

“You don't want to do it like that”:
**some (in)famous examples of
research misconduct**



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Classification of misconduct (1)

Misconduct that distorts scientific knowledge

- **Fabrication** – reporting of non-existent data
- **Falsification** – selective reporting of data

Misconduct that misleads the scientific community

- Authorship: **Plagiarism**, 'Guest' authors, 'Ghost' authors
- Duplicate publication
- Abuse of the peer-review process

"FFP" = Fabrication, Falsification, Plagiarism

Classification of misconduct (2)

Misconduct relating to human subjects

- Consent issues
- Exploitation issues (inc. financial)

Other issues

- Conflicts of Interest
- Poor record-keeping
- Failure to obtain necessary ethical approval
- Incidental findings?

Selection of cases for discussion

- Sadly there are plenty more cases than can be discussed in time available
- Omitted alleged cases before 1900
- Omitted cases where there is significant minority dissent re guilt
- Omitted cases from outside biology and biomedicine
- Have tried to balance UK, USA and other countries
- Have looked for combination of classic, curious and contemporary cases reflecting range of different types of misconduct

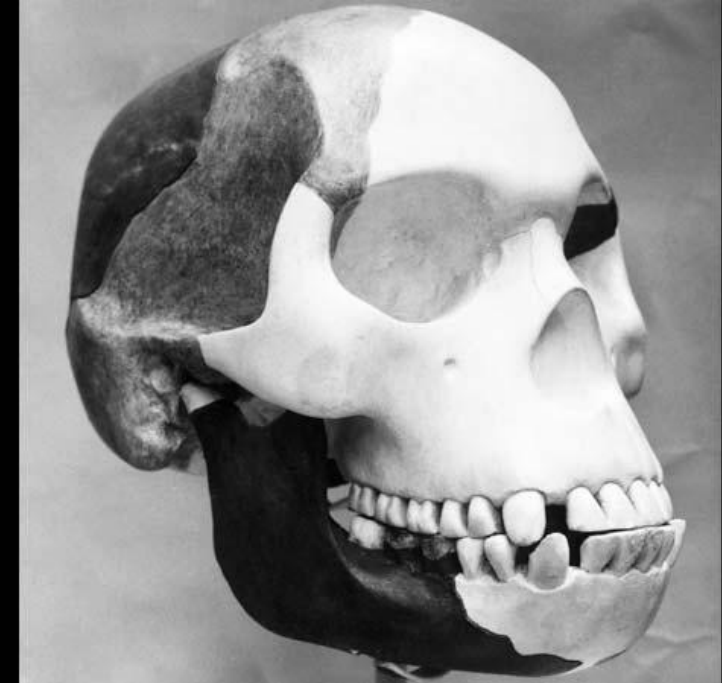
i.e. cases likely to be useful in teaching

Pittdown Man (1912)

- Report of hominid remains found in Sussex
- “Missing link”?
- Later shown to be skull of modern man and jawbone of orang-utan
- Fraud certain, but identity of culprit still uncertain
 - Charles Dawson?
 - Martin Hinton?



<http://tinyurl.com/dawsonhinton>



<http://tinyurl.com/pitdownskull>

✘ Fabrication

Tuskegee Syphilis Study (1932-72)



<http://tinyurl.com/tuskegee11>

- Poor African-Americans with advanced syphilis recruited to trial to study their “bad blood”
- Deliberately untreated to see long-term effects of infection, even when treatments became available (e.g. Penicillin)
- Over 400 men (plus families) involved
- Breach of human rights

- ☒ Consent
- ☒ Exploitation
- ☒ (Racism)

Nazi doctors (1940s)

- Medical experiments conducted on prisoners
 - sterilisation
 - modelling of battlefield wounds and infection
 - physiological response to extreme conditions
 - bizarre transplantation and twin studies
- Doctors included “Angel of Death” Joseph Mengele (escaped), plus several put on trial and hanged
- Led to [Nuremberg Code](#) of conduct for research involving human subjects (1947)

☒ Consent

☒ Exploitation

Porton Down (1940s-60s)

- Series of experiments conducted at Porton Down, UK Government and military research centre
- Participants thought they were volunteering for trials to find things such as cure for common cold
- Actually exposed to LSD, sarin, mustard gas, etc
- 2008, MOD agreed to £3M payout to surviving veterans

☒ Consent

☒ Exploitation

Last Updated: Thursday, 31 January 2008, 17:02 GMT

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Porton Down victims awarded £3m

The Ministry of Defence (MoD) is to award £3m in compensation to 360 veterans of Cold War experiments at the Porton Down research centre.

Defence minister Derek Twigg said: "The government sincerely apologises to those who may have been affected."



The government has not admitted liability

The money is "in full and final settlement" of claims and without admission of liability, Mr Twigg added.

Many of those given nerve agents in the trials at the Wiltshire complex have complained of life-long ill health.

The servicemen were often told they were helping to find a cure for the common cold.

<http://tinyurl.com/portondown>

William Summerlin (1974)

- Researching ways to overcome tissue rejection at Sloan-Kettering Institute in New York
- Included transplanting fur from black mouse onto white mouse
- “Transplanted” patches actually drawn on with black marker pen (removable with alcohol)



☒ Fabrication

Vijay Soman & Philip Felig (1978)



<http://tinyurl.com/soman11>



<http://tinyurl.com/felig11>

- NEJM sent Felig paper for review
- Felig passed paper to junior colleague Soman
- They rejected paper
- Few months later, Am J Medicine sent original author paper by Soman to review
- Sections clearly copied from hers, plus additional material later shown to be made up

☒ Plagiarism

☒ Fabrication

☒ Violation of peer-review process

Dick van Velzen (1988-95)

- Senior pathologist at Alder Hey Children's Hospital
- Expert in cot death, was found to have organs from about 850 children without appropriate permission
- Struck off by GMC
- Along with scandal at Bristol Royal Infirmary led to **Human Tissue Act (2004)**

☒ Consent

☒ Fabrication

Last Updated: Monday, 20 June, 2005, 16:21 GMT 17:21 UK

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Organ scandal doctor struck off

A pathologist who ordered the removal of organs from the bodies of dead children has been found guilty of serious professional misconduct.

Professor Dick van Velzen, 56, worked at Alder Hey Children's Hospital in Liverpool at the height of the organ retention scandal from 1988 to 1994.



Dr Van Velzen was struck off the UK medical register

The General Medical Council (GMC), sitting in Manchester, ordered that he be struck off the UK medical register.

The doctor, from Oegstgeest in Holland, was not present at the hearing.

Eric Poehlman (1992-2002)



<http://tinyurl.com/poehlman>

- Research into ageing, menopause and Hormone Replacement Therapy, working primarily at Uni of Vermont
- Misconduct exposed by former lab technician Walter DeNino
- Pleaded guilty to falsifying 17 grant applications and fabricating data in 10 research papers
- 2006, first scientist jailed for fraud (also fined \$200K)

☒ Fabrication

☒ Falsification

Malcolm Pearce (1994-95)



<http://tinyurl.com/pearce11>

- Obstetrician at St George's, London
- Reported transplant of ectopic pregnancy to uterus and live birth
- Colleagues at same hospital said no knowledge of case
- Pearce tried to hack computer to alter notes
- Also found to have invented patients in study on polycystic ovary syndrome
- Struck off by GMC

✘ Fabrication

Geoffrey Chamberlain (1995)

- Linked to Malcolm Pearce case
- World renowned ultrasound expert
- Chamberlain was Pearce's Head of Dept, and Editor of *British Journal of Obstetrics and Gynaecology* where both fraudulent papers were published
- Accepted "gift authorship" for ectopic pregnancy paper
- Reprimanded by GMC
- "*A considerable error of judgement*" (Wells, 2008)

☒ Gift authorship



Andrew Wakefield (1998)

- Author on infamous Lancet paper linking autism with MMR vaccine
- Investigation for >2 years (ended May 2010) decided he was guilty of conflict of interest, both as recipient of money from lawyer looking for link to vaccine, and regarding company he set up looking to market test
- Highly selective reporting of data
- Unethical dealings with children

- ☒ Consent
- ☒ Exploitation
- ☒ Conduct of clinical trial
- ☒ Conflict of Interest (financial)



James Wilson (1999)



<http://tinyurl.com/jwilson11>

- Conducted clinical trial using gene therapy to combat OTC deficiency at U of Pennsylvania in which Jesse Gelsinger died
- President and major shareholder (30%) in Genova, company developing product under test
- Failed to report extent of adverse reactions during animal testing

Consent

Conduct of clinical trial

Conflict of Interest (financial)

Raj Persaud (2003 & 2005)

- Celebrity psychologist appearing regularly on TV and radio (including own show *All In The Mind* on R4)
- 2003 book *From the Edge of the Couch* and various other writings including article on scientology
- Admitted plagiarism but claimed it was accidental due to pressure of work
- Suspended for 3 months



☒ Plagiarism

Hwang Woo-Suk (2004-05)



<http://tinyurl.com/hwang11>

- 2 landmark papers in *Science* reporting production of human embryonic stem cells via Somatic Cell Nuclear Transfer
- Data fabricated and falsified
- Also obtained human eggs for research by unethical means, including requiring female team members to superovulate
- Suspended prison sentence for embezzlement

- ☒ Fabrication
- ☒ Falsification
- ☒ Exploitation
- ☒ Embezzlement

Gerald Schatten (2005)

- Corresponding author and senior scientist on 2nd Hwang paper
- U of Pittsburgh investigation found him innocent of fraud but said he “shirked” his responsibility to validate results
- Guilty of “research misbehaviour” not “research misconduct”



☒ Irresponsible authorship

Jon Sudbo (1993-2005)

- Research into prevention of oral cancer at Norwegian Radium Hospital, Oslo
- 2005 paper in *Lancet* raised almost instant accusation of fabrication as it included 900 patients from database that didn't exist at time cited
- Also found that second image in a 2001 NEJM paper just enlargement of first
- Eventually 15 papers (plus PhD) retracted

☒ Fabrication

☒ Falsification



Vipul Bhrigu (2010)

<http://tinyurl.com/amesbhrigu11>



- U Michigan PhD student Heather Ames struggled to get expts to work in her own lab, but worked fine in boyfriend's lab
- Suspected PostDoc Vipul Bhrigu (inset) was sabotaging expts
- Set up concealed camera and caught Bhrigu adding ethanol to cell culture
- April 2011 pleaded guilty to destruction

☒ Fabrication (sabotage)



<http://tinyurl.com/bhriguvideo>

Conclusions

Why tell students about misconduct?

- It happens, we need to be realistic
- Serves as warning: demonstrates points where acceptable action has been breached

Would you tell so many stories back-to-back?

- Probably not, purpose today was to share a catalogue from which suitable cases can be picked
- I use several in introductory lecture (van Velzen, Schön, Sudbø, Wakefield, Hwang, Persaud)
- Others at relevant point (e.g. Wilson, Hwang)

Thank you

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