Research Methods in Computing: Plagiarism

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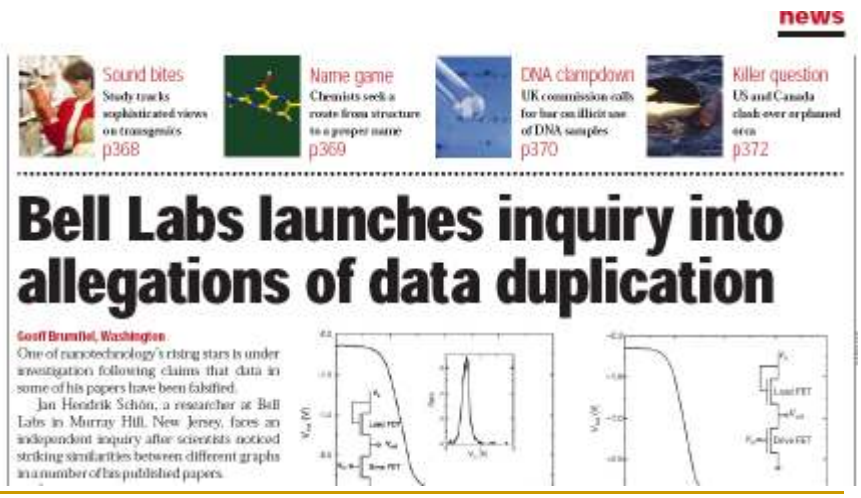
Plagiarism: THE SCHÖN SAGA

October 2001:
Hendrik Schon and Zhenan Bao: A single molecule transistor made out of organic material;

The end of silicon-based, highly toxic process of making transistor involving rare metals;

The new world of freely available organic molecules to build transistor.

Plagiarism: THE SCHÖN SAGA



news

Sound bites
Study tracks sophisticated views on transgenics
p368

Name game
Chemists seek a route from structure to a proper name
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DNA clampdown
UK commission calls for bar on illicit use of DNA samples
p370

Killer question
US and Canada clash over orphaned orca
p372

Bell Labs launches inquiry into allegations of data duplication

Geoff Brumfiel, Washington

One of nanotechnology's rising stars is under investigation following claims that data in some of his papers have been falsified.

Jan Hendrik Schön, a researcher at Bell Labs in Murray Hill, New Jersey, faces an independent inquiry after scientists noticed striking similarities between different graphs in a number of his published papers.

The Saga Continues with another name

LIVE SCIENCE

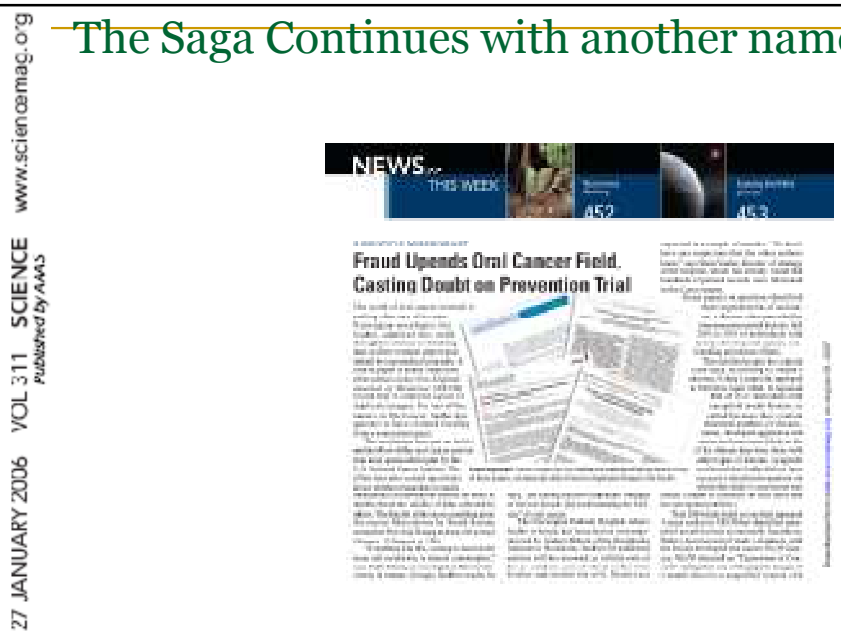
Space Animals Health Environment Technology

Science Fraud Shakes Stem Cell Field

By Paul Elias and Malcolm Ritter, Associated Press
posted: 24 December 2005 09:38 am ET

27 JANUARY 2006 VOL 311 SCIENCE www.sciencemag.org
Published by AAAS

The Saga Continues with another name



To peer or not to peer : The Einstein Saga

Doubting gravitational waves

Einstein submitted this research to the *Physical Review* under the title "Do Gravitational Waves Exist?" with Rosen as coauthor. Although the original version of the paper no longer exists, Einstein's answer to the title question, to judge from his letter to Born, was "No."

[....]

But not everyone was so easily convinced. The *Physical Review* received Einstein's submission on 1 June 1936, according to the journal's logbook. Tate returned the manuscript to Einstein on 23 July with a critical review and the mild request that he "would be glad to have [Einstein's] reaction to the various comments and criticisms the referee has made." Einstein wrote back on 27 July in high dudgeon, withdrawing the paper and dismissing out of hand the referee's comments:

> Dear Sir,
> We (Mr. Rosen and I) had sent you our manuscript for publication and had not authorized you to show it to specialists before it is printed. I see no reason to address the—in any case erroneous—comments of your anonymous expert. On the basis of this incident I prefer to publish the paper elsewhere.
>
> *Respectfully,*

Kennefick, Daniel. (2005). 'Einstein Versus the *Physical Review*'. *Physics Today,* Vol. 58 (September 2005). pp 43-48.http://www.physicstoday.org/vol-58/iss-9/pdf/vol58no9p43_48.pdf

Scientific misconduct

Scientific misconduct consists of

fabrication:

- making up of data
- manipulation of research data and processes

plagiarism

self-plagiarism

violation of ethical standards

ghost-writing

DEFINITIONS
The American Historical Association

Plagiarism: [The word *plagiarism* derives from Latin roots: *plagiarius,* an abductor, and *plagiare,* to steal.]

The expropriation of another author's text, and the presentation of it as one's own, constitutes plagiarism and is a serious violation of the ethics of scholarship. It undermines the credibility of historical inquiry.

http://www.public.asu.edu/%7Eicprv/courses/hst498/plagiarism_def.html

DEFINITIONS
Modern Language Association (MLA)

Plagiarism: The MLA Handbook defines plagiarism as the use of another person's ideas or expressions in your writing without giving proper credit to the source. The word comes from the Latin word plagiarius ("kidnapper"), and Alexander Lindey defines it as "the false assumption of authorship: the wrongful act of taking the product of another person's mind, and presenting it as one's own" (Plagiarism and Originality [New York: Harper, 1952] 2).

DEFINITIONS
American Psychological Association

Plagiarism:

The key element of this principle is that an author does not present the work of another as if it were his or her own work. This can extend to ideas as well as written words.

If an author models a study after one done by someone else, the originating author should be given credit. If the rationale for a study was suggested in the Discussion section of someone else's article, that person should be given credit.

Given the free exchange of ideas, which is very important to the health of psychology, an author may not know where an idea for a study originated. If the author does know, however, the author should acknowledge the source; this includes personal communications (Publication Manual.... 292-95).

DEFINITIONS
Wikipedia

Plagiarism:

'Plagiarism' refers to the use of another's implementation of ideas, information, language, or writing, when done without proper acknowledgment of the original source. Essential to an act of plagiarism is an element of dishonesty in attempting to pass off the plagiarised work as original. Plagiarism is not necessarily the same as copyright infringement, which occurs when one violates copyright law. Like most terms from the area of intellectual property, plagiarism is a concept of the modern age and not really applicable to medieval or ancient works.

DEFINITIONS

Self plagiarism: 'Self-plagiarism occurs when authors reuse portions of their previous writings in subsequent research papers. Occasionally, the derived paper is simply a retitled and reformatted version of the original one, but more frequently it is assembled from bits and pieces of previous work.' (Collberg and Kobourov 2005:88).

Christian Collerg & Stephen Kobourov (2005). 'Self plagiarism in Computer Science', *Communications of the American Computer Machinery (ACM Society)*. Vol 48 (No.4), pp 88-9

DEFINITIONS: Types of Self Plagiarism

Reuse type	Involves incorporating
Selective	**bits and pieces from previously published work.**
Incidental	**texts or ideas not directly related to the new ideas presented in the paper**
Cryptomensic	**texts or ideas from previously published work while unaware of the existence of that work.**
Opaque	**texts or ideas from previously published work without acknowledging the existence of that work.**
Advocacy	**texts or ideas from previously published work when writing to a community different from that in which the original work was published.**

Christian Collerg & Stephen Kobourov (2005). 'Self plagiarism in Computer Science', *Communications of the American Computer Machinery (ACM Society).* Vol 48 (No.4), pp 88-9
Carroll, R.T. Cryptomnesia. The Skeptics Dictionary. 1998. March 20, 2000.
http://www.dcn.davis.ca.us/~btcarrol/skeptic/cryptomn.html

Anecdote #1: Plagiarism is instutionalised

'Plagiarism is conventionally seen as a serious breach of scholarly ethics, being a theft of credit for ideas in a competitive intellectual marketplace. This emphasis overlooks the vast amount of institutionalized plagiarism, including ghostwriting and attribution of authorship to bureaucratic elites. There is a case for reducing the stigma for competitive plagiarism while exposing and challenging the institutionalized varieties.'

Martin, Brian. (1994) Plagiarism: a misplaced emphasis. *Journal of Information Ethics*, Vol. 3, No. 2, Fall 1994, pp. 36-47. (From his web site)

Anecdote #2: Towards a free market in learning and research?

http://www.guilford.edu/services/index.cfm?ID=700004020

Anecdote#2: Towards a free market in learning and research?

http://search.essaysite.com/cgi-bin/query?mss=essaysite&q=plagiarism&submit=Search

Anecdote#3: The Poehlman Saga

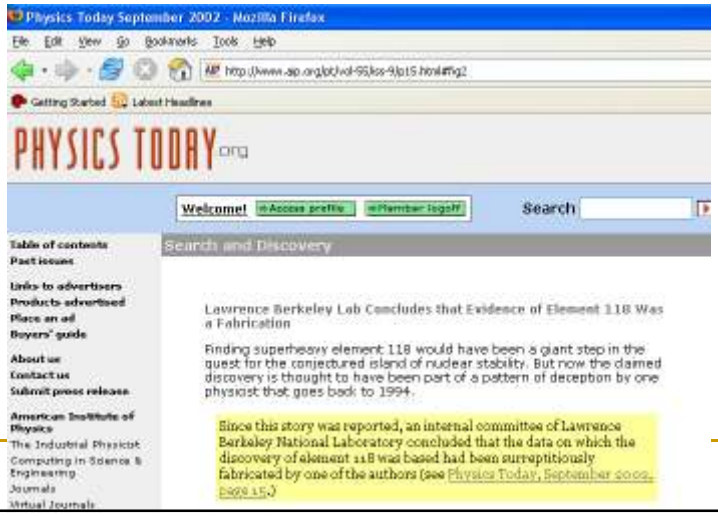
Faking menopause and aging data:

Obesity research Eric Poehlman fabricated 17 applications for federal grants and in March of 2005 was barred for life from seeking federal funds and his name was added to the Public Health Service Office of Research Integrity List of Misconduct.

SOUND FROM THE AMERICAN PUBLIC RADIO

Anecdote#4: The Ninov Saga

A research scientist in the USA claimed to have found the heaviest element in the prestigious Lawrence Berkley Laboratory. But then had to withdraw the element!!



Scientific misconduct:

One in Three Scientists Confesses to Having Sinned

Action	%age
plagiarism or falsification	(<)1.5%
"changed the design, methodology or results of a study in response to pressure from a funding source;	15.5%
admitted overlooking others' use of flawed data;	12.5%
had circumvented minor aspects of requirements regarding the use of human subjects."	7.6%

Meredith Wadman, One in Three Scientists Confesses to Having Sinned, 435 Nature 718 (2005);

Scientific misconduct

Reasons for scientific misconduct include:

1. career pressure
2. believing that one knows the right answer
3. ability to get away with it

Reasons for retraction of papers mainly consist of:

a. errors (i.e. irreproducible results)
b. fraud or misconduct (e.g. in Schön's case)
c. political reasons (e.g. in Galileo's case)

(Goodstein 2002)

Plagiarism: THE SCHÖN SAGA

Hendrick J. Schön obtained his PhD from the University of Konstanz (Germany) in 1997 and worked at the Bell Labs (USA) until 2002.

During 2001 and 2002, his works were hailed as remarkable breakthroughs in condensed matter physics, and solid state devices particularly for his work on single molecule transistors and on high temperature superconductors:

organic single molecule transistors – that would have taken us beyond the Moore's law and increased the number of transistors on a chip way beyond today's technology- and

controllable high-temperature superconductors (superconductors work well at –2700 C and high temperature here means –1700C) will increase memory speeds and processor power by orders of magnitude.

Schön was being nominated for the Nobel Prize

Plagiarism: THE SCHÖN SAGA

Hendrick J. Schön has reported to have published over 80 research papers all in leading journals of science and of physics including *Nature, Science*, and the American Physical Society's *Physical Review* amongst others. All these journals have a 'high impact factor'. Here is a sample of 15 papers out of 45 examined in detail after its publication. He took a break for X-mas.

Month	2000	2001
January		
February	***Science***	
March		***Nature***
April	***Science***	***Science***
May		
June	***Science***	
July	***Science***	
August		
September		***Science***
October		***Nature &Appl Phys Letters***
November	***Science & Nature***	***Nature***
December	***Appl. Phys. Letters***	***Appl. Phys. Lett & Science***

All these papers have now been retracted publicly – 45 of all his 80 or so publications.

CASE STUDY: THE SCHÖN SAGA:

Not all misconduct is linguistic!

Two experiments carried out, by Schon and colleagues, very different temperatures were reported to have identical noise → Schon suggested that he had submitted the same graph twice by accident;

But then another reader found the same noise in a paper describing a third experiment.

More instances of duplicate data were found in Schön's work.

CASE STUDY: THE SCHÖN SAGA:

Not all misconduct is linguistic!

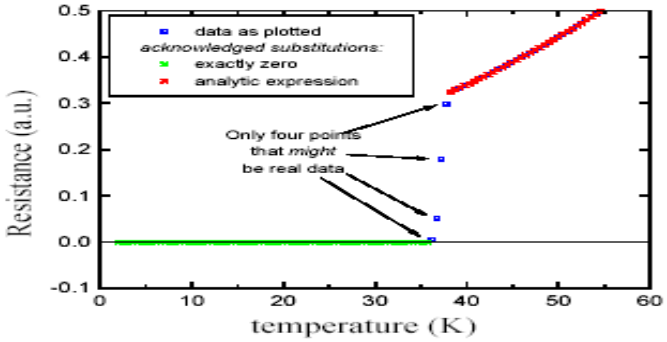


Figure 61.Data from the "Super C60"Paper (XIX) for one gate voltage, showing that only four points of the original 117 remain after acknowledged spliced points are removed. Any rounding of the transition would be obscured by this procedure.

http://publish.aps.org/reports/lucentrep.pdf

CASE STUDY: THE SCHÖN SAGA

- Prof. Leonardo Cassuto, described perhaps the greatest fraud in scientific publishing in recent times. It described work that was supposed to have taken place in Lucent Laboratories (formerly **Bell Labs**). Dr. **Hendrick Schon** published about 90 papers in 3 or 4 years, an almost unheard of rate of production. All papers had been submitted to reputable journals, including the prestigious "Nature" and "Science" and had been peer reviewed and published.
- They described experiments which claimed to show organic crystals which had been made to behave as semiconductors, including pentacene as photovoltaic, and C60 (buckyballs) superconducting at low temperatures. Dr. **Schon** seemed to be heading for a Nobel Prize. After publication, other scientists attempted to repeat the results without success: this was the first warning of something amiss. Someone pointed out that the same graph appeared in two separate papers, with different axes, purporting to be the result of separate experiments: this was the second warning.

CASE STUDY: THE SCHÖN SAGA

•The Committee looked at 24 allegations from 20 different sources with over 100 different complaints; 16 cases of *scientific misconduct* were proven, 2 had no direct link to his work, and 6 were not used in publication. He was aksed to, and did, retract 25 of his largely co-authored publications in the high impact journals.

• Only Hendrick Schon was reprimanded, he was dismissed by Bell Labs in September 2002 and in June 2004 the University of Konstanz withdrew his PhD because he brought the discipline in disrepute. His thesis has not been criticised for plagiarism and it is understood that his lawyers are in touch with the University authorities.

Beasley Report

The allegations investigated in the Beasley Report were:

1. data substitution
2. unrealistic precision (of data = precisions beyond that expected in real experiment)
3. contradictory physics (= results that were inconsistent with stated device parameters and prevailing physical understanding)

Conclusions of the Beasley Report

- The Committee found falsification or fabrication of data in 16 out of the 24 cases they examined.
- Substitution of curves or parts of them to represent materials or devices in order to produce a more convincing representation of behaviour observed was found to be scientific misconduct.
- Schön did not follow generally accepted practice concerning the maintenance of traceable records nor did he retain original data in a form with which critical physical claims could be verified or examined.
- The Committee found all coauthors of Hendrik Schön in the work in question completely cleared of any scientific misconduct

Report of the Committee "Liability in Science" at the University of Konstanz

- It was limited to the papers that originated in Konstanz (papers on photovoltaics)
- The main results are not questionable
- Inconsistencies in the publications were found but the documentation provided was not enough to prove fabrication of data
- Inconsistencies did not affect conclusions
- The committee concluded that on this basis no deliberate manipulation could be inferred

Report of the Committee "Liability in Science" at the University of Konstanz

- The remark in the Beasley Report that most papers had originated in Konstanz only explains the circumstances.
- The committee also found that there are no grounds to accuse Schön of gross negligence.
- Schön's behaviour lies in a 'grey area' hence his scientific misconduct cannot be proved.
- The final conclusion of the Committee is that Schön's mistakes can be corrected by Errata in the journals concerned.

University of Konstanz 'rejects' Schon's thesis

- Schon's thesis was rejected by the University of Konstanz in 2004 on grounds of unbecoming scientific conduct.
- Schon appealed against the decision and the University took 5 more years to decide!

Report of the Doctoral Committee, University of Konstanz

Universität Konstanz

Presseinformation Nr. 163 vom 28. Oktober 2009

Erhebliches wissenschaftliches Fehlverhalten

Widerspruch gegen Entzug des Doktorgrades zurückgewiesen

Jan Hendrik Schön hat gegen den Entzug des Doktorgrades durch den Promotionsausschuss des Fachbereichs Physik an der Universität Konstanz Widerspruch eingelegt. Der Promotionsausschuss hat daraufhin nochmals verschiedene Publikationen Schöns untersucht. Er kam dabei zum Ergebnis, dass bei diesen Publikationen ein erhebliches wissenschaftliches Fehlverhalten vorliegt. Aufgrund der Feststellungen hat der Promotionsausschuss seine Auffassung bestätigt, dass sich Hendrik Schön durch sein Verhalten als unwürdig zur Führung des Doktorgrades erwiesen hat. Vor diesem Hintergrund hat der Prorektor für Lehre nach einer Interessenabwägung den Widerspruch zurück gewiesen.

Die Universität Konstanz hat im Juni 2004 Jan Hendrik Schön den Doktortitel entzogen. Das wissenschaftliche Fehlverhalten, das der Physiker zwar nicht im direkten Zusammenhang mit seiner Promotion, jedoch bei seinen späteren Arbeiten an den Tag gelegt hat, war der Grund für die Entscheidung des Promotionsausschusses des Fachbereichs Physik.