



University of HUDDERSFIELD

University of Huddersfield Repository

Whitaker, Simon

Intelligence across the life span

Original Citation

Whitaker, Simon (2015) Intelligence across the life span. In: Annual Conference of the BPS North East of England Branch, 7th September 2015, York St John University, York. (Unpublished)

This version is available at <http://eprints.hud.ac.uk/id/eprint/25609/>

The University Repository is a digital collection of the research output of the University, available on Open Access. Copyright and Moral Rights for the items on this site are retained by the individual author and/or other copyright owners. Users may access full items free of charge; copies of full text items generally can be reproduced, displayed or performed and given to third parties in any format or medium for personal research or study, educational or not-for-profit purposes without prior permission or charge, provided:

- The authors, title and full bibliographic details is credited in any copy;
- A hyperlink and/or URL is included for the original metadata page; and
- The content is not changed in any way.

For more information, including our policy and submission procedure, please contact the Repository Team at: E.mailbox@hud.ac.uk.

<http://eprints.hud.ac.uk/>

Intelligence across the life span

By

Simon Whitaker

Intelligence

Difficult to define precisely but it is generally agreed that it is:

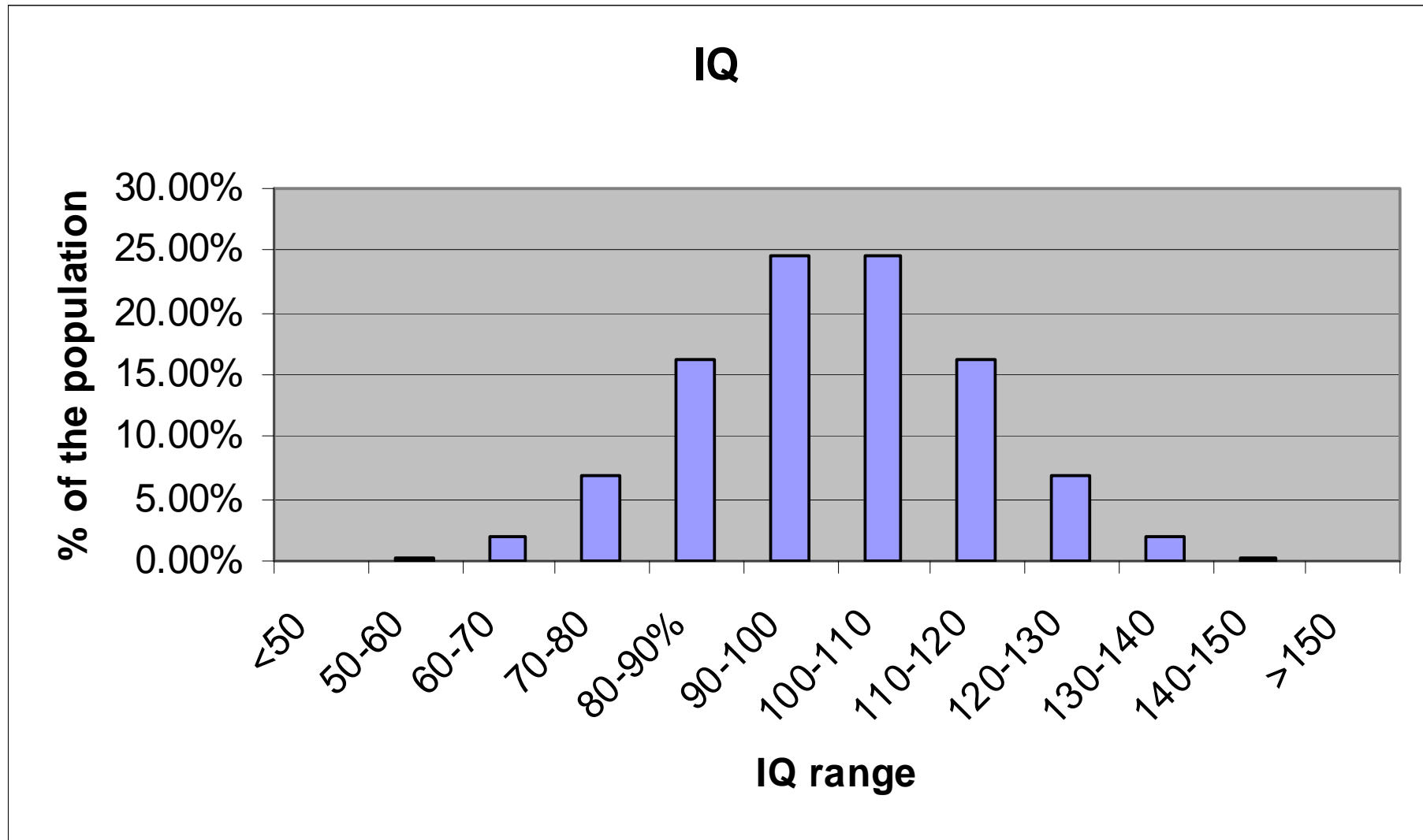
- An individual's overall cognitive ability.
- Can be predictive of his/her ability to succeed in the real world.

Measurement of Intelligence

IQ Tests

Cognitively demanding tasks how well an individual does on a series of cognitively demanding tasks, compared with a representative sample of people of his/her own age.

Distribution of intelligence



The Flynn Effect

Flynn (1984) found that for the US the longer it was since the test was standardised the higher the IQ, the rate of increase being about 3 points a decade.

The implication is that the intellectual ability of the population is increasing by 3 points a decade or about .3 of a point per year.

Flynn (1987) extended his analysis to 14 industrialised countries and found evidence of an increase in IQ in all of them.

For some countries (e.g. Holland, Belgium and France) the data was very strong, being based on the assessment of virtually all 18-year-old men when they report for military service.

Change over the last 100 years

There is evidence that this general increase in intellectual ability has been occurring since the beginning of industrialization.

If the rate of change was .3 of a point a year for the last 100 years the average IQ in 1915 would have been 70.

IQ 70 is the point below which we now regard somebody as having an intellectual disability.

Effect over a life time

- If the average 20 year old in 1972 was given an IQ test standardized in 2015 they would get a measured IQ of about 87, whereas the average 20 year old today would get a measured IQ of about 100.
- It's not that we get dimmer as we get older it just that our children get brighter.

Good evidence the Flynn effect has occurred in the past.

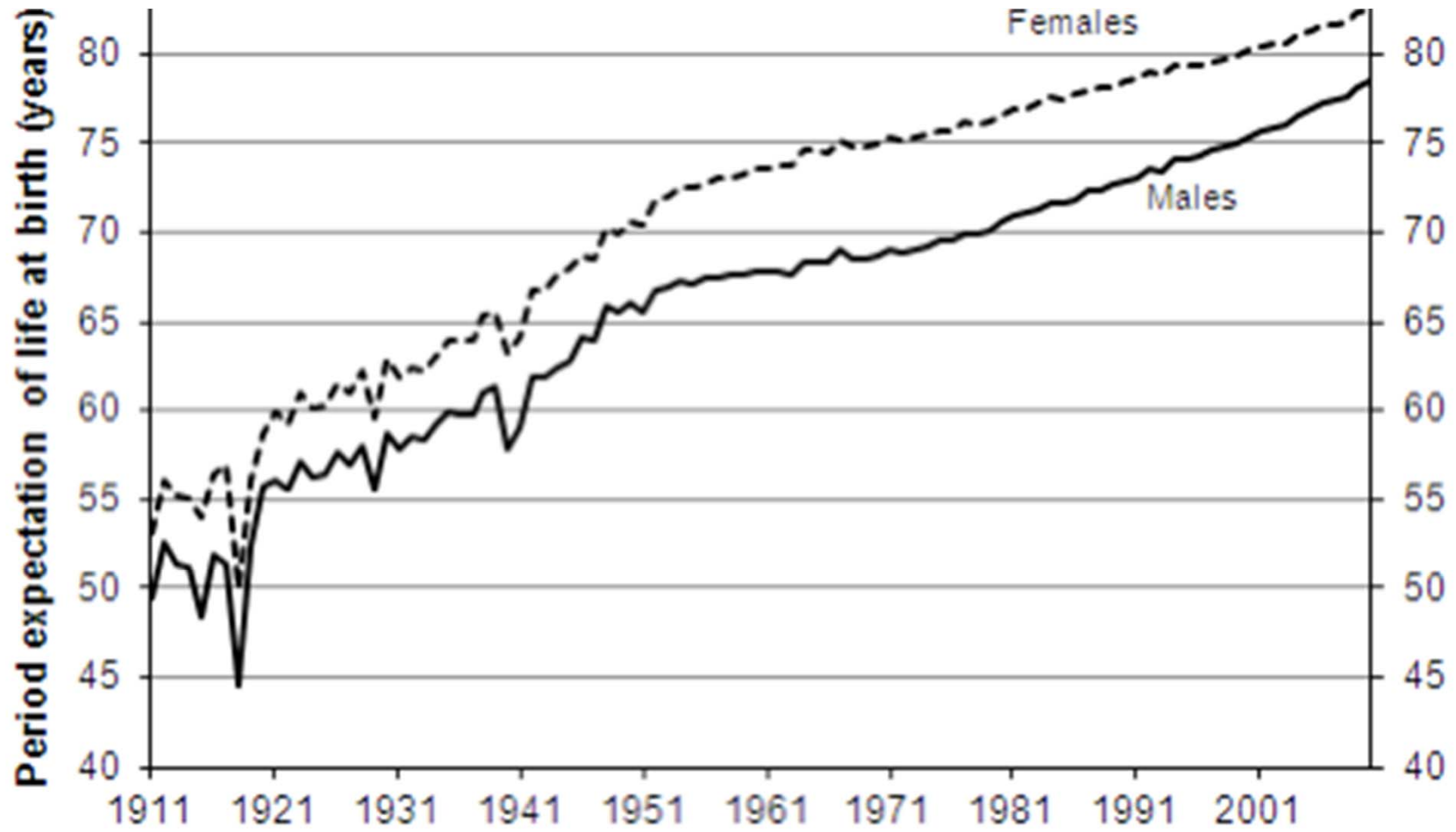
Some evidence it is still occurring in the UK today.

Should we be surprised?

Other things are improving over time

- Longevity
- Health
- Infant mortality
- High
- Weight

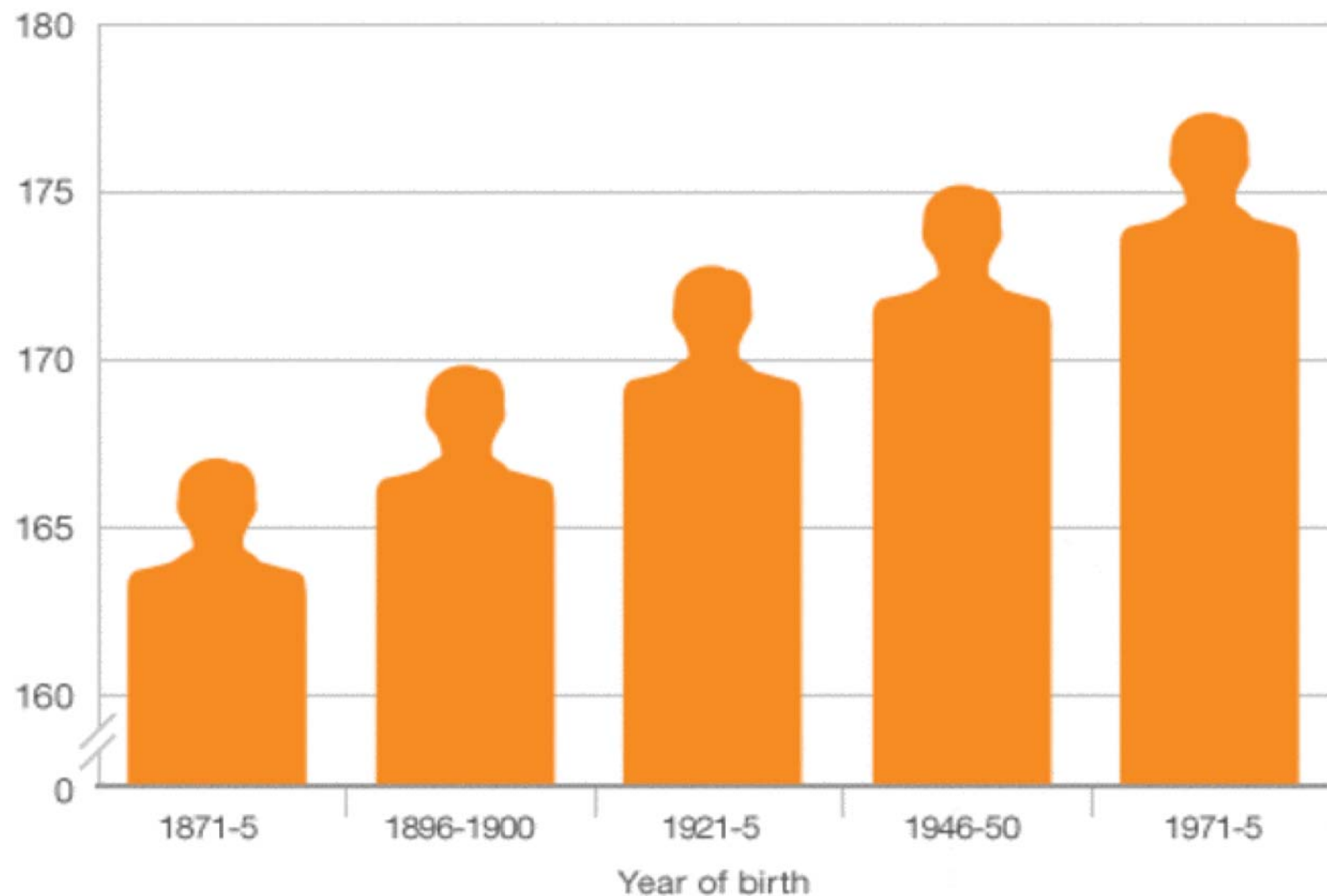
Longevity



A century of growth

British males: Average height at age 21

Height cm



Source: Prof Tim Hatton et al, Oxford Economic Papers

Why is IQ increasing over time?

Is it genuine or are we just getting better at doing IQ tests?

Evidence for genuine increase in intelligence (g)

- Improved diet
- Improved health
- Smaller families
- Better and more education
- More intellectually stimulating leisure?

All this must have some effect

Evidence for improvement in doing tests

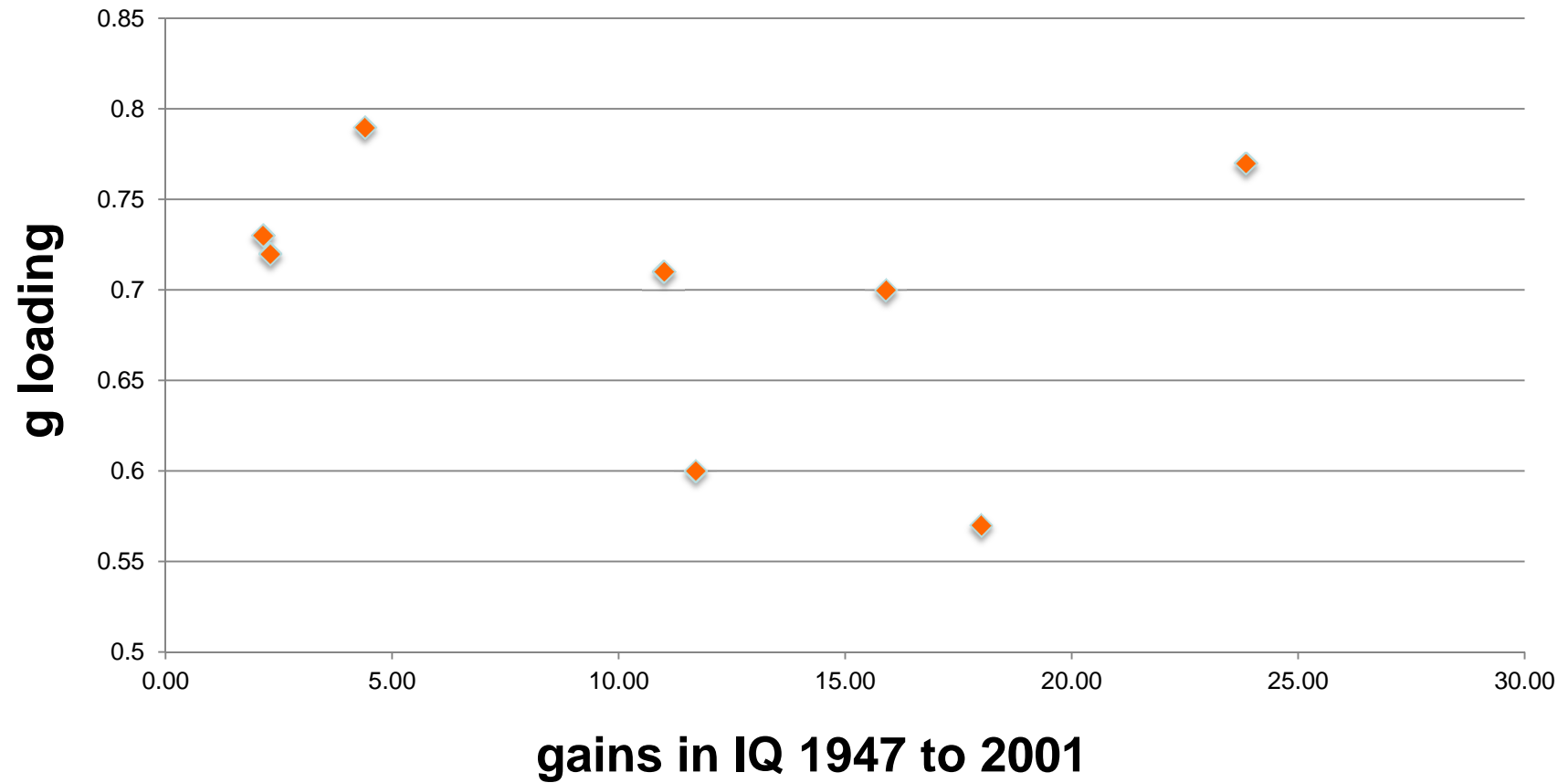
Subtest IQ gains and g loading

| Subtest | IQ gains 1947-2001 | g loading |
|--------------------|-------------------------------|------------------|
| Information | 2.15 | .73 |
| Arithmetic | 2.30 | .72 |
| Vocabulary | 4.40 | .79 |
| Comprehension | 11.00 | .71 |
| Picture completion | 11.70 | .60 |
| Block Design | 15.90 | .70 |
| Object Assembly | 17.35 | |
| Coding | 18.00 | .75 |
| Similarities | 23.85 | .77 |

$r = -.26$

Scatter plot

Flynn gains and g loading



There is not relationship between g loading and the Flynn effect for subtest which should be the case if g (general intelligence) was increasing.

So what else is happening?

The world had become more intellectually demanding but in specific ways.

The subtest that have shown the least gained are similar to everyday tasks that have not changed over the years or have become less cognitively demanding.

Test that have not moved much

Arithmetic: We use calculators and spread sheets.

Information/digit span: We don't have to remember thing to the same extent as we have them at touch of a button.

Vocabulary: Less emphasis on formal language.

The subtests that have shown the most gain are ones that have things in common with cognitively demanding everyday tasks that have become increasingly common over the years.

More emphasis on on the spot problem solving

- Life now changes and we have constantly have to work out how to cope (e.g. smart phones, TVs, DVDs, computers, change).
- Often visual and abstract.

More emphasis on visual information

The screenshot displays the website for The British Psychological Society. At the top right, there are links for "Sign in" and "Sign up". Below these, a navigation menu includes "How we use cookies", "Contact details", "Shop", "Advertise", and "Join BPS". A search bar is located below the navigation menu with the placeholder text "Search this site...".

The main header features the BPS logo and the text "The British Psychological Society" with the tagline "Promoting excellence in psychology". Below this is a horizontal navigation menu with the following items: "Home", "Psychology & the public", "News", "What we do", "Member networks", "Careers, education & training", "Publications", "Events", and "Jobs".

The main content area is divided into several sections:

- Introduction:** A paragraph describing psychology as the scientific study of people, the mind and behaviour, and the role of the British Psychological Society. It includes a link: "> more about what we do".
- EBMH Journal:** A featured section for the Evidence-Based Mental Health Journal. It includes a navigation menu (1-5), the journal title, a description: "Latest issue published in partnership with RCP and BMJ", and a link: "> read more".
- Quicklinks:** A list of links: "> Find a psychologist", "> Accredited course search", "> Search events", "> Pay membership fees", "> Research Digest", "> PsychSource/Discovery Service", "> Publications", and "> myCPD".
- Latest News:** A section titled "EBMH: Expert commentaries on new research in mental health". It features a small image of the journal cover and a text snippet: "A new intervention for children with bipolar disorder that integrates individual Cognitive Behavioural Treatment with family psycho-education and mindfulness skills is the subject of a commentary by Dr David Miklowitz of Oxford University in the".
- Recent News:** A section with two items: "> Research Digest: Writing style and the risk of suicide" (with a subtext: "Suicidal thoughts are relatively common whereas acts of suicide...") and "> Research Digest: What teams must believe to be successful".

At the bottom left, there is a "Join" button with a graphic of a hand holding a pen.



Great trips start with great prices

HOME **FLIGHTS** HOTEL

Flights > Airlines > Ryanair

+1 200

Like 3.7k

Tweet 8



Airline Rating 3.6/5 Reviews: 3.965

Ryanair flights from
£8 *
LOOK FOR THEM
IN EDREAMS!

Return One-Way

From

To

This Site is published by eDreams for comparison, information and commercial purpose and it has no link with the official website of the airline here above mentioned.

* This Price is based on eDreams search results for flights performed within the next 365 days for this airline. It reflects the cheapest price per route for an adult passenger that can be found in our system

Cheap Ryanair Flights

LONDON

MANCHESTER

DUBLIN

ALICANTE

MALAGA

Most of the subtests that have increased:

- Comprehension
- Picture completion
- Block Design
- Object Assembly
- Similarities

require on the spot problem solving

Most of them are also visual and abstract

- Picture completion
- Block Design
- Object Assembly

IQ subtests that have increased are in effect more familiar to us, hence we do better on them.

Part of the Flynn effect is a generalized practice effect.