

# **The attainment gap: are disadvantaged children simply born less intelligent than their peers? If not, why do we still have a gap after all the effort?**

*"The measure of intelligence is the ability to change."  
Albert Einstein*

## **Abstract**

It is claimed by some that disadvantaged children lag behind their peers because they have lower intelligence or cognitive abilities. It is even been claimed that there's nothing that can be done about the attainment gaps because they simply represent the natural variation of intelligence, as illustrated by the famous bell curve.

We argue, with strong evidence, that this view is completely wrong and that it unjustly excuses professionals from their moral responsibility to improve the relative outcomes for poorer children. We show that the evidence tells us that the attainment gaps we witness in our schools are everything to do with environmental, including cultural effects, and nothing to do with any supposed inherent lack of intelligence.

We show that there is something which schools can do – something very simple and something most will not be doing at present – that can have a dramatic effect on the gaps and therefore the opportunities available to poorer children.

## **Introduction**

The attainment gaps between disadvantaged and better-off children are among the most intractable problems facing the education system. The issue is a national one and has always been with us. But it doesn't have to stay that way.

Edsential is committed to supporting schools not just to narrow these gaps but to totally eradicate them. Only when children born into disadvantaged families enjoy the same educational success as better-off children can we say that we have succeeded. It is nothing less than a moral imperative that we should do everything in our power to achieve this goal. Apart from anything else, it is economically stupid for a country to allow a large fraction of its children to underachieve.

What follows describes in some detail a major reason why, despite huge efforts made by schools, large attainment gaps still persist at all stages of education and why they actually worsen as children get older. The reason may even be the most important single factor that schools can address.

The reason is a very simple one. But it is one that is in our power to put right.

## **Working class children are simply less intelligent than others. Discuss.**

Every now and then somebody will argue that the cause of the attainment gap between disadvantaged children and others is because poorer children are simply less intelligent. But claims about intelligence, especially the intelligence of a social class or ethnic group, require careful handling and interpretation.

In 2008, Dr Bruce Charlton, an evolutionary psychiatrist at Newcastle University, stated<sup>1</sup>: *"Poor people have lower average IQ than wealthier people"*. He went on to argue that the large number of middle-class students at top universities was the *"natural outcome of meritocracy"*.

What are we to make of this? Do poor people have lower IQs than wealthier people? If so, are poor people simply born less intelligent than wealthier people? And if this is true, does it not suggest that it is genetics, in part at least, behind the lower attainment of poorer children? Is it really true that the disproportionate representation of the wealthy at top universities a sign of meritocracy?

Here are some more comments. One former Chief Inspector of Schools stated<sup>2</sup>: *"I think it would be unlikely that large numbers of grammar school kids would come from disadvantaged areas – the genes are likely to be better if your parents are teachers, academics, lawyers, whatever."* But it wasn't all down to the middle-classes having better genes. He added: *"And the nurture is likely to be better. But that doesn't mean that there are not going to be DH Lawrences"*

But even when genetics aren't cited explicitly as a contributor to the gap, there are examples where its role is implied. A retired headteacher iterates that: *"There is indeed a gap. It is a cognitive ability (general intelligence) gap. **It is not one that be closed because of the fact of natural variation, which is precisely described by the statistical normal distribution (bell curve).**"* They continue:

*"The fundamental reason for the 'attainment gap' is that pupils from poorer backgrounds tend to have lower cognitive abilities. This is why the 'attainment gap' persists despite all the government initiatives, 'zero tolerance of failure', head sackings, school closures and Academisation and Free School promotions. None of these have worked because they are remedies for an incorrect diagnosis of the problem. They are the educational equivalent of 'blood-letting', where the response of doctors to failure of the patient to respond was to take more blood, ultimately ending in death."*

What was most interesting about this is what was said later in the article:

*"What remains controversial is the range of speculation as to the reason for this pattern, ranging from genetic inheritance, through qualitatively different parenting, to class and ethnicity based discrimination by teachers and schools. **It is not necessary to get into any of this**, because regardless of the mechanisms, the result is that better educated parents, that tend to raise more cognitively able children, are usually more successful in their careers and so can afford to live in more affluent areas."*

*"When it comes to variations in attainment between pupils it is necessary to understand **not only that this cannot be reduced, but any attempt so to do makes the 'gap' wider"***

This is all a bit confusing, as the same author states elsewhere

*"...with the crucial proviso that [general intelligence] is plastic and that it can be enhanced in childhood and subsequently throughout life as a result of both passive and (especially) active interaction with cognitive challenges"*.

That's enough! Let's respond to all this. We'll ignore for now the considerable evidence that many schools have succeeded in closing the attainment gap (and done so not at the expense of the better-off children.)

Firstly, it is true that poorer children perform less well on IQ tests than children from affluent backgrounds. Secondly, it is true that poorer children perform less well in a range of cognitive tests than their better-off peers. Finally, it is most certainly true that there is controversy around the reasons for this.

The implication that this is somehow ‘natural’ variation, perhaps genetically driven, which cannot be interfered with, is simply false. And the notion that it’s not necessary to explore the underlying causes of the lower cognitive performance of poorer children is quite extraordinary – unless you believe that the problem is in principle unsolvable and therefore not worth bothering with at all. And if you believe this, then it lets an awful lot of people off the hook.

There is a serious problem: who really believes that independent schools making up almost half the intake at Oxbridge yet, only 7% of the working population. Is a sign of meritocracy at work? This is a point of view that might have traction with some people from privileged backgrounds, but it does smack of complacent, arrogant elitism.

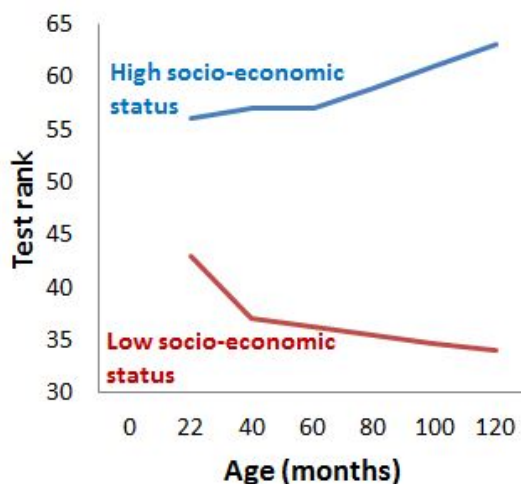
The idea that ‘low IQ’ genes are disproportionately concentrated in the working classes (or ‘high IQ’ genes in the middle-classes) is an extraordinary claim. Which doesn’t make it untrue, per se. But, as the saying goes, ‘extraordinary claims require extraordinary evidence’. Such extraordinary evidence could be gained only by a large scale genetic study of the concentration of low-intelligence (or high-intelligence) genes in different social classes. This *would* be extraordinary evidence.

The box below gives the evidence that low IQ genes are disproportionately present in the working class:



Now that we’ve seen the evidence that genetics lies behind the systematic lower performance of poorer children, is there any evidence that suggests genetics is not the root cause of the gap? Yes, and there’s plenty of it. Three examples are given below.

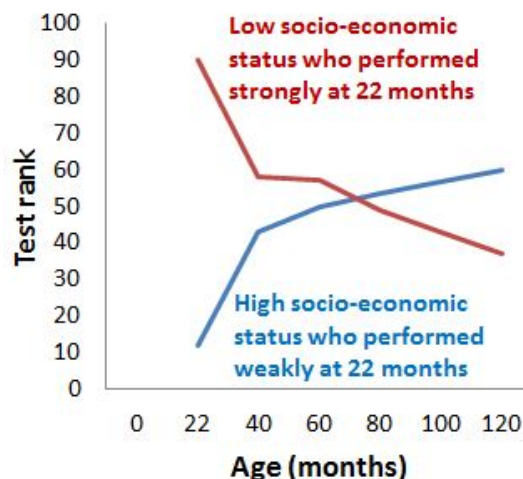
### 1) The British Cohort Study 1970



The British Cohort Study 1970 is a continuing, multi-disciplinary survey monitoring the development of babies born in one particular week in 1970. One of the areas monitored was the cognitive performance of the children. Children were assessed by a range of tests at ages 22 months, 42 months, 60 months and again at age 120 months. The chart shows how children from two broad social classes performed over time. What is particularly interesting is the divergence of performance: at very young ages the two groups were much closer together.

But the researchers found something more dramatic. They analysed the data to show how low socioeconomic status children who had performed particularly well at 22 months fared over time. A similar analysis was done for high socioeconomic status children who had performed particularly poorly at 22 months

By the age of 6, high socio-economic status children who had performed poorly at 22 months had overtaken low socio-economic status children who had performed strongly at 22 months.



So, there *is* a gap in cognitive skills, and it *emerges* in early childhood, widening as the children get older. But the deterioration in relative performance of high-performing poorer children, and the improvement in relative performance of low-performing richer children, very strongly points to the cumulative effects of their environments rather than towards any innate difference.

## 2) Intellectual Status of Working-Class Children Adopted Early into Upper-Middle-Class Families (Schiff et al., 1978)

The subjects of the research were born into poorer working class families. But the subjects fell into two sub-groups: children adopted before the age of one out of the working class and into the upper middle class; and their siblings who remained in the lower class.

The study found that the eventual educational performance of the adopted children was similar to that of their upper middle class peers, both being very significantly superior to the achievement of the children from lower class background.

In other words, it was the destination background rather than the source background that determined the educational performance of the adopted children.

## 3) Effects of enriched and restricted early environments on the learning ability of bright and dull rats (Cooper and Zubeck, 1958)

Another piece of evidence comes from a study of the effects of environment on the learning ability of rats. Yes, that's right, rats. A huge amount of what we know about humans comes from studies of animals.

The researchers used two distinct genetic strains of rats: 'maze-dull' and 'maze-bright'.

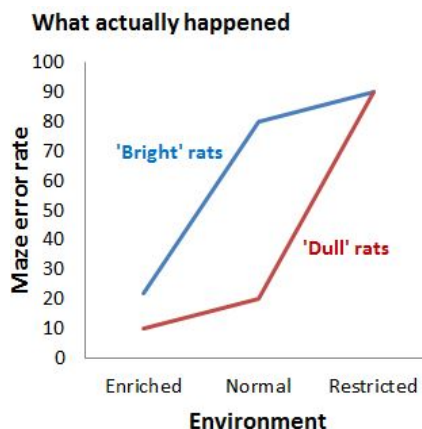
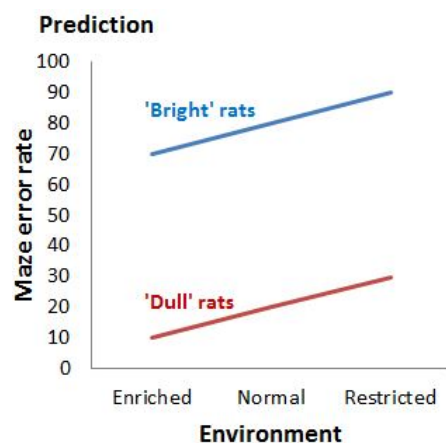
The maze-dull rats had consistently performed poorly, over many generations, in navigating a maze. The maze-bright rats had consistently performed well, again, over many generations. Newborn rat pups from each strain were raised in three different environments: enriched, normal and restricted.

**Enriched environment:** contained stimulating toys, brightly-patterned walls etc.

**Restricted environment:** effectively rat slums - food and water and nothing else.

**Normal environment:** somewhere between the two.

The researchers predicted that the performance of maze-dull rats would improve somewhat if they grew up in the enriched environment, and worsen in the restricted environment. They predicted a similar effect on the performance of maze-bright rats. Environment would play its part, but genetics would be the main determinant of the rats' performance. Here's what they predicted and what they actually found:



The conclusion they reached (after overcoming their surprise) was that original supposed genetic differences weren't genetic at all – subtle, hidden environmental factors must have been behind the performance difference of the two groups of rats. Many later studies confirmed

that differences originally thought to be purely genetic in nature were actually due to environmental influences, interacting in a complex and dynamic manner with genes.

### **Other interesting research: The Flynn Effect**

In the 1970s, a New Zealand researcher, James Flynn, noticed a remarkable pattern in IQ scores. Over many decades he noticed that the average IQ of the population was increasing by about 3 points per decade. During the period covered by his research, the percentage of people scoring highly enough to be classed as 'genius' went up by a factor of 20. Flynn suggested that, if real, this would be very hard to miss and it's difficult to disagree with him. Can anybody seriously believe that, proportionally, there are 20 times more geniuses walking our streets, or that people of the 21<sup>st</sup> century are genuinely more intelligent humans than those of the early 20<sup>th</sup> century?

#### **What's going on?**

Well, there is no mechanism available to suggest that people have *evolved* greater intelligence over a few decades. So this suggests that some environmental mechanisms are at work. Nobody knows for sure, but a range of explanations has been offered, including better nutrition, longer schooling, mass media and so on.

One thing is certain—performance on IQ tests is improving. And if, as seems certain, it is some combination of environmental factors at work, the message is an interesting one: if intelligence really is measured by IQ tests then intelligence, whatever it is, is not hard-wired at birth and inflexible thereafter—it is plastic. Very plastic.

#### **Differences between ethnic groups**

Different ethnic groups do score differently on IQ tests. But we've seen that environmental and other factors play a huge part in cognitive performance *as measured by the tests we employ*. The notion that certain groups have inferior inherent intelligence is, sadly, still alive and kicking, and based on performance in said tests.

While genetics do influence cognitive ability, there is no reason to believe that cognitive differences *between* groups are due to genetics, and every reason to believe they are due to environmental differences.

*This is good because it means something can be done.*

Now schools can't make poorer families wealthy, but they still have a hugely significant role. And one of the things schools can do is extremely simple: ensure their expectations for disadvantaged children, including academic expectations, are the same as their expectations for other children.

Most schools would say they already do this, but there is a simple question that reveals whether this is fully true in practice:

***If you set individual academic targets for children, are the targets you set for disadvantaged children the same (on average) as those you set for the rest?***

It's a simple question. If the answer is yes, then all well and good. But if the answer is no then the school's expectations for poorer children are likely to be a big part of the problem.

In 2012 one local authority examined the pupil-level attainment targets set by some of its schools. Almost without exception, the targets set for disadvantaged children were, *on average*, significantly lower than the ones set for others. Why? Because schools were basing their targets heavily on prior attainment. And, since the poorer children attained less well in the previous key stage, their targets for the next key stage were inevitably lower. While staff believed they held equal expectations for both groups, the targets had built-in lower expectations for poorer children. The attainment gap inherited from the previous key stage had been consolidated and converted to a gap in the targets. Which the children duly met.

Targets based principally on prior attainment are essentially targets for the realisation of self-fulfilling prophecies. While prior attainment does contain information about children's abilities, and needs to be taken into account, it also contains a historical imprint of the disadvantage experienced by many.

For this reason, Fischer Family Trust go to great pains to explain that what many wrongly refer to as 'Fischer Targets' or 'Fischer Predictions' are no such thing. They are merely estimates, telling you what is likely to happen if nothing changes.

### **What can be done?**

It is clear from what's been said that schools have a crucial role in equalising outcomes for disadvantaged children, and there is one thing in particular that only schools can do: *ensure that the long-range academic targets they set for disadvantaged children are the same as those they set for other children.*

Anything less than this is to actively consolidate the gap.

### **What can Edsential do to support schools? The RADY Project (Raising the Attainment of Disadvantaged Youngsters)**

Using the expertise developed in a pilot project, RADY, and the experience gained from the project's roll-out in Staffordshire and Birmingham, where initial results are extremely promising, Edsential is offering schools a chance to implement the target-setting approach outlined above.

But it is not simply a matter of setting more ambitious targets for disadvantaged children – it is also about calibrating them in a way which aims for equal outcomes. This is different to most approaches to closing the gap in that it is deliberately medium-to-long term.

In addition, interim milestones are necessary and these are quite unlike the milestones many schools often set. It is an entirely new approach to tracking and monitoring pupil progress over time – an essential step necessary to ensure that those children who need extra support are accurately identified. Analysis showed that many disadvantaged children who needed extra support were being missed by orthodox progress-tracking approaches.

Edsential would support schools in adapting the approach to their own circumstances and, crucially, analyse the schools' data to identify trends.

Participating schools would be invited to termly meetings, free of charge, to hear about the latest developments and share ideas.

This approach has received extremely favourable feedback, including from Ofsted.

*"Whether you think you can or whether you think you can't, you're right"* - Henry Ford

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