

Psychology

Norwegian IQ scores are falling – but genes are not to blame

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ABSTRACT

After several decades of increasing IQ scores, the average score of Norwegian male conscripts began to decline with the birth cohorts born after 1975. Both the increase and decline, however, can be identified by comparing siblings with the same mother and father. ruling out a genetic explanation.



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IQ captures the tendency of people to score well or poorly on tests of seemingly different cognitive abilities. Research shows that high scorers also tend to do better in life, achieving more education and earning higher incomes, with reduced risk of unemployment, poor health and death.

Population IQ scores trended upwards by about 3 points per decade in the 20th century, a phenomenon labelled the “[Flynn effect](#),” but in recent years some countries have seen gains taper off or reverse. Several researchers have expressed concern that this may reflect “[dysgenics](#)” – the hypothesis that low-ability parents have more children than high-ability parents thus producing new generations with reduced intellectual potential. The concern is that

this has been happening under the surface, masked by IQ-boosting improvements in education, nutrition and public health, and that what we see now is the true underlying decline as the gains from environmental boosters have been exhausted.

To examine this hypothesis, we built on a simple insight: A dysgenic decline would be present across families, but not within families when we compare full siblings. Later-borns do not receive “better genes” than older siblings during increase periods and “worse genes” than older siblings during decline periods.

We can therefore compare the change in average IQ occurring *across* families – measured as the average

ability of first-born children in each birth year – and that occurring *within* families – measured as the trends occurring across siblings after accounting for birth order and all factors shared by siblings.

As “ability-dataset”, we used test scores from compulsory military conscription testing, with scores for the vast majority of Norwegian males born between 1962 and 1991. This dataset was matched to administrative data on family relationships, identifying parents and siblings.

Across families, we found the average scores of first-born sons increasing from the 1962 birth cohort to those born in 1975, followed by an equally clear decline in the second half of the period covered.

To identify the within-family trends we used two approaches. The first approach considered the birth order - since later-borns typically score below their older siblings - and the birth year, reflecting within-family trends. Beyond this, scores were assumed to differ randomly around a “family average.” Using all available observations, this method found a clear upwards trend, a shift around 1975, and a decline in the remaining years. The decline, however, was substantially lower than what we saw when comparing families.

The second approach used data from all families where the two first children are male and account for three additional factors:

Regression to the mean, which means that a boy with, for example, the top score will have brothers who typically score above average – but below the top. Intuitively, top scorers tend to have been lucky in what parents they have, which of their parents’ genes they received, what teachers they had, what friends they had, and so on. While the brothers will

share some of their luck (the same parents), they are unlikely to be equally lucky in all ways, giving them a lower score on average. Taking this into account makes us better able to discern trends within families.

The **birth order** difference reflects differences in how children are raised – the resources and encouragements they receive from their parents. This, too, can change over time. For instance, it may have become increasingly common for later-born children to complete high-school, which would raise their scores at conscription testing.

Finally, **selective scoring** was discovered towards the end of the data period: More males were missing scores, and these tended to have low-scoring brothers. This means that the raw data were not telling the whole story – and that the actual decline was larger than we thought.

Accounting statistically for these factors, the ability trends across and within families coincided fully, providing strong evidence that the underlying causes were environmental factors that change over time and affect brothers differently. Strengthening this result, our data did not show low-ability males (measured by ability scores and educational attainment) or females (measured using attainment) outbreeding others. In fact, for men, the opposite was true.

In conclusion, our analysis finds that the Norwegian Flynn effect and its reversal were driven by environmental factors. Any genetic effects present are negligible across our data period. Our analysis does not, however, speak to what these underlying environmental causes are. That remains an issue for future research.