



## Lecture 8 – In the name of science 2



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# Acknowledgement

**Here at Curtin, we are learning on Whadjuk Noongar boodja. I would like to acknowledge the Whadjuk Noongar people, and their culture and connection to country.**

**I offer the class's respects to the Whadjuk Noongar Elders, past present and emerging.**

**! Aboriginal and Torres Strait Islander users of this material are advised there may be images, viewings, stories, photos and written materials of people which could be disturbing and/or of persons who are deceased.**

# Why are we here?

Science and social attitudes intertwine – **science operates within society**

Certain scientific facts are objective – **the application and interpretation of science is not.**

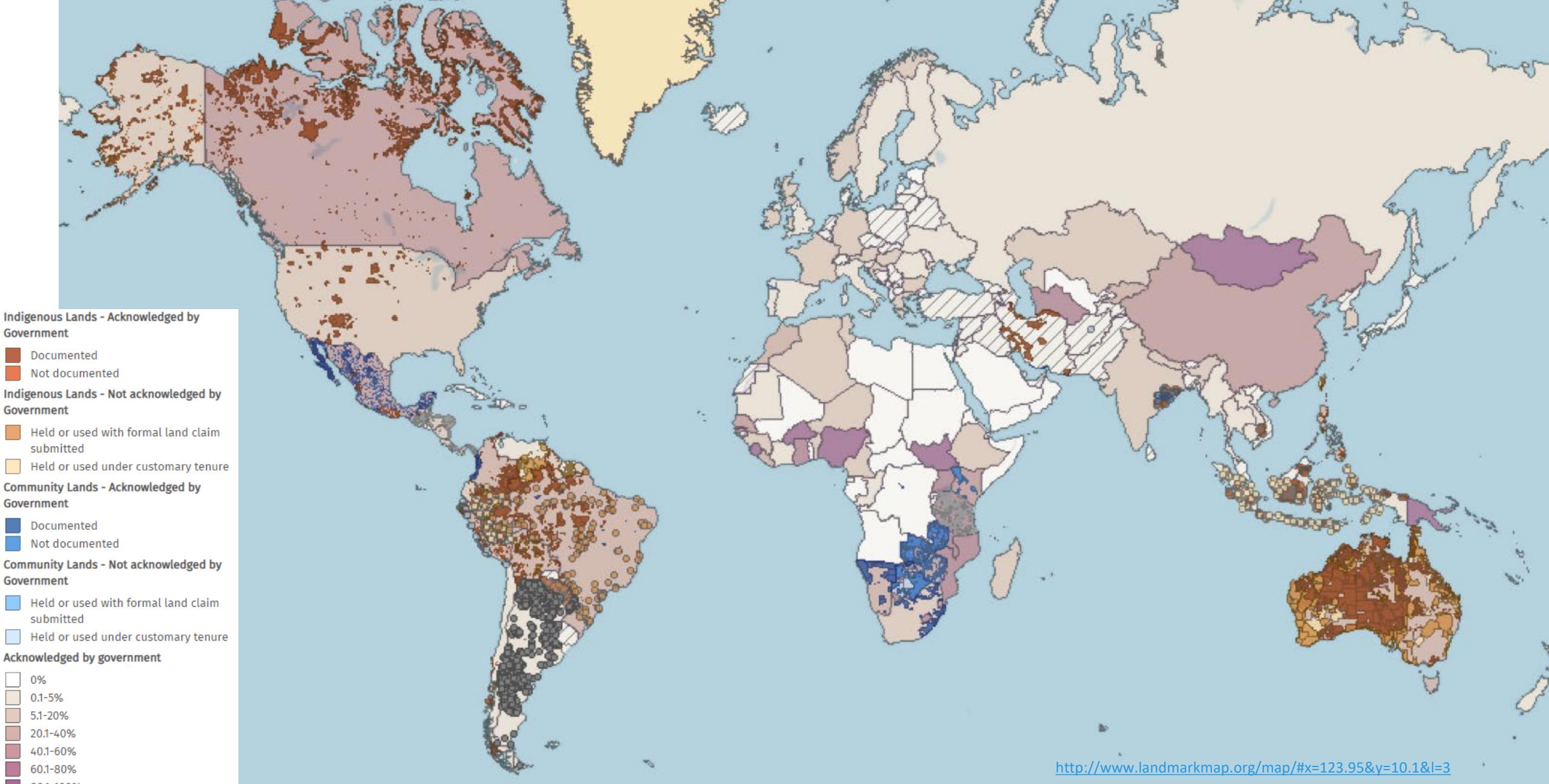
In the past this has led to some very dark places.

**We are going to discuss difficult things today – eugenics and race science**

**Some people may find this distressing – please take a break if you need to.**

**It is not about individuals – no one in class should feel blame or guilt**

But we need to face up to the past misuse of science to **understand the present and protect the future**



<http://www.landmarkmap.org/map/#x=123.95&y=10.1&l=3>

# Colonisation vs invasion

Use of language stems from perspective



Board game

[https://www.warandpeacegames.com.au/Warlord\\_Games\\_Hail\\_Caesar\\_The\\_Roman\\_Invasion\\_o\\_p/101510001.htm](https://www.warandpeacegames.com.au/Warlord_Games_Hail_Caesar_The_Roman_Invasion_o_p/101510001.htm)

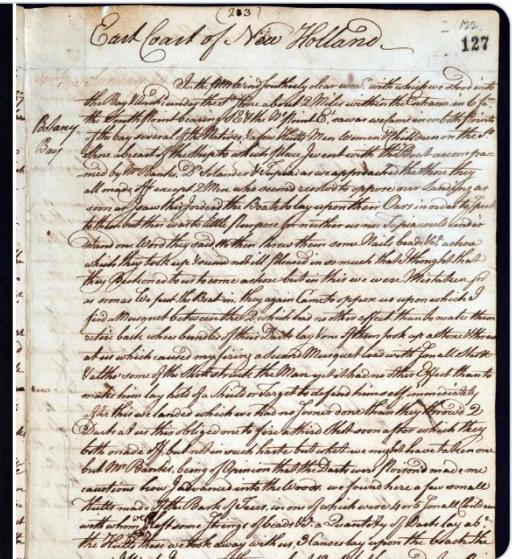
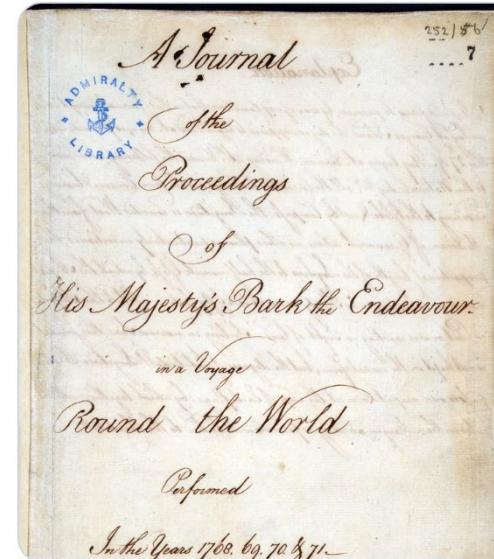


The National Archives

@UkNatArchives

250 years ago #OTD in 1770, explorer James Cook's HMS Endeavour anchored at Botany Bay, in what is now New South Wales, Australia

ADM 55/40



4:13 PM · Apr 29, 2020 · Twitter Web App

54 Retweets 116 Likes

<https://twitter.com/uknatarchives/status/1255409737736359941>



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THE  
PRINCIPAL VARIETIES OF MANKIND.



Categorising  
humankind  
(notice who  
gets the  
centre spot!)

Grant, C. (Jul 24, 2019). Data of prejudice: the uses and abuses of the science of race. *NewStatesmen*.  
<https://www.newstatesman.com/Angela-Saini-Jennifer-Eberhardt-race-science-Superior-biased>



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Joseph Lycett (c. 1775–1828), Aborigines Spearing Fish, Others Diving ... c. 1817, [nla.gov.au/nla.cat-vn906467](https://nla.gov.au/nla.cat-vn906467)

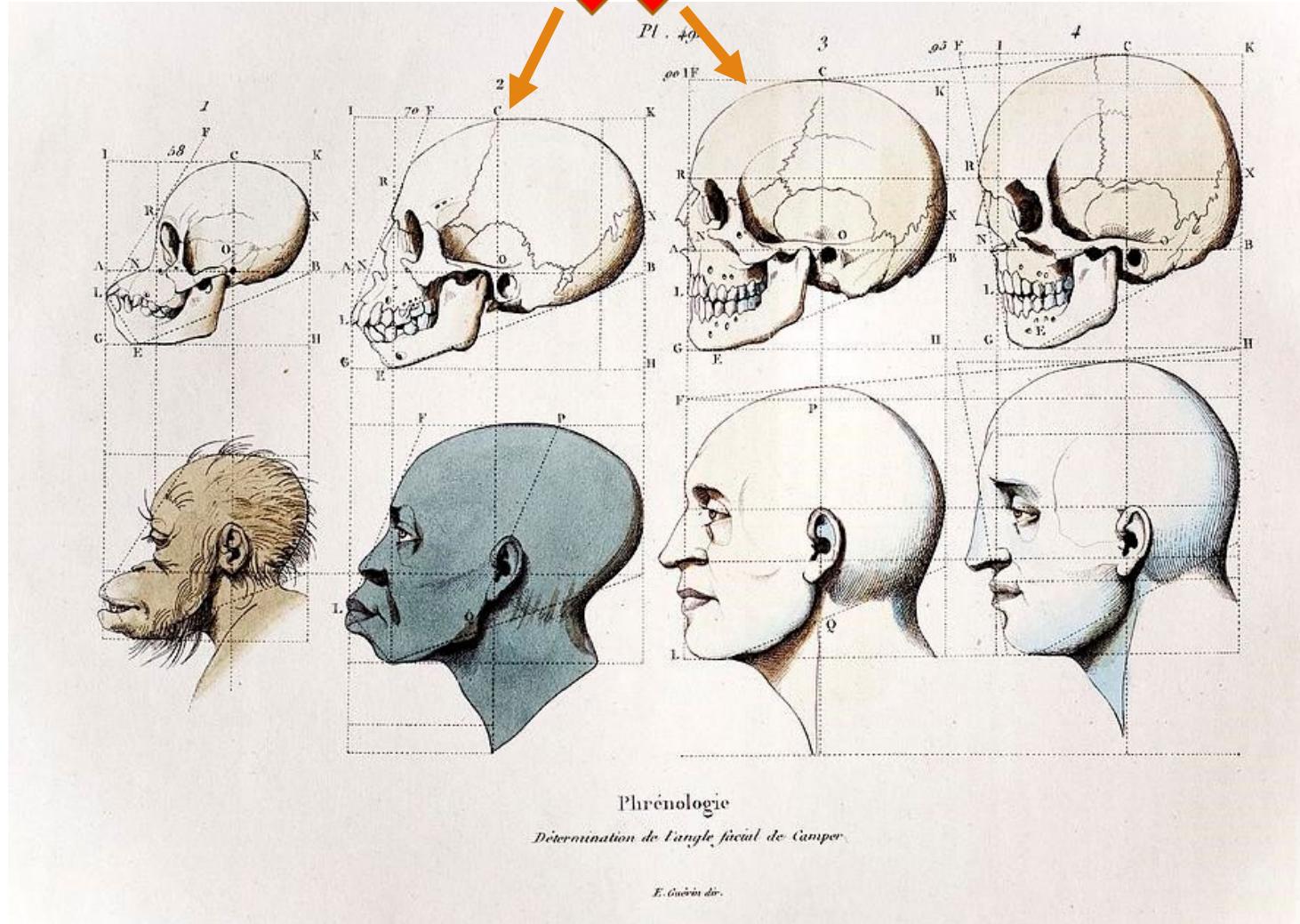
Britain's "justification" in invading Australia was not only economic and military power. It was a belief in European racial and cultural superiority.

Britain knew Aboriginal people existed.

It just didn't think that they counted.

**Terra nullius is not just a lie of an empty land.**

**It is a lie about human beings: a direct result of scientific racism**



From Jacobson, A. (2019). Racism is a societal construct, not a biological one. *Eastern Washington University Website*. <https://inside.ewu.edu/engl201-13/racism-is-a-societal-construct-not-a-biological-one/>

Hostility / discrimination towards out-groups occurred in many cultures throughout history.

What was different in “enlightenment” Europe is that such ideas were claimed to be supported by “objective” science.

It all started with measuring skulls... badly.



There are differences between human skulls

**But these are not racial differences.**

The differences *within* an ethnic group are as large or larger as the differences *between* ethnic groups.

This was observed in the 18<sup>th</sup> century.

But data that didn't support scientific racism was ignored.

**Small sample sizes can be used to “prove” anything you want...**

# A racist double-whammy – using pseudo-anthropology to justify English racism against both Irish and African peoples

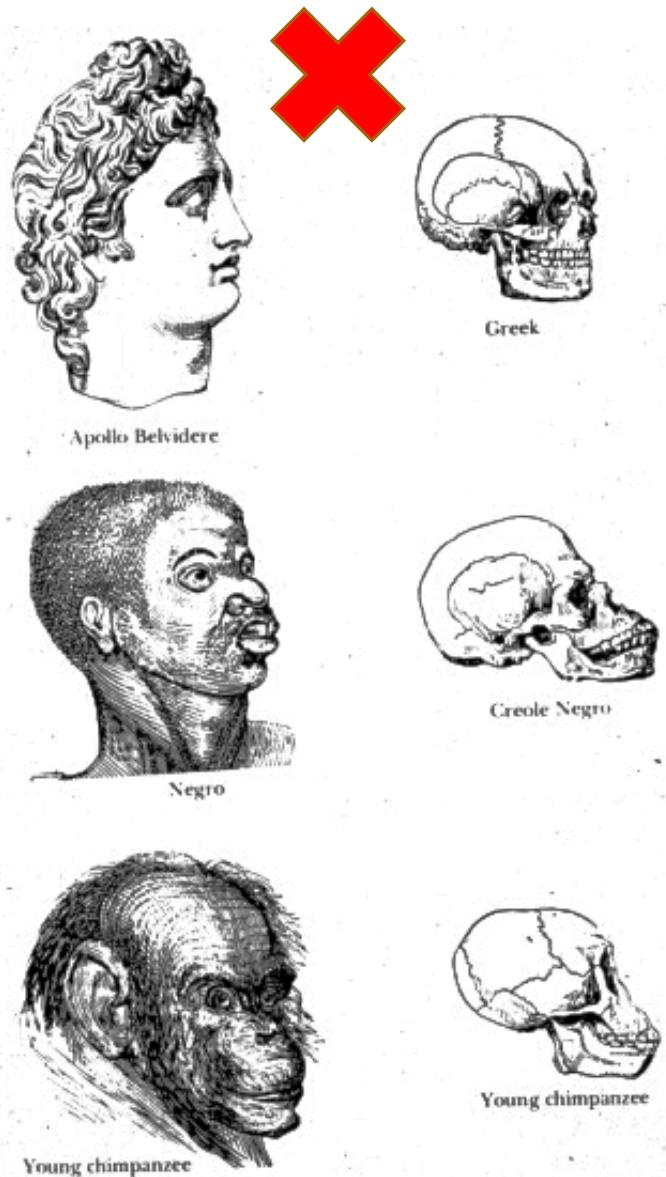


The Iberians are believed to have been originally an African race, who thousands of years ago spread themselves through Spain over Western Europe. Their remains are found in the barrows, or burying places, in sundry parts of these countries. The skulls are of low, prognathous type. They came to Ireland, and mixed with the natives of the South and West, who themselves are supposed to have been of low type and descendants of savages of the Stone Age, who, in consequence of isolation from the rest of the world, had never been out-competed in the healthy struggle of life, and thus made way, according to the laws of nature, for superior races.

H. Strickland Constable - [1] Drawing by: H. Strickland Constable. 1899, Ireland from One or Two Neglected Points of View [https://commons.wikimedia.org/wiki/File:Scientific\\_racism\\_irish.jpg](https://commons.wikimedia.org/wiki/File:Scientific_racism_irish.jpg)

**Scientific racism is the idea that:**

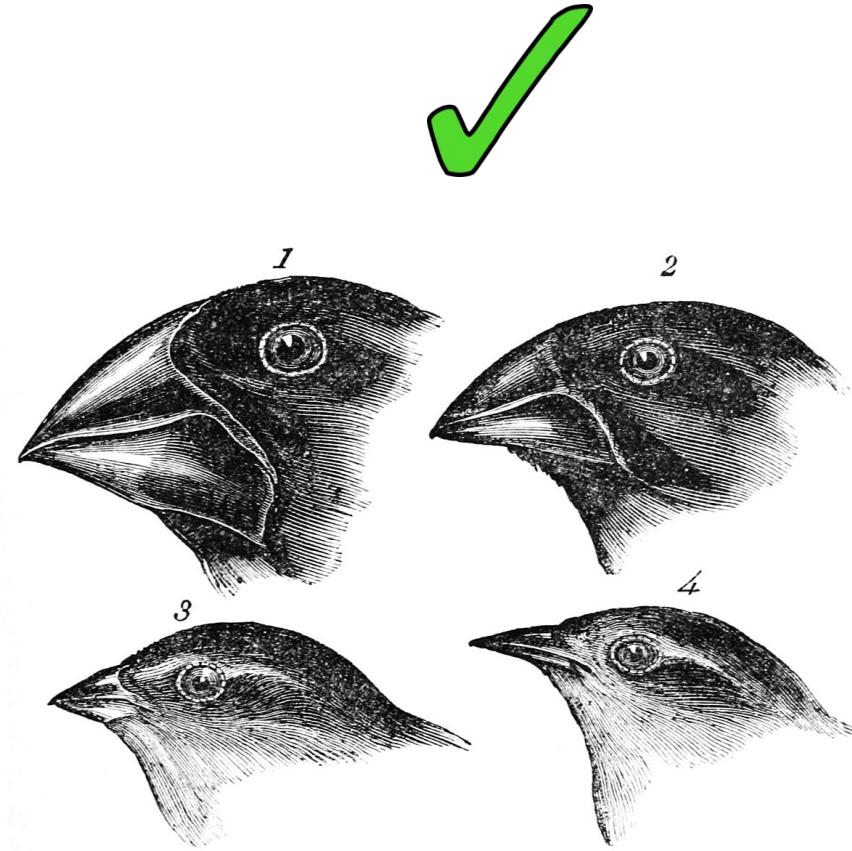
- a) People can be ethnically grouped by physical or biological characteristics (spoiler: they can't)
- a) That these characters show a racial hierarchy within humanity (spoiler: they don't)



Darwin's theory of **evolution** was co-opted to justify racism.

Evolution and natural selection are real. But they are also complicated.

Applying a simplistic idea of evolution to modern human groups is bad science.

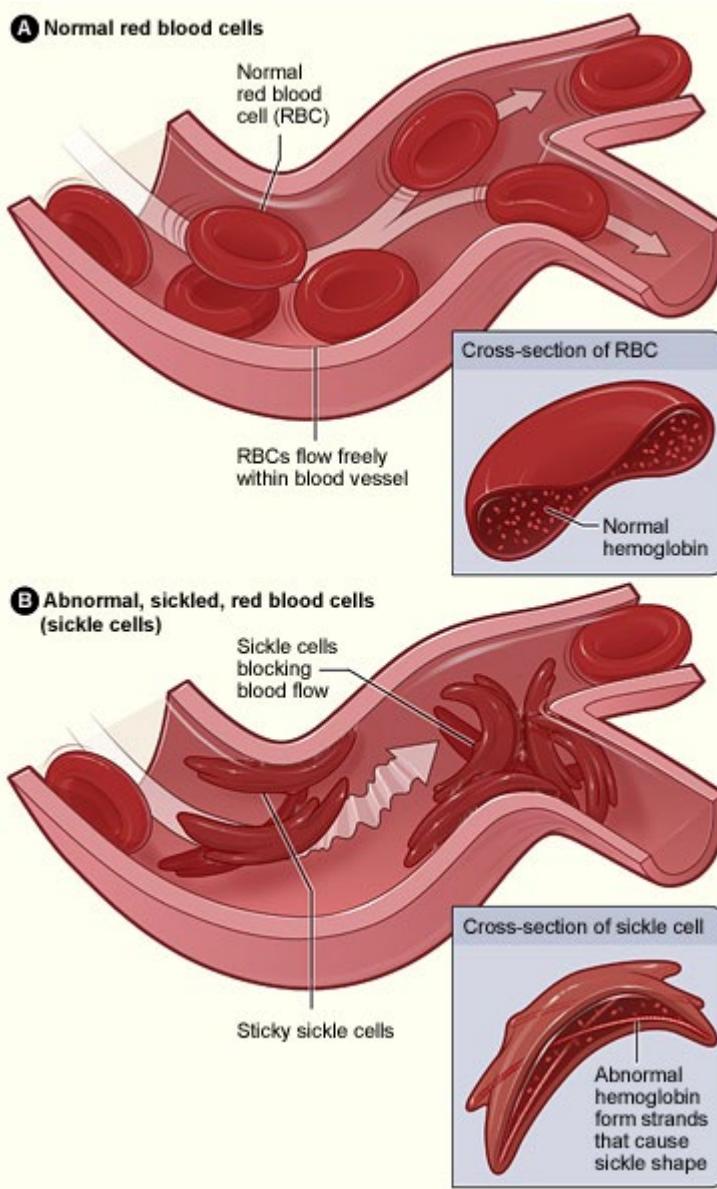


1. *Geospiza magnirostris*.  
3. *Geospiza parvula*.

2. *Geospiza fortis*.  
4. *Certhidea olivacea*.

Gould, in Darwin, 1845. Journal of researches into the natural history and geology of the countries visited during the voyage of H.M.S. Beagle round the world, under the Command of Capt. Fitz Roy, R.N. 2d edition.

[https://en.m.wikipedia.org/wiki/File:Darwin%27s\\_finches\\_by\\_Gould.jpg](https://en.m.wikipedia.org/wiki/File:Darwin%27s_finches_by_Gould.jpg)



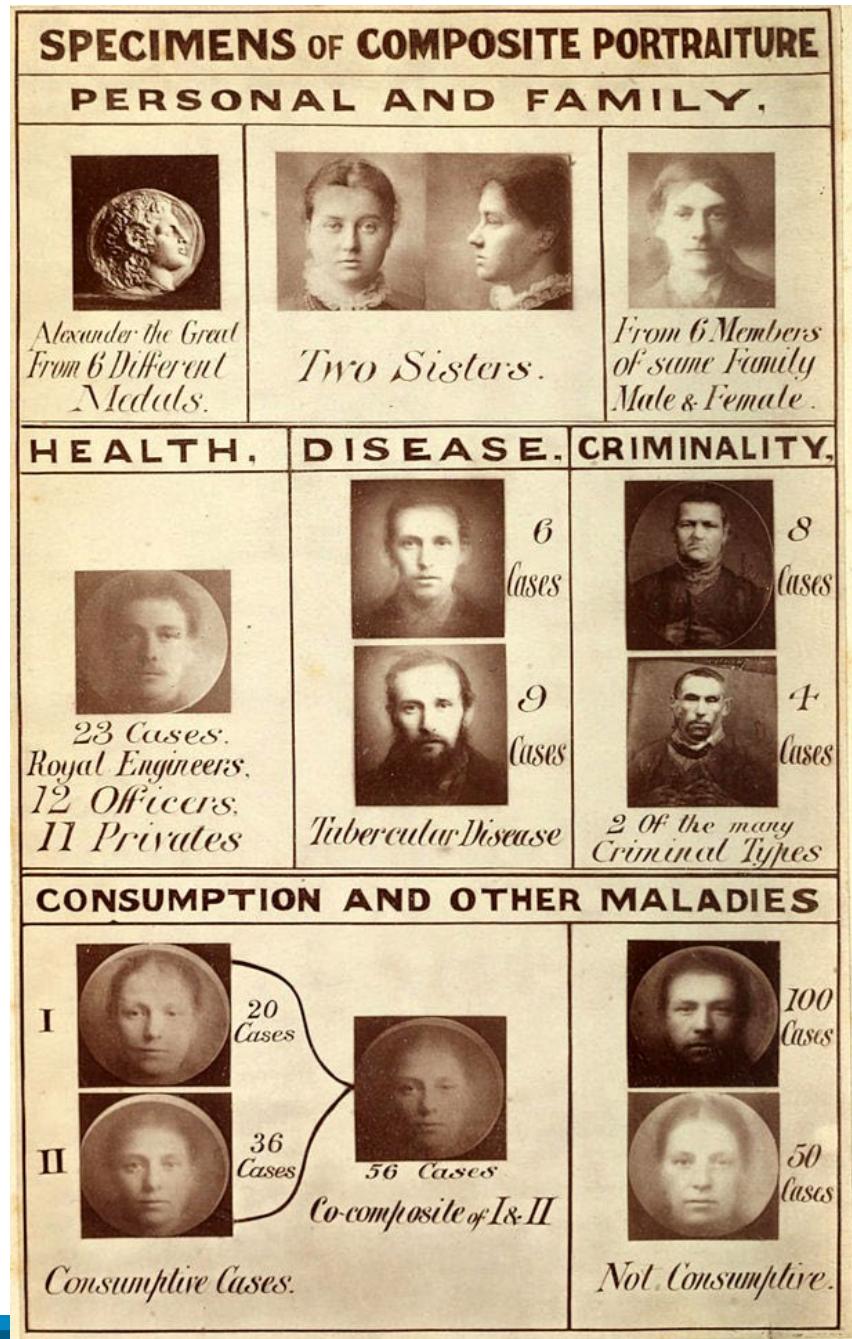
Bad science often contains a smidge of truth – some biological characteristics are **more common** within certain populations.

E.g. the gene for sickle-cell anaemia protects against malaria.  
It is more common in sub-Saharan African populations.  
(note: *environmental pressure, not inherent trait*)

The vast majority of traits have equal or more variation within an ethnic group than between ethnic groups

Race is a social construct, not biological fact.

**There is no scientific evidence to support the concept of a racial hierarchy.**



**Eugenics** is the idea that humanity can be improved by breeding out or eradicating the “unfit” using scientific techniques.

**Eugenics cannot be discussed as objective science.  
Its basis is fundamentally ideological and subjective.**

Eugenics is most associated with the Nazis, but it was founded many years earlier in the UK by Francis Galton, whose work focused on dividing people into “types”.

The “Galton Laboratory” still exists at UCL today as a human genetics research group.



# Registering Human Pedigrees



Mrs. Mary T. Watts,  
Audubon, Iowa

THE average American family of today is the result of haphazard mating. Men and women marry with little scientific thought as to their physical and mental fitness for bearing and rearing children. When the children come they too often are brought up in the same haphazard fashion in which their parents chose each other. Is it any wonder that the number of mentally and physically unfit increases?

For years, American farmers and breeders

How Kansas Develops Fitter Families;  
A Remarkable Experiment in Eugenics

By Arthur Capper, U. S. Senator from Kansas



The Eugenics Building at the Kansas Free Fair, where families are judged and registered. Seated in the center is a "fitter family" surrounded by examiners



Dr. Florence B. Sherbon,  
University of Kansas

member of a family. Another sheet of the record shows the results of the intelligence test, and an examination by a psychiatric specialist of the nerve reflexes, emotional and intellectual responses. A thorough structural examination is made, including strength tests and measurements. The medical record gives the results of a complete physical and organic examination, with blood pressure, hemoglobin blood test and the Wasserman blood test. Every member of the family is examined

Eugenics and race science are closely connected.

Eugenics was first conceived as a way of eradicating physical and mental disability, or other allegedly "unfit" traits



<https://www.pbs.org/independentlens/blog/unwanted-sterilization-and-eugenics-programs-in-the-united-states/>

# Does eugenics work?

Short answer: no.

Long answer: It's the wrong question.

**Eugenics is an ideology, not a science.**

Discussing whether it “works” assumes the ideology has credence.

## Does *selective breeding* work in animals?

Yes and no. It's possible to select for genetically simple traits within single lineages

It's extremely hard to select for complex traits, work across lineages, or to avoid unwanted consequences.

← Thread



**Richard Dawkins** @RichardDawkins · 16 Feb

It's one thing to deplore eugenics on ideological, political, moral grounds. It's quite another to conclude that it wouldn't work in practice. Of course it would. It works for cows, horses, pigs, dogs & roses. Why on earth wouldn't it work for humans? Facts ignore ideology.

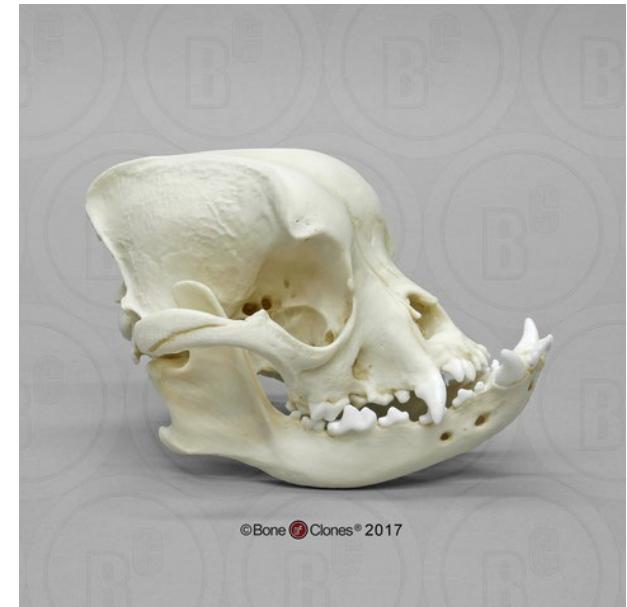
10.4K

3.7K

25K



[Show this thread](#)





**Dear Alison,**  
**This is a horror story.**  
**Why do we have to learn about it?**

Therapeutic pygmy possum



Photo via Dr Christine Cooper on Twitter

**Early 20<sup>th</sup> century WA policy was an explicit experiment in racial eugenics.**

WESTERN AUSTRALIA.

## NATIVE ADMINISTRATION.

No. 14 of 1905.

(As amended by No. 42 of 1911,\* No. 8 of 1931,† and No. 43 of 1936.‡)

**AN ACT to make provision for the better protection and care of the Native inhabitants of Western Australia.**

Amended by  
No. 43 of  
1936, s. 3.

[Reserved, 23rd December, 1905.]

[Royal assent proclaimed, 27th April, 1906.]

**B**E it enacted by the King's Most Excellent Majesty, by and with the advice and consent of the Legislative Council and Legislative Assembly of Western

*Homes Are Sought For These Children*



A GROUP OF TINY HALF-CASTE AND QUADRONE CHILDREN at the Darwin half-caste home. The Minister for the Interior (Mr Perkins) recently appealed to charitable organisations in Melbourne and Sydney to find homes for the children and rescue them from becoming outcasts.

*I like the little girl in centre of group, but if taken by anyone else, any of the others would do, as long as they are blacks*

From: Solomon, A. (May 23, 2014). *The stolen generations: an unending disaster for Australia*. Photograph: Corbis  
<https://www.theguardian.com/books/australia-culture-blog/2014/may/23/the-stolen-generations-an-unending-disaster-for-australia>

Wikipedia



Christoph Meiners 1747 – 1810

In 1785, Meiners decided that people of African origin didn't feel pain.

This was part of his “theory” of mankind. A cursory reading shows it is about as scientific as Gulliver’s Travels!



[Proc Natl Acad Sci U S A.](#) 2016 Apr 19; 113(16): 4296–4301. PMCID: PMC4843483  
Published online 2016 Apr 4. PMID: [27044069](#)  
doi: [10.1073/pnas.1516047113](https://doi.org/10.1073/pnas.1516047113)  
Psychological and Cognitive Sciences

Racial bias in pain assessment and treatment recommendations, and false beliefs about biological differences between blacks and whites

[Kelly M. Hoffman](#),<sup>a,1</sup> [Sophie Trawalter](#),<sup>a</sup> [Jordan R. Axt](#),<sup>a</sup> and [M. Norman Oliver](#)<sup>b,c</sup>

**In 2016, enough physicians still considered this 18<sup>th</sup> century racial prejudice to be fact for research disproving it to be necessary.**

# Bad science can be peer-reviewed...

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 ELSEVIER

Personality and Individual Differences  
Volume 53, Issue 1, July 2012, Pages 4-8

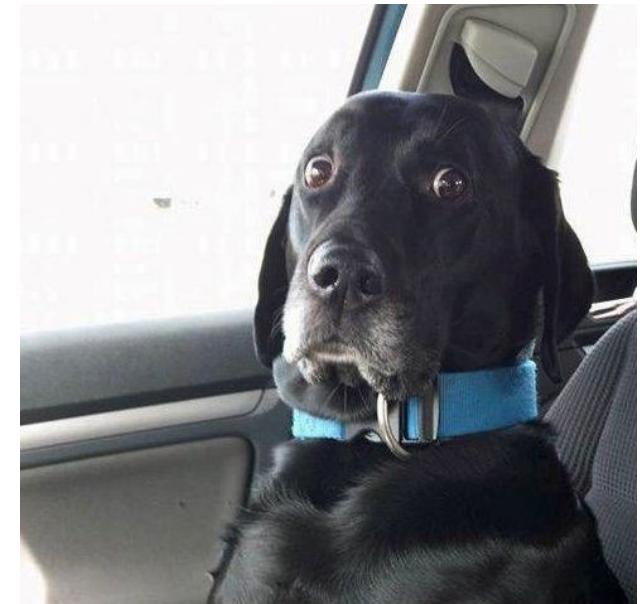
Review

Do pigmentation and the melanocortin system modulate aggression and sexuality in humans as they do in other animals?

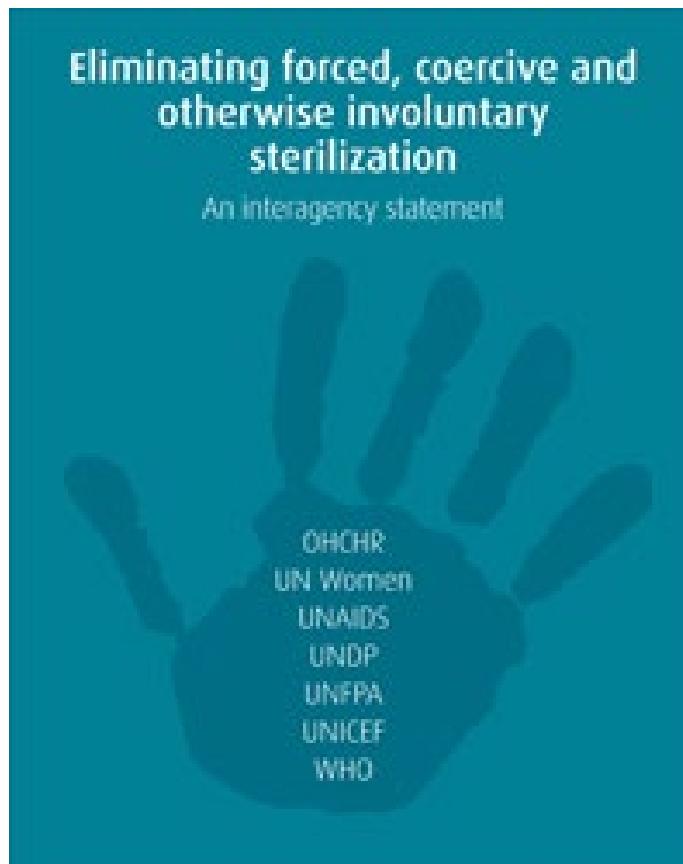
J. Philippe Rushton <sup>a</sup>  , Donald I. Templer <sup>b</sup>  



*“Black dogs are more difficult to get adopted from shelters and are rated as less desirable as pets. [...] Observers rated the black dogs as less friendly, less likely to make a good pet, and to be more aggressive.”*



# Bad science isn't history



<https://www.ohchr.org/EN/NewsEvents/Pages/The right to choose and refuse sterilization.aspx>

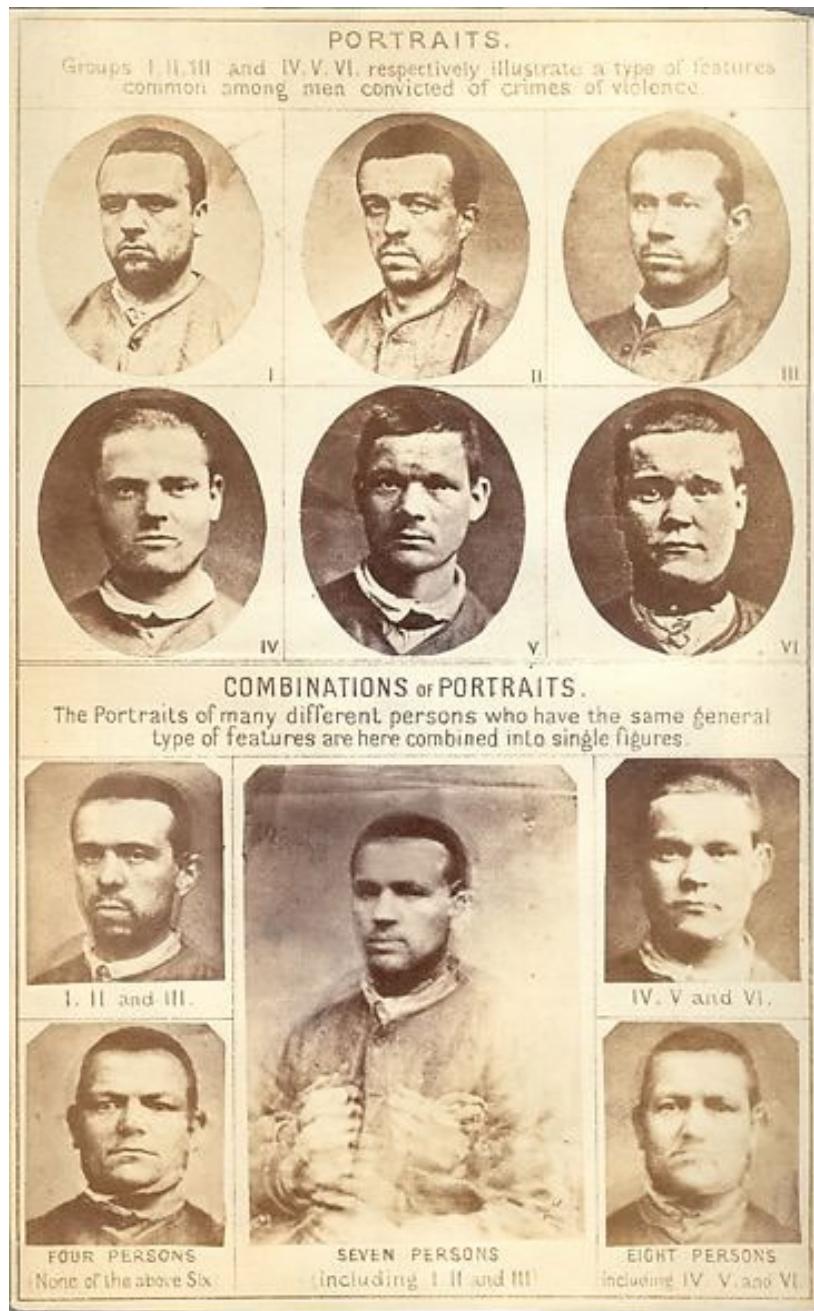
## No 10 refuses to comment on PM's views of racial IQ

**Move comes after hiring of new adviser who said black people have lower average IQs**

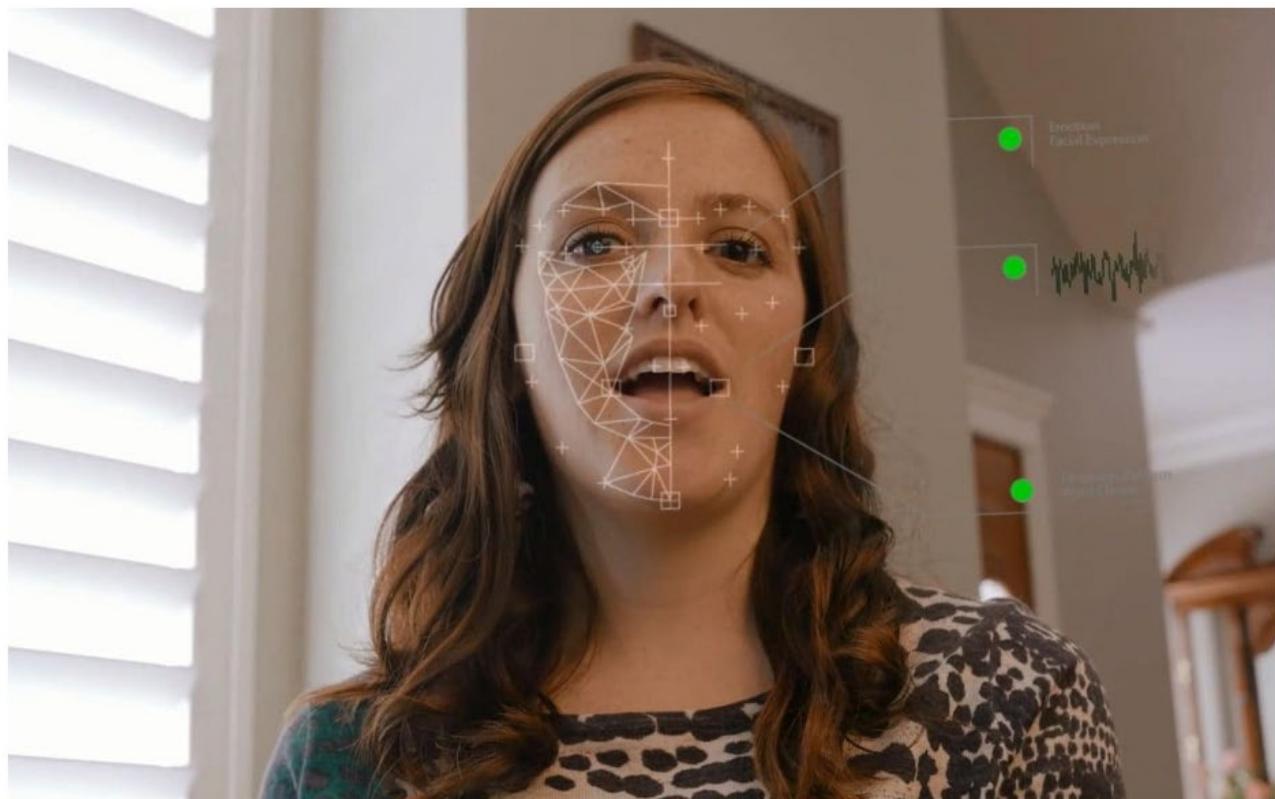


▲ Boris Johnson and Andrew Sabisky. The PM's adviser has suggested the use of 'enforced contraception' to avoid the creation of a 'permanent underclass'. Composite: EPA/BBC

<https://www.theguardian.com/politics/2020/feb/17/no-10-refuses-to-comment-on-pms-views-of-racial-iq>



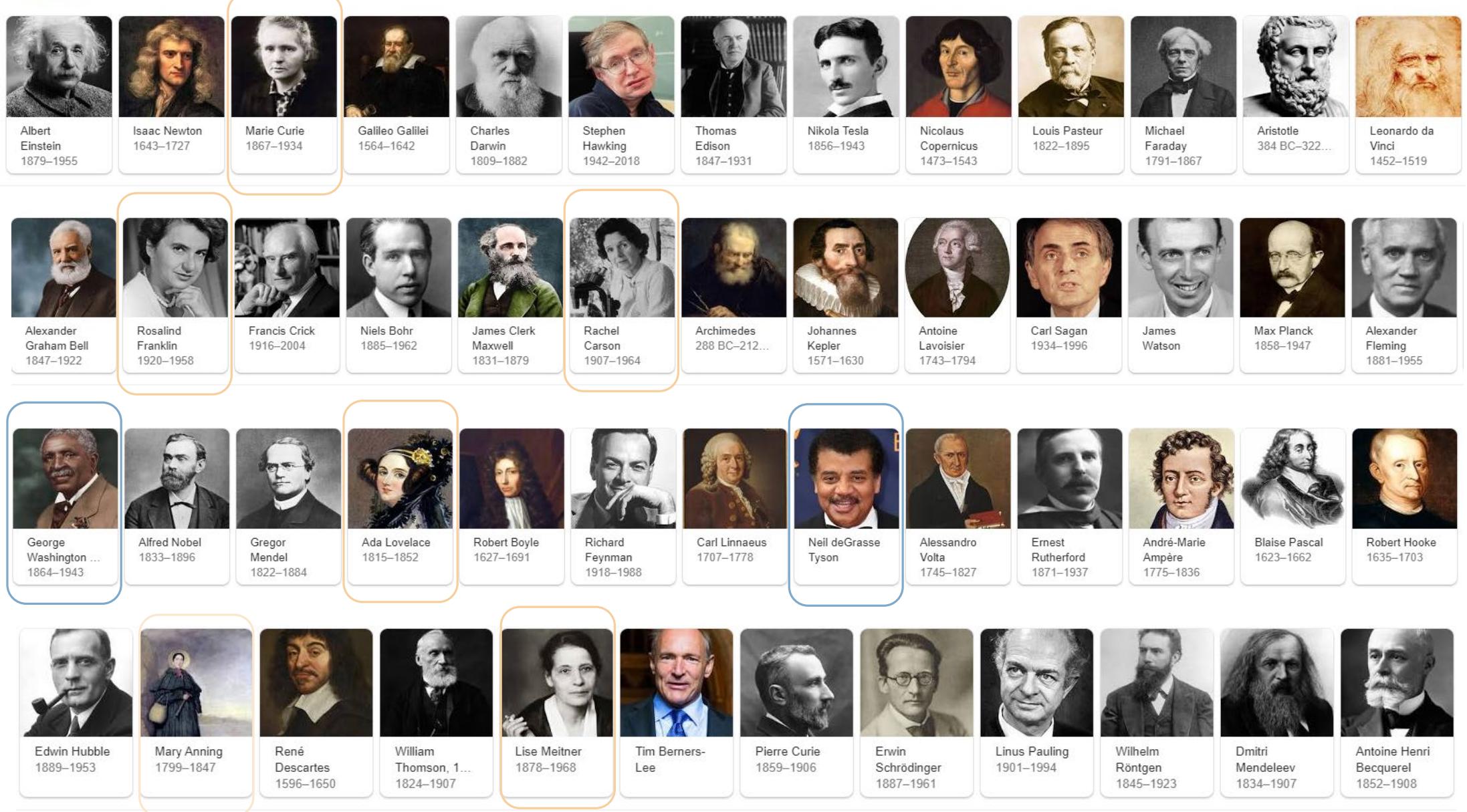
# AI used for first time in job interviews in UK to find best applicants



An applicant being interviewed on their phone

<https://www.telegraph.co.uk/news/2019/09/27/ai-facial-recognition-used-first-time-job-interviews-uk-find/>

## Scientists



# Diversity = more perspectives = better science

This is not about individuals.

There is no guilt, blame, or negativity attached to being white, or male, or able-bodied.

The issue lies in western science as a **system** that has historically prioritised one point of view.

**We all have biases and prejudices.** Every single one of us. It's part of being human.

To undertake good science we need three things:

- 1) A system that contains **multiple perspectives to act as checks and balances**
- 2) Training to **look outside our own perspectives**
- 3) An established ethical framework in which to work

# The next chapter

Western science, and colonial and 20<sup>th</sup> century racism were intertwined.

It was bad (incorrect) science – but the ideas were mainstream and influential

We can't understand where we are today, or how to move forward without addressing this.

**Scientific ethics** are rules we put in place to prevent science being used for damaging purposes.

**But ethical debates aren't clear cut** – we'll be helping you navigate that next week.

## How Ethical Is Facial Recognition Technology?



Yaroslav Kuflinski

[Follow](#)

Apr 11, 2019 · 9 min read ★



<https://towardsdatascience.com/how-ethical-is-facial-recognition-technology-8104db2cb81b>

NEWS · 14 JANUARY 2020

## How the fight over a Hawaii mega-telescope could change astronomy

Thirty Meter Telescope controversy is forcing scientists to grapple with how their research affects Indigenous peoples.

<https://www.nature.com/articles/d41586-020-00076-7>

## It's time to give back the loot

By what right do western museums keep property they know to have been stolen in earlier times?

By GEOFFREY ROBERTSON

<https://www.theaustralian.com.au/weekend-australian-magazine/why-museums-must-give-their-stolen-treasures-back/news-story/93a98235861d11e4a3707ef63cd0c13d>