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Educational inequalities in childhood

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(joint work edited by Alissa Goodman and Paul Gregg, other contributors from IFS and CMPO)

(also based on a review undertaken by Paul Howard-Jones and Liz Washbrook as part for Centre for Understanding Behaviour Change for DfE)

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Background and Motivation

- Children growing up in poor families end up with lower educational attainment than children growing up in rich families

- Strong contributor to patterns of social mobility
  - Low income → poor attainment → low income

- Gaps start very early in life, but tend to widen throughout school

Outline

- Perspectives on early intervention
- Chart socio-economic gradient in attainment across childhood
- Investigate contribution of parent and child behaviours, attitudes to education and aspirations to the evolution of this gradient:
  - Early years: home learning environments and parenting styles
  - Primary school: maternal aspirations, child's own ability beliefs
  - Teenage years: YP's own attitudes and behaviours; material resources
  - Intergenerational factors: parents' and grandparents' attitudes; transmission of ability
- Summarise and assess implications for policy

Perspectives on early intervention (1)

- Models developed by James Heckman suggest that intervention in the early years has highest return for policymakers
- Wide body of empirical evidence points to importance of early investment
  - e.g. Perry Pre-School Programme and Nurse-Family
  - Many later interventions have also been shown to be less effective.
- Neuroscience suggests first years of life are important period for neural and cognitive organisation and could be “foundational”.
- Normal brain development is discontinuous in some important respects, and this may inform the types of provision provided for different age groups in the future.

Perspectives on early intervention (2)

- But, no evidence from neuroscience for a “critical period” of learning and development from 0-3
- Human capital models suggest early investment must be followed up in order to be effective.
- Some later interventions may well prove effective, e.g. private job training, mentoring and increasing school choice.
- Optimal investment should be tailored to specifics that create adversity and to the likely productivity of investment

Preview of findings from analysis

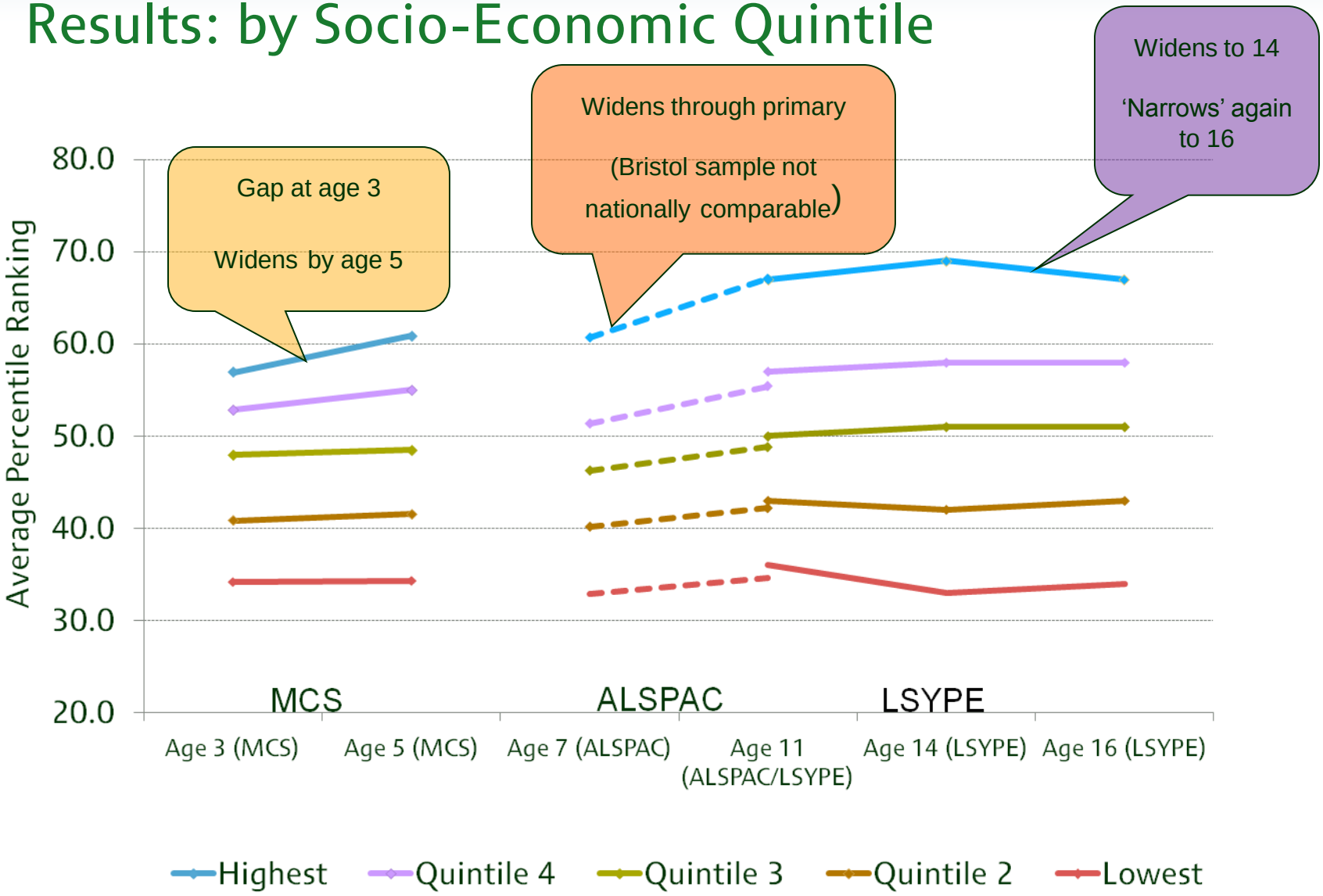
- The gaps between rich and poor children is already large at age 3 continues to widen until age 14

- The following factors seem to have an important role in explaining the perpetuation of these gaps:
  - Early home learning environment
  - Expectations/ aspirations for education
  - Beliefs in own actions making a difference
  - Behaviour
  - Material factors

- Suggests a potentially important role for policy *if* it can be shown that:
  - More positive attitudes and behaviours *cause* higher attainment

    AND
  - Attitudes and behaviours can be influenced

Results: by Socio-Economic Quintile



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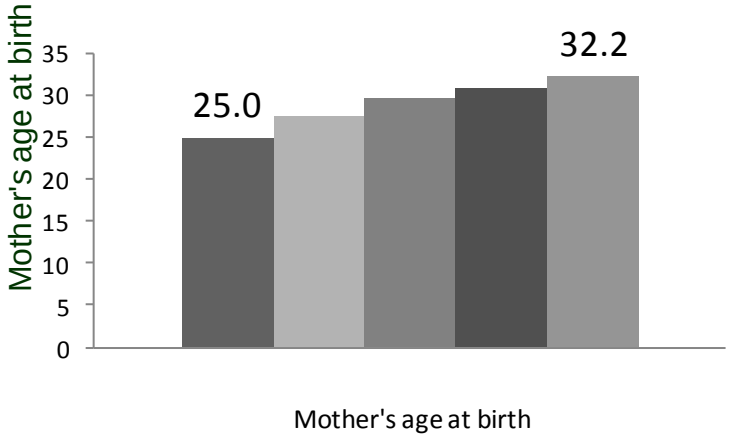
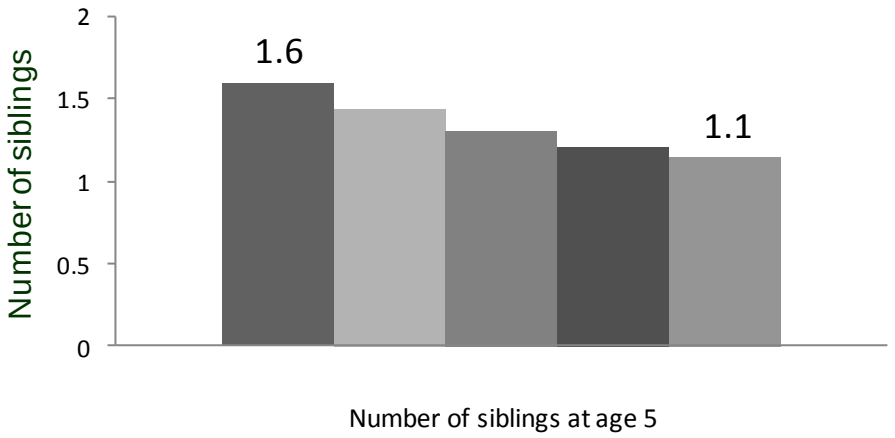
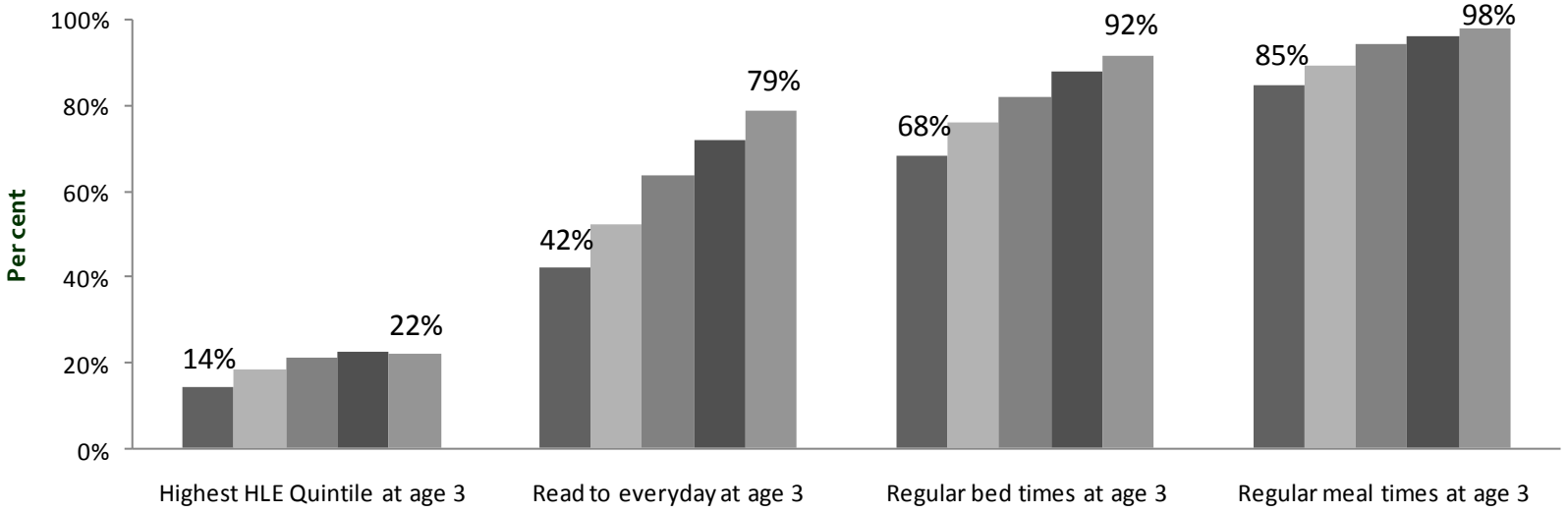
Explaining the socio-economic gradient in the early years

- Define set of family background and possible transmission mechanisms ("early childhood caring environment")
- Family background
  - Socioeconomic position (SEP)
  - Parental education
  - Demographic, and other family background
- Early childhood caring environment
  - Family Interactions (mother-chid and between parents)
  - Health and Well-being (birth-weight, gestation, post-natal depression)
  - Childcare usage
  - Home-learning environment (reading, ABCs, numbers, nursery rhymes)
  - Parenting Style/Rules (bed-times, meal-times)

Selected differences in characteristics at age 3 & 5







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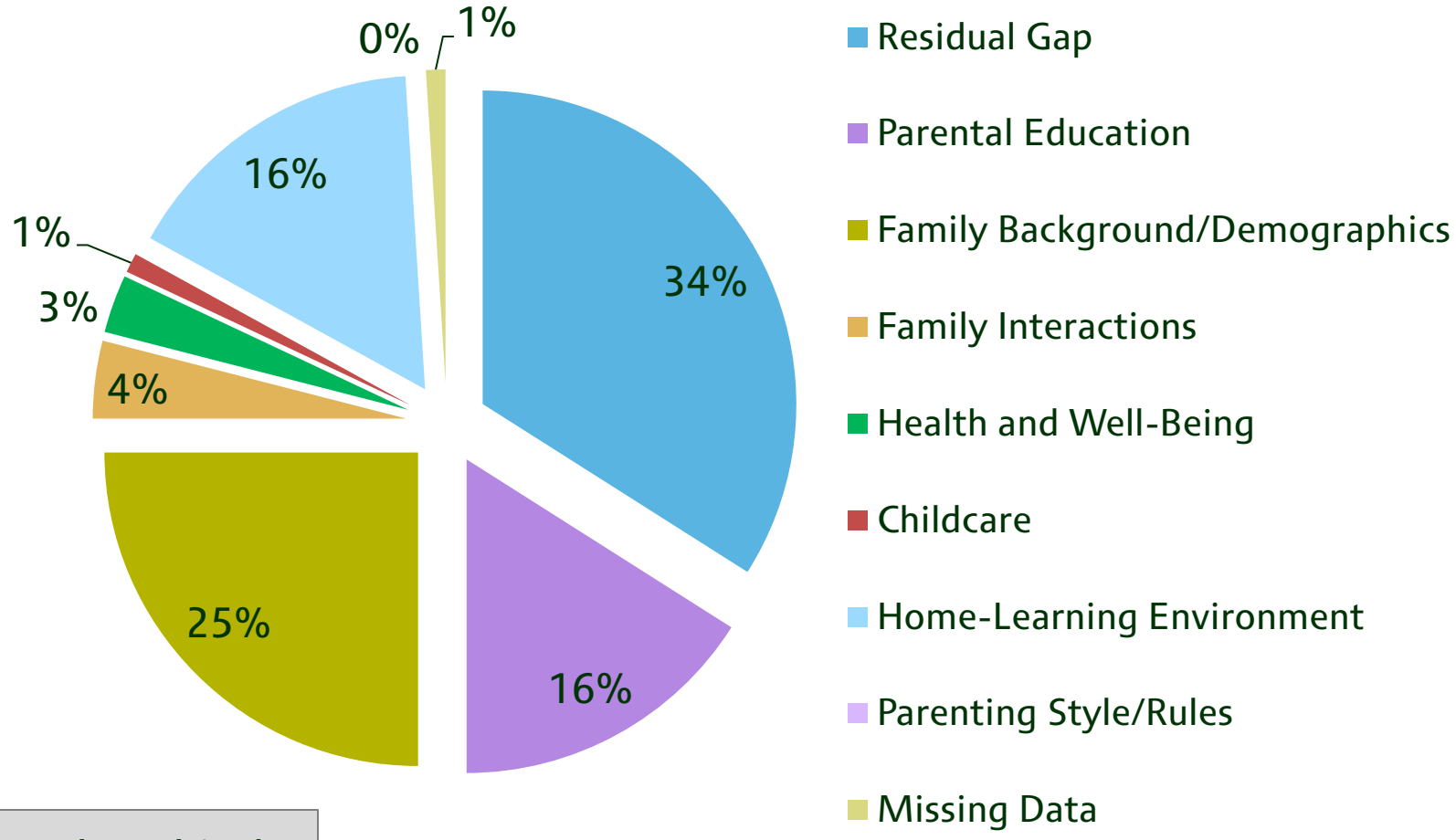
How much of the socio-economic gap in cognitive outcomes at age 3 is explained by these factors?



Total gap to be explained: 23 percentile points

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How much of the socio-economic gap in cognitive outcomes at age 5 is explained by these factors?

- Gap widens at age 5 (from 23 to 27 percentile points)
- Half of the gap is explained by prior cognitive ability
- Less than 1% from the early childhood caring environment
- What role for the Home-Learning Environment?
  - HLE at age 3 explains age 5 cognitive outcomes through its impact on age 3 cognitive outcomes
  - No independent impact of age 5 HLE on age 5 cognitive outcomes

- Overall, results suggest policies to improve parenting skills and home learning environments in isolation cannot possibly eliminate the cognitive skills gap between rich and poor young children.

Gaps in educational attainment in the primary school years

- Average percentile score gap between richest and poorest quintiles widens between KS1 and KS2
- Parenting activities and family interactions may continue to matter, but new potential mechanisms come into play as children age:
  - Parents' values, beliefs and aspirations for their children

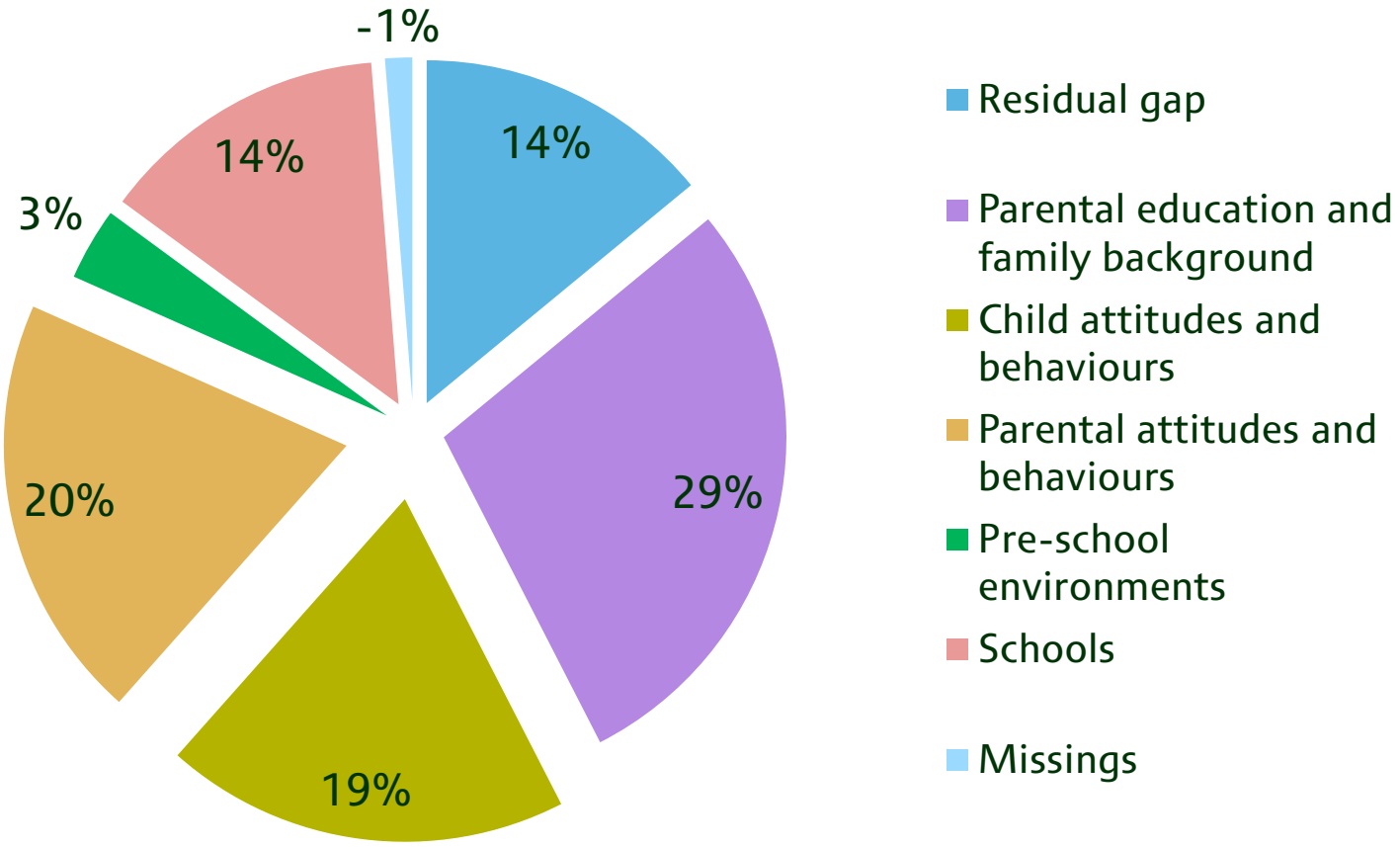
81% of the highest SEP mothers hope their child will go to university, compared with 37% of the lowest SEP mothers

  - Children's own values and beliefs

67% of the highest SEP children believe school results are important in life, compared with 51% of the lowest SEP children

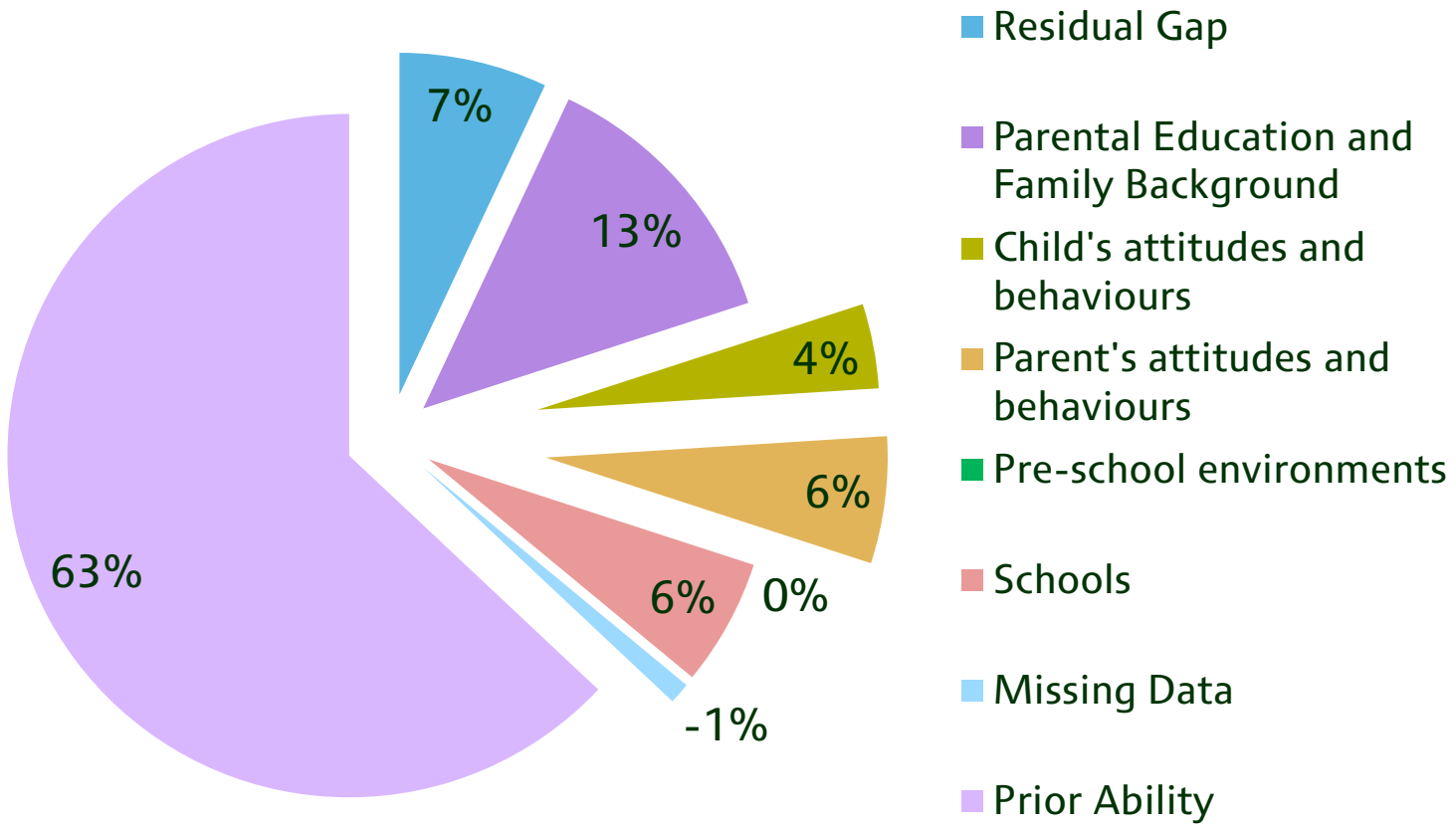
  - Children's activities and patterns of behaviour
  - Experience of schooling

How much of the socio-economic gap at age 11 is explained by these factors?



Total gap to be explained: 31 percentile points

How much of the socio-economic gap at age 11 is explained by these factors **net of prior ability**?



Total gap to be explained: 31 percentile points

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Summary of primary years study

- Poor children are much more likely to begin primary school behind their better-off peers, but also fall further behind by age 11

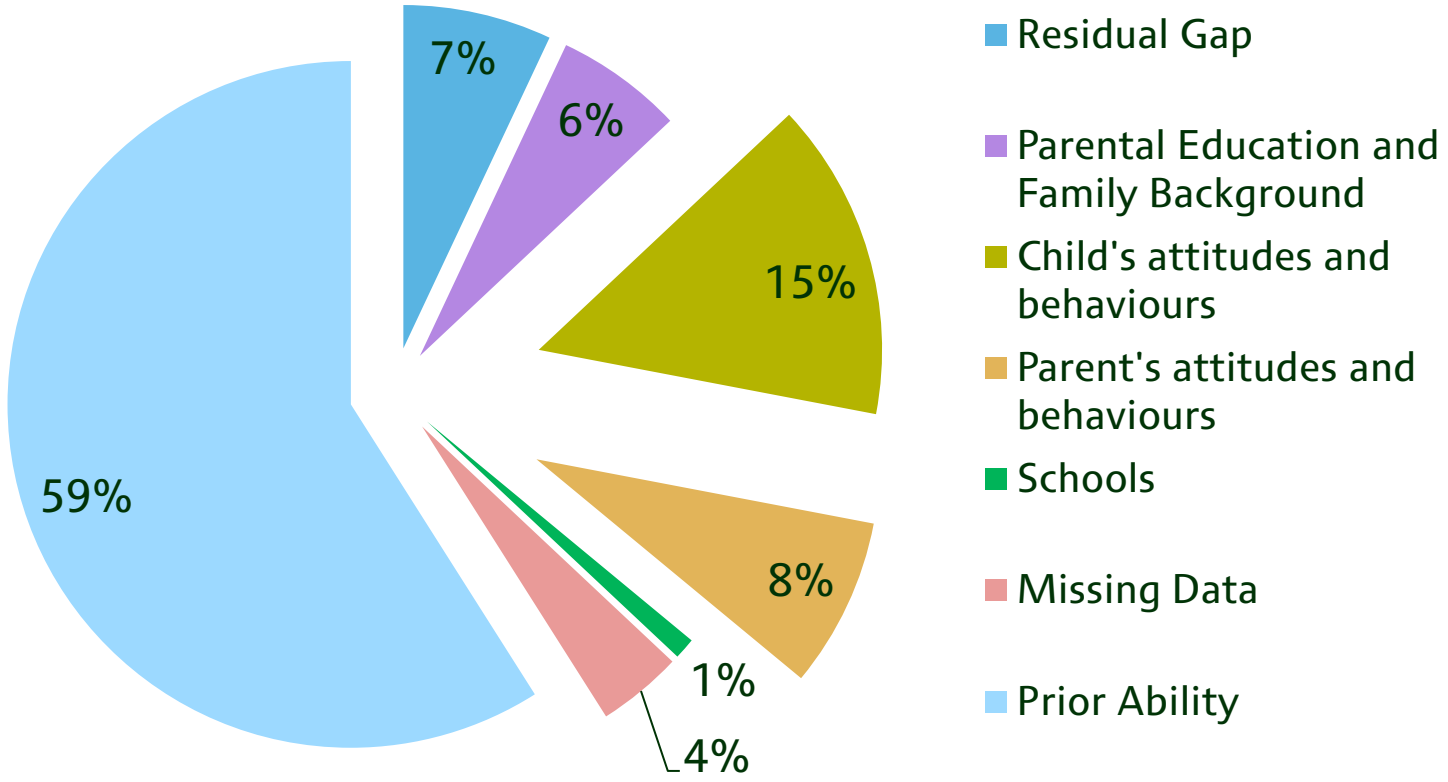
- Important factors in explaining the gap include:
  - Mother's hopes that the child will go to university
  - The belief that one's own actions can make a difference (among both parents and children)
  - Socio-emotional difficulties such as inattention and conduct problems

- Explain some of the widening of the gap, to a lesser degree

Outcomes in the secondary school years: evidence from the LSYPE

- Now focus on educational attainment at 16
- See if gap can be explained by the following characteristics:
  - Prior attainment (at 11 and 14)
  - Parental education and family background
  - School characteristics
  - Children's attitudes and behaviours
    - Beliefs and values about being at school
    - Aspirations/expectations towards future education
    - Behavioural problems
  - Parental attitudes and behaviours
    - Provision of educational material resources
    - Aspirations/expectations about child's future education
    - Home relations and educational interactions with the child

How much of the socio-economic gap in cognitive outcomes at age 16 is explained by these factors?



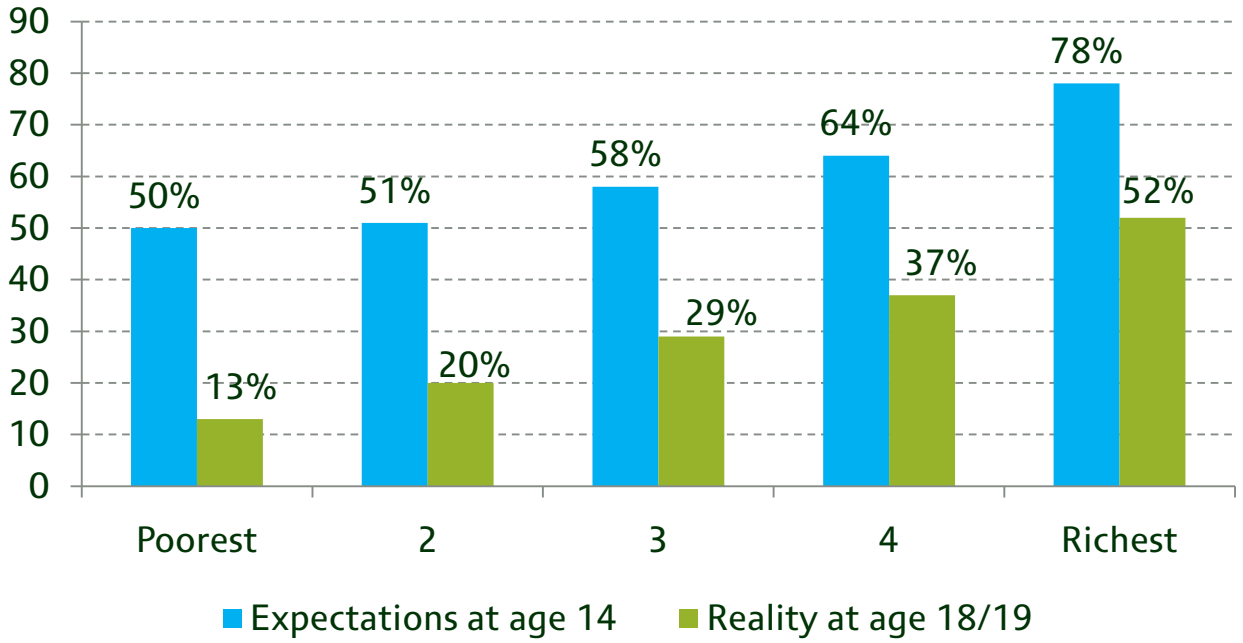
Total gap to be explained: 33 percentile points

Summary of secondary years analysis

- Attainment gap at 16 a continuation of earlier gaps
- But *might* be reduced if poorest children:
  - Have access to computer/internet
  - Avoid problematic/risky behaviour (in and outside school)
  - Expect to go to HE, or have parents who expect them to go
  - Believe that they do well in school
- What role for policies to raise education aspirations?
  - Aspirations are strongly associated with educational attainment
  - Poorest children have lower expectation of going to HE than rich children, even after taking into account prior attainment
  - Suggests an 'aspirations deficit' that ought to be alleviated

Summary of secondary years analysis

- However:
  - HE expectations are already very high across all SEP groups
  - Poor children most likely to *over-estimate* chances of going to HE



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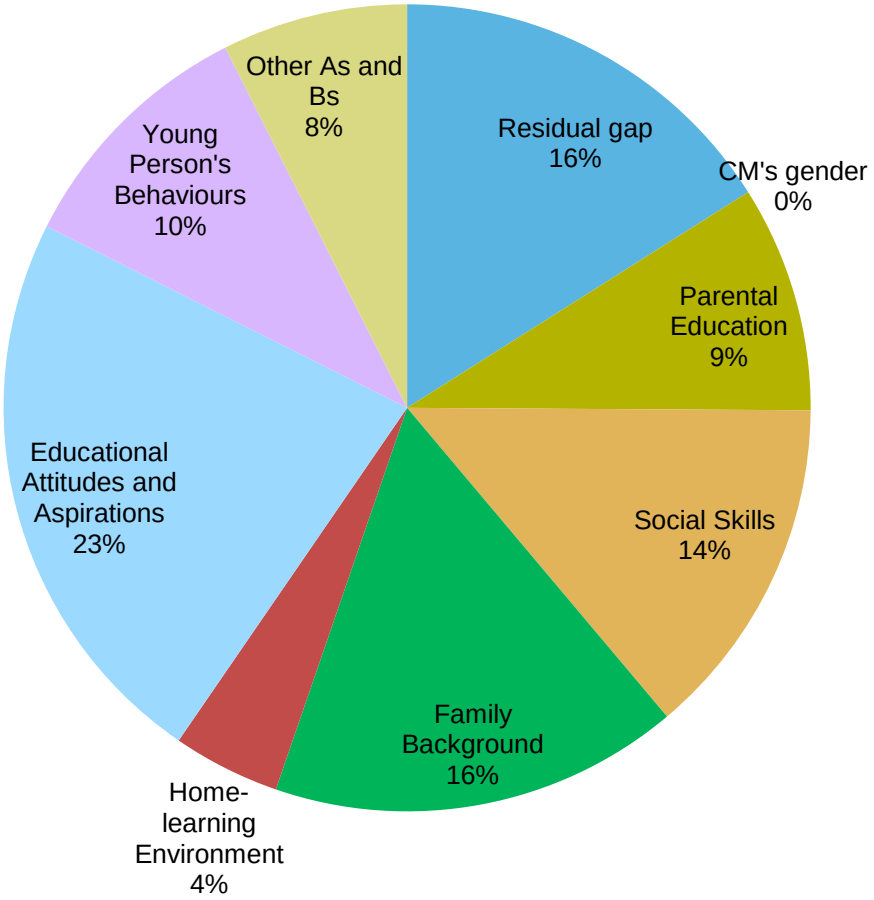
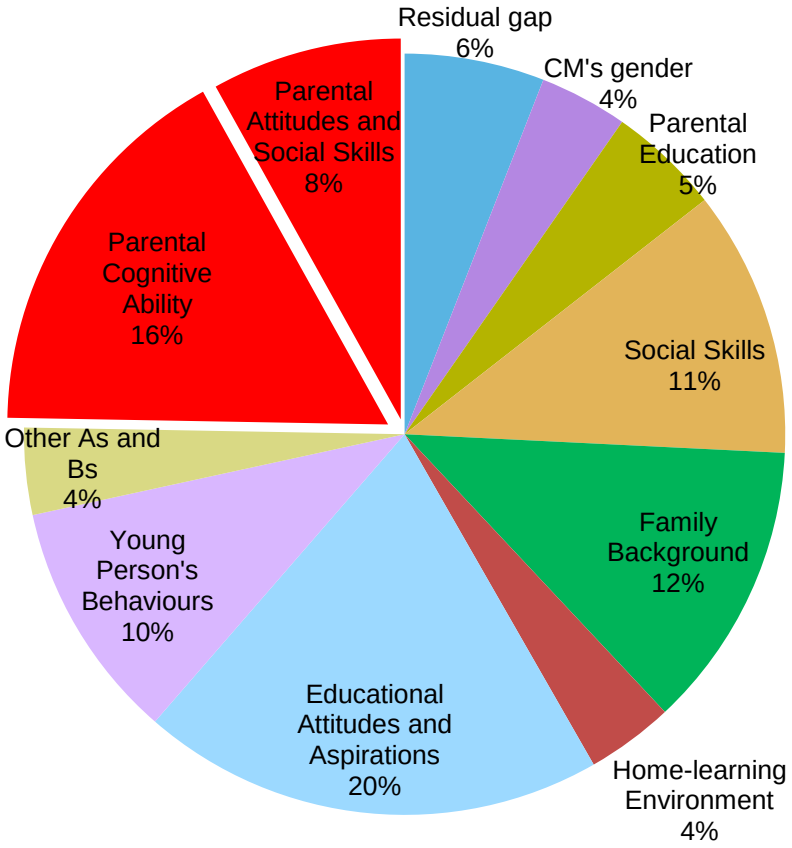
An intergenerational picture

- British Cohort Study (BCS): everyone born in Great Britain in one week in April 1970 interviewed every few years.
- In age-34 wave, half those who had children were randomly selected for parent-and-child questionnaires and children took cognitive tests (BAS).
- So we have:
  - Info about the environment children are growing up in.
  - Their cognitive test scores.
  - Info about the cognitive ability, social skills and attitudes of their parents when they were children.

The SEP gap in cognitive test scores: adding new information about parents





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Summary of intergenerational conclusions

- Adding usually unobserved information about parents is important.
  - Predicts about ¼ of SEP gap in cognitive skills.
- Mainly due to parental cognitive ability.
- But reassuringly it does little to change our impression of relative (predictive) importance of other factors.
- Attitudes and aspirations towards education, family background, socio-emotional development still important.

Overall conclusions

- Socio-economic gap in attainment could be reduced by improving attitudes and behaviours amongst poor children
  - Optimistic take would suggest 25% reduction in GCSE attainment gap

- But not a causal analysis. More robust evidence needed to establish that:
  - Attitudes and behaviours can be changed
  - Such changes cause improvements in attainment

- Our work suggests that trials may be best focused on:
  - Raising educational aspirations and expectations (for both parents and children) – and at an earlier stage than e.g. Aim Higher.
  - Supporting the home-learning environment (e.g. pre-school reading).
  - Helping parents and children to believe that their own actions and efforts can help to improve attainment (locus of control).