

“Research integrity: What is a science funder to do?”

Kevin Moses

Director of Science, Wellcome Trust

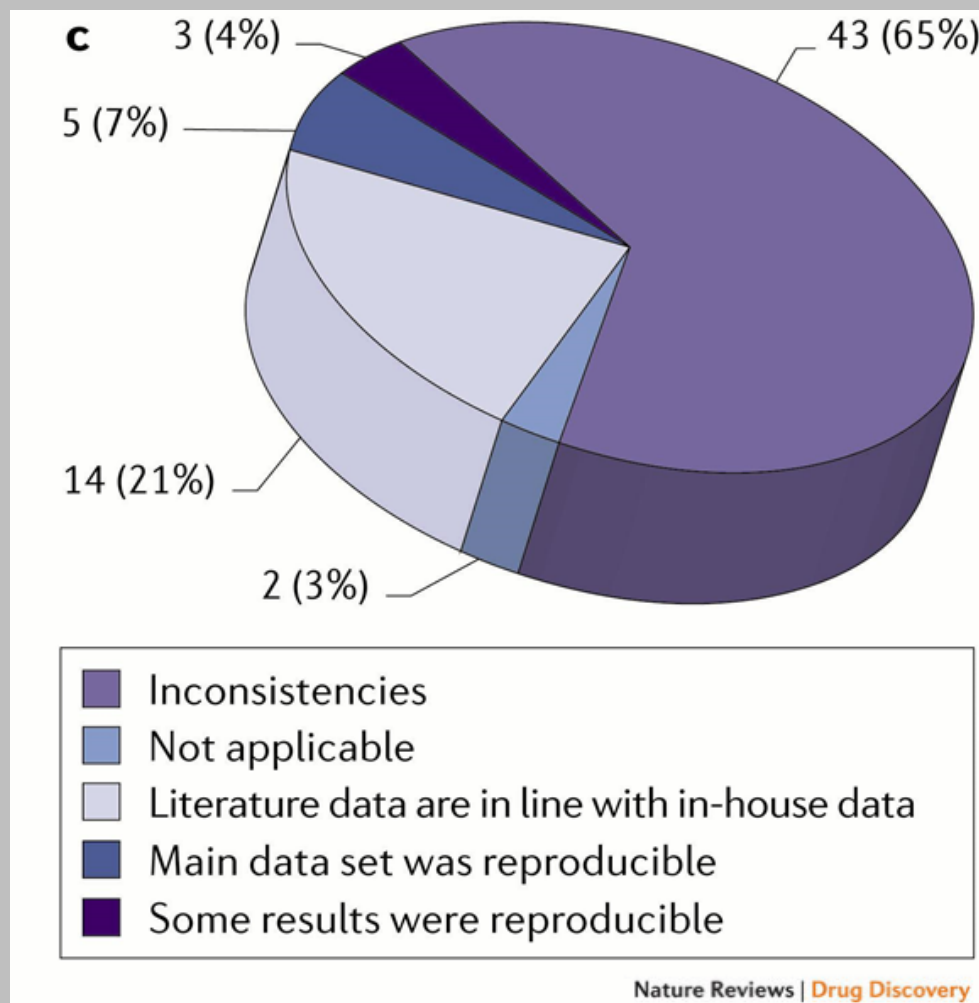
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Bayer findings

Figure 1c: Analysis of the reproducibility of published data in 67 in-house projects.

Findings published by Bayer HealthCare in Nature Reviews, showed that nearly three quarters of 67 projects reviewed, were not replicable.

Fig. 1c reproduced from Florian Prinz, Thomas Schlange & Khusru Asadullah; Nature Reviews Drug Discovery, 2011



Amgen findings

Of the 53 articles (shown in the table below) only 6 were reproducible. Those that weren't, were cited more than those that were.

Table 1: Reproducibility of research findings

Preclinical research generates many secondary publications, even when results cannot be reproduced

Journal impact factor	Number of articles	Mean number of citations of non-reproduced articles*	Mean number of citations of reproduced articles
>20	21	248 (range 3 - 800)	231 (range 82 - 519)
5 - 19	32	169 (range 6 - 1,909)	13 (range 3 - 24)

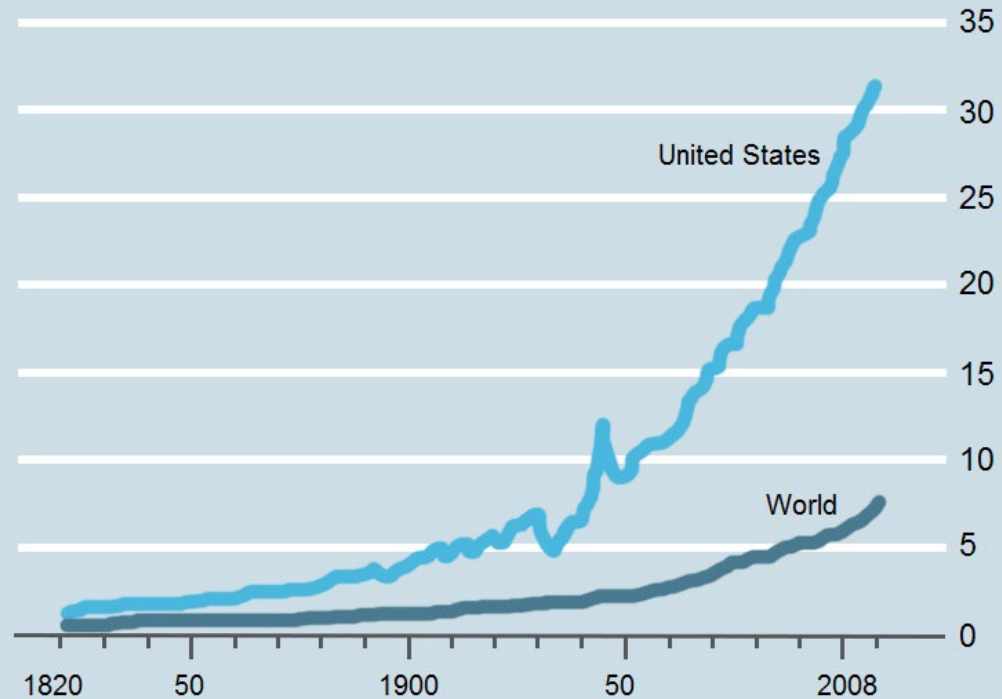
Results from ten-year retrospective analysis of experiments performed prospectively. The term 'non-reproduced' was assigned on the basis of findings not being sufficiently robust to drive a drug-development programme.

*Source of citations: Google Scholar, May 2011

Table 1 reproduced from C. Glenn Begley & Lee M. Ellis: Nature 2012

Economic Growth

Rising tide
GDP per person, 1990 \$'000*



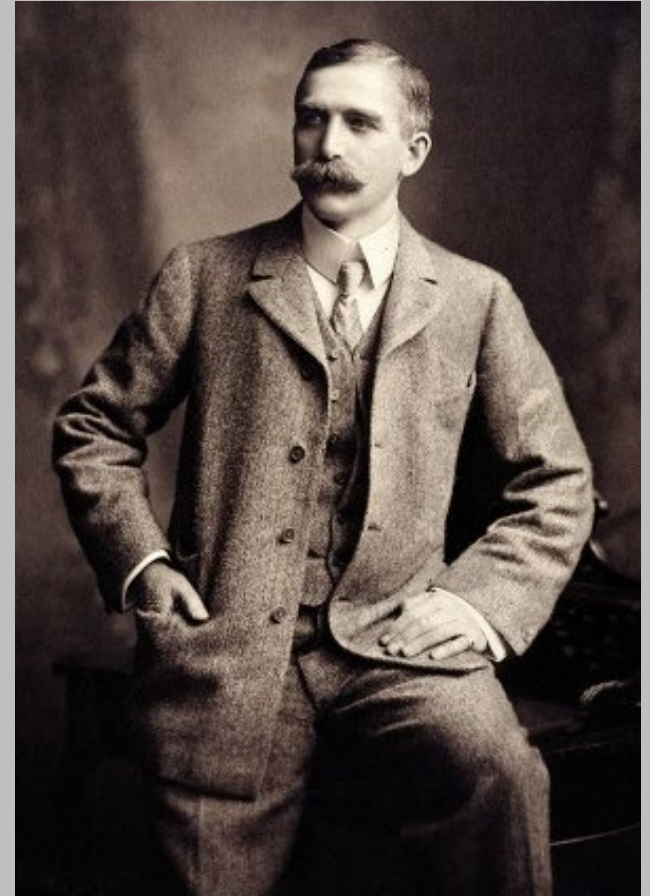
Source: Angus Maddison,
University of Groningen

* At purchasing-power parity

Chart extracted from an article in The Economist, Jan 2013
Entitled: "Has the ideas machine broken down?"

History of the Wellcome Trust

- The Trust was set up in 1936 under the will of Sir Henry Wellcome, who vested the entire share of his pharmaceutical company, The Wellcome Foundation, in a charitable trust
- The income from the Trust must be used to:
 - Advance medical and scientific research to improve mankind's wellbeing
 - Increase the understanding of the history of medicine
- The Trustees began work in 1937 with £73,048 in their deposit account



Wellcome Trust

- We are a global charitable foundation dedicated to achieving extraordinary improvements in human and animal health
- Our interests range from science, to the history of medicine, to public engagement
- We are independent of both political and commercial interests

Vision and strategy

Our vision is to achieve extraordinary improvements in human and animal health. In pursuit of this, we support the brightest minds in biomedical research and the medical humanities.

Focus areas

1. Supporting outstanding researchers
2. Accelerating the application of research
3. Exploring medicine in historical and cultural contexts

Challenges

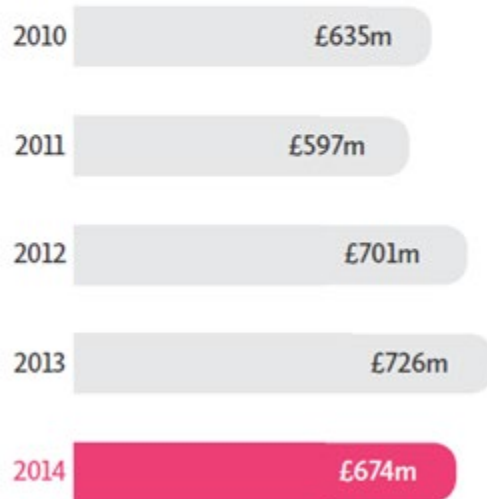
1. Maximising the health benefits of genetics and genomics
2. Understanding the brain
3. Combating infectious disease
4. Investigating development, ageing & chronic disease
5. Connecting environment, nutrition and health

2014 in numbers

Total grant funding and direct charitable activities

£674m

For the year ended 30 September.



Investment assets net of bond liabilities

£18bn

As at 30 September.



1044

Total grants awarded

123

Fellowships awarded or renewed

£374m

Venture capital finance secured by grantholders for commercialisation of R&D

297,822

Wellcome Collection visits

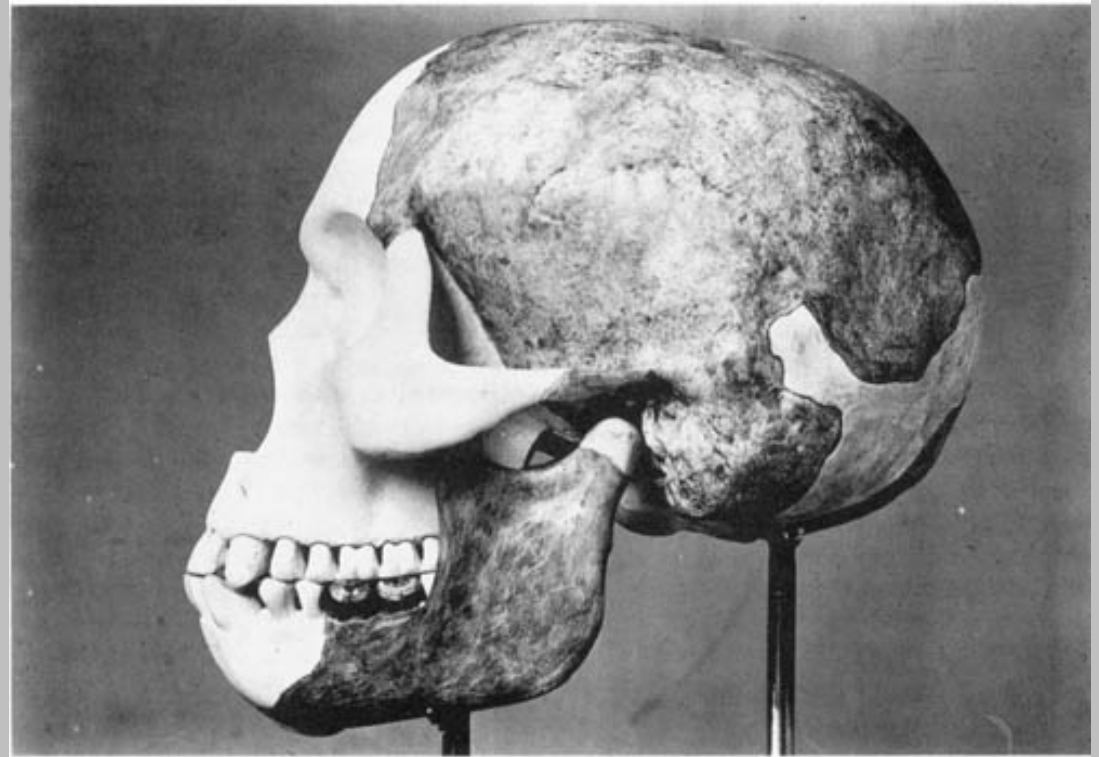
Approximate spread of grants funding across subject areas 2013/14

- 83% Science
- 11% Innovations
- 6% Culture & Society

Pitdown man

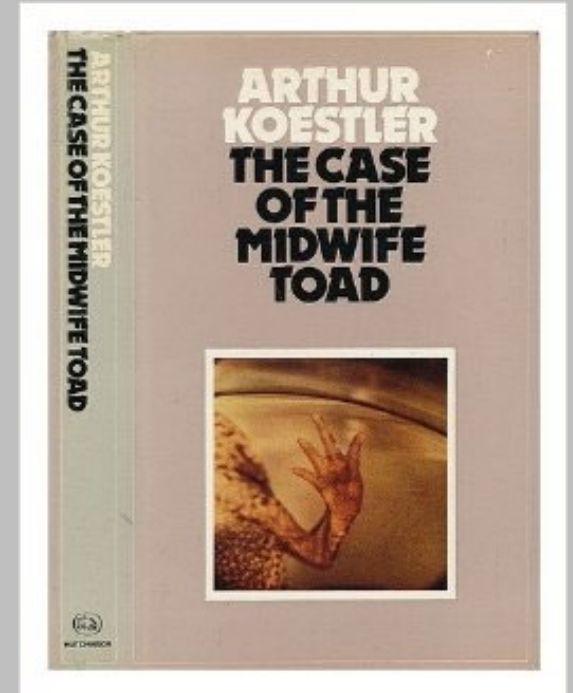
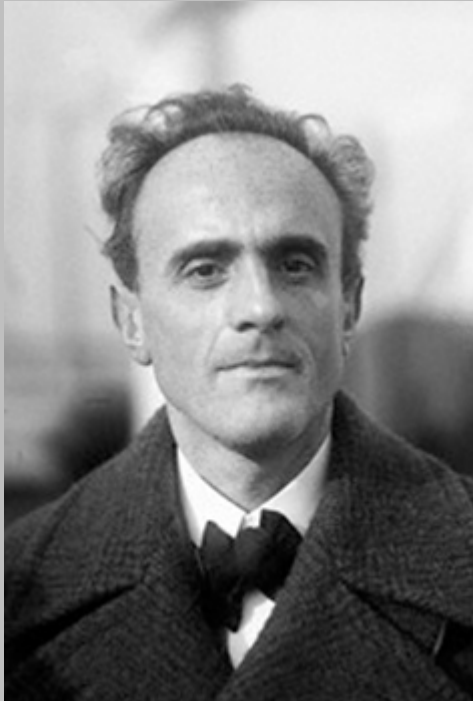


Charles Dawson



Pitdown man, 1912, a human cranium and an orangutan jaw with filed down teeth

Paul Kammerer, (1880 – 1926)



Paul Kammerer was an Austrian biologist who advocated the Lamarckian theory of inheritance; the idea that organisms pass on characteristics to their offspring that they have acquired during their lifetime.

Marc Hauser



Hauser's research was aimed at understanding the processes and consequences of cognitive evolution.

An investigation resulted in the retraction of a much-cited study published in *Cognition* (2002) and doubts about the validity of other findings.



Joachim Boldt



Boldt was suspended in 2010 for alleged drug research fraud.

The withdrawal of almost 90 fraudulent studies by the German anesthetist is one of the biggest medical research scandals or recent time.

Recent articles



nature International weekly journal of science

NATURE | NEWS   

UK universities slow to publish reports of misconduct investigations

Few institutions have followed research integrity guidelines to the letter.

Elizabeth Gibney

14 May 2015

Just a fraction of universities in the United Kingdom have made public the extent of their investigations into research misconduct, a survey has found — even though all have been told that they should do so.

Since 2013, the United Kingdom's major research funders have said that to receive grants, universities must adhere to a set of guidelines that recommend publishing annual summaries of their formal investigations into research misconduct.

But a snapshot survey carried out on behalf of the UK Research Integrity Office (UKRIO, a national advisory body with no regulatory powers) has found that universities are falling short on this recommendation. The survey was presented at the UKRIO's annual conference in London on 13 May.

Tony Segal and Jatinder Ahluwalia



THE
Times Higher Education

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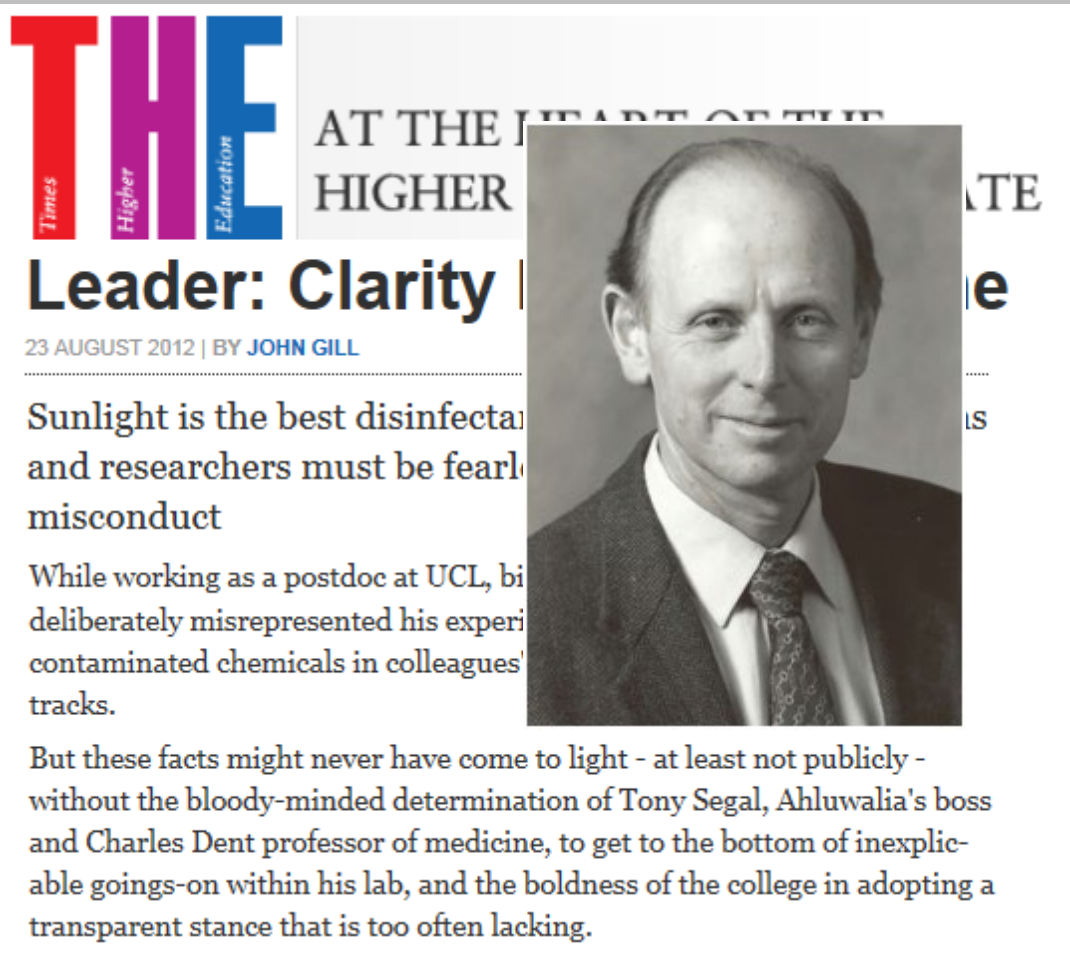
Faking it

23 AUGUST 2012 | BY PAUL JUMP

Another THE article from 2012, reporting the research misconduct of Jatinder Ahluwalia

A renowned immunologist whose li
down when it emerged that one of
researchers had falsified experimen
Jump that the sector needs a cultur
its duty to expose research misconc

THE report on Tony S



THE
Times Higher Education


AT THE HE
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Leader: Clarity

23 AUGUST 2012 | BY JOHN GILL

Sunlight is the best disinfectant
and researchers must be fearful
misconduct

While working as a postdoc at UCL, bi
deliberately misrepresented his experi
contaminated chemicals in colleagues'
tracks.



But these facts might never have come to light - at least not publicly - without the bloody-minded determination of Tony Segal, Ahluwalia's boss and Charles Dent professor of medicine, to get to the bottom of inexplicable goings-on within his lab, and the boldness of the college in adopting a transparent stance that is too often lacking.

Recent articles

The New York Times

Inquiry Finds Misconduct by a Top Surgeon, Paolo Macchiarini

By HENRY FOUNTAIN MAY 20, 2015

An investigation in [Sweden](#) into a surgeon who is a pioneer in the field of regenerative medicine has found that he committed scientific misconduct by omitting or falsifying information about the conditions of three patients in medical journals.

Dr. Bengt Gerdin, the independent investigator who looked into accusations against the surgeon, Dr. Paolo Macchiarini, said that in several journal papers, including one in *The Lancet* in 2011, Dr. Macchiarini had “omitted some data and also fabricated or falsified some data regarding the postoperative state of patients” on whom he had performed experimental groundbreaking operations.