

# Millennium Cohort Study

## COGNITIVE DEVELOPMENT



Taken from Chapter 7 of *Millennium Cohort Study Second Survey: A User's Guide to Initial Findings*

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### The Survey

The Millennium Cohort Study (MCS) offers groundbreaking large-scale information about children born into the new century and the families who are bringing them up in all four countries of the United Kingdom. It lays the foundation for a major new research resource.

For the first survey, conducted in 2001-2002, we interviewed the families of nearly 19,000 children aged nine months. A disproportionate number of these children came from families living in areas of high child poverty, and, in England, from areas with relatively high minority-ethnic populations<sup>1</sup>. This survey looked at the circumstances of pregnancy and birth, as well as the social and economic background of the families into which these children were born.

The second survey marks the beginning of a series of follow-up surveys. Conducted in 2003-2005, it records how nearly 16,000 cohort children are developing at the age of three. For the first time, researchers have been able to chart the changing circumstances of families and relate children's outcomes at age three to earlier circumstances and experiences. This summary reveals some of the results from the second survey.

### Introduction

Child development assessments, even very early in life, have been found to be good indicators of future educational performance and levels of health. If early outcomes are differentially related to demographic and socio-economic factors this may mean that inequalities are established early in life. These, in turn, promote or limit children's trajectories through life depending on the families into which they are born.

### The assessments

In order to measure the children's cognitive skills at age three, two established assessments were used: the Naming Vocabulary Subtest of the British Ability Scales (BAS) and the School Readiness Composite (SRC) of the Revised Bracken Basic Concept Scale. The BAS is part of a set of cognitive assessments designed to gauge children's expressive language skills. The child is asked to name a series of pictures of everyday items, 36 in total. The number of items shown to each child is dependent on their performance. If five successive items are answered incorrectly the questions are stopped. BAS was administered in English to children who could speak English, and was also offered in Welsh.

The SRC consists of six subtests of the Revised Bracken Basic Concept Scale. These look at children's expected level of understanding gathered in early learning. The SRC measures their 'readiness' for formal education by assessing their knowledge of colours,

letters, numbers/counting, sizes, comparisons and shapes. As a non-verbal assessment, that required the child to point but not speak, it could be administered to children who did not speak English, in their own language where the interviewer was using that language. Both cognitive assessments were administered by specially trained interviewers using computers.

The analysis used BAS and Bracken normed scores, adjusted according to the age of the cohort child. In families with twins and triplets, only one child was included in the analysis.

### The results

We present a preliminary analysis by selected factors taken in turn. It will require in-depth investigation of their joint association and other factors before any conclusion can be drawn.

The BAS Naming Vocabulary assessment showed:

- As expected, the three-year-old girls had better expressive language skills than boys, on average about three months worth of development.
- Children in Scotland were ahead of the rest of the UK by about two months margin. Various factors may help to explain this: fewer large families in Scotland and relatively more prosperous ones in this sample, also less ethnic diversity. However, a full investigation remains to be completed.
- Children from families with two natural parents recorded the best scores. On average, they were about

<sup>1</sup> Percentages reported here have been re-weighted to represent the population as a whole.

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five months ahead of children from lone-parent families and those with one natural parent and one step-parent. The difference between children from lone-parent and step-families was negligible.

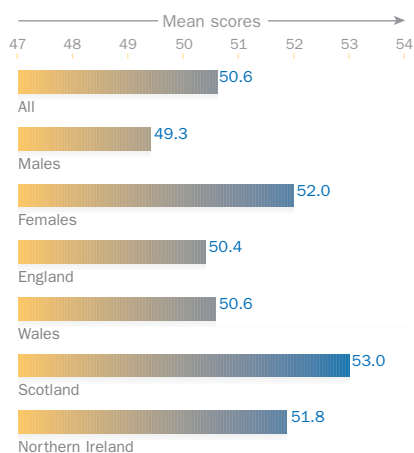
- Children with the most educated parents (who had degree-level or above qualifications) were on average about 12 months ahead of those with the least educated parents (who had no qualifications).
- Children in higher income families achieved better scores. Those in families with incomes below our poverty line had scores about eight months behind those with incomes above it.
- White children achieved the highest mean score (51.4), about half a month ahead of the all-UK average, followed by children from a mixed ethnic background (49.8), about half a month behind.
- Bangladeshi and Pakistani children (in the somewhat depleted sample who attempted this assessment) attained the lowest vocabulary scores, with averages around 35, which is characteristic of the lowest tenth in the population at large. These scores, taken at face value, would represent a severe delay for Bangladeshi and Pakistani children, well below the level normally expected for two-and-a-half-year-olds, let alone those aged over three, as these were. This partly reflects the finding that children from homes where English is not the only language spoken make slower progress in English even if they can speak it (except in the case of children whose families speak both English and Welsh).

Further investigation of all these differences needs to take account of the full circumstances of the assessment, the combined interplay of family background and cultural considerations.

Similar patterns were found when examining the Bracken Basic School Readiness Scale.

- Girls did better than boys on average:

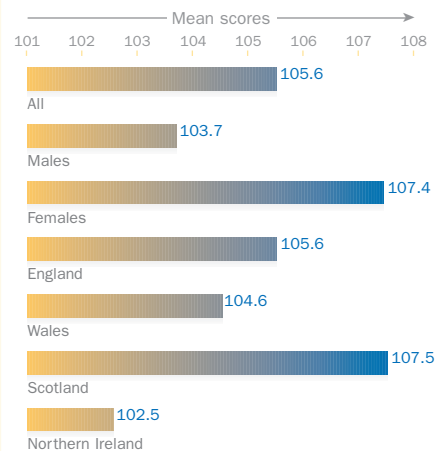
**Fig 1 BAS Vocabulary mean scores by child gender and country**



again they were about three months ahead.

- Children in Scotland, on average, attained better scores than those in the other three UK countries. They were about two months in advance.
- Children with two natural parents were on average about seven months ahead of those in lone-parent families and those in a step family. Again, there were only minor differences in scores between the latter two types of family.
- Children of the most highly educated parents were on average about 13 months ahead of those whose parents had no qualifications.
- Children from families with income over the poverty threshold were, on

**Fig 2 Bracken School Readiness mean scores by child gender and country**



average, about 9 months ahead of those below it.

White girls and boys were, on average, the highest scorers (108.1 and 104.4 respectively); Bangladeshi girls and boys obtained the lowest mean scores (90.1 and 83.6). The Bangladeshi children's school readiness scores were well behind those of White children, and Pakistani children's scores also fell considerably short of White children's. Furthermore, while only 4 per cent of the White children had scores in the 'delayed' range, over one-quarter of the Black African and Black Caribbean children, as well as the Bangladeshi and Pakistani children, were 'delayed'.

## Conclusion

Overall, the results show a marked difference in children from advantaged versus disadvantaged backgrounds, and that inequalities in cognitive achievement have already been established in these early years. Better scores were achieved by children from families with two working parents, with high household incomes and with highly educated parents. There was also substantial variation across ethnic groups of a similar order of magnitude. Both assessments show differences along lines of socio-economic disadvantage in early childhood, which

previous cohort studies have found very predictive of future wellbeing and life chances. However, there may be a range of other factors which could account, partially or even fully, for the differences. For example, difficulties with a second language, family size, or the circumstances of the interview may account for some of the ethnic differences. The investigation of these factors has only started.

**Millennium Cohort Study Second Survey: A User's Guide to Initial Findings is available at [www.cls.ioe.ac.uk](http://www.cls.ioe.ac.uk)**

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