

Writing and getting published

OU Developing as a Researcher
conference for postgrad students 2015
Anna Sharman

Overview

1. Before you start to write
2. Scientific writing basics
3. The peer review process
4. Journals and how to pick the right one

BEFORE YOU START TO WRITE

Why publish?

- Career
- To establish priority
- To join the conversation
- To learn and improve
- To be built on
- To change the world
- To prevent waste

Preparation for paper writing

- Keep good records
 - Methods
 - Results
 - Interpretation, thoughts, problems
 - References
- Read a lot (especially papers)
- Write a lot

Record keeping

- Keep all raw data
- Use reference management software
- Note who helped with what

Making time for writing

- Little and often
- Set aside time and defend it
- Remove distractions eg internet
- Write with others

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Aids to writing

- Pomodoro technique®
- Write with others
 - In person
 - Online
- Use free writing to get started
- Set goals
- Reward yourself



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Getting feedback

- Don't leave it too long
- Get friendly feedback first
- Get used to feedback – build your resilience

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Feedback people

People	Purpose
Supervisor/PI	Essential
Coauthors	Essential
Others in field	Spot gaps in logic, missing references
Friends and family	Spot bits that are unclear to layperson
Language experts	Spot ambiguities and grammar problems

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Writing papers



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The structure of a paper

- Usual structure:
 - Title
 - Abstract
 - Introduction
 - Methods
 - Results
 - Discussion
 - Conclusions
 - References
- Results and Discussion
-

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Principles

- Put info where readers expect it
- Signal parts of the paper
 - With headings
 - With wording

Conventions

- Introduction: poses the problem
- End of Introduction: Summary of approach
- Methods and Results: explain details
- Start of discussion: Summary of results
- Discussion: explains how you solved problem
- End: Summary of conclusions

Title

- Not too long
 - Up to 12 words
 - Up to 2 lines in pdf/print
 - Depends on journal
- Informative
- No abbreviations (unless essential)

Abstract must contain:

- Background
- Rationale
- Results
- Conclusions
- Implications
- Sometimes also Methods (brief)

Common errors in abstracts

Rationale not clear 1

"We discovered that J causes Q..."

But why should I care what causes Q?

Common errors in abstracts

Rationale not clear 2

"Others have done X. We did Y..."

But why did you do Y? What was wrong with X?

Common errors in abstracts

Too much methodological detail

"We added 3.57 ml of Z to a 4.76 l solution of W and stirred for 15 minutes. The resulting precipitate was significantly better than the previous compound (p = 0.0087, CI = 1.45-2.67, Student's t-test..."

Why is all that guff in the abstract?

Common errors in abstracts

Vague conclusion

"These results give insights into how A works..."

What insights? How does A work?

First 3 rules of writing style for papers

Clarity

Clarity

Clarity

Basic rules

SI units	ml, kg, °C, mmHg
Full stops for decimal points	0.5% not 0,5%
Species/names	<i>Homo sapiens</i> , GAPDH
Define	Charge coupled device (CCD)
Full sentences	Sorted! → The strategy succeeded.
No contractions	can't → cannot

Person and voice

- First person is allowed!
"We examined the samples"
"I analysed what happened" (if only one author)
- Passive is OK when needed, but don't overuse
"The samples were processed (by the machine)"

Past tense

- For:
- what previous papers did
"Bloggs et al. showed..."
 - what you did
"Next we analysed..."

Perfect tense

For:

- looking back in the paper
- Conclusions section: “Here we have shown...”
- For generalising about past and ongoing work
- “No-one has yet identified the mechanism...”

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Present tense

For:

- what is known
- “Volcanoes erupt unpredictably”
- (sometimes) for methods
- “We generally produce it like this”
- what you present in the paper
- “Figure 1 shows...”

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Use active verbs

“Isolation of the active component was achieved by filtering of the solution”



“To isolate the active component, we filtered the solution”

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Avoid stacked nouns

“We identified strong private sector manager performance prediction factors”

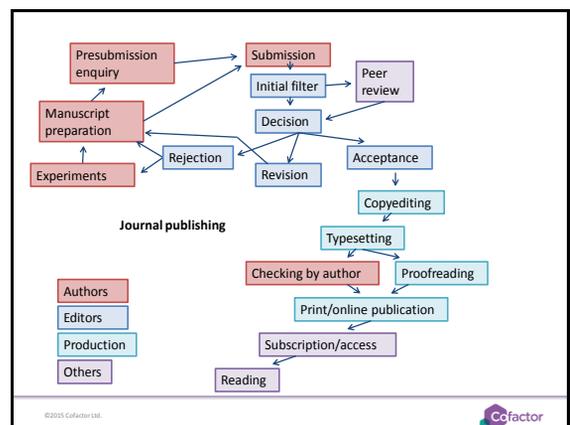


“We identified factors that strongly predict the performance of managers in the private sector”

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THE PEER REVIEW PROCESS



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Presubmission enquiry

- Email to editors
- Include title, abstract, authors, addresses
- Brief letter saying why paper interesting
- Ask if they would consider paper
- Get a quick yes/no answer
- Saves time if they say no
- Check if journal encourages

Cover letter

- Editors have little time for each paper, so...
 - Make the advance clear
 - Be brief
 - Get journal name right
- Statements to include:
 - Not under consideration elsewhere
 - All authors have approved the manuscript

Decision

- Simple rejection
 - Rejection, but might reconsider
 - Revisions invited (more analyses)
 - Minor revisions invited
 - Accept as is
- Most common

Dealing with the decision

- If rejection, give yourself time to get over it
- Read editor's letter carefully
- If you disagree with revisions requested:
 - Ask editor for advice
 - Argue in revision letter
 - Go elsewhere

Response to reviews

- Be polite and reasonable
- Concise to editor, full for reviewers
- Quote each point, then respond

Remember:

Editor makes final decision



NOT reviewers



JOURNALS: HOW TO PICK THE RIGHT ONE

The impact factor and more

Impact factor

A = times articles published in 2011 and 2012 cited during 2013

B = total "citable items" published by journal in 2011 and 2012

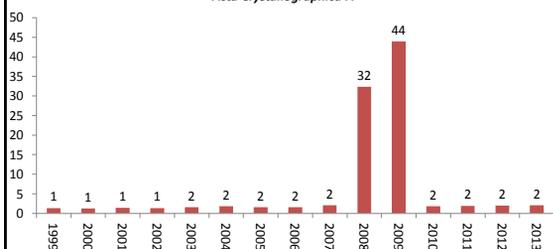
$$\text{2013 impact factor} = A/B$$

(released June 2014)

Problems with Impact Factor

1. Citations \neq impact
2. 2 years
3. Average (mean) - can be skewed
4. Can be gamed
5. Errors unknown

Citations per paper
Acta Crystallographica A



Reason: "This paper could serve as a general literature citation when one or more of the open-source SHELX programs... are employed in the course of a crystal-structure determination." **A short history of SHELX.** 2008;64:112-22. Cited over 48,000 times.

Uses of impact factor

- Compare two journals in same field
- Quick assessment of citation rate

Not:

- To judge a paper
- To judge a researcher

Alternative metrics

- Other journal metrics
- Citations of paper itself
- Downloads, views
- Mentions in mainstream media
- Social media shares
- Saves in reference management
- Wikipedia citations
- Data reuses

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Journal metrics



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Score in context

Puts article in the top 5% of all articles ranked by attention

show more...

Mentioned by

- 32 news outlets
- 7 science blogs
- 102 tweeters
- 17 Facebook users
- 144 Google+ users
- 1 Redditor
- 1 Highlights & review

Readers on

- 72 Mendeley
- 9 CiteULike

News Blogs Twitter Facebook Google+ Reddit Reviews Score Demog

So far Altmetric has seen 33 stories from 32 outlets.

ScienceDaily

Scientist uncovers internal clock able to measure age of most human tissues

Women's breast tissue ages faster than rest of body

A new study is the first to identify a biological clock able to gauge the age of most human tissues. Some parts of the anatomy...

2013-10

RT

Hallan 'el reloj biológico' del ADN, clave para entender mejor el envejecimiento

Un estudio ha localizado el 'reloj biológico' incorporado en nuestro ADN que muestra el tiempo que llevamos en algunas partes de nuestro...

2013-10

Biological Clock Hidden In Our DNA Can Identify Ages Of Specific Tissues

The age on your driver's license may not be exactly correct – well, for certain parts of your body. A new study, published...

2013-10

ImpactStory profile

Overview Map

Selected works

- An Introduction to Social Media for Scientists
- Dramatic Shifts in Benthic Microbial Eukaryote Communities following the Deepwater Horizon Oil Spill

Key profile metrics

- 5M Impressions on 27 articles
- 106.3k Views on 27 articles
- 104.4k Impressions on 9 datasets
- 70.4k Impressions on 13 slide decks

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Open access



Open access: definition

- Free to read online
- Anyone can (full text):
 - Download
 - Copy
 - Distribute
 - Print
 - Search
- Anyone can reuse for any lawful purpose
- No financial, legal or technical barriers
- Authors must be credited

(Budapest Open Access Initiative 2001)

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Open access - why?

- More shares and citations
- More people can read:
 - Patients
 - Policy-makers
 - Students in poorer universities
 - Inventors
- Mandated by funders (eg RCUK, Wellcome)
- Essential for REF2020

Open access - how?

- Via journal (**gold**)
 - Open access journal
 - Hybrid journal
- Via repository (**green**)
 - Immediately or delayed
 - Published version or final author version

Copyright

Old way:



New way:



Copyright

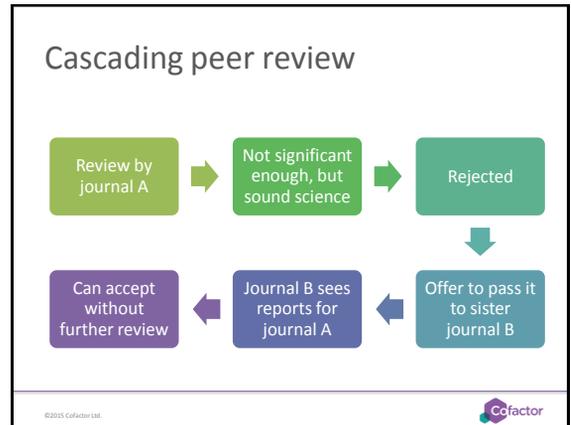
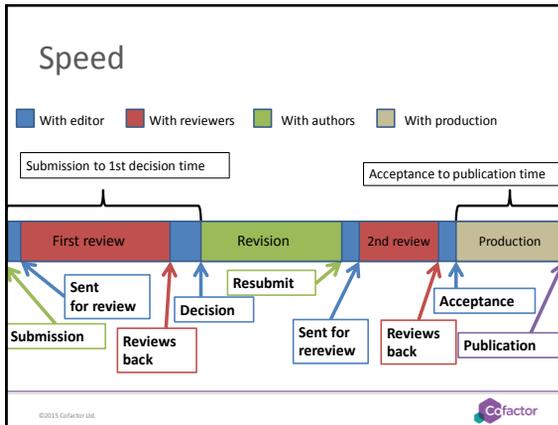
- Copyright is a valuable asset...
- Don't give it away
- If you give away your copyright:
 - you will have to ask permission to reproduce your own work
 - you can't post it elsewhere with permission

Creative Commons (CC) licences

- By: Attribution
- NC: Only non-commercial reuse
- ND: No derivative works allowed
- SA: Share-alike

Eg "CC By-NC-ND"

How to get your paper out fast



- ### Issues and backlogs
- Articles that are ready are compiled into issues
 - Some articles wait for the rest
 - Limit on articles per issue = longer wait
 - Print publication is much slower
 - Many publish continuously online
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A new kind of journal

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- ### Megajournals
- Peer review only for soundness of science
 - Not for potential impact, significance, surprisingness, etc
 - Broad subject area
 - Open access
 - Potential to get very large
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- ### Submitting to a megajournal
- Avoids going to journal after journal
 - Generally fast process
 - Avoids getting asked to do extra experiments
 - Will be seen by many readers
 - Altmetrics to let cream rise to the top
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Megajournals

- *PLOS One*
- *Scientific Reports*
- *Springer Plus*
- Frontiers series
- BMC series
- *PeerJ*
- *F1000Research*
- *AIP Advances*
- *Biology Open*

Avoiding the downside

- Promote your paper – don't be ashamed!
- Social media, email, in person...
- Check metrics, put them on CV

Take home messages

- Sharing is key to science
- Write early, write often
- Focus on clarity
- Get used to feedback and rejections
- Editor makes final decision
- Research journals (speed, copyright, metrics etc)
- Don't give away your copyright
- Consider megajournals
- Promote your paper

Keep in touch!

Editing or advice: cofactorscience.com
anna@cofactorscience.com
Twitter: @sharmanedit

Links and slides handout by email

Don't forget the evaluation

Links

Before you start

Book: What Editors Want: An Author's Guide to Scientific Journal Publishing by Philippa J. Benson and Susan C. Silver (University of Chicago Press, 2012)

American Chemical Society: 'virtual issue' of 20 editorials on Mastering the Art of Scientific Publication

Responsible research publication: international standards for authors (position statement developed at the 2nd World Conference on Research Integrity, 2010)

EASE (European Association of Science Editors) guidelines

ICMJE Recommendations for the Conduct, Reporting, Editing, and Publication of Scholarly work in Medical Journals.

Retraction Watch blog

Duplicate submission

ICMJE guidelines on overlapping submissions

Referencing and plagiarism

Most publishers and universities have their own rules on plagiarism. For example, here are Nature Publishing Group's guidelines together with links to relevant articles.

Paraphrasing and Plagiarism: chapter in eBook English for Writing Research Papers by Adrian Wallwork, Springer 2011 (not free)

Image manipulation

Journal of Cell Biology instructions for authors, which include guidelines on image manipulation

Journal of Cell Biology editorial 'What's in a picture?' on image manipulation

Authorship

ICMJE guidelines on authorship

The peer review process

Peer review: the nuts and bolts: guide for early career researchers by Sense About Science

Peer review: a guide for researchers (Research Information Network 2010)

Taylor&Francis guide to peer review

Open access

Introduction to open access, including definitions of gold and green routes.

Creative Commons licences

SHERPA FACT: check whether a particular journal fulfils the open access requirements of your funder.

When your paper is published

Melissa Terras: Is blogging and tweeting about research papers worth it? The verdict (blog post, 2012)

Christie Wilcox: Social Media for Scientists Part 1 of 5 (Discover Magazine, 2011)

LSE Public Policy Group: Using Twitter in university research, teaching and impact activities (pdf guide, 2011)

Dorothy Bishop: A gentle introduction to Twitter for the apprehensive academic (blog post, 2011)

John Launer: The age of Twitter (Postgraduate Medical Journal, 2013)

Altmetrics

ImpactStory

Altmetric

Choosing a journal

Anna has written several introductory posts on this subject (now getting a bit old):

[Choosing a journal I: getting your paper published quickly](#)

[Choosing a journal II: getting your paper noticed](#)

[Choosing a journal III: practicalities](#)

[Choosing a journal IV: peer review procedure](#)

[Choosing a journal V: impact factor](#)

You can use the [Cofactor Journal Selector tool](#) to select journals that fit a range of criteria such as those below.

Journal impact measures

Anna's blog post on [journal metrics](#) (links to a [spreadsheet comparing metrics for 97 journals](#))

[Royal Society explanation](#) of journal metrics and their uses and misuses

[Journal Citation Reports](#) (for Impact Factor)

[Eigenfactor](#)

[SCImago Journal Rank \(SJR\)](#)

[Source-Normalized Impact per Paper \(SNIP\)](#)

[Google Scholar Metrics](#)

Problems with the impact factor

[Short term measure](#)

[Gaming](#)

[Skewing by one paper](#)

[Misuse of the impact factor](#)

Visibility

Indexing: for a comprehensive list of the indexing services for journals, see this [list from Springer](#).

Evidence that open access leads to more citations: [Preprint by Alma Swan](#) and [brief summary](#) of it from openscience.com.

Speed

See also Anna's blog posts on

- [Acceptance to publication time](#)
- [Submission to first decision time](#)

Scholarly Kitchen post on [cascading peer review](#)

See below under 'How scientific publishing is changing' for links to various megajournals.

Charges

Anna's blog posts on [journals that charge authors \(and not for open access publication\)](#), [journal submission fees](#) and [open access publication charges](#) (links to a [spreadsheet comparing author processing charges for 209 journals](#)).

Innovative journal publishers

[PeerJ](#)

[F1000Research](#)

[eLife](#)

Journal-independent peer review

[Peerage of Science](#)

[Rubriq](#)

[Axios Review](#)

Post-publication peer review services

Faculty of 1000 Prime

PubPeer

Publons

Megajournals

Physical and biological sciences:

PLOS One (Public Library of Science)

Scientific Reports (Nature Publishing Group)

Springer Plus (Springer)

QScience Connect (Bloomsbury Qatar Foundation Journals)

The Scientific World Journal (Hindawi)

The Winnower

ScienceOpen Research

Cogent OA journals

Biological sciences and medicine:

Frontiers journals

The BMC series (BioMed Central)

ISRN series (Hindawi)

PeerJ

F1000Research

Gigascience

Medicine:

BMJ Open (British Medical Journal Group)

SAGE Open Medicine

CMAJ Open

Cureus

Biological sciences:

Biology Open (Company of Biologists)

FEBS Open Bio (Elsevier)

G3: Genes, Genomes, Genetics (Genetics Society of America)

Ecosphere

Physical sciences:

[AIP Advances](#) (American Institute of Physics)
[IEEE Access](#) (IEEE Publishing)
[Elementa](#) (BioOne)

Social sciences:
[SAGE Open](#) (SAGE)
[Open Library of the Humanities](#) (Ubiquity Press)

Journal selector tools

[Journal Author Name Estimator \(JANE\)](#)
[Edanz journal selector](#)
[JournalGuide](#)
[Springer journal selector](#)
[Elsevier journal finder](#)
[Cofactor Journal Selector tool](#)

The writing process

[Writing for an academic journal: 10 tips](#) (Guardian Professional article by Rowena Murray, professor in education and director of research at the University of the West of Scotland)

[Tips from an academic writing retreat](#) (Hub for Education Research at Edinburgh Napier)

Explorations of Style on [reverse outlines](#), the [speed of writing](#) and [dealing with anxiety about writing](#)

[The Pomodoro Technique®](#)

Thesis Whisperer posts on ['Shut up and write'](#) and the [Pomodoro Technique®](#)

[The Twitter Phenomenon #madwriting](#) (blog post by a journalism lecturer)

[Nature feature](#) on collaborative writing tools such as Google Docs, Writelatex, Authorea and Fiduswriter

The structure of a paper

[How do I write a scientific paper?](#) Guidelines from SciDev.Net

[Scientific reports](#): guide to writing from the University of North Carolina Writing Center

Title and abstract

[EASE guidelines](#)

Nature [example for download](#) (.doc format)

[Blog post on abstracts by a Nature editor](#)

[Tutorial post on titles](#) by palaeontologist Mike Taylor

[Research Trends article](#) on choosing a good title

Blog post on [academic paper/thesis titles](#) by Patrick Dunleavy of LSE (Write for Research)

[How to write a conference abstract \(or how NOT to write one\)](#) – blog post in McGill University GradLife

[How to write a scientific abstract in six easy steps](#): blog post by Steve Easterbrook (University of Toronto). Includes a fun example abstract about 'widgetology'.

Writing style

Book: [The Craft of Research](#) by Wayne C. Booth, Greg Colomb and Joe Williams. 3rd Edition (Chicago Guides to Writing, Editing, and Publishing). University of Chicago Press 2008.

[Explorations of Style](#): blog on academic writing by Rachael Cayley, Senior Lecturer in English Language and Writing Support, University of Toronto

A [collection of tips](#) garnered from various journals by Dey Alexander

[The Science of Scientific Writing](#): Article by George Gopen, Judith Swan, American Scientist, November-December 1990

[How to write consistently boring scientific literature](#): article by Kaj Sand-Jensen, Oikos 2007

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