COPE UK seminar 2011 – 18 March 2011

Systematic review of authorship research across research disciplines

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Croatian Medical Journal
University of Split School of Medicine, Split, Croatia
An Account of Some Observations, Lately Made in Spain, by His Excellency the Earl of Sandwich
Measurement of CP-violating asymmetries in B0 decays to CP eigenstates. The article discusses the measurement of CP-violating asymmetries in B0 decays to CP eigenstates. The authors present new results from the BABAR experiment at SLAC. The analysis is based on a sample of 231,000 B0 lifetimes reconstructed from charm and beauty decays. The measured CP-violating asymmetries are in good agreement with the standard model predictions. The article is a significant contribution to the understanding of CP violation in weak interactions.
First measurement of Bose-Einstein correlations in proton-proton collisions at $\sqrt{s}=0.9$ and 2.36 TeV at the LHC.

2010: 2080 authors
Research project supported by COPE

Aims

1. To evaluate evidence about authorship issues and provide a synthesis of research on authorship across research fields

2. To assess authorship definitions and guidance given by groups that have reflected on and established guidelines, rules, or regulations pertaining to scientific authorship issues across all scientific disciplines and geographical locations:
   a. journals from different scholarly fields
   b. professional organizations
Search

Electronic databases were searched using a general search term “authorship” to increase the sensitivity of the search

Time limitation: 2010 and before

Article type limitation: original research articles and reviews

No language restrictions
9088 records identified:
Agricola 67
Business Source Complete 935
CINAHL 768
Current Contents 1124
EBM reviews 169
ERIC 728
GeoRef 69
Food Science and Technology Abstracts 6
INSPEC 258
Library, Information Science & Technology 387
MEDLINE 821
PsycINFO 773
SCOPUS 1605
Web of Knowledge 1278

7703 overlapping records excluded

1285 abstracts screened for eligibility

1109 records excluded

176 full text articles assessed for inclusion in systematic review

61 articles excluded:
32 not research
22 not on authorship
7 no extractable data

8 articles identified by berry-picking search

123 articles included in qualitative synthesis
123 articles:

Health sciences = 66 (65 studies)
Social sciences = 33
Natural sciences = 9 (6 studies)
Multidisciplinary = 15 (14 studies)
Humanities = 0
Types of studies

Cross-sectional survey: 63 studies published in 65 articles (response rates 16% - 100%)

Descriptive studies: 32 studies published in 34 articles (1 was a test-retest study and 1 combined survey and intervention design)

Before and after study: 3 studies
Cohort study: 1 study
Randomized studies: 3 studies
Qualitative studies: 5 studies published in 6 articles

85 (72%) studies had methodological limitations
Four themes across research disciplines

1. Authorship perceptions, definitions, and practices (n=58 articles)
2. Order of authors on the byline (n=45)
3. Ethical and unethical authorship practices (n=46)
4. Power issues in authorship (n=19)
Theme 1: Authorship perceptions, definitions, and practices

Conception of research / research design

Identified as most important contributions across sciences, geographical regions and time

Authorship was thought to be deserved by non-researchers, including community/collective authorship

General lack of knowledge and use of authorship guidelines (health, physics, psychology)
Theme 1: Authorship perceptions, definitions, and practices

Contribution declaration in use in psychology since at least 1970, in medicine since 1990ties

ASSIGNMENT OF PUBLICATION CREDITS:
ETHICS AND PRACTICES OF PSYCHOLOGISTS

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Brentwood Hospital, Veterans Administration Center, Los Angeles

PATRICIA KEITH-SPIEGEL
San Fernando Valley State College

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Additional contributors: (a) the 746 psychologists who completed the lengthy survey questionnaires on which this report is based, (b) Marilyn Crosslin who recorded most of the survey data, (c) William E. Wilsoncroft who was consulted during the planning phases of the project.

Requests for reprints should be sent to Patricia Keith-Spiegel, Department of Psychology, San Fernando Valley State College, Northridge, California 91324.
Theme 1: Authorship perceptions, definitions, and practices

Contribution declaration in use in psychology since at least 1970, in medicine since 1990ties but
- no effect on number of authors
- test-retest study showed low reliability of contribution declaration forms

Four qualitative studies:
- guiding factors in authorship decisions – fairness, reciprocity and sponsorship
- in physics, young researchers have to balance the practice of large group authorship with their individual need for recognition and promotion.
Theme 2: Authorship order

Amount of work and not prestige of position were the preferred method for determining authorship order.
- Reported exceptions: management research and economy.

Alphabetical authorship stable in economy: 9.9% increase from 1974 to 1999 (82% decrease in medical journals).
0.41% increase in estimated salary return for an additional alphabetical article.

First and last authors regarded as most important, especially in biomedicine.
Recent trend of equal first (and last) authorships.
PSYCHOLOGY OF THE SCIENTIST: LXXX.
ATTITUDES REGARDING AUTHORSHIP ISSUES
IN PSYCHOLOGICAL PUBLICATIONS

SIMON A. BARTLE, ALEXIS A. FINK, AND BRYAN C. HAYES

Old Dominion University

Since all authors contributed equally to the design, research, and writing of this article, order of authors is alphabetical. We thank Robert I. McIntyre for guidance on this project and the Department of Psychology at Old Dominion University for their administrative support. Address correspondence to Bryan C. Hayes, Department of Psychology, Old Dominion University, Norfolk, VA 23529-0267 or e-mail (bchayes@erols.com).
Across disciplines undeserved authorship or denial of authorship were considered unethical but were common practice (10% to 89% response in surveys)

Reasons for giving undeserved authorship include feelings of obligation, crediting past and future relationships, team responsibility and power relations.

Interventions to prevent undeserved authorship:
- when authorship decision was made during planning rather then later – 23% vs. 47% undeserved authorship
- ethics training did not affect willingness to give undeserved authorship
- Student with instruction on authorship criteria give more value to contributions from authorship definition

Theme 3: Authorship ethics
Metaanalysis

Reports of problems with and/or misuse of authorship in surveys – 14 studies

Dana transformed with Freeman-Tukey variant of the arcsine square root (Stuart&Ord, 1994).

Pooled proportion was calculated as the back-transform of weighted mean of the transformed proportions, using inverse arcsine variance weights for the fixed effects and DerSimonian-Laird weights for random effects model (DerSimonian&Laird, 1986)
Heterogeneity of the studies and assessment of bias:

Significant heterogeneity
Cochran Q = 109.4; df=13; P<0.0001

Indicators of bias:
Begg-Mazumdar: Kendall's tau=0.319, P=0.127
Egger: bias=2.035 (95% CI -1.777 to 5.847), P=0.267
Harbord: bias = 1.202 (92.5% CI -2.161 to 4.565), P=0.499
Subgroup analysis: health research vs. other disciplines

Pooled weighted estimate (random effects):

<table>
<thead>
<tr>
<th>Group</th>
<th>Estimate (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>health (n=7)</td>
<td>38% (95% CI 25 to 52)</td>
</tr>
<tr>
<td>non-health (n=7)</td>
<td>23% (95% CI 17 to 29)</td>
</tr>
</tbody>
</table>

Significant heterogeneity for both subgroups (P<0.0001)

Indicators of bias not significant but low power
Theme 4: Power issues in authorship

Fairness of the research collaboration between professors and students, especially for publications from the thesis - important issues in psychology

also reported in nursing, multidisciplinary areas, accounting, social work, ecology, agriculture, education research
Search of journals’ guidelines – Thomson Reuters databases:

1. Journal Citation Reports (JCR)
   - First 5 journals with highest impact factor from 21 out of 172 categories of the Science Citation Index
   - First 5 journals with the highest impact factor from 15 out of 55 categories of the Social Sciences Citation Index

2. Arts & Humanities Citation Index
   - First 5 journals on the list of 10 general out of 27 major categories of the A&HCl

No duplications
### Thomson Reuters databases

<table>
<thead>
<tr>
<th>Authorship statement</th>
<th>Citation index</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SCI (n=110)</td>
</tr>
<tr>
<td>No. journals with statement regarding authorship</td>
<td>58 (53%)</td>
</tr>
</tbody>
</table>

**Source of definition:**

- **own definition**: 25 (43%) | 3 (13%) | 4 (25%)
- **definition from a professional association**: 13 (22%) | 5 (21%) | 0
- **definition from a publisher**: 20 (35%) | 16 (67%) | 12 (75%)
Codes of ethics from professional societies, corporations, government and academic (http://ethics.iit.edu/codes)

- No authorship statement: 557 (86%)
- Authorship statement: 71 (11%)
- Information not available: 23 (4%)
# Types of the statements

<table>
<thead>
<tr>
<th>Statement category*</th>
<th>Citation index</th>
<th>Ethics codes†</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SCI (n=58)</td>
<td>SSCI (n=24)</td>
</tr>
<tr>
<td>Giving proper credit (non specific)</td>
<td>33 (57%)</td>
<td>21 (88%)</td>
</tr>
<tr>
<td>Criteria for authorship</td>
<td>47 (81%)</td>
<td>24 (100%)</td>
</tr>
<tr>
<td>Honorary or „gift“ authorship</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Including all persons who merit authorship (includes statements on acknowledging all personnel’s contributions)</td>
<td>49 (85%)</td>
<td>20 (83%)</td>
</tr>
<tr>
<td>Order of authorship</td>
<td>0</td>
<td>5 (21%)</td>
</tr>
<tr>
<td>Authors take responsibility for work/obtaining consent to publish from all authors</td>
<td>39 (67%)</td>
<td>19 (79%)</td>
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*Categorization according to Rose MR, *Science Editing & Information Management* 1999
Research AND/OR Writing?

<table>
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<th>SSCI</th>
<th>A&amp;HCI</th>
<th>Codes</th>
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<td>3</td>
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<tr>
<td>Only writing</td>
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<td>1</td>
<td></td>
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<td>Research AND writing</td>
<td>20</td>
<td>7</td>
<td>11</td>
<td>5</td>
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<tr>
<td>Research OR writing</td>
<td>24</td>
<td>17</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
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Elsevier

Wiley – Blackwell
Authorship should be limited to those who have made a significant contribution to the conception, design, execution, or interpretation of the reported study. All those who have made significant contributions should be listed as co-authors. Where there are others who have participated in certain substantive aspects of the research project, they should be acknowledged or listed as contributors.
Wiley-Blackwell recommends that journal editors consider adopting the ICMJE authorship criteria as part of their editorial policy. The ICMJE authorship criteria state 'authorship credit should be based on 1) substantial contributions to conception and design, or acquisition of data, or analysis and interpretation of data; (and) 2) drafting the article or revising it critically for important intellectual content; and 3) final approval of the version to be published. Authors should meet conditions 1, 2, and 3.'

Wiley-Blackwell recommends that editors ask authors to submit a short description of all contributions to their manuscript. Each author's contribution should be described in brief. Authors of research papers should state whether they had complete access to the study data that support the publication. Contributors who do not qualify as authors should also be listed and their particular contribution described. This information should appear as an acknowledgement.
## Tone of the statements

<table>
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<tr>
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<td>aspirational</td>
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<tr>
<td>A&amp;HCI journals (n=16)</td>
<td>3 (19%)</td>
<td>13 (81%)</td>
</tr>
<tr>
<td>All journals (n= 98)</td>
<td>18 (18%)</td>
<td>80 (82%)</td>
</tr>
<tr>
<td>Ethics codes (n=71)</td>
<td>53 (75%)</td>
<td>18 (25%)</td>
</tr>
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\[\chi^2 = 51.245, \quad P < 0.0001\]

*Categorization according to Rose MR, Science Editing & Information Management 1999*
There is no universally agreed definition of authorship, although attempts have been made (see Appendix). As a minimum, authors should take responsibility for a particular section of the study.

(1) The award of authorship should balance intellectual contributions to the conception, design, analysis and writing of the study against the collection of data and other routine work. If there is no task that can reasonably be attributed to a particular individual, then that individual should not be credited with authorship.

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(3) All authors must take public responsibility for the content of their paper. The multidisciplinary nature of much research can make this difficult, but this can be resolved by the disclosure of individual contributions.

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Thank you.
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