Plagiarism: definitions, cases, detection and prevention

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Associate Professor of Medicine
Member, World Association of Medical Editors
Member, European Association of Science Editors
Organisations concerned with plagiarism
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)

- A form of piracy that involves the use of text or other items (figures, images, tables) without permission or acknowledgment (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.”
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
Plagiarism

Passing off as one's own the work of another without credit.
Year introduced: 1990

Results: 1 to 20 of 1131
>2,000 articles are retracted in PubMed (May 2012)

Impact factor correlates with retractions

67.4% - misconduct, including fraud (43.4%), duplication (14.2%) and plagiarism (9.8%)


Misconduct accounts for the majority of retracted scientific publications.

Fang FC, Steen RG, Casadavall A.
• US, Germany, Japan, China – $\frac{3}{4}$ of retractions


Misconduct accounts for the majority of retracted scientific publications.

Fang FC, Steen RG, Casadevall A
Prevalence of plagiarism in USA

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

### Table 1

<table>
<thead>
<tr>
<th>Variable</th>
<th>Range</th>
<th>Median</th>
<th>Mean (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year statement was published</td>
<td>1989–2011</td>
<td>2003</td>
<td>2002.2 (5.7)</td>
</tr>
<tr>
<td>Journal impact factor*</td>
<td>1.25–38.86</td>
<td>7.15</td>
<td>10.33 (8.69)</td>
</tr>
</tbody>
</table>

#### Category

<table>
<thead>
<tr>
<th>Type of statement</th>
<th>N (%, N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retraction</td>
<td>95 (79.8)</td>
</tr>
<tr>
<td>Correction</td>
<td>24 (20.2)</td>
</tr>
</tbody>
</table>

#### 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)

Scientific retractions and corrections related to misconduct findings.

Resnik DB, Dinse GE.
NIEHS, National Institutes of Health, Research Triangle Park, North Carolina, USA.
Retracted Croatian papers (8 in PubMed)

The Editor and Publisher of the Journal *Digestive Diseases* wish to state that the following article has been retracted from the Journal due to plagiarized parts:

**Gut Microbiota and Obesity**  
Krznarić Ž, Vranešić Bender D, Kunović A, Kekez D, Štimac D  
*Dig Dis* 2012;30:196–200 (DOI: 10.1159/000336965)
I apologize to the national and international research community for presenting a part of another authors’ work as my own. Although the data presented in the article are original, I respectfully ask that the article “Desa K, Sustic A, Zupan Z, Krstulovic B, Golubovic V. Evaluation of single intensive care unit performance by Simplified Acute Physiology Score II System. Croat Med J 2005;46:964-9.” be retracted.

Kristian Deša

Department of Anesthesiology and Intensive Care
Rijeka University Hospital, Croatia

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Notice of Retraction

Matko Marušić, Editor in Chief, Croatian Medical Journal

The article "Intervillous blood flow in patients with missed abortion" by Kurjak A, Kupešić S, Hafner T, Latin V, Kos M, Harris RD (1) has been retracted at the request of the editors because the authors had infringed the normal professional ethical codes by submitting the above article to the Croatian Medical Journal after an article with substantial overlap of patients, methods, and results has been accepted for publication in another journal (2).

Retraction Watch

How do Croatian scientists deal with retractions and misconduct?
A guest post by Mico Tatalovic

with 5 comments

Today, we have the pleasure of presenting a guest post from Mico Tatalovic, who has just published a piece in the monthly magazine Tehnopolis on retractions in journals in his home country, Croatia. Here, he describes the reporting that went into that feature, which he says was inspired by Retraction Watch.

You may think that in a country with regular plagiarism scandals there would be many retractions. But a search for ‘retractions’ in the open-access depository of academic journals, Hrcak Srce, shows only two retraction notices among more than 70,000 articles in 271 journals indexed there.

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

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’

Intentional intellectual theft

✓ Stealing ideas, methodology or text from manuscripts or proposals under review by reviewers

✓ Stealing images or tables from open-access sources (e.g., for lectures)

✓ Appropriation of others’ ideas and suggestions expressed at informal discussions
Unintentional misconduct in writing

- Inappropriate summarizing (without reading full text of a primary source)
- Inappropriate paraphrasing
- 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 (eg APA citation guide)

Self-plagiarism (recycling)

• Recycling one’s own published text, data, graphics (even with citations)
• Duplicate publications or submission (exclusion – publication of an article based on a conference abstract, presentation; notes should indicate that)
• ‘Salami’ or ‘augmented’ publications
Limits of self-plagiarism

- <10% of verbatim text recycling (particularly in Methods) is acceptable
- Up to 15-20% - less acceptable by experts
- >30% - unacceptable

<table>
<thead>
<tr>
<th>Types of Scientific Misconduct</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Fabrication</td>
<td>“Making up data or results and recording or reporting them”⁷</td>
</tr>
<tr>
<td>2. Falsification</td>
<td>“Manipulating research materials, equipment, or processes, or changing or omitting data or results”⁷</td>
</tr>
<tr>
<td>3. Plagiarism</td>
<td></td>
</tr>
<tr>
<td>a. Plagiarism of ideas</td>
<td>Using another person’s ideas, processes, or results without giving appropriate credit⁷</td>
</tr>
<tr>
<td>b. Plagiarism of text</td>
<td></td>
</tr>
<tr>
<td>i. Without citing the source</td>
<td></td>
</tr>
<tr>
<td>Verbatim copying</td>
<td></td>
</tr>
<tr>
<td>Paraphrasing</td>
<td></td>
</tr>
<tr>
<td>ii. With citing the source</td>
<td></td>
</tr>
<tr>
<td>Verbatim copying</td>
<td>Using the text or any materials of others without acknowledging the source</td>
</tr>
<tr>
<td>Inappropriate paraphrasing</td>
<td>Using the text of others with a few changes or mixing the others’ texts without acknowledging the source(s)</td>
</tr>
<tr>
<td>Copyright infringement</td>
<td>Using a large part of others’ words (in quotation marks) that violates the copyright</td>
</tr>
<tr>
<td>4. Self-plagiarism</td>
<td></td>
</tr>
<tr>
<td>a. Duplicate publication</td>
<td>Publication of paper that are identical or the same in hypothesis, results, and conclusions</td>
</tr>
<tr>
<td>b. Salami publication</td>
<td>Publication of each part of the results of one study in several papers</td>
</tr>
<tr>
<td>c. Practice of text recycling</td>
<td>Using one’s own text in several different papers</td>
</tr>
</tbody>
</table>

*Adapted from the paper by Roig and the definitions of the Office of Research Integrity.⁶⁷ 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.

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
Detecting copied texts

http://www.seomastering.com/similar-text-checker.php
Detecting image stealing

Google Images

Search by image
Search Google with an image instead of text. Try dragging an image here.

Paste image URL  Upload an image

Browse...
Gallery of scientific cartoons by Nasim Lotfinezhad

"The peer review process"

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http://www.amazon.co.uk/gp/product/148885307X?psc=1&redirect=true&ref_=oh_aui_detailpage_o01_s00

http://www.ease.org.uk/node/539
• 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)

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”

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

2. **Write in your own words** and style, minimize paraphrasing.

3. **When in doubt, cite.**

4. **Don’t recycle graphics** without permissions and citation.

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

• “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...
Global fight against misconduct

- Improving mentorship
- Training of authors
- Reducing the pressure to publish
- Teaching writing, editing and publishing ethics
- Adhering to research reporting guidelines
- Ensuring harsh punishments

How to deal with text recycling

- How much text is recycled
- Where in the article the text recycling occurs
- Whether the source of the recycled text has been acknowledged
- Whether the article is a research or non-research article
- Whether there is a breach of copyright
- In some circumstances, cultural norms at the time and place of publication

Lessons for journals

When an editor discovers text recycling in a submitted manuscript or published article, it is advisable to check the journal’s author guidelines to ensure they are clear.

Editors! Revise Instructions for Authors

**How The Lancet handles your paper**

**Acknowledgment**
- Receipt of your paper will be acknowledged by an email containing a reference number, which should be used in all future communications.

**Checking for plagiarism, duplicate publication, and text recycling**
- All Seminars, Series, Reviews, and other non-research material that we are interested in publishing will be checked by editors using CrossCheck (see *Lancet* 2011; 377: 281–82). We expect that such papers are written in a way that offers new thinking without recycling previously published text.

**PLAGIARISM DETECTION**

Each manuscript is checked for plagiarism. We use eTBLAST, CrossCheck, and Wcopyfind softwares and deal with suspicious manuscripts following COPE flowcharts (http://publicationethics.org/resources/flowcharts).
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.28
CONSERVATION Field work is limited to office hours in Mauritius p.29

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

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