (SE)	95% CI
Conduct problems	11,397	1.41 (0.02)	[1.36, 1.45]	2075	1.66 (0.05)	[1.57, 1.76]
Hyperactivity	11,356	3.37 (0.04)	[3.30, 3.44]	2066	3.82 (0.07)	[3.69, 3.96]
Peer problems	11,381	1.23 (0.02)	[1.18, 1.27]	2071	1.48 (0.05)	[1.39, 1.58]
Emotional symptoms	11,374	1.53 (0.02)	[1.49, 1.58]	2069	1.73 (0.05)	[1.62, 1.83]
Age (years) at Sweep 4	11,656	7.23 (0.25)	[7.23, 7.24]	2201	7.24 (0.24)	[7.22, 7.25]
Family poverty	9072	0.74 (0.02)	[0.70, 0.79]	3931	1.09 (0.03)	[1.02, 1.15]
(Low) maternal education	11,622	4.66 (0.05)	[4.56, 4.76]	7533	5.12 (0.06)	[5.01, 5.24]
(Low) maternal social class	10,470	4.61 (0.06)	[4.49, 4.73]	6368	5.11 (0.07)	[4.98, 5.25]
Maternal psychological distress	10,252	3.01 (0.04)	[2.92, 3.09]	3527	3.33 (0.08)	[3.17, 3.48]
BAS Pattern Construction	11,052	51.13 (0.17)	[50.79, 51.47]	3852	49.07 (0.25)	[48.59, 49.56]
BAS Picture Similarities	11,052	56.06 (0.17)	[55.72, 56.39]	3852	54.46 (0.23)	[54.00, 54.92]
BAS Naming Vocabulary	11,074	55.36 (0.19)	[54.99, 55.73]	3887	53.00 (0.27)	[52.47, 53.54]
(Low) maternal involvement	11,121	3.09 (0.01)	[3.07, 3.11]	4055	3.13 (0.02)	[3.10, 3.16]

Note: Means are weighted to account for both sampling design and non-response in MCS. Ns are unweighted. BAS = British Ability Scales. CI = Confidence Interval. All three BAS scores are age-adjusted.

**Table 3. Pairwise Correlations of Key Observed Study Variables (ns 8232 - 11,622)**

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.
1. Conduct problems	-														
2. Hyperactivity	.54**	-													
3. Emotional symptoms	.37**	.31**	-												
4. Peer problems	.35**	.34**	.43**	-											
5. Family poverty	.24**	.20**	.16**	.22**	-										
6. (Low) maternal education	.23**	.20**	.15**	.20**	.46**	-									
7. (Low) maternal social class	.20**	.18**	.14**	.17**	.46**	.56**	-								
8. (Low) maternal involvement	.12**	.13**	.06**	.08**	.11**	.20**	.12**	-							
9. Maternal psychological distress	.25**	.20**	.26**	.22**	.22**	.15**	.15**	.10**	-						
10. BAS Pattern Construction	-.15**	-.22**	-.12**	-.14**	-.20**	-.21**	-.17**	-.10**	-.08**	-					
11. BAS Picture Similarities	-.11**	-.14**	-.08**	-.11**	-.15**	-.17**	-.15**	-.08**	-.07**	.35**	-				
12. BAS Naming Vocabulary	-.15**	-.17**	-.13**	-.15**	-.31**	-.35**	-.28**	-.20**	-.12**	.35**	.33**	-			
13. 'Low' aspiration	.04**	.06**	.02	.02	.03	.03**	.04**	.00	.00	-.04**	-.04**	-.01	-		
14. 'Extrinsic' aspiration	.04**	.05**	-.04**	-.03**	-.03**	-.01	.00	.01	.01	-.03**	-.03**	.01	.22**	-	
15. 'Masculine' aspiration	.07**	.12**	-.02	.04**	-.01	.02	.01	.05**	.01	-.07**	-.05**	-.03**	-.10**	.38**	-

Note: \*\*p &lt; .01. BAS = British Ability Scales



(N = 11,656;  $\chi^2(971) = 6847.326$ ,  $p < .001$ ; RMSEA = .023; CFI = .917; TLI = .904)

**Figure 2. The linear effects of socioeconomic disadvantage (family poverty, low maternal education, and low maternal social class), maternal psychological distress and involvement, and cognitive ability and aspirations on problem behaviour at age seven.**

Notes: Only paths with coefficients that are statistically significant at  $p < .01$  are included. All coefficients are reported in standard deviation units. Covariances and covariate effects (see note to Fig. 1) are not shown.

## Paths

### 1) From age three socioeconomic disadvantage to age seven problem behaviour.

As can be seen in figure 2, children of more educated mothers had fewer conduct, peer and hyperactivity problems. Early family poverty was associated positively with all four problem types at age seven. Low maternal social class was related positively to conduct, peer and emotional problems. Boys (not shown in figure 2) had more conduct, hyperactivity and peer problems compared to girls. Children of Pakistani/Bangladeshi, black, and 'other' ethnicity had fewer conduct and hyperactivity problems compared to white children. Compared to white children, Indian and Pakistani/Bangladeshi children had more peer problems and black children had fewer emotional symptoms.

### 2) From age three socioeconomic disadvantage to age five ability, maternal psychological distress and maternal involvement.

All three socioeconomic disadvantages were related negatively to child cognitive ability and positively to maternal psychological distress. Mother's education was positively associated with her involvement. Maternal involvement was higher with girls and lower with Indian, Pakistani/Bangladeshi and black, compared to white children. Cognitive ability was higher in girls and lower in children of Indian, Pakistani/Bangladeshi, black and 'other' ethnicity, compared to white children. Finally, psychological distress was higher in Pakistani/Bangladeshi, compared to white mothers.

### 3) From age three socioeconomic disadvantage and age five ability, maternal psychological distress and maternal involvement to age seven aspirations.

None of the age five mediators significantly predicted children's aspirations. However, children with more educated mothers reported higher aspirations, whereas those in poorer families reported more intrinsic aspirations. None of the socioeconomic disadvantages of the family predicted the gender type of the child's aspiration. Mother's social class was not significantly

associated with any domain of aspirations, given the level of her education. Compared to girls, boys had lower, more 'masculine' and more extrinsic aspirations. Children from all ethnic minority groups had higher aspirations than white children. Compared to white, children of mixed or 'other' ethnicity aspired to more masculinised jobs and children of Pakistani/Bangladeshi or 'other' ethnicity had less extrinsic aspirations.

### 4) From age seven aspirations and age five ability, maternal psychological distress and maternal involvement to age seven problem behaviour.

Low maternal involvement was positively related to conduct and hyperactivity problems and maternal psychological distress was associated positively with all four problem types. Cognitive ability was negatively related to conduct, hyperactivity and peer problems. Lower aspirations were associated with more hyperactivity and emotional problems. More extrinsic aspirations were related to fewer peer and emotional problems. The gender type of the aspiration was not related to any problem behaviour.

## Interactions

First, in separate models, we examined whether the direct effects of the three socioeconomic disadvantages on child problem behaviour were moderated by aspirations (i.e. whether aspirations were related to emotional/behavioural resilience to the three early socioeconomic disadvantages we examined). Table 4 shows the coefficients for the main and the interaction effects for the interactions that were found to be statistically significant at  $p < .01$ . Of the nine two-way interactions tested, two were significant at  $p < .01$ . Children of poorer families ( $\beta = .128$ ,  $se = .046$ ,  $p = .005$ ) and those of less educated mothers ( $\beta = .144$ ,  $se = .049$ ,  $p = .003$ ) had less hyperactivity if they had more female-type aspirations.

Subsequently, we tested whether the effects of aspirations on problem behaviour differed for boys and girls. Only one of the interactions tested (table 4), that of gender and extrinsic aspirations on peer problems, was statistically significant ( $\beta = .101$ ,  $se = .035$ ,  $p = .004$ ). Although both boys and girls with more intrinsic aspirations had more peer problems, the gap between those with more and less intrinsic



aspirations was much greater in boys. There was no evidence for an effect of gender atypical aspirations (i.e., girls nominating male-type roles or boys nominating typically female ones) in these models.

Lastly, we explored whether the two significant interactions between aspirations and socioeconomic disadvantage on hyperactivity differed for boys and girls. The Wald test for the

interaction between family poverty and gender type of the aspiration was nonsignificant ( $\chi^2(1) = 0.064$ ,  $p = .800$ ), as was that for the interaction between maternal education and gender type of the aspiration ( $\chi^2(1) = 1.788$ ,  $p = .181$ ). Therefore, having aspirations for more feminised jobs 'protected' both boys and girls from the adverse effects of family poverty and low maternal education.

**Table 4. Main and Interaction Effect Estimates (Statistically Significant Interactions Only)**

	Family poverty x 'masculine' aspiration on hyperactivity		(Low) maternal education x 'masculine' aspiration on hyperactivity		Extrinsic aspiration x female on peer problems	
Family poverty	0.045	0.042				
(Low) maternal education			-0.036	0.037		
'Masculine' aspiration	-0.010	0.019	0.077	0.035		
Family poverty x 'masculine' aspiration	0.128*	0.046				
(Low) maternal education x 'masculine' aspiration			0.144*	0.049		
Extrinsic aspiration					-0.126*	0.022
Female					-0.166*	0.035
Extrinsic aspiration x female					0.101*	0.035

Note: \*p < .01. Coefficients in standardised units.

## Discussion

This study, using longitudinal data from a large cohort of UK children followed at ages nine months and three, five and seven years, had two aims. Its first aim was to explore the role of aspirations in children's emotional/behavioural adjustment. Its second was to investigate their role in children's emotional/behavioural resilience to the effects of early socioeconomic disadvantage. To our knowledge, this is the first study to examine whether aspirations may promote such resilience in young children, and one of the few to investigate the role of aspirations in young children's emotional/behavioural adjustment in general. Resilience in this study was defined as better than expected emotional/behavioural outcomes at age seven years despite exposure to the early socioeconomic disadvantages of low maternal education, low maternal social class and family poverty (measured at age three years). We expected to see evidence for emotional/behavioural resilience in seven-year-old children holding aspirations that were higher and more intrinsic. We also expected that aspirations for typically male jobs or roles would moderate the effect of early socioeconomic disadvantage on emotional problems, and aspirations for typically female jobs or roles would moderate the impact of that disadvantage on behavioural problems.

In general, our findings confirmed previous research that socioeconomic disadvantage has strong and long-term effects on children's emotional and behavioural outcomes (Bradley & Corwyn, 2002; Conger & Donnellan, 2007; Costello et al., 2003; Kiernan & Huerta, 2008; Shanahan et al., 2008). Importantly, the effects we found were robust to adjustment for parenting, maternal mental health and child cognitive ability. As for resilience, aspirations did moderate some of the impact of socioeconomic disadvantage but the moderator effects found were weak and involved a high degree of specificity. Neither high nor intrinsic aspirations protected from the effect of early socioeconomic disadvantage. However, children who had fewer hyperactivity problems than is typical among those living in less educated and poorer families had more female-type aspirations. Previous research has shown that masculinity and femininity may be beneficial for both boys and girls because masculinity (instrumentality) and femininity (expressivity) appear to play a protective role in the development of emotional and behavioural problems, respectively

(Hoffmann et al., 2004). Our study showed that aspirations for feminised jobs were related to fewer hyperactivity problems among boys and girls of less educated or poor parents.

As well as predicting some resilience, aspirations were related to adjustment, but again the association was between specific aspects of aspirations and specific domains of adjustment. For example, in line with previous research (Beal & Crockett, 2010), we found no link between aspirations and conduct problems. However, children with higher aspirations had fewer hyperactivity and emotional problems, whereas those with more intrinsic aspirations had more emotional and peer problems. Although the first finding is in line with some research with adolescents (Boxer et al., 2011), the second was unexpected, especially in view of the evidence that, in general, intrinsic aspirations are related to positive outcomes (Mouratidis et al., 2013).

Also unexpected was our finding that neither cognitive ability nor maternal involvement appeared to be related to aspirations. Aspirations in our study were predicted only by maternal education, family poverty, and child's gender and ethnicity. Non-white children and those with more educated mothers reported higher aspirations, whereas children in poorer families reported more intrinsic aspirations. As for the role of gender in aspirations and their 'effects', we found, as expected, that boys had lower prestige, more male-type and more extrinsic aspirations than girls. However, we did not find, in general, gender differences in the effects of aspirations, including those classified by gender-type of role, on either adjustment or resilience. In both boys and girls, lower aspirations were associated with more hyperactivity and emotional problems, more extrinsic aspirations were related to fewer emotional problems, and aspirations for more feminised jobs or roles were related to behavioural resilience to socioeconomic disadvantage. The only gender difference found was in the effect of the intrinsic/extrinsic goal of the aspiration on peer problems. Having an intrinsic aspiration was associated positively with peer problems, particularly among boys. One reason could be that such aspirations tend to be gender-atypical, and gender-atypical behaviour is penalised by peer rejection, especially in boys (Young & Sweeting, 2004).

Together therefore these findings suggest that, in the UK, seven-year-old children's aspirations differ by gender, are directly shaped by their parents'

educational, economic and ethnic backgrounds, and are related, to an extent, to their emotional and behavioural adjustment and to their behavioural resilience to socioeconomic disadvantage. The lack of evidence for 'process paths' to aspirations (i.e., via child cognitive ability, parenting or maternal mental health) suggests that, in our sample, young children's aspirations were influenced directly by their parents' levels of education and material resources, and not because higher parental education and income were related to higher child cognitive ability, more involved parenting or better maternal mental health.

These findings should be viewed in the light of three important limitations, however: the use of parent reports of child problem behaviour, the absence of individual achievement data (which we did not use because they were not available for all four UK countries), and a classification of aspirations based on limited data. We ranked children's aspirations on gender composition and prestige using official data on the sex segregation and prestige of the occupations of the UK working-age population in the same year the MCS children were asked about their aspirations. However, to a seven-year-old, 'train driver' may be a more prestigious occupation than 'teacher', for example. We had no direct evidence on the child's sense of gender identity beyond the single answer given on aspirations. Similarly, we ascribed intrinsic/extrinsic occupational and life goals to children without having data on the children's reasons for them. For example, 'doctor' may be an extrinsic goal if the motivation is the high status and public prestige usually enjoyed by doctors, but intrinsic if the motivation is to help those in need. Other limitations are the exclusion from the analysis of multiple aspirations and children with uncertain aspirations or uninterpretable responses, and the absence of information about children's exposure to people with different kinds of occupations, which likely covaries with parental background. Perhaps the most crucial limitations are the weak associations of aspirations with emotional/behavioural problems, the cross-sectional modelling of the 'effects' of aspirations on emotional/behavioural problems, and, related to this, the absence of longitudinal data on aspirations. Causal interpretations are difficult to justify as the temporal ordering of our two main

variables – aspirations and adjustment – is unclear, and reciprocal relations between them are likely. Nonetheless, we feel reassured by findings from studies testing cross-lagged models of emotional/behavioural adjustment and constructs closely related to aspirations, such as career orientation (Skorikov & Vondracek, 2007), that aspirations are likely to be the precursor rather than the outcome of adjustment in children and young people.

Despite these limitations, our study has many strengths. This was the first study to examine the role of early aspirations in promoting emotional/behavioural resilience to socioeconomic disadvantage in children. Its additional strengths are the use of a large, nationally representative cohort of children followed from infancy to middle childhood, and the simultaneous examination of several aspiration domains. Our findings suggest that early aspirations are related to emotional/behavioural adjustment in children, and this applies to boys as well as girls in most cases. The 'effects' of aspirations were small. Our study showed that aspirations were not as powerful predictors of child adjustment as cognitive ability, maternal psychological distress or socioeconomic disadvantage. However, it also showed that a very simple question, and one that most children would be eager to answer, can help identify not only children who struggle emotionally or behaviourally but also those who do better than expected. We think this is an important contribution of our study.

Our findings also suggest that, to the extent that the sex composition of adults' occupations adequately reflects children's orientation to feminine/masculine roles, socioeconomically disadvantaged children with aspirations for more feminised jobs act out less than expected. Perhaps surprisingly, this also applies equally to boys and girls, though boys were less likely to have aspirations for female-type jobs. From a policy perspective, there has been far more focus on opening up 'masculine' aspirations to girls than on encouraging gender-atypical aspirations in boys, and our findings suggest that poor boys could benefit from being able to express 'feminine' aspirations. This is in line with the view that conventional masculinity is damaging for the prospects of disadvantaged boys.

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## Endnotes

<sup>1</sup> For 11,366 of the 13,244 children the first aspiration was an occupational aspiration (and could, therefore, be assigned a value indicating its prestige). For 11,652 the first aspiration could be coded to gender type, and for 11,811 it could be coded to level of intrinsic/extrinsic motivation.