CONCOURS D'ADMISSION 2020

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COMPOSITION D'ANGLAIS

Samedi 14 Septembre 2019 de 13h30 à 15h30

Durée : 2 heures

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Has Humanity reached peak intelligence?

Are our IQs set to increase forever, or are we on the cusp of decline? David Robson explores the past, present and future of intelligence.

Adapted from *BBC News*, By David Robson, 10 July 2019

You may not have noticed, but we are living in an intellectual golden age. Since the intelligence test was invented more than 100 years ago, our IQ scores have been steadily increasing. Even the average person today would have been considered a genius compared to someone born in 1919 – a phenomenon known as the Flynn effect.

[…] Let's begin by exploring the ancient origins of human intelligence, from the moment our ancestors began to walk upright more than three million years ago. Scans of fossil skulls suggest that the brains of the first bipedal apes, *Australopithecus*, were about 400 cubic centimetres – just a third the size of modern humans'. […] There are many potential reasons for this brain boost, but according to one leading theory, it was a response to the increasing cognitive demands of group living. […] By around 400,000 years ago, the brain of *Homo heidelbergensis* had reached around 1,200 cubic centimetres – just a shade smaller than the brains of modern humans, which are around 1,300 cubic centimetres. […]

Few experts would argue that the more recent changes to IQ are the product of […] genetic evolution – the timescales are simply too short. It was only 100 years ago, after all, that scientists first invented the "intelligence quotient" to measure someone's intellectual potential. Their success relies on the fact that many cognitive abilities are correlated. So your ability to perform spatial reasoning or pattern recognition is linked to your maths ability and your verbal prowess, and so on. For this reason, IQ is thought to reflect a "general intelligence" – a kind of underlying brainpower.

Although IQ tests are often criticised, a vast body of research shows that their scores can be useful indicators of your performance on many tasks. They are especially good at predicting academic success (which is not surprising, considering that they were initially designed to be used in schools) but also predict how quickly you pick up new skills in the workplace. They are not a perfect measure, by any means – and many other factors will also shape your success – but in general they do show a meaningful difference in people's capacity to learn and process complex information.

[…] When the researcher James Flynn looked at scores over the past century, he discovered a steady increase – the equivalent of around three points a decade. Today, that has amounted to 30 points in some countries. Although the cause of the Flynn effect is still a matter of debate, it must be due to multiple environmental factors rather than a genetic shift.

[…] Whatever the cause of the Flynn effect, there is evidence that we may have already reached the end of this era – with the rise in IQs stalling and even reversing. If you look at Finland, Norway and Denmark, for instance, the turning point appears to have occurred in the mid-90s, after which average IQs dropped by around 0.2 points a year. That would amount to a seven-point difference between generations.

Partly because they have emerged so recently, these trends are even harder to explain than the original Flynn effect. One possibility is that education has become slightly less stimulating than it once was – or at least, has not targeted the same skills.

[…] While scientists continue to untangle the causes of those trends, it's worth questioning what these changes in IQ actually mean for society at large. Has the IQ boost of the Flynn effect brought us the dividends we might have hoped? And if not, why not?

A special issue of the Journal of Intelligence recently raised that specific question, and in the accompanying editorial, Robert Sternberg, a psychologist at Cornell University, wrote:

People are probably better at figuring out complex cell phones and other technological innovations than they would have been at the turn of the 20th Century. But in terms of our behaviour as a society, are you impressed with what 30 points has brought us? The 2016 US presidential election was probably about as puerile as any in our history... Moreover, higher IQs have not brought with them solutions to any of the world's or the country's major problems – rising income disparities, widespread poverty, climate change, pollution, violence, deaths by opioid poisoning, among others.

Sternberg may be a little too pessimistic here, [however], he is not alone in questioning whether the Flynn effect really represented a profound improvement in our intellectual capacity.

[…] You might assume that the more intelligent you are, the more rational you are, but it's not quite this simple. While a higher IQ correlates with skills such as numeracy, which is essential to understanding probabilities and weighing up risks, there are still many elements of rational decision making that cannot be accounted for by a lack of intelligence.

Consider the abundant literature on our cognitive biases. Something that is presented as "95% fat-free" sounds healthier than "5% fat", for instance – a phenomenon known as the framing bias. It is now clear that a high IQ does little to help you avoid this kind of flaw, meaning that even the smartest people can be swayed by misleading messages. People with high IQs are also just as susceptible to the confirmation bias – our tendency to only consider the information that supports our pre-existing opinions, while ignoring facts that might contradict our views. That's a serious issue when we start talking about things like politics. Nor can a high IQ protect you from the sunk cost bias – the tendency to throw more resources into a failing project, even if it would be better to cut your losses – a serious issue in any business. (This was, famously, the bias that led the British and French governments to continue funding Concorde planes, despite increasing evidence that it would be a commercial disaster.)

[…] Given these looser correlations, it would make sense that the rise in IQs has not been accompanied by a similarly miraculous improvement in all kinds of decision making. […] Modern life, while allowing us to think more abstractly, does not appear to have corrected our irrational tendencies. We have assumed that smart people naturally absorb good decision making as they go through life – but it is now clear that is not the case.

Looking to the future, the "reverse Flynn effect" and the potential drop in IQs should certainly cause us to take stock of the ways we are using our brains, and preventing any further decline should undoubtedly be a priority for the future. But we might also make a more concerted and

deliberate effort to improve those other essential skills too that do not necessarily come with a higher IQ.

[…] Why not teach these skills in early education? […] discussions of decision making errors can be incorporated in the history curriculum of high school students, for instance. Not only did it improve their performance of a subsequent test of rationality; it also boosted their learning of the historical facts too.

Others have attempted to revitalise the teaching of critical thinking in schools and universities – for instance, a discussion of common conspiracy theories teaches students the principles of good reasoning, such as how to identify common logical fallacies and how to weigh up evidence. Having taken those lessons, the students appear to be more sceptical of misinformation in general – including fake news.

These successes are just a small indication of what can be done, if rationality and critical thinking are given the same kind of respect we have traditionally afforded our other cognitive abilities. Ideally, we might then start to see a steep rise in rationality – and even wisdom – in tandem with the Flynn effect. If so, the temporary blip in our IQ scores need not represent the end of an intellectual golden age – but its beginning. (1291 words)

1. READING COMPREHENSION

Answer the following questions *in your own words.*

- Any passage including 3 or more words in sequence taken from the source, or paraphrase without citation will be penalized.
- 50 words minimum / question.

a) List all the cognitive biases mentioned by the author and explain what they have in common.

b) What does IQ measure and why is it so popular?

c) What are the "other essential skills" mentioned by the author (l. 78)? Why are they essential?

d) Explain what the Flynn effect is.

2. ESSAY

Discuss the statement below (450 words, +/- 10%; use a / every 50 words)

People are probably better at figuring out complex cell phones and other technological innovations than they would have been at the turn of the 20th Century. But in terms of our behaviour as a society, are you impressed with what 30 points [in IQ] has brought us? The 2016 US presidential election was probably about as puerile as any in our history... Moreover, higher IQs have not brought with them solutions to any of the world's or the country's major problems – rising income disparities, widespread poverty, climate change, pollution, violence, deaths by opioid poisoning, among others.

Sternberg R. J. (2018). Speculations on the Role of Successful Intelligence in Solving Contemporary World Problems [†]. *Journal of Intelligence*, *6*(1), 4.