Hot Topic: Assuring the Quality of Psychological Research

Research Misconduct and the Development of Article Retractions in Psychology and its Fields

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Research misconduct and the development of article retractions in Psychology and its fields by Armin Günther is licensed under a Creative Commons Attribution 4.0 International License.
Increasing retraction rates

Retracted publications per 10,000 published publications by year in PubMed and PsycINFO.

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Retracted publications per 10,000 published publications by year in PubMed and PsycINFO.

Why does this happen?

Two explanations:

1. Declining quality of published articles
   (cf. Fanelli 2013: “growing misconduct hypothesis”)

2. Increasing sensibility of scholarly communication system
   (cf. Fanelli 2013: “stronger system hypothesis”)

![Graph showing trend over years]
Are some fields of psychological research more affected than other?

- Is Social Psychology affected more by research misconduct?

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- Is *Social Psychology* affected more by research misconduct?

Method: Sampling retractions

Query: (retract*.ab. or retract*.ti. or retract*.dt.) and "[YR]".yr.

PsycINFO records
N = 2178

YR: 1860-2016

Retracted articles
N = 286

Retraction notices
N = 326 + 3

Unmatched articles
N = 21

Matched articles
N = 265

Matched notices
N = 265

Unmatched notices
N = 64

Added notices
N = 21

Added articles
N = 64

Article/retraction notices pairs
N = 350

1) 326 PsycINFO records + 3 additional retractions due to retraction notes retracting multiple articles.
Retraction of Johnson, Smeesters, and Wheeler (2012)


This retraction follows the results of an investigation by the Committee for Inquiry into Scientific Integrity, Erasmus University Rotterdam, into the work of Dirk Smeesters. The Committee concluded that the findings of, and data collected by, Smeesters could not be confirmed. Smeesters also disclosed that he had removed data related to this article in order to achieve a significant outcome. The University therefore requested the retraction of this article. His co-authors were unaware of his actions and were not involved in the collection of the data in question.

DOI: 10.1037/a0026106

Source: *JPSP 103*, 605.

Reason for retraction:  
Accused author:  
Subject field(s):  
Year of publication: 2012  
Year of retraction: 2012
Method: Variables

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DOI: 10.1037/a0030145

Reasons for article retractions

<table>
<thead>
<tr>
<th></th>
<th>Reason</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Fraud</td>
<td>Data fraud; data falsification; biasing design</td>
</tr>
<tr>
<td>2</td>
<td>Plagiarism</td>
<td>Plagiarism; self-plagiarism, duplicate publication</td>
</tr>
<tr>
<td>3</td>
<td>Other misconduct</td>
<td>e.g., authorship issues; legal issues etc.</td>
</tr>
<tr>
<td>4</td>
<td>„Error“</td>
<td>Honest error; dubious error (maybe unproven misconduct)</td>
</tr>
<tr>
<td>5</td>
<td>Publisher error</td>
<td>e.g., article published in wrong issue or wrong journal</td>
</tr>
<tr>
<td>6</td>
<td>Other reasons</td>
<td>Not matching any other category</td>
</tr>
</tbody>
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PsycINFO content classification

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<thead>
<tr>
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<tr>
<td>21**</td>
<td>Psychometrics &amp; Statistics &amp; Methodology</td>
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<tr>
<td>22**</td>
<td>Human Experimental Psychology</td>
</tr>
<tr>
<td>23**</td>
<td>Animal Experimental &amp; Comparative Psychology</td>
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<td>24**</td>
<td>Physiological Psychology &amp; Neuroscience</td>
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Source: *JPSP 103, 605.*

Reason for retraction: Fraud
Accused author: Smeesters, Dirk
Subject field(s): Personality Psychology [31** ]

Year of publication: 2012
Year of retraction: 2012
Results: Development of retractions and reasons for retractions

- Misconduct: 65%
- "Error": 24%
- Plagiarism: 26%
- Fraud: 31%
- Other: 8%

Retraction reasons:
- Other
- Publisher
- "Error"
- Misconduct
How shape authors with very high numbers of retractions (outliers) the overall picture?

Most authors have one, nearly all less than five articles retracted, one author (D. Stapel) more than 50, accounting for more than 20% of all retractions because of misconduct in the data. (Base: PsycINFO)
Results: Types of research misconduct

- Fraud: 48%
- (Self)Plagiarism: 39%
- Other author misconduct: 13%
- Number of retracted articles:
  - Fraud: 200
  - (Self)Plagiarism: 100
  - Other author misconduct: 50
- Number of retracted authors:
  - Fraud: 200
  - (Self)Plagiarism: 60
  - Other author misconduct: 20
Results: Research misconduct in different fields of psychology

Number of retracted articles
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<th>Number of Retracted Authors</th>
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<tbody>
<tr>
<td>General Psychology</td>
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<tr>
<td>Psychometrics &amp; Statistics &amp; Methodology</td>
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<tr>
<td>Human Experimental Psychology</td>
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<td>Animal Experimental &amp; Comparative Psychology</td>
<td>3</td>
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<td>Physiological Psychology &amp; Neuroscience</td>
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<td>Psychology &amp; The Humanities</td>
<td>0</td>
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<td>3</td>
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<td>Developmental Psychology</td>
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Number of retracted authors
Results: Research misconduct in different fields of psychology

Number of retracted articles in field

<table>
<thead>
<tr>
<th>Field</th>
<th>Total number of articles in field</th>
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<tbody>
<tr>
<td>Social Psychology</td>
<td>20,000</td>
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<tr>
<td>Psychological &amp; Physical Disorders</td>
<td>50,000</td>
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<td>Physiological Psychology &amp; Neuroscience</td>
<td>70,000</td>
</tr>
<tr>
<td>Health &amp; Mental Health Treatment &amp; Prevention</td>
<td>80,000</td>
</tr>
</tbody>
</table>
Results: Research misconduct in different fields of psychology

- Social Psychology
- Health & Mental Health Treatment & Prevention
- Psychological & Physical Disorders
- Physiological Psychology & Neuroscience

Number of retracted authors in field vs. Total number of articles in field.
Results: Concluding remarks

- **Are article retractions a useful tool for assuring the quality of psychological research?**
  No. Retractions mostly indicate, that processes of quality control have failed.

- **Do retractions destroy knowledge and the advancement of knowledge?**
  Generally not. We constantly re-build our knowledge in the light of new (positive or negative) evidence, For this, we need procedures and intelligent tools to update our knowledgebase.

- **Why do retractions matter at all?**
  The real problem with retractions is not, that single research results may be invalidated. The real problem is that – if retractions are based on research misconduct – they may undermine trust in the general reliability and integrity of research, which is fundamental for building scientific knowledge.
References

Contact:

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armin.guenther@zpid.de