

Review: William Broad and Nicholas Wade, *Betrayers of the Truth: Fraud and Deceit in the Halls of Science*, Touchstone, NY, 1983

Pages: 256

Revelations on ‘The Science’

This is documented evidence of where the religion of Scientism leads: fraud; unaccountability; and unwarranted trust. The introduction alone is myth busting, that the high and wise ancients were noble and precise, when in fact they seem to have massaged data, notwithstanding their theories were true.

It is an important philosophical work; by attacking the heart of Scientism, Logical Positivism, and referencing luminaries like Kuhn and Einstein, the authors make a compelling case what scientists really do is interpret ‘facts’ in light of preconceived ‘theories’, the opposite of the scientific method.

Apart from an increase in integrity and moral fibre across the board, the enterprise of ‘science’ of peer review, refereeing, and replication (its Invisible Boot) seems doomed. Replication, the last bulwark of science is particularly discredited as lacking motivation, resources, time to perform. Most scientists are well aware of this which increases the fraud incentive.

The style is as expected from science writers; penetrating, concise, and educative where relevant at the same time.

Preface (pp. 7-9)

Logic, replication, peer review, and objectivity are the pillars of science.

“Scientists are not guided by logic and objectivity alone ... but also by ... rhetoric, propaganda, and personal prejudice. Scientists do not depend solely on rational thought.” [p9]

I) The Flawed Ideal (pp. 10-21)

Scientists are confident their self-correcting mechanisms make fraud a no-win venture.

“Modern science is a career. Its stepping-stones are published articles ... a researcher must get as many articles published as possible, secure government grants, build up a laboratory and the resources to hire graduate students ... strive to ... a tenured post ... the system rewards the appearance of success.” [p19]

Fraud is lower in the ‘hard’ sciences like physics, and almost non-existent in mathematics.

II) Deceit in History (pp. 22-37)

Fact-finding is inferior to inventing a theory which can explain facts.

Almagest: “greatest’. Ptolemy is said to have used Hipparchus of Rhodes’ astronomical measurements, since the latitude used in his equations is that of Rhodes.

John Dalton founded the atomic theory of matter and the law of chemical proportions.

Darwin is said to have copied the idea of Natural Selection from Edward Blyth from his 1835 and 1837 papers.

Gregor Mendel is thought to have cooked some of his pea offspring ratios since they’re too perfect.

Ehrenhaft postulated “subelectrons” carrying fractional electronic charges.

The e ’s strength was measured by suspending droplets in an electric field.

The cost of equipment and research puts science out of most amateurs’ reach. Grants also dry up quickly if results are not forthcoming.

III) Rise of the Careerists (pp. 38-59)

Iraqi-‘Jordanian’ Elias Alsabti would simply retype already published papers, removing the authors’ name and using his own.

There are at least 8,000 medical journals in the world.

The Ortega Hypothesis: only a handful of scientists actually move a given field forward, the rest have zero impact.

IV) The Limits of Replication (pp. 60-87)

Failure to replicate is in no way sufficient basis for raising even the possibility of fraud.” [p71]

Mitochondria can synthesise cytochrome c.

Published experiment descriptions are often incomplete and replication is very expensive (scientists usually only do this to find other breakthroughs, not for verification alone).

Half of all papers are not read one year post publishing.

From 1967-1973, the FDA found 50 doctors had submitted false data.

Only 42% of chemical engineers would refuse to write a fraudulent report.

V) Power of the Elite (pp. 88-106)

Scientists hold to Universalism, that the acceptance of truth claims should not depend on any social attribute.

Simon Flexner (of the 1910 Flexner report) was first to isolate dysentery bacteria.

Matthew Effect: “a complex pattern of the misallocation of credit for scientific work”. Senior scientist take credit for subordinate work.

Rep. John B. Conlan, AZ: “Peer review is an ‘old boys system’ where ... It is an incestuous ‘buddy system’ that frequently stifles new ideas and scientific breakthroughs, while carving up the multimillion-dollar Federal

reserve research-and-education pie in a monopoly game of grantsmanship.” [pp100,101]

Identical papers suffer different fates and scrutiny depending on the journal. ‘Positive’ journals identify deliberate errors are only 25%, but ‘negative’ ones at 71%.

VI) Self-Deception and Gullibility (pp. 107-125)

“Digit preference” holds round or “nice” data are preferred.

VII) The Myth of Logic (pp. 126-142)

“The myth of science as a purely logical process ... has an overwhelming influence on scientists’ perceptions of what they do ... Scientific knowledge, in their view, is superior to all other kinds ... Scientists will cling to a theory, no matter how damaging ...

In the secular world ... science performs part of the inspirational function that myths and religious play in less developed societies ... To a probably insalubrious† degree, science has replaced religion as the fundamental source of truth ... in the modern world ... to deceive because of their overconfidence in objectivity.” [pp126-128; 219]

Scientific reporting is antihistorical.

Textbooks omit all false leads, fallible theories and failed experiments.

Albert Einstein: “It is the theory which decides what we can observe.”

VIII) Masters and Apprentices (pp. 143-160)

Episodes of deceit are often attributed to insanity by the profession.

IX) Immunity From Scrutiny (pp. 161-180)

X) Retreat Under Pressure (pp. 181-192)

Social Darwinists used Evolution in the 19thC to support conservative, laissez-faire policies.

The Soviets supported Lamarckism.

XI) The Failure of Objectivity (pp. 193-211)

Samuel Morton pioneered intelligence measure based on skull volume measurement of 1,000 human skulls.

IQ tests certainly measure ability to take IQ tests.

Primary reference investigation is very rare.

XII) Fraud and the Structure of Science (pp. 212-224)

Modern science is designed to promote careerism with the elite controlling the reward systems.

Scholars' fraud is one sign of a decadent civilisation.

Appendix: Known or Suspected Cases of Scientific Fraud (pp. 225-232)