

Faculty of Health and Wellbeing

PhD Students' Workshop
Wednesday October 12 2016

What's a PhD?

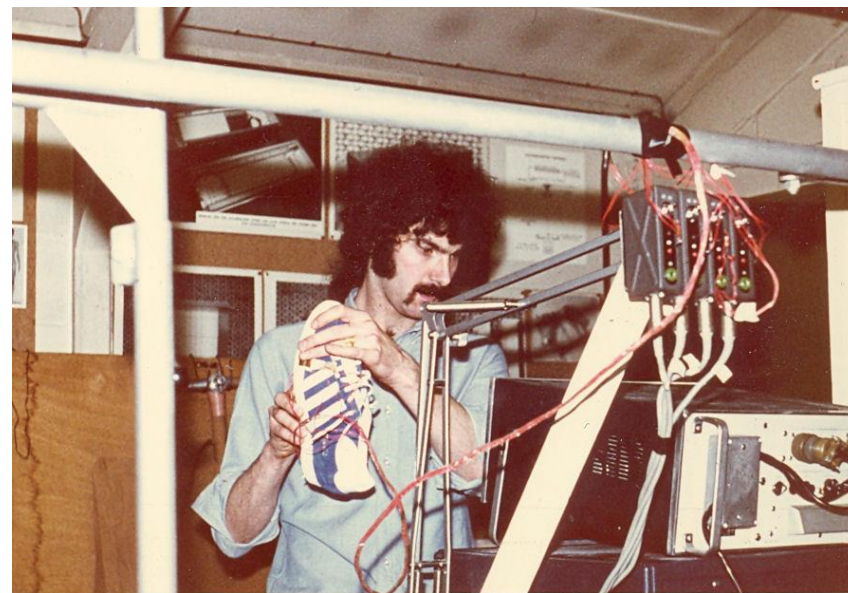
Edward M Winter BEd MSc PhD DSc CSci FBASES FafPE
Emeritus Professor of the Physiology of Exercise

Where we are . . .



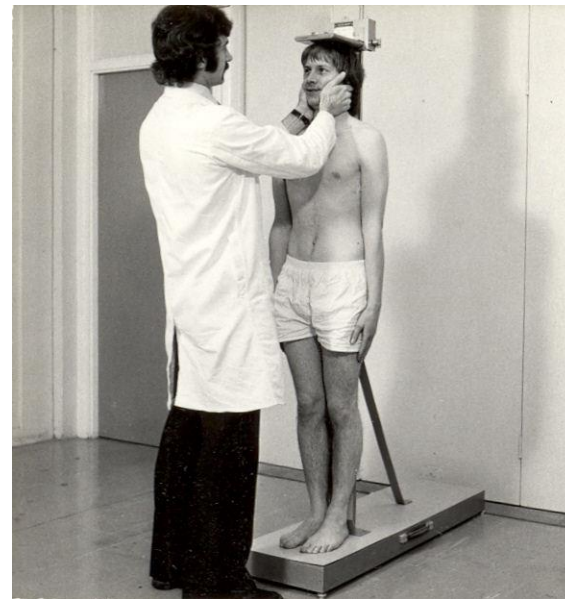
Once upon a time . . .

In 1972 there was a
young undergraduate . . .



Once upon a time . . .

. . . who, in 1974, went on
to do an MSc . . .



Once upon a time . . .

. . . and then in 1989 took
a PhD . . .



Once upon a time . . .

. . . in 1999 became a
Professor



Once upon a time . . .

. . . and in 2011 became a
DSc . . .



Once upon a time . . .

. . . and in 2011 became a
DSc . . .
. . . and in 2013, CSci.



But throughout . . .

. . . he has been guided by a trinity of:

- ◆ excitement
- ◆ challenge
- ◆ preparation

. . . and . . .

. . . has had fun . . .

. . . but, that fun should not be confused with
frivolity.

How many people in the UK have a PhD?

- ◆ Approximately 240,000
- ◆ $\approx 0.8\%$ of the working population (32,000,000)
- ◆ 14,000 professors ($\approx 0.044\%$)

What is a PhD?

What is a PhD?

Doctor of Philosophy
from the Latin *philosophiae doctor*

What is a PhD?

A licence to practise as an independent researcher

What is a PhD?

A licence to practise as an independent researcher

A rite of passage to academia

What is a PhD?

The PhD will be awarded to a candidate who, having critically investigated and evaluated an approved topic, resulting in an independent and original contribution to knowledge, and demonstrated an understanding of research methods appropriate to the chosen field, has presented and defended a thesis by oral examination to the satisfaction of the examiners.

SHU PhD award objectives R1.5

Research

- ◆ Systematic enquiry
- ◆ Epistemology
- ◆ Evidence-based practice

Science

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Finished files are the result of
years of scientific study
combined with years of
experience

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What is science?

Science is the pursuit of knowledge and understanding of the natural and social world following a systematic methodology based on evidence

the Science Council

What is science?

A way of working

What is science?

A way of working
only one of several epistemological
techniques

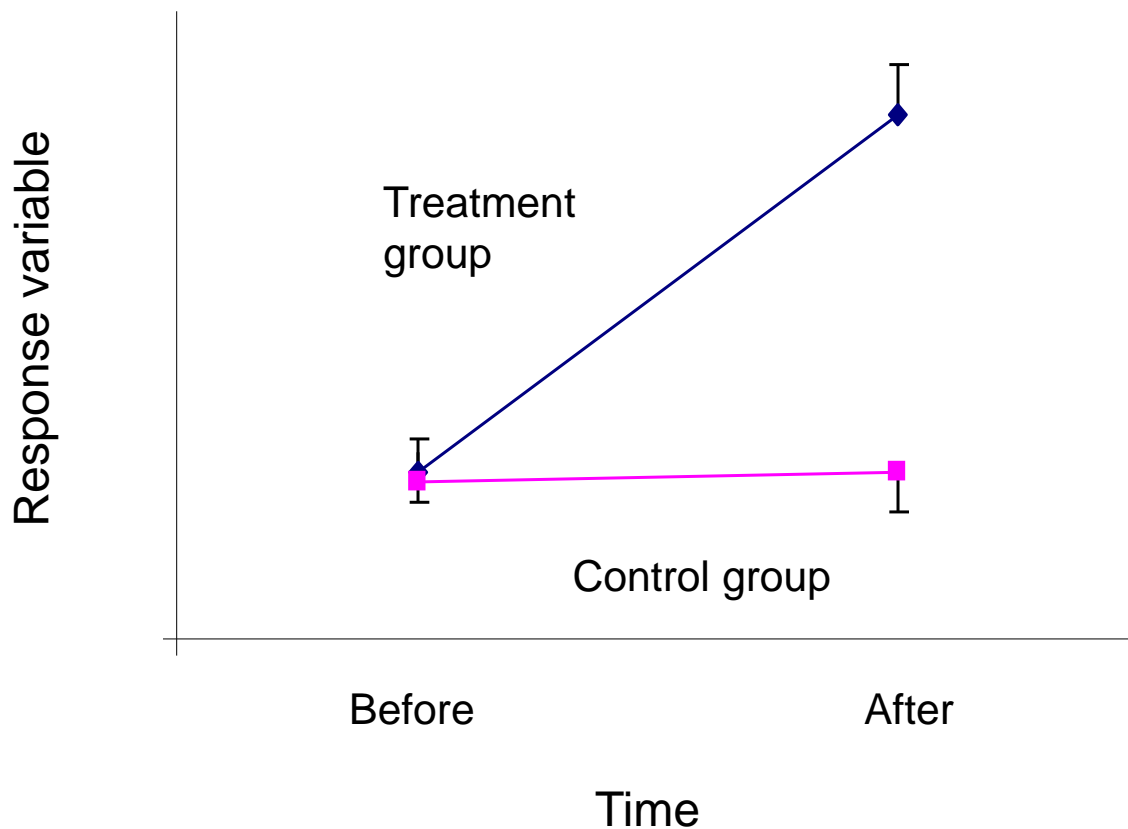
What is science?

A way of working characterised by:

1. Observation
 2. Research question
 3. Hypotheses
 4. Experiment
 5. Analysis
 6. Outcome
 7. Broadcast
- Scholarship

Evidence-Based Practice

The Randomised Controlled Trial



What is science?

Proof or probability . . ?

What is science?

Proof and certainty is the province of priests and politicians, the rest of us have to wrestle with probabilities.

After Jones (2009)

Science

Science appears to us with a very different aspect after we have found that it is not in lecture rooms only, but that we may find illustrations of the highest doctrines of science in games and gymnastics, in travelling by land and water, in storms of the air and of the sea, and wherever there is matter in motion.

James Clerk Maxwell (1831-1879)

(Introductory lecture on elementary physics, Cambridge, 1871)

Other methods

Qualitative

- ◆ Non-scientific
- ◆ Health-related research

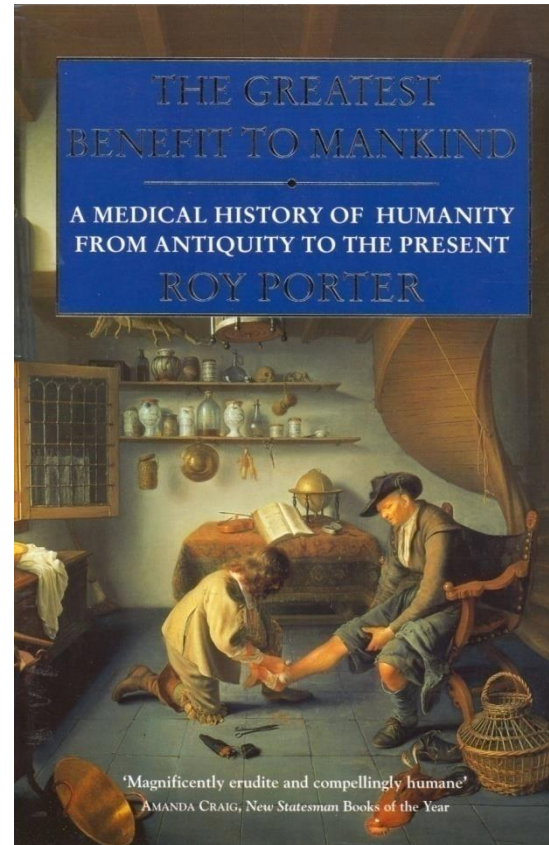
Define your discipline

. . . ology

◆ the study of . . .

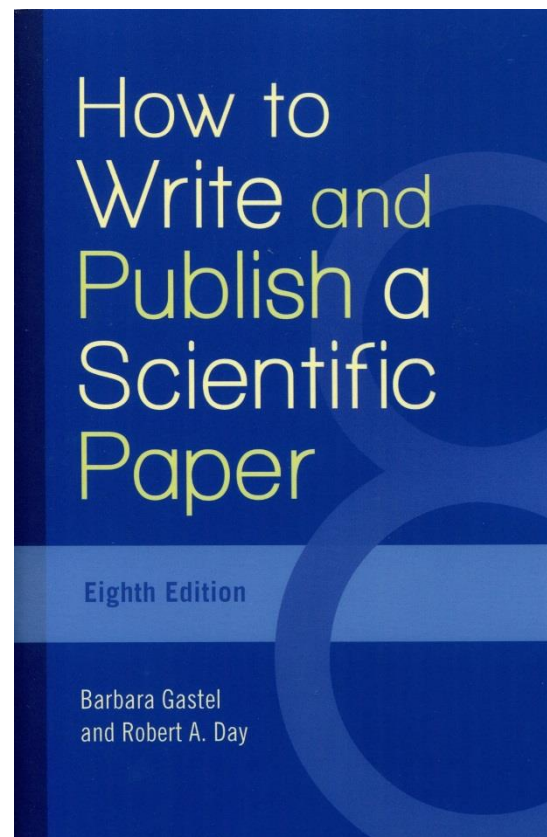
Sheffield Hallam University Supporting Literature

◆ Roy Porter (1999)



Supporting Literature

◆ Gastel and Day
(2016)



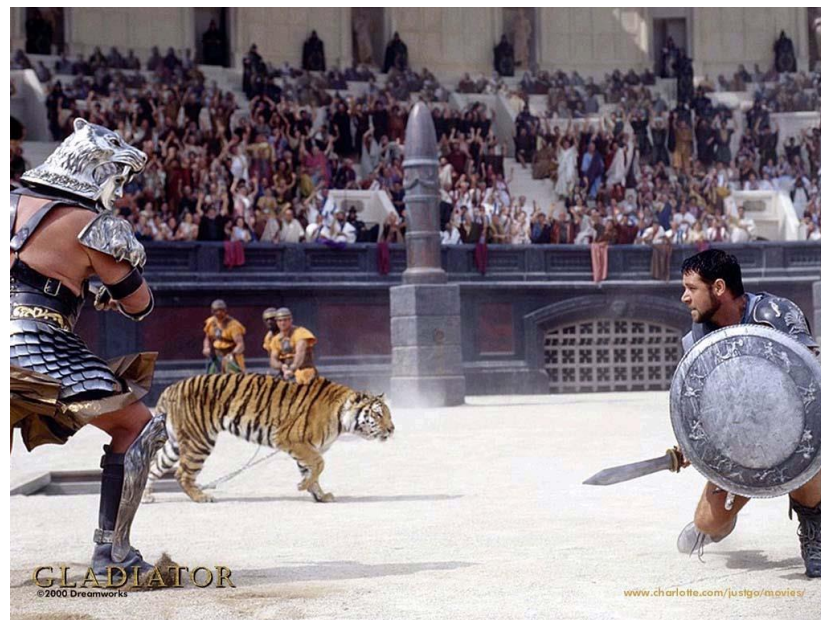
New . . .

André Gide (1869-1951)

Everything has been said before, but
since nobody listens we have to keep
going back and beginning all over again

History . . . depicted

- ◆ Gladiator Maximus Decimus Meridius



History . . . depicted

- ◆ Gladiator Maximus
Decimus Meridius



- ◆ Trainer Antonius Proximo



History . . . actual

- ◆ Marcus Aurelius 121-180AD



History . . . actual

- ◆ Marcus Aurelius 121-180AD

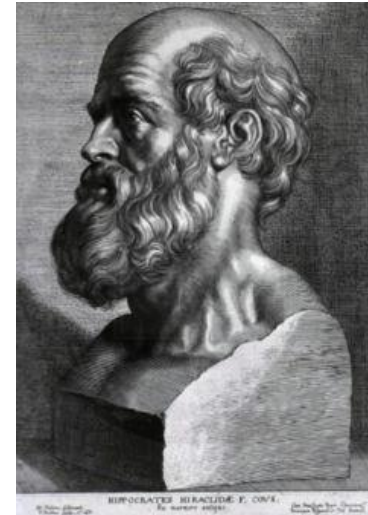


- ◆ Galen c129-c216AD



History . . . actual

- ◆ Hippocrates c460-
c370BC



History . . . actual

We are simply reinterpreting and perhaps adding only a little to the preceding 2,500 years – and probably even longer than that

Birth of Empiricism – Bacon

'*Novum Organum*' (*New Method*) published 1620

- Empiricism
 - based on careful observation of empirical evidence
 - methodological
 - interrogate nature based on method of **INDUCTION**
 - a method which leads to the understanding 'Forms' of things – the hidden processes that are responsible for the behaviour of all observed physical phenomena



Francis Bacon (1561-1626)



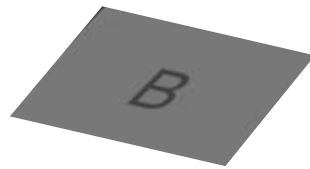
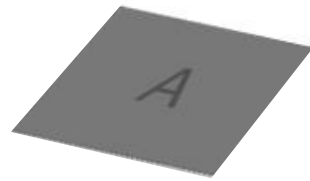
John Locke (1632-1704)

Observation

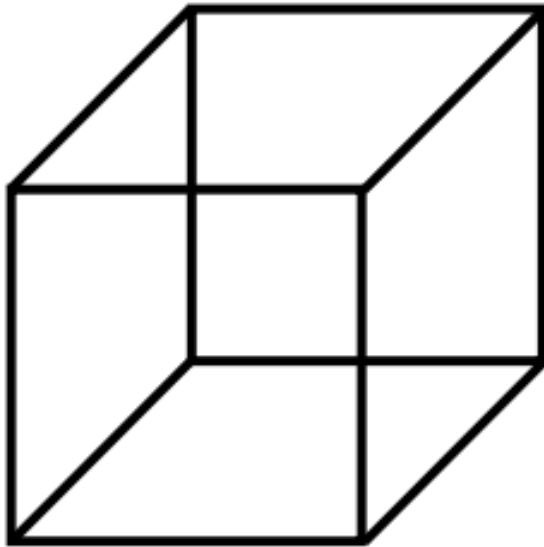
- The empiricist case states that ‘experimental’ knowledge is pure and unmediated.
- What do you think about this statement?

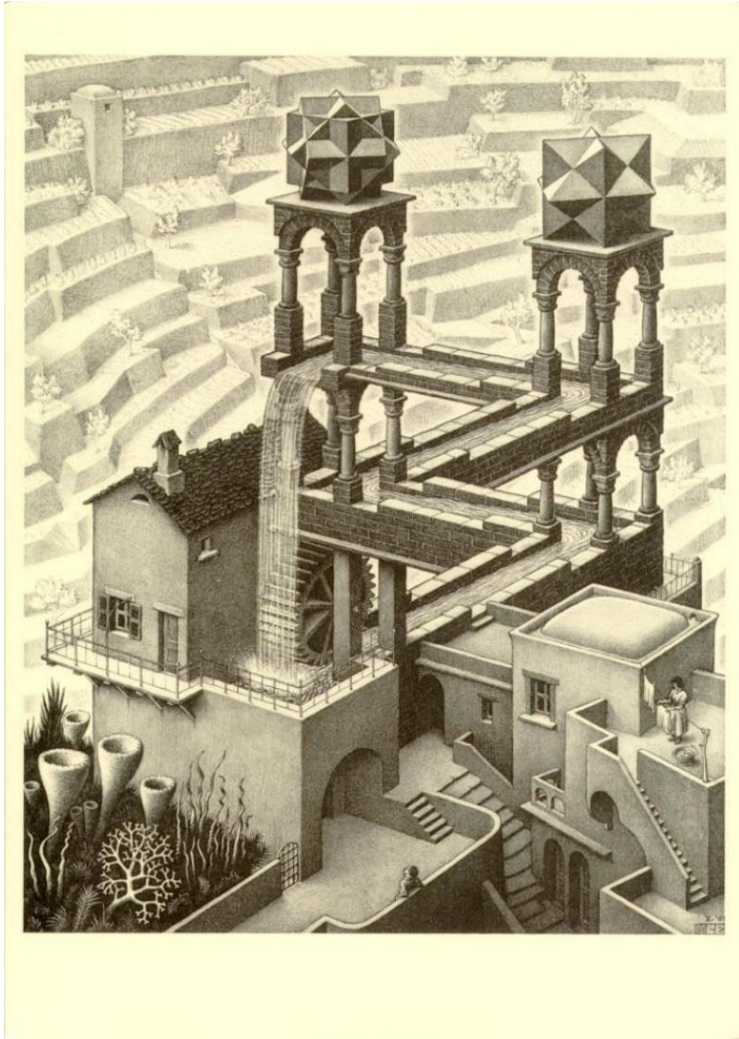
Perception test

- <http://www.youtube.com/watch?v=SyWbVFLGuhQ>
- <http://www.youtube.com/watch?v=jdADSx8JpfI&feature=related>

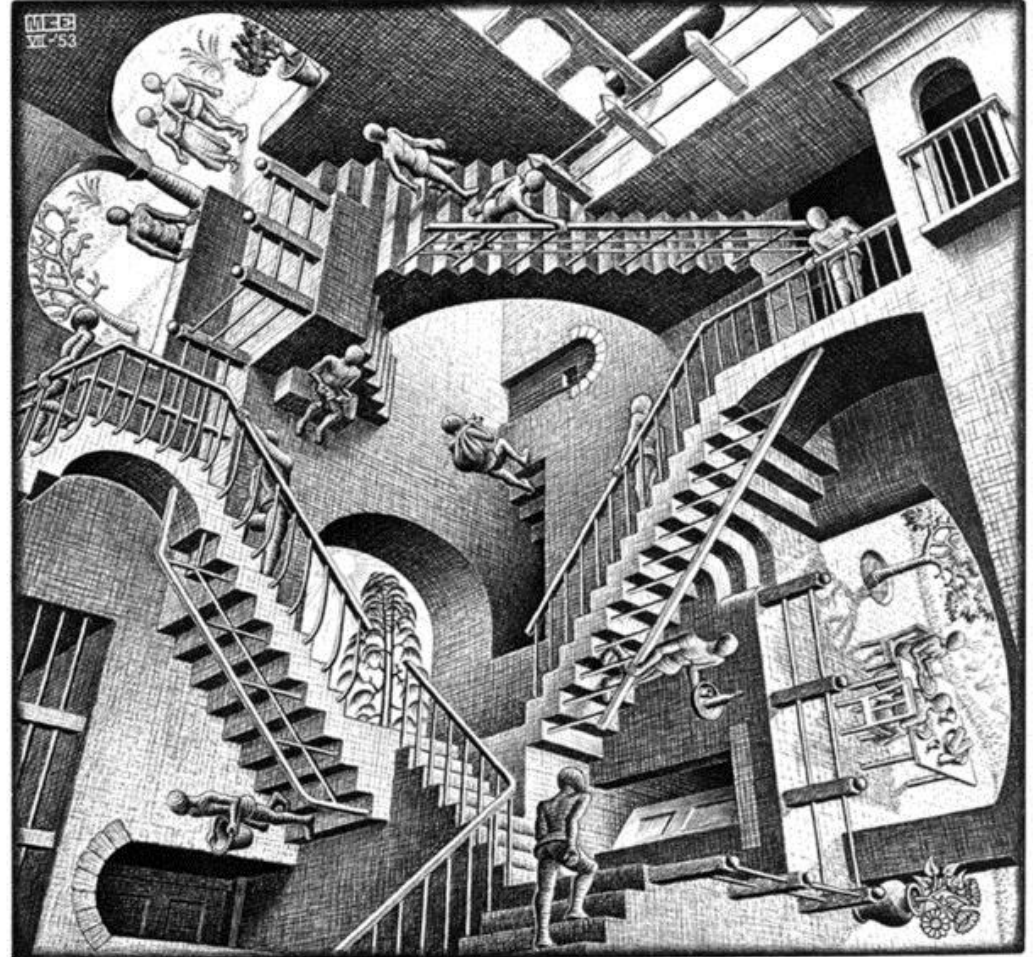


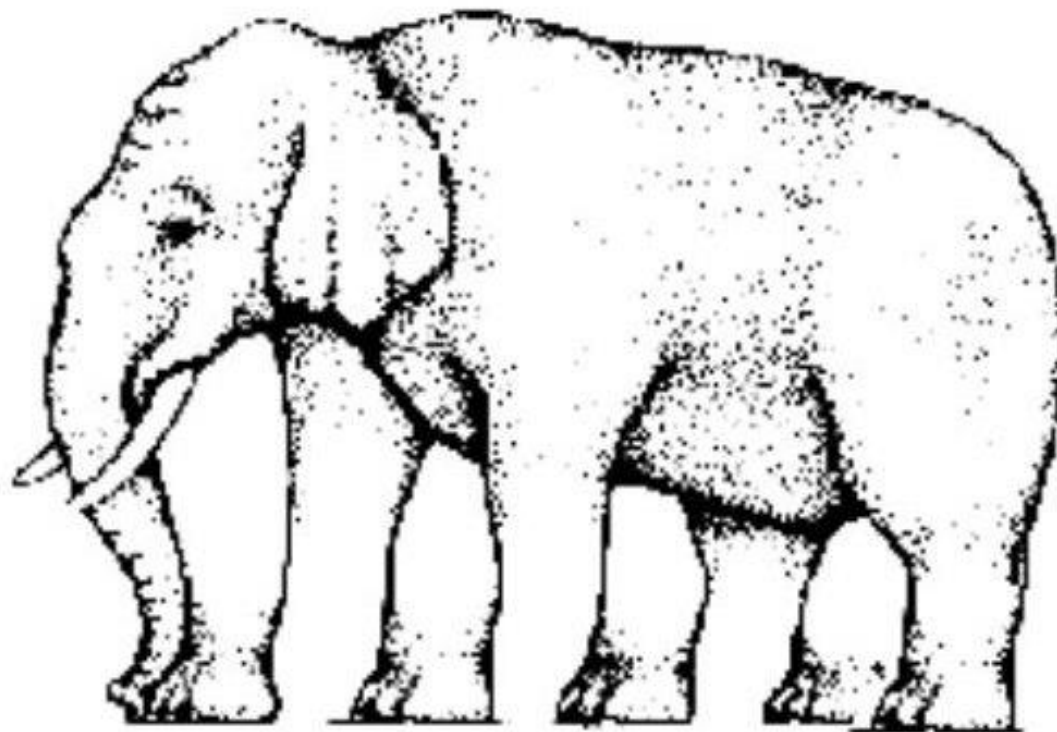
Perception & Reality





t





How many legs does this elephant have?

Perception & Reality



Summary

- ◆ What is a PhD?
- ◆ What is epistemology?
- ◆ What is science?
- ◆ Popper and falsifiability
- ◆ Probability
- ◆ Other methods

Summary

The older you get the more you learn

Summary

The older you get the more you learn
. . . and the more you learn, the more you
realise how much you don't know.

Summary

- ◆ Appreciate history
- ◆ Enjoy both your PhD and subsequent career
- ◆ Good luck!

