



Plagiarism in Health Care Research Papers: Definitions of Scientific Misconduct, Case Studies, Detection and Prevention

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Associate Professor of Medicine

Organisations concerned with plagiarism



European
Association of
Science
Editors



Definitions of plagiarism

- ❖ **To copy another person's words or work and pretend that they are your own** (*The Oxford advanced learner's dictionary*, 6th edition, 2000)
- ❖ **To use another person's ideas or expressions in your writing without acknowledging the source** (*MLA handbook for writers of research papers*, 1995)
- ❖ **A form of piracy that involves the use of text or other items (figures, images, tables) without permission or acknowledgment of the source of these materials** (*CSE*)

- “...in addition to **text** and **data**, plagiarism also includes the misappropriation of a wide range of others’ intellectual property, including **ideas**, **images**, and **methodologies**.”

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Editorial

Avoiding unethical writing practices

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Biased research reporting is misconduct

“Any omission or misrepresentation of the information necessary and sufficient to evaluate the validity and significance of research, at the level appropriate to the context in which the research is communicated”

Redefine misconduct as distorted reporting

To make misconduct more difficult, the scientific community should ensure that it is impossible to lie by omission, argues Daniele Fanelli.

Prevalence of plagiarism

- There are no exact data due to the lack of universal definition

Scientific Misconduct

Intentional falsification of scientific data by presentation of fraudulent or incomplete or uncorroborated findings as scientific fact.

Year introduced: 1990

Results: 1 to 20 of 4358

Results: 1 to 20 of 56



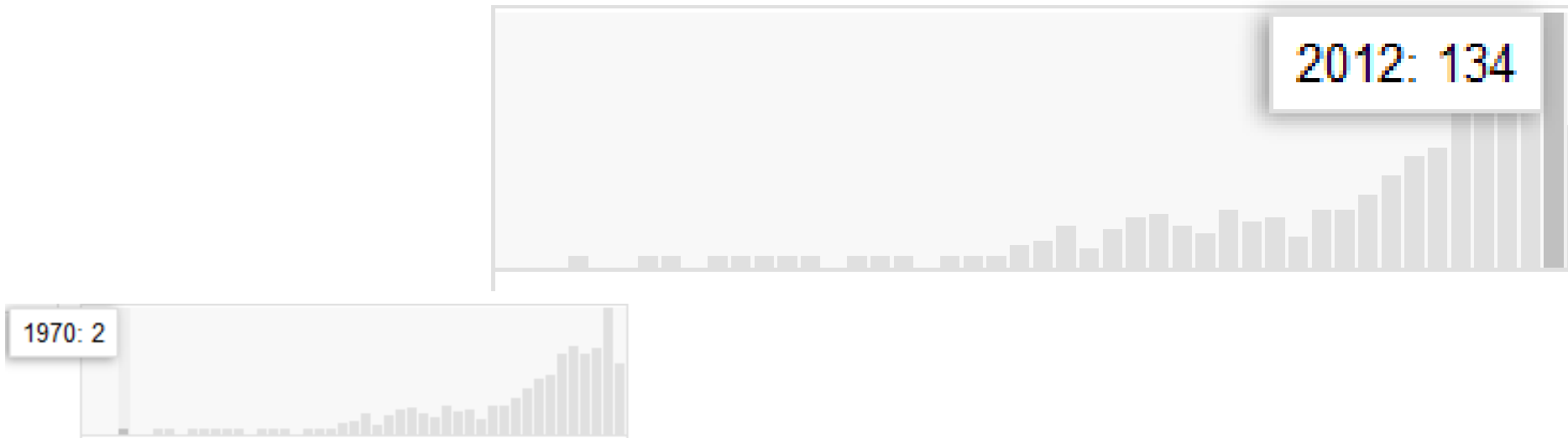
Filters activated: Systematic Reviews

Plagiarism

Passing off as one's own the work of another without credit.

Year introduced: 1990

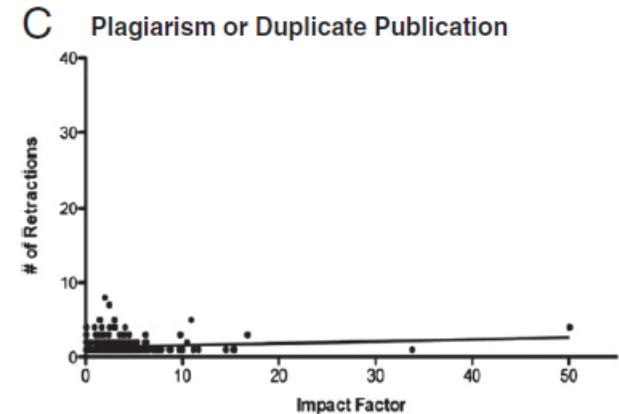
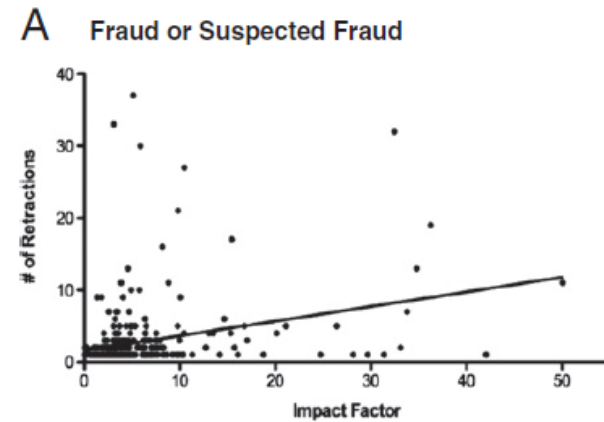
Results: 1 to 20 of 1131



Results: 11

i Filters activated: Systematic Reviews

- >2,000 articles are retracted in PubMed (May 2012)
- **Impact factor correlates with retractions**
- 21.3% retractions due to errors
- 67.4% - misconduct, including fraud (43.4%), duplication (14.2%) and **plagiarism (9.8%)**

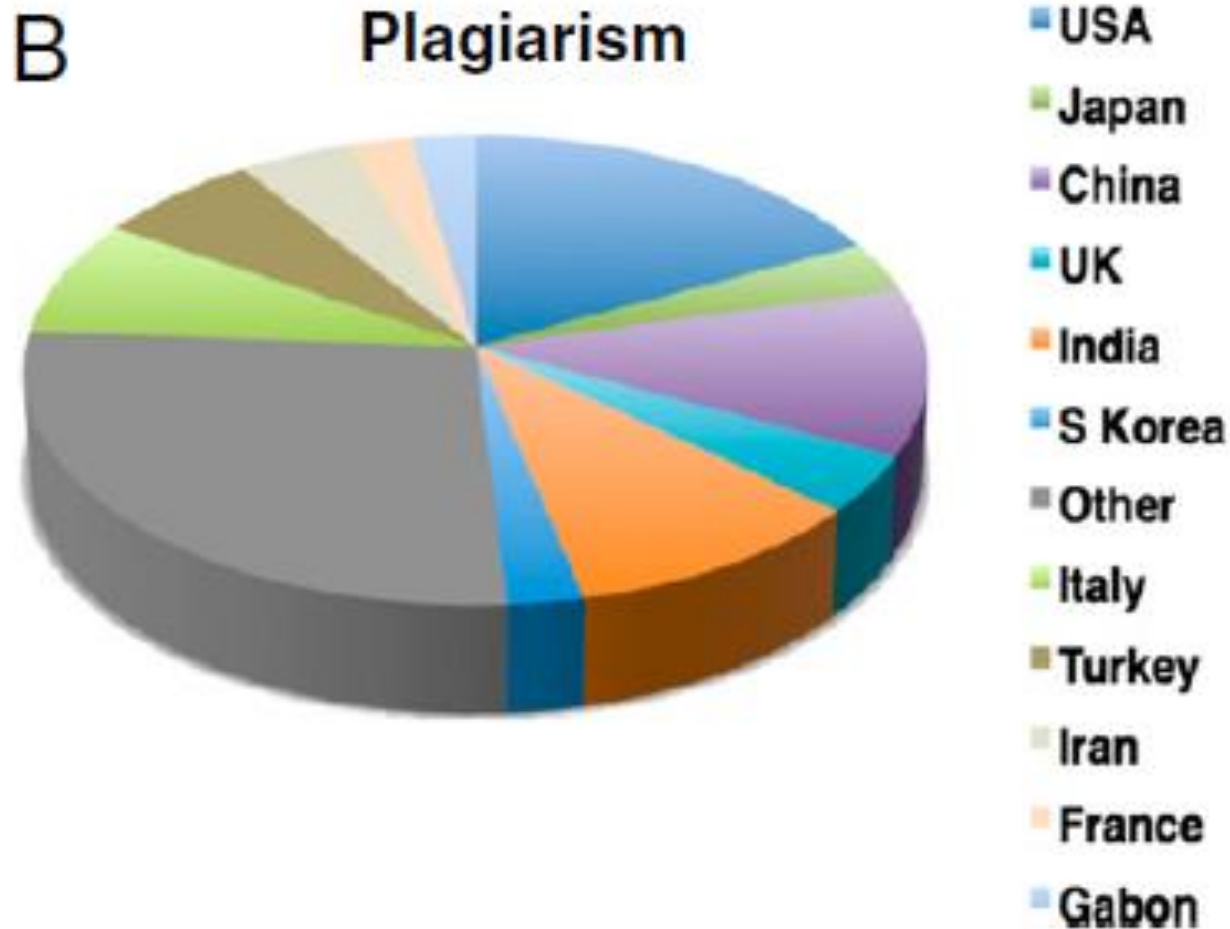


[Proc Natl Acad Sci U S A](#). 2012 Oct 16;109(42):17028-33. doi: 10.1073/pnas.1212247109. Epub 2012 Oct 1.

Misconduct accounts for the majority of retracted scientific publications.

[Fang FC](#), [Steen RG](#), [Casadevall A](#).

- US, Germany, Japan, China – $\frac{3}{4}$ of retractions



[Proc Natl Acad Sci U S A](#). 2012 Oct 16;109(42):17028-33. doi: 10.1073/pnas.1212247109. Epub 2012 Oct 1.

Misconduct accounts for the majority of retracted scientific publications.

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Prevalence of plagiarism in USA

- 208 cases of misconduct were investigated by ORI in 1992-2011

Table 1 Distribution of variables among 119 published statements regarding retractions or corrections of scientific articles associated with ORI findings of misconduct

Variable	Range	Median	Mean (SD)
Year statement was published	1989–2011	2003	2002.2 (5.7)
Journal impact factor*	1.25–38.86	7.15	10.33 (8.69)
	Category		N† (%)
Type of statement	Retraction		95 (79.8)
	Correction		24 (20.2)
Type of misconduct	Plagiarism only		7 (5.9)
	Fabrication only		5 (4.2)
	Falsification only		53 (44.5)
	Fabrication and falsification		48 (40.3)
	All three types		6 (5.0)
			49 (41.2)
			70 (58.8)
			39 (32.8)
			80 (67.2)

3% in USA

J Med Ethics. 2012 Sep 1. [Epub ahead of print]

Scientific retractions and corrections related to misconduct findings.

Resnik DB, Dinse GE.

NIEHS, National Institutes of Health, Research Triangle Park, North Carolina, USA.

Acta Med Jugosl. 1974;28(1):15-26.

The effect of continuous lumbar epidural analgesia on the fetus, newborn child and the acid-base status of maternal blood.

Kurjak A, Beazley JM.

Comment in

BMJ. 2006 Sep 16;333(7568):594-6.



BMJ. 2006 September 16; 333(7568): 594–596.
doi: [10.1136/bmj.38968.611296.F7](https://doi.org/10.1136/bmj.38968.611296.F7).

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Professional regulation

Role of systematic reviews in detecting plagiarism: case of Asim Kurjak

Iain Chalmers, *editor*¹

¹ James Lind Library, Oxford OX2 7LG ; Email: ichalmers@jameslindlibrary.org

Accepted June 26, 2006.

[Iran J Allergy Asthma Immunol. 2006 Jun;5\(2\):47-56.](#)

Air pollution induced asthma and alterations in cytokine patterns.

[Ebtekar M.](#)

Department of Immunology, School of Medicine, Tarbiat Modares University of Medical Sciences, Tehran, Iran. ebtekarm@modares.ac.ir

Retraction in

[Iran J Allergy Asthma Immunol. 2008 Dec;7\(4\):243.](#)



 [comments on this story](#)

Published online 22 October 2008 | *Nature* **455**, 1019 (2008) | doi:10.1038/4551019a

News

Stories by subject

- [Lab life](#)
- [Policy](#)
- [Technology](#)

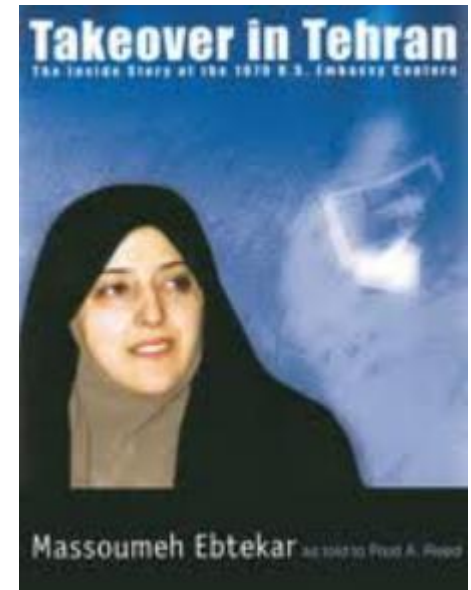
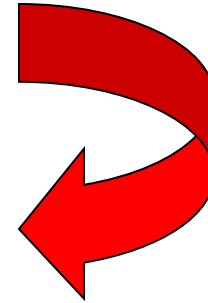
Iranian paper sparks sense of déjà vu

Allegations of plagiarism prompt journal to retract report.

[Declan Butler](#)

A review paper by Massoumeh Ebtekar, the former vice-president of Iran and an immunologist at Tarbiat Modares University in Tehran, is

Stories by keywords






of Allergy, Asthma and Immunology ([M. Ebtekar Iran. J. Allergy Asthma Immunol. 5, 47-56; 2006](#)). Deja Vu claims that about 85% of the text comes from five papers by other researchers, with the chunks ranging from 5% to 30% of their content.

“We did a ... search of the plagiarized sentences in 80 papers submitted to [Urology] j... 55% of the manuscripts had at least one plagiarized sentence”

Farrokhi F. Plagiarism: Where Unawareness Makes a Lame Excuse. Arch Iranian Med 2009; 12 (2): 176 – 178

Politicians accused of plagiarism

	Name	Row over	Resigned?
	Karl-Theodor zu Guttenberg, German defence minister	PhD University of Bayreuth 2007	Yes, March 2011
	Pal Schmitt, Hungarian president	PhD Semmelweis University 1992	Yes, April 2012
	Ioan Mang, Romanian education minister	Eight academic papers	Yes, May 2012

<http://www.bbc.co.uk/news/18962349>

Politicians accused of plagiarism

	Name	Row over	Resigned?
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Victor Ponta,
Romanian
prime
minister

PhD
Bucharest
University
2003

No - rejects
accusation,
has backing
of national
ethics council



Vladimir
Medinsky,
Russian
culture
minister

PhD Russian
State Social
University
2011

No - rejects
accusation

Explanations of instances of plagiarism

‘My English is very poor, so I thought it was better to use the words of someone senior to me’

Harvey Marcovitch, former chair of COPE

Cross M. Policing plagiarism. BMJ 2007;335:963 doi: 10.1136/bmj.39388.668773.47

‘Academic laziness’

Kleinert S. Checking for plagiarism, duplicate publication, and text recycling. Lancet. 2011;377:281–2. doi: 10.1016/S0140-6736(11)60075-5.

Intentional intellectual theft

- ✓ **Stealing unpublished ideas, methodology or text from manuscripts or grant proposals under review by reviewers**
- ✓ **Stealing images or tables from open-access sources (including those for lectures from the Internet)**
- ✓ **Appropriation of others' research ideas and suggestions expressed at informal discussions in a department without an acknowledgement**

Unintentional misconduct in writing

- ✓ **Inappropriate summarizing (without reading full text of a primary source)**
- ✓ **Inappropriate paraphrasing (changing a few words in an original text)**
- ✓ **Inappropriate or lack of citations and quotations**

Proper citation and quotation

- ✓ When passages from published texts are copied word for word, these should be enclosed in quotations marks and linked to a reference.
- ✓ Refer to the commonly used citations and references guides (e.g. APA citation guide

*Publication Manual of the American Psychological Association, 6th ed.
Washington, DC: American Psychological Association, 2010.*

<http://www.lib.monash.edu.au/tutorials/citing/apa-a4.pdf>

Self-plagiarism

- **Recycling one's own published text, research data, figures and tables (even if proper citations are provided)**
- **Duplicate publications as a result of submitting the same manuscript to several journals (*exclusion – publication of an article based on a conference abstract or presentation; notes should indicate such an instance*)**
- **'Salami' or 'augmented' publications**

Limits of self-plagiarism

- ?
- **<10%** of verbatim text recycling (particularly in Methods section) is acceptable by most experts
- Up to **15-20%** - by a few experts
- **>30%** - unacceptable

Kravitz RL, Feldman MD. From the Editors' Desk: Self-Plagiarism and Other Editorial Crimes and Misdemeanors. J Gen Intern Med 2011;26(1):1.

Table 1. A classification of scientific misconduct*

Types of Scientific Misconduct	Description
1. Fabrication	“Making up data or results and recording or reporting them” ⁷
2. Falsification	“Manipulating research materials, equipment, or processes, or changing or omitting data or results” ⁷
3. Plagiarism	
a. Plagiarism of ideas	Using another person’s ideas, processes, or results without giving appropriate credit ⁷
b. Plagiarism of text	Using another person’s words without giving appropriate credit ⁷
i. Without citing the source	
- Verbatim copying	Using the text or any materials of others without acknowledging the source
- Paraphrasiarism	Using the text of others with a few changes or mixing the others’ texts without acknowledging the source(s)
ii. With citing the source	
- Verbatim copying	Using exact words of others with citing the origin but without using quotation marks
- Inappropriate paraphrasing	Using texts of others while citing the origin but only with minor changes in the words or structure
- Copyright infringement	Using a large part of others’ words (in quotation marks) that violates the copyright
4. Self-plagiarism [†]	
a. Duplicate publication	Publication of paper that are identical or the same in hypothesis, results, and conclusions
b. Salami publication	Publication of each part of the results of one study in several papers
c. Practice of text recycling	Using one’s own text in several different papers

*Adapted from the paper by Roig and the definitions of the Office of Research Integrity.^{6,7} The definitions are applicable for any part of a written work (text, table, figure, etc.) and are regardless of the extent (either a sentence, a paragraph, or a large body of the text); †Self-plagiarism is considered either as an independent entity or as a subcategory of plagiarism. Here, it was not possible to include it under the plagiarism classifications just because of the nature of this classification.

Farrokhi F. Plagiarism: Where Unawareness Makes a Lame Excuse. Arch Iran Med 2009; 12 (2): 176 – 178

Reasons for plagiarism



Academic writing: Avoiding plagiarism

- **Deliberate** - when the writer makes the decision to steal someone else's work because of the lack of time or poor writing skills. It is when the writer is
 - copying from a book, a journal, or a website,
 - asking another person to do the work for you,
 - downloading the complete text from the Internet



Reasons for plagiarism (2)



Academic writing: Avoiding plagiarism

- **Accidental plagiarism** -
accidentally, through carelessness, or lack of skill copying words without acknowledging it
- It is when the writer
 - does not know that direct copying is incorrect,
 - does not have skills for expressing others' ideas in own words
 - forgets or does not have time to acknowledge another person's words or ideas





Types of plagiarism



Academic writing: Avoiding plagiarism

- ❖ **Outright copying** - using exactly the same words from the original source without putting quotation marks or acknowledging the source
- ❖ **Paraphrase plagiarism** - changing some of the words but leaving most of the original text the same
- ❖ **Patchwork plagiarism** - original author's words are used and connected together in a slightly different way
- ❖ **Stealing an apt term** – using a short phrase from the original source, because it looks good

Plagiarism detection

- ❖ Google search
- ❖ Checking by colleagues/co-authors, “Whistleblowing” by readers

❖ Plagiarism detecting softwares

FREE: Chimsky, CopyTracker, **eTBLAST**, plagiarism-detect.com, Plagiarismchecker, SeeSources

COMMERCIAL: **iThenticate**, Copyscape, Plagium, Turnitin

- ✓ **Time-consuming, useful for small text articles; not suitable for extensive reviews**

- ✓ **Detection subject to the availability of sources tracked by software**

- **A fee-based membership for publishers**
- **CrossRef provides links to primary research, assigns DOIs to articles, books, theses, conf. proceedings, and makes referencing more systematic**
- **Members have access to CrossCheck to detect plagiarism (more than 54000 members; the largest database)**



Rheumatol Int

DOI 10.1007/s00296-011-1944-5

ORIGINAL ARTICLE

Lancet 2011; 377: 1331-40

Published Online

April 14, 2011

DOI:10.1016/S0140-

6736(10)62233-7



www.crossref.org/08downloads/2011/2011_PILA_Membership_Agreement.pdf

www.crossref.org/08downloads/2011/2011_Membership_Application.pdf

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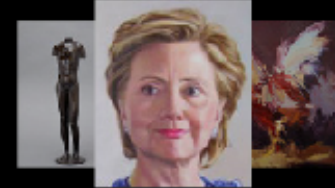
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Originality is undetected plagiarism!



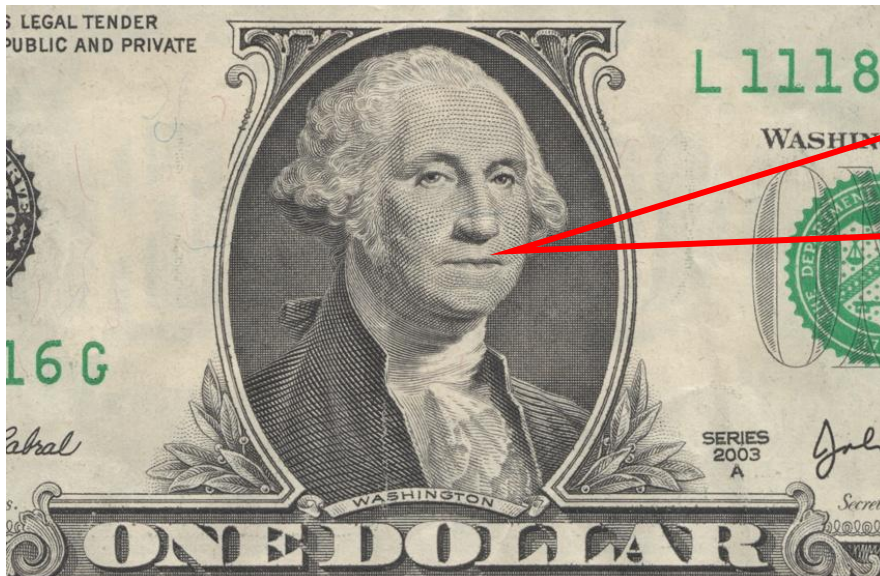
"DEJAVU® is not really for plagiarism; it's to make artists more original."

Lindsay More Howard, Hawaii Pacific University

NEWS

[Plagiarism problem continues](#)

by Meredith Larkin, May 12, 2009



**An ounce of
prevention is
worth a pound of
cure**

Simple rules to avoid plagiarism

“Plagiarism is easy ... to avoid by simply not copying any printed sources and by writing original text in one’s own words, and, if paraphrasing, citing the source”

Annals of Biomedical Engineering (© 2012)
DOI: 10.1007/s10439-012-0662-9



Five Simple Rules to Avoid Plagiarism

HOLLY OBER,¹ SCOTT I. SIMON,¹ and DANIEL ELSON²

¹University of California, Davis, Davis, CA, USA; and ²Imperial College, London, UK

Simple rules to avoid plagiarism

1. **Don't copy verbatim** words from papers or books (even from your own).
2. **Write in your own words** and style, minimize paraphrasing.
3. **When in doubt, cite.** But avoid excessive citations, as it may indicate the use of others' ideas and words.
4. **Don't recycle graphics** without citing.
5. **Ask permission** to use graphics

Ober H, Simon SI, Elson D.

Five Simple Rules to Avoid Plagiarism. Ann Biomed Eng 2012

How to avoid plagiarism(1)

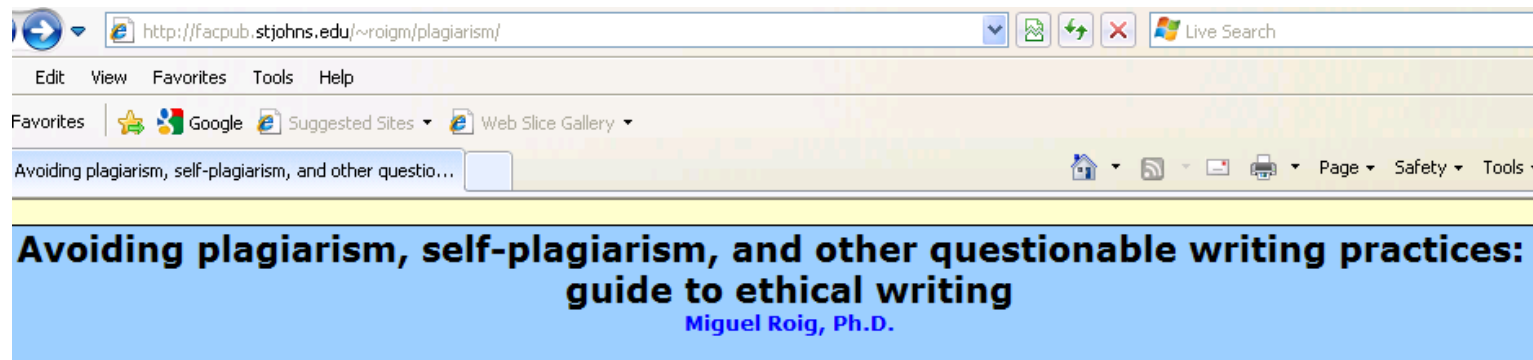
- **“ALWAYS** acknowledge contributions of others and the source of his/her ideas
- Any verbatim text taken from another author must be enclosed in quotation marks
- We must always acknowledge every source that we use in our writing; whether we paraphrase it, summarize it, or enclose it quotations
- When paraphrasing we must reproduce the exact meaning of the other author’s ideas or facts using our words and sentence structure

How to avoid plagiarism (2)

- **When in doubt whether a concept or fact is common knowledge, provide a citation**
- **Authors who submit a manuscript containing data already disseminated as an article in another journal, presented at a conference, posted on the internet must clearly indicate to the editors the nature of the previous dissemination**
- **If the results of a single complex study are best presented as a ‘cohesive’ single whole, they should not be partitioned into individual papers (‘salami’ publications)**

How to avoid plagiarism (3)

- **Authors are strongly encouraged to become familiar with basic elements of copyright law**
- **Authors should always ensure that each reference notation appearing in the body of the manuscript corresponds to the correct citation listed in the reference section**
- **Ensure that all elements of a citation (authors' names, volume number, pagination) are derived from the original paper, rather than from a citation that appears on a secondary source**
- **Do not rely on a secondary source (textbook) to describe the contents of a primary source”**



Global fight against misconduct

- **Improving mentorship**
- **Training of authors**
- **Publishing negative results**
- **Reducing the pressure to publish**
- **Pre-registering studies (trials, systematic reviews)**
- **Teaching writing, editing and publishing ethics**
- **Adhering to research reporting guidelines**
- **Ensuring harsh punishments**

Fanelli D. Redefine misconduct as distorted reporting. Nature 2013;494(7436):149.

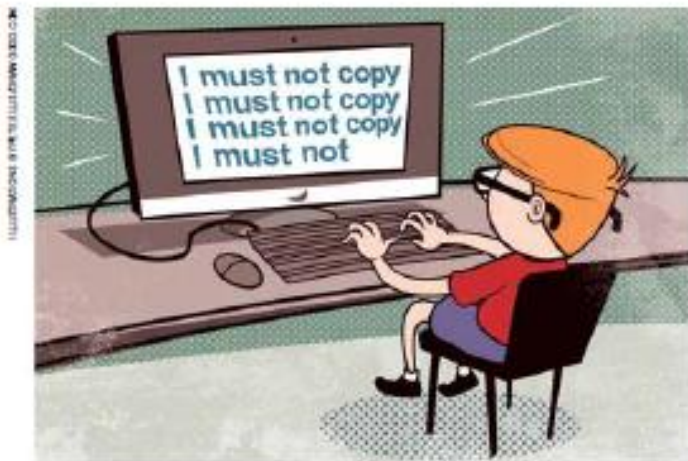
COMMENT

PHYSICS The standard model is broken, whether or not the Higgs boson exists **p.24**

SOCIOLOGY Collective quality control is central to digital-era science **p.25**

CHEMISTRY The new president of the American Chemical Society on education **p.26**

CONSERVATION Field work is limited to office hours in Mauritius **p.28**



How to stop plagiarism

Duplication is easily detected by software, yet it remains a problem. Ten experts explain how to stamp it out.

SANDRA TITUS Invest in prevention

Health science administrator, US
Office of Research Integrity

require time and effort to develop, and therefore may need dedicated funding — it is a worthy cause, one that will ensure the quality of the research corpus.

Editors and researchers will also need to agree on a clear definition of plagiarism. Detection software does not define it — instead, it can only say whether a scanned text exceeds a threshold of similarity to another text. In our studies thus far, we have used a similarity threshold of approximately 50%; we then compared the full text of any articles that exceeded this threshold, line by line and figure by figure. Ultimately, plagiarism comes down to human judgement. Like other questionable practices, you will know plagiarism when you see it.

BERND PULVERER Spot subtle forms

Head of scientific publications,
European Molecular Biology
Organization

Every manuscript that the European Molecular Biology Organization (EMBO) receives undergoes a plagiarism screen supported by text-comparison software before formal acceptance. Significant text duplications are rare and often confined to the materials and methods section. I have to try to detect them

JOHN LOADSMAN

Use professional translators

Editor, Anaesthesia and Intensive Care

YUEHONG ZHANG & IAN MCINTOSH

Blacklist repeat offenders

Managing editor, and English editor,
Journal of Zhejiang University
Science A/B/C

MIGUEL ROIG

Teach scientists to paraphrase

St Johns University, New York, author
of guide to avoiding plagiarism