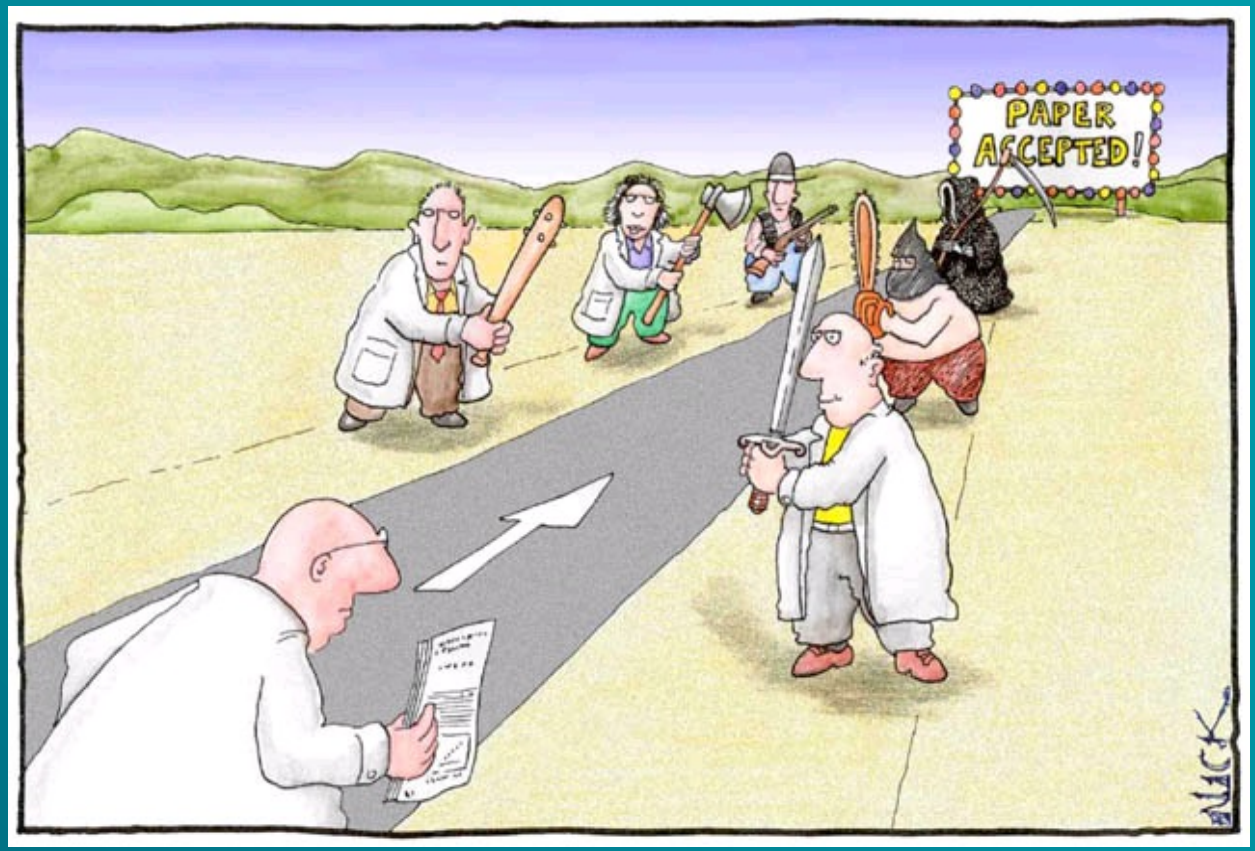
How to Write a Manuscript that Reviewers (& Editors) will Love

Nidhi Bansal, PhD
Founder Editor-in-Chief, *Cancer Reports*
Senior Manager, Strategic Insights
Society Partner Publishing

Rutgers School of Graduate Studies

March 16, 2022

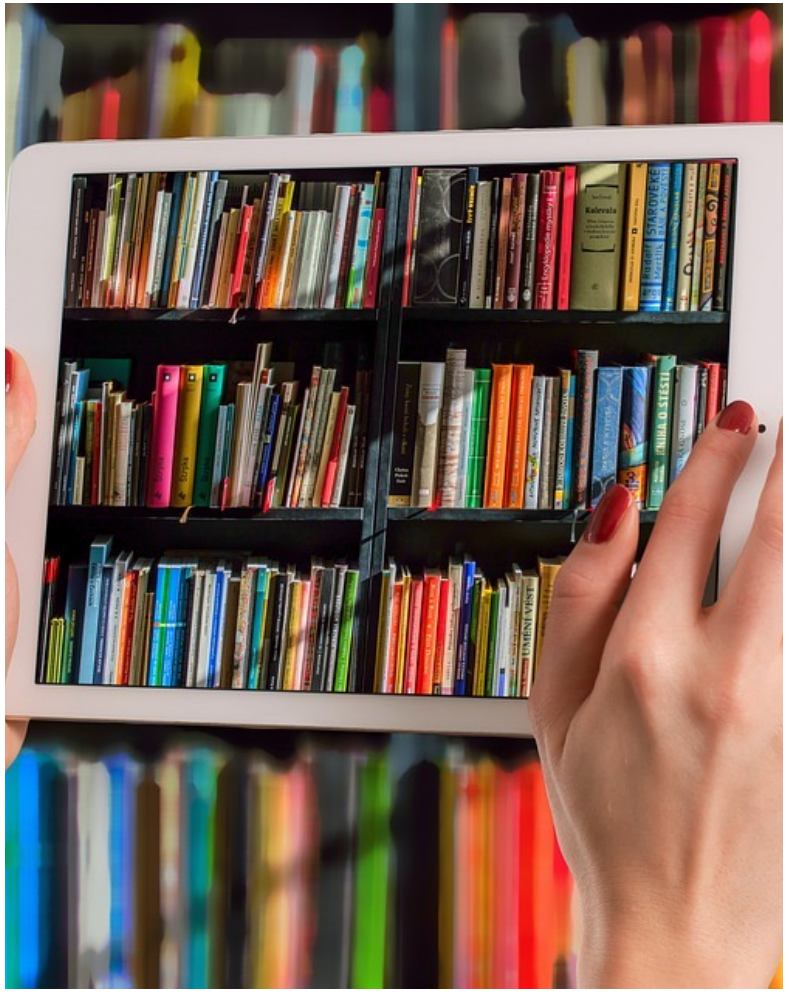


WILEY

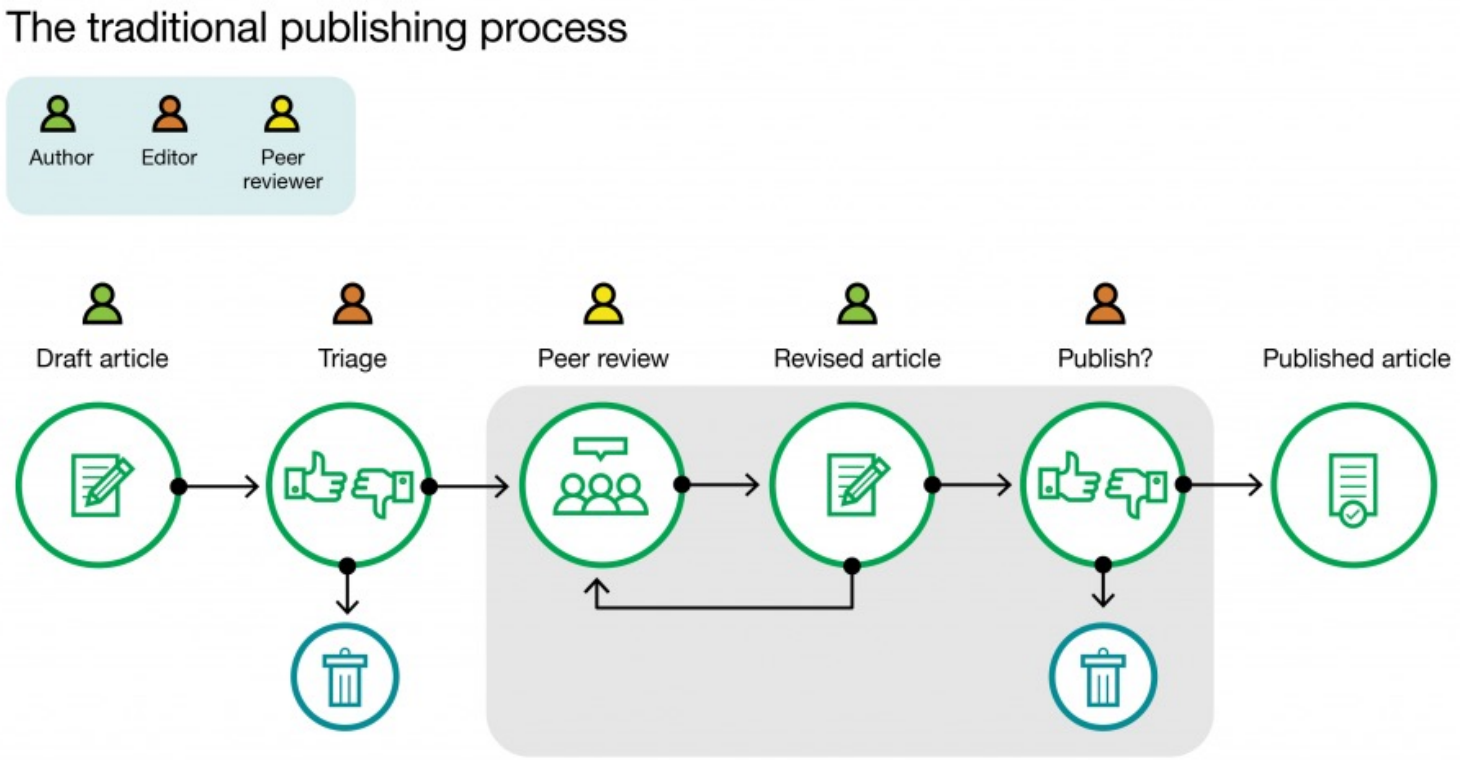
Overview

- Scientific Publishing, journal selection, peer review
- Tips and Best Practices in Manuscript Writing
- Open Data and Open Publishing Practices
- Registered Reports
- Predatory Publishing
- Poll questions and a short activity
- Please post your questions in the chat box.

Scientific Publishing – A view from the other side



Scientific Publishing: How do journals work?



1. Preparation & Submission
2. Evaluation
3. Publication and Dissemination

http://asapbio.org/digital-age

Choosing a Journal

THE RIGHT PAPER IN THE RIGHT JOURNAL

Tip 10 - Choice of journal: define a list of target journals!

https://scientificwritingtips.wordpress.com

What is more important to you when choosing a journal for your paper?

a. Speed of publication
b. Access (subscription or open access)
c. Publication charges
d. Impact factor
e. Scope and readership of the journal

Choosing a Journal

THE RIGHT PAPER IN THE RIGHT JOURNAL

Tip 10 - Choice of journal: define a list of target journals!

https://scientificwritingtips.wordpress.com

Journal Selection Criteria :

Scope/Impact/Audience

Preprint and Archive Policy

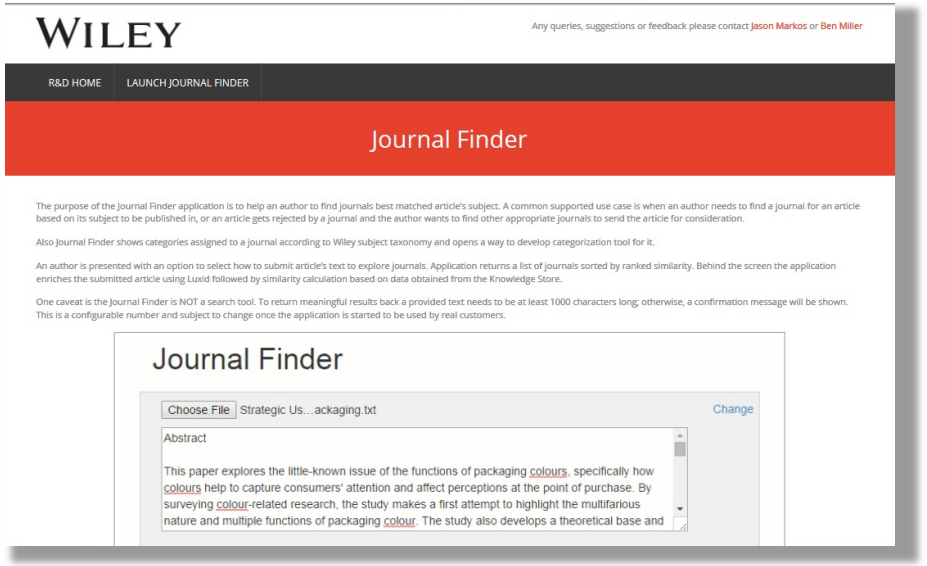
Funding mandate (Green OA vs Gold OA)

Publication time (submission to acceptance/publication)

Be fair, unbiased in critically evaluating your paper, priorities and limitations and then find the right match - this strategy will lead to faster publication times

Types of journals

- Subscription only journals:
  - Free to publish but need to be subscriber to read
- Open Access journals:
  - Articles are freely accessible online
  - Authors pay an Article Publication Charge (APC)
  - The APC can be paid via the author's institution or funding
- Hybrid journals:
  - Subscription journal that allows Open Access publications
  - Article can be published behind or outside paywall



https://journalfinder.wiley.com/

https://jane.biosemantics.org/

Beware of predatory journals

PREDATORY JOURNALS

- Use the Open Access publication model (Most Open Access journals are okay)
- Do not provide legitimate writing , peer-review, and publishing services
- Send frequent spam messages
- Sometimes use names of researchers without their consent
- Look carefully at the publishing company, the affiliated scholarly society and the journal indexation

INFORM/DEFEND YOURSELF

- Beall's List of Predatory Journals and Publishers: **https://beallslist.net/**
- Cabells' Journal Blacklist: **https://www2.cabells.com/about-predatory ($)**
- Useful Appraisal Tool: **https://thinkchecksubmit.org/**
- Directory of Open Access Journals: **https://doaj.org/**

Journal Guidelines

- ALWAYS, and I mean ALWAYS, read carefully the journal's guidelines for authors
  - What is required at submission? In which format?
  - Is there a template?
  - Is there a graphical abstract? How long?
  - Check the definition of authorship
- Word/Page limits ?
- Find out & follow the best practice in the field
  - Reporting standards
  - Data sharing and deposition
  - Open access policy, funders mandates

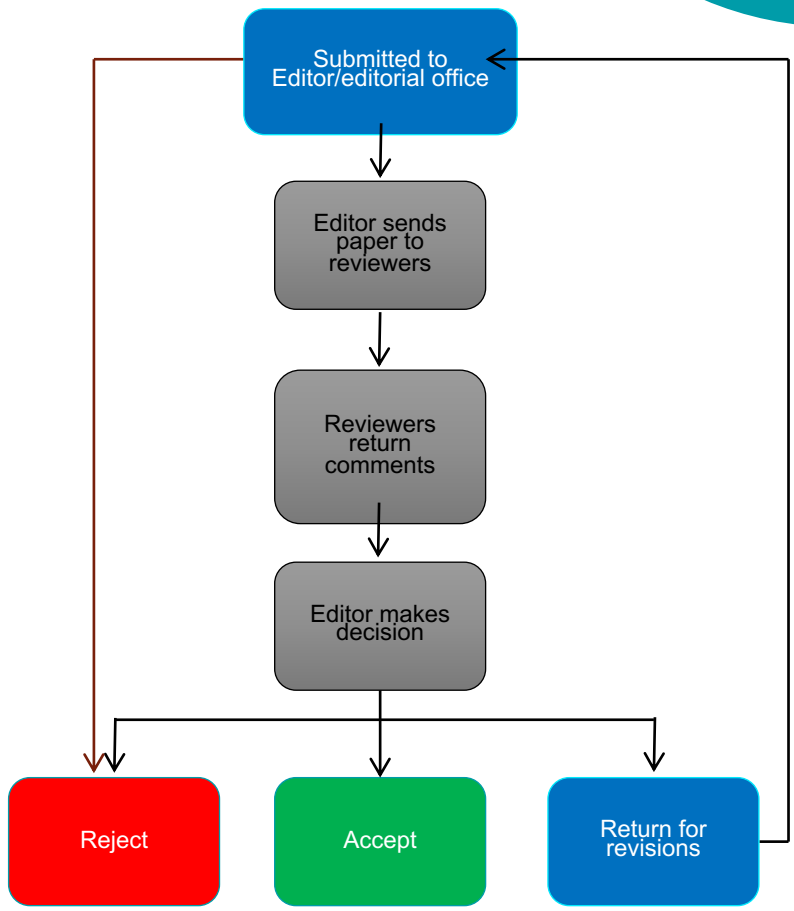
- Think like a referee, check the journal's reviewer guide

- Violating ethical guidelines is the fastest way to rejection, and worse (Plagiarism, duplication, fabrication, authorship issues)

- The cover letter is important for many journals

What Happens When Your Manuscript is Submitted?

What	*Who*	*Time taken*
• Quality control	Editorial assistant/Editor	1-3 days
• Suitability for the journal, general scientific quality	Editor-in-Chief (EiC)	1-5 days
• Reviewer selection & invitations	EiC or Associate Editors	3-15 days
• Peer-review process	2-3 Reviewers	14-28 days
• Evaluation of reviews, recommendation to EiC	EiC/Associate Editors	1-7 days
• Evaluation of recommendation, final decision	Editor-in-Chief	1-2 days
• **Total**		**21-60** days



Broad Assessment by the Editor

ALL JOURNALS

-**Scope**
-Format (Communication, full paper, review…)
-Understandability
-Ethical Compliance

Sound Science Journals

-Hypothesis/Aims
-Technical and scientific rigor
-Conclusions supported by data

Selective Journals

-Novelty
-Importance (in specific field / in related disciplines)
-Interest

*Editors are not always qualified to assess the technical merits of a manuscript – This is where peer-reviewers input

Top Reasons for Editorial Triage

- Manuscript does not fall within the aims and scope of the journal.
- Lack of a clear hypothesis or research aim (i.e. written like a report).
- Glaring flaws in the procedures and/or analysis of the data.
- Poor language (grammatical errors, typos, verbose).
- Research topic is of little significance.
- Piece of research is incremental.
- Manuscript has ethical issues
    - Plagiarism
    - Missing ethical approvals and no informed consent from patients
    - Multiple submission

What constitutes Plagiarism?

- Unintentional Plagiarism: A researcher is extensively referencing past works and ends up using too much of the original text from those works.

- Intentional Plagiarism: A researcher presents ideas or findings from other published papers as his own, instead of citing those papers.

<u>Considerations:</u>

- Where in the text do the similarities occur? How much?
- Direct copying and theft? Or use of prior published article as ‘inspiration’?
- Is the data authentic? Are the results new?

What is the peer-review process?

SINCE 1665, TOUCHSTONE OF THE SCIENTIFIC METHOD

"Peer review is the critical assessment of manuscripts submitted to journals by experts who are not part of the editorial staff"-International Committee of Medical Journals Editors

WHAT IT SHOULD DO	WHAT IT CANNOT DO (*)
-Filter out scientifically flawed studies -Provide feedback on structure, presentation, study design and scientific rigor -Make sure results are interpreted correctly, and convincingly -Improve the quality of publication	-Detect fabrication -Prevent duplicate publication -Pick the most interesting papers -Ensure the article is right for the journal -Measure the impact of the findings

(*) AUTOMATICALLY

This is how reviewers are chosen

-Editors' knowledge & experience

-From related papers:
- cited manuscripts
- literature search

-Additional research:
- conference/lab visits
- web search (good 'ol Google)

-Reviewer database:
- keywords, interest, history…

- Author recommendations

Peer Review

	Modality	Pros	Cons
Traditional	**Single-blind** Author known Reviewer unknown	• Encourages frank opinion No retribution from author	• Reviewers may be unnecessarily critical • Authors fear their work is purposefully delayed
	Double-blind Author unknown Reviewer unknown	• Prevents bias	• Author still identifiable (writing style, topic, citations)
Innovative	**Open** Author known Reviewer known	• More honest (transparent)	• Less honest (polite)
	Post-publication Everybody knows	• Encourages further checks, dialog	• Quality control of comments

Portable Peer Review

- Idea that if a manuscript is rejected from a journal for reasons other than being scientifically unsound the peer review reports can be transferred elsewhere and re-used by others
  - Efficient use of peer reviews and reviewer pool
  - Faster publications
  - Development of journal networks
    - Within a publisher
    - Cross-publisher

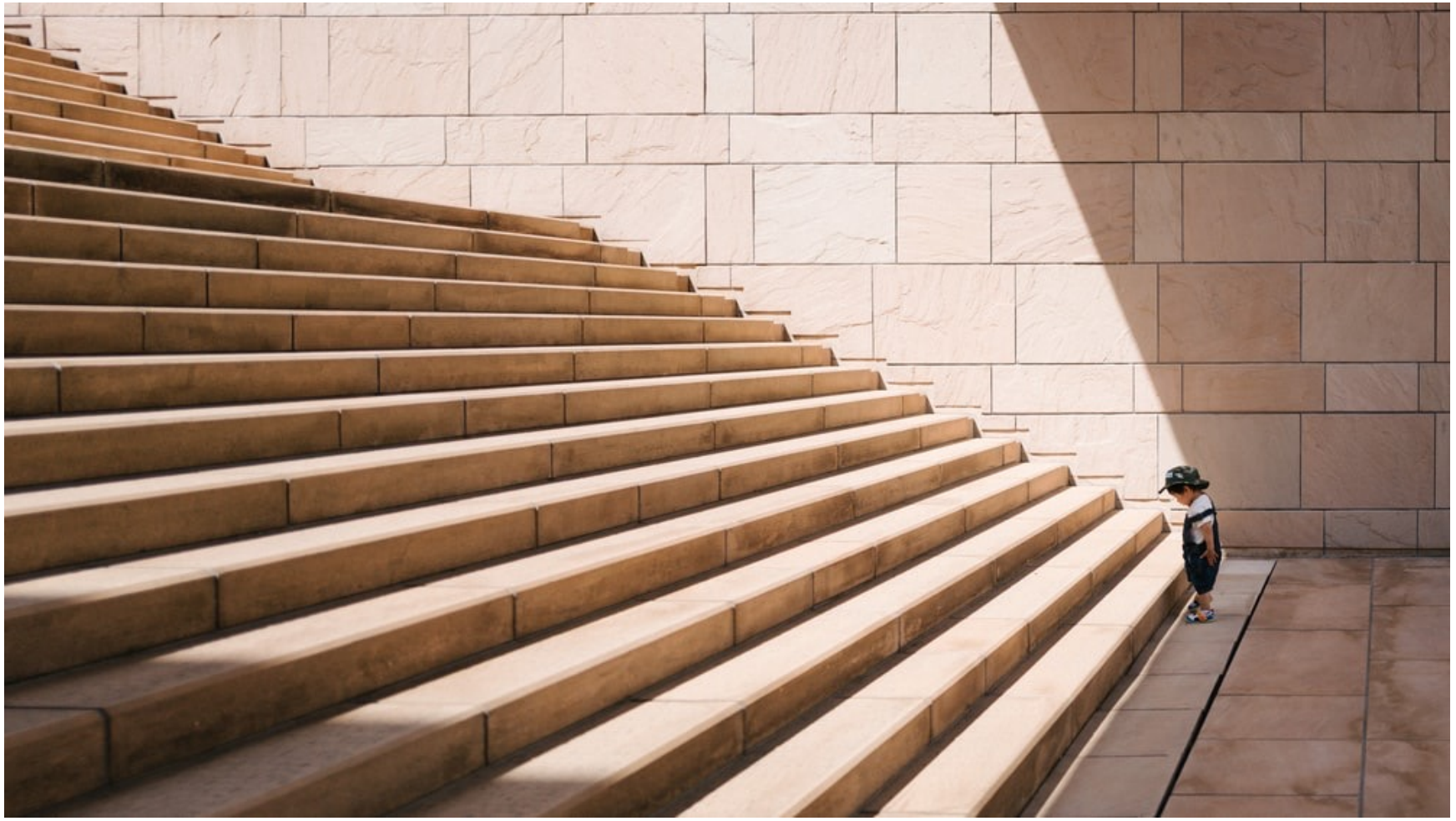
nprc Neuroscience Peer Review Consortium

Journal independent peer review

- Provides authors with a Refereed Preprint, which includes the authors' manuscript, reports from a single round of peer review and the authors' response. Also facilitates author-directed submission of Refereed Preprints to affiliate journals to expedite editorial consideration, reduce serial re-review and streamline publication.
  - Cross-publisher alliance
  - Reviewers focus on science, not journal fit
  - Reduce re-reviewing in different journals
  - Faster publications

Review COMMONS

Manuscript Preparation – THE FIRST STEP



Manuscript Preparation

Where to start?

Manuscript Preparation

Where to start?

How will you begin writing a research manuscript?

a. Introduction
b. Methods
c. Results
d. Discussion
e. Figures
f. Tables
g. Abstract

The order of writing/reviewing different parts of paper is not set in stone

As Author

- Figures and Tables
- Introduction
- Methods
- Results
- Discussion
- Abstract
- Title

As Editor

- Title
- Abstract
- Figures and Tables
- Introduction
- Methods
- Discussion
- Results

As Reviewer

- Title
- Abstract
- Introduction
- Methods
- Results
- Figures and Tables
- Discussion

Tips and Best Practices

1. Title
2. Abstract
3. Introduction
4. Methods and Results
5. Discussion
6. Figures and Tables
7. Journal Selection

Title and Abstract

First impressions for editors and reviewers to assess the paper's merit and suitability for the journal

- **Title:** Keep the title simple and specific to describe the content and main finding. Be concise, not too technical.

- **Abstract –** Don't cram the abstract with details. Tell the audience that the butler did it in the 1st sentence!

    - **Background**: Brief overview and rationale for the study that should provide logical progression to the findings
    - **Objective**
    - **Methods and Results** – Very concisely state how the study was performed and the **main** findings.
    - **Conclusions** - should provide clear context for the paper's implications
    - **Key Words**

Tip 2 - Title and abstract: sell your paper!

https://scientificwritingtips.wordpress.com/the-cartoons/

Title

J. Mamm., 65(1):131–135, 1984

SYLVILAGUS NUTTALLII: A SEMIARBOREAL LAGOMORPH

B. J. Verts, Steven D. Gehman, and Kris J. Hundertmark

Better as:

“Tree-climbing behaviour by mountain cottontail rabbits”

OR

“Mountain cottontail rabbits can climb trees”

RESEARCH ARTICLE | Full Access

Sustainable built environment for facilitating public health of older adults: Evidence from Hong Kong

Shuangzhou Chen, Zhikang Bao, Junjie Chen, Linchuan Yang, Vivian Lou

First published: 08 March 2022 | https://doi.org/10.1002/sd.2303

Funding information: Hong Kong Kerry Group Service Limited, Grant/Award Number: RS180122

Choose your keywords for this Abstract.

Abstract

In response to the United Nations' call to build a sustainable and age-friendly society, older adults' public health, normally measured by functional capacity, has been of increasing concern on a global scale. The built environment is closely intertwined with the functional capacity of older adults, as evidenced by extensive studies. However, most studies have focused on exploring linear relationships between the built environment and functional capability yet overlooking non-linear relationships. This study aims to investigate non-linear relationships between the built environment and older adults' functional capability. Therefore, this study conducted in 2018 adopts a generalized additive mixed model based on a sample of 1083 participants in a typical aging society of Hong Kong. The results discover improved functional capability among older adults who are younger, female, living with family members, with a longer care cycle and fewer comorbidities. The results also support non-linear relationships between the built environment and older adults' functional capability. The optimal functional capability of older Hong Kong adults was found under a specific threshold of built environment factors, such as park density with a desirable number of 5 ± 2, intersection density with a maximal threshold of 200, the highest sky view percentage possibly, and land-use diversity with a minimum threshold of 0.6 for entropy index. The study is of value for relevant stakeholders and policymakers to implement sustainable and age-friendly urban planning for the built environment for facilitating older adults' public health.

https://authorservices.wiley.com/author-resources/Journal-Authors/Prepare/writing-for-seo.html

WILEY

RESEARCH ARTICLE

Sustainable Development WILEY

Sustainable built environment for facilitating public health of older adults: Evidence from Hong Kong

Shuangzhou Chen[1,2] | Zhikang Bao[3] | Junjie Chen[3] | Linchuan Yang[4] | Vivian Lou[1,2]

[1]Department of Social Work and Social Administration, Faculty of Social Sciences, The University of Hong Kong, Hong Kong, China

[2]Department of Social Work and Social Administration, Sau Po Center on Ageing, The University of Hong Kong, Hong Kong, China

[3]Department of Real Estate and Construction, Faculty of Architecture, The University of Hong Kong, Hong Kong, China

[4]Department of Urban and Rural Planning, School of Architecture, Southwest Jiaotong University, Chengdu, China

Correspondence
Zhikang Bao, Department of Real Estate and Construction, Faculty of Architecture, The University of Hong Kong, Hong Kong, China.
Email: u3004700@hku.hk

Funding information
Hong Kong Kerry Group Service Limited, Grant/Award Number: RS180122

Abstract

In response to the United Nations' call to build a sustainable and age-friendly society, older adults' public health, normally measured by functional capacity, has been of increasing concern on a global scale. The built environment is closely intertwined with the functional capacity of older adults, as evidenced by extensive studies. However, most studies have focused on exploring linear relationships between the built environment and functional capability yet overlooking non-linear relationships. This study aims to investigate non-linear relationships between the built environment and older adults' functional capability. Therefore, this study conducted in 2018 adopts a generalized additive mixed model based on a sample of 1083 participants in a typical aging society of Hong Kong. The results discover improved functional capability among older adults who are younger, female, living with family members, with a longer care cycle and fewer comorbidities. The results also support non-linear relationships between the built environment and older adults' functional capability. The optimal functional capability of older Hong Kong adults was found under a specific threshold of built environment factors, such as park density with a desirable number of 5 ± 2, intersection density with a maximal threshold of 200, the highest sky view percentage possibly, and land-use diversity with a minimum threshold of 0.6 for entropy index. The study is of value for relevant stakeholders and policymakers to implement sustainable and age-friendly urban planning for the built environment for facilitating older adults' public health.

KEYWORDS
age-friendly urban planning, Hong Kong, older adults, public health, sustainable built environment, sustainable development

Introduction

An Effective Introduction Leads to a Logical Progression of Why the Study Was Conducted

What is already known about the subject, related to the paper in question

- Is there sufficient scientific background (including relevant references) to understand the motivation, context, and rationale for the study

What is not known about the subject and hence what the study intends to examine (or what the paper seeks to present)

The rationale/significance of the work is established

Are the questions (objectives/hypotheses) you are seeking to answer identified

Tip 3 - Introduction: work on that funnel shape!

Materials and Methods

Editors' and Reviewers' expectations for this section have undergone significant changes and trace back to the inception and execution of the study.

The driving forces

Scientific Rigor and Reproducibility
Transparency and access

Open Science

Open Access

Increasing the accessibility of publicly funded research

Open Data

Enabling verification of data, methodology and reporting standards and allowing others to build on existing work

Open Publishing Practices

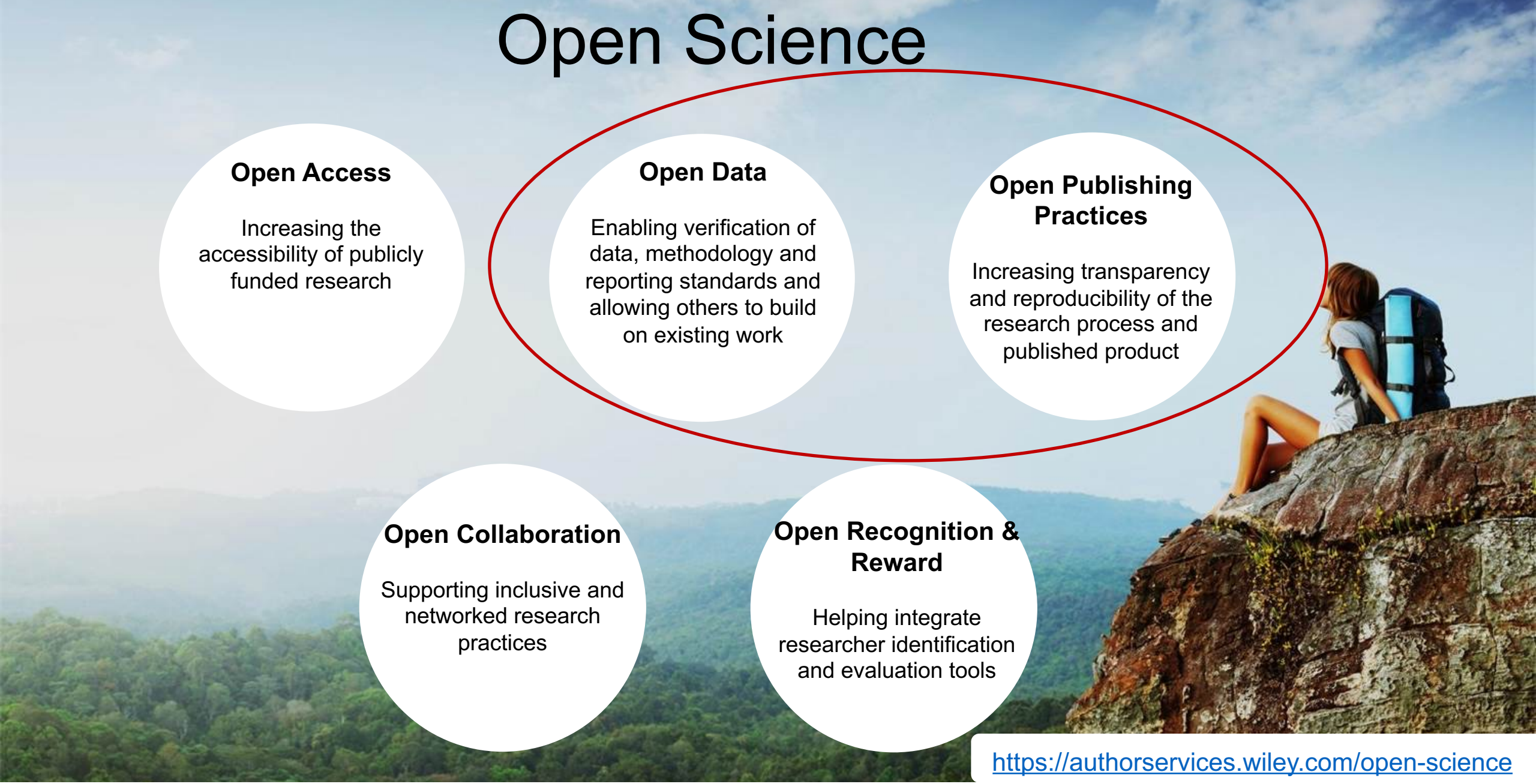
Increasing transparency and reproducibility of the research process and published product

Open Collaboration

Supporting inclusive and networked research practices

Open Recognition & Reward

Helping integrate researcher identification and evaluation tools



https://authorservices.wiley.com/open-science

WILEY

Open Data and Open Publishing Practices are sparking discussions and initiatives to improve how research is performed, reported and published.

METHODS

A Methods Section Must Provide the **Details** of How The Study Was Conducted (Rigor & Reproducibility)

What goes into the methods section:

- Experimental Design
  - Precise details of all procedures (including sequence of manipulation, measurement procedures)
- Experimental Subjects
  - Control and experimental procedures, technical and biological replicates
- Materials
  - Source, catalog #
  - Cell line authentication
- Statistical Analyses
  - Exclusion criteria, outliers defined and handled, data removed prior analyses, randomization and blinding procedures
- Ethical Approvals and written informed consent (for human subjects)

Tip 4 - Methods: provide a cookbook with the study's ingredients!

Design and Perform a Robust Research Study (Scientific Rigor)

- Well-reasoned hypothesis
- Unbiased, scientifically rigorous study design and statistical analysis
  - experimental subjects
  - experimental conditions
  - blinding methods
  - data points
  - variables
  - sample size
  - replicates
  - statistical assumptions
  - statistical power

- Adherence to reporting guidelines – ARRIVE (Animal Research: Reporting in vivo Experiments) and CONSORT (Consolidated Standards of Reporting Trials)

Randomization and Blinding can Reduce Experimental Bias

- Blinding: Experimenter and/or subjects do not know the experimental condition
- Randomization: experimental subjects (“Units”) are assigned to a group at random
- Extremely important for confirmatory research with major impact.
- Crucial when the study cannot be repeated because of ethical /resource-limitation

For more information - https://onlinelibrary.wiley.com/doi/full/10.1002/jnr.24340

What Biological or Technical Variables Might Influence the Outcomes?

Biological variables

- Sex
- Age
- Litter
- Cell Line
- Species
- Strain

Technical Variables

- Cage
- Experimental
- Machine
- Batch
- Order
- Time period between analysis

What Should You Include In Your Statistics Section?

- How the power analysis was performed to determine sample sizes/effect sizes (and report calculated power/effect sizes)
- Inclusion/exclusion criteria and methods to account for biological and technical effects
- Justification of statistical inference and data transformation procedures
- Assumptions (don't just say you tested assumptions, explain and provide details)
- Explanation for how data will be presented (e.g., means or medians, SD)
- A link to the data for reviewer/editor verification

For more information - https://onlinelibrary.wiley.com/doi/full/10.1002/jnr.24340

Data Sharing – to maximize the value of research

- **FAIR** Data - Findable, Accessible, Interoperable, Reusable
- Raw data, processed data, softwares, algorithms, protocols, methods, materials
- Assists editors and reviewers to evaluate research
- Funder Compliance
- Promotes research reproducibility and integrity
- Journal Editors and Publishers are encouraging/expecting/mandating authors to share their data
- For example, many Wiley journals are
  - Publishing ‘Data Statements’ where authors confirm the presence or absence of shared data
  - Partnering with data repositories like Dryad to sponsor the Data Publication Charges for their authors
  - Adopting Data Citation policy

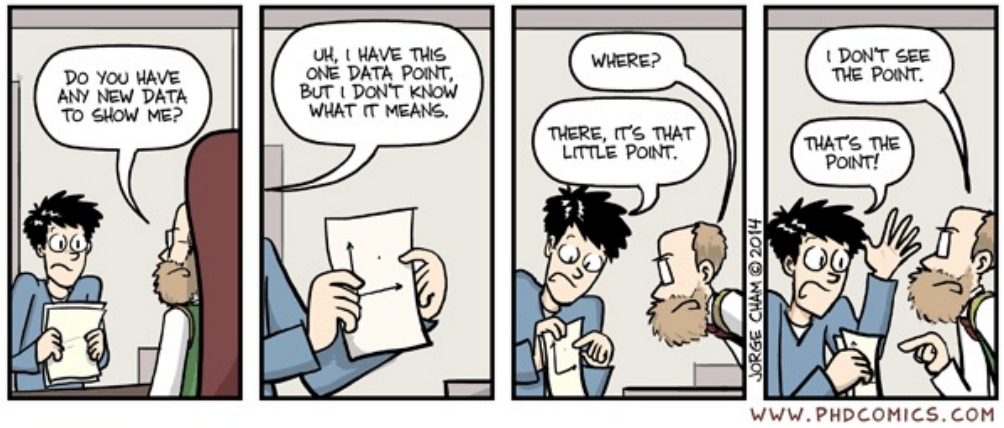
figshare

COS CENTER FOR OPEN SCIENCE

DRYAD

RESULTS

- Organize the results in a logical order that address the research questions asked in a stepwise manner.
- Include a heading for each result that summarizes the key finding.
- Clearly summarize the findings and point the reader to the relevant data in the text, figures and/or tables?
- Text should complement the figures or tables, not repeat the same information.
- Present key results without interpreting their meaning
    - Report the descriptive statistics (e.g., mean ± SD or SEM)
    - Quantify all statements concerning significance numerically
    - Report the test statistic, degrees of freedom, test value, and *P*-value and sample size
- Results sections should be written with accuracy, brevity and clarity…
    - BUT readers cannot be expected to extract important trends from the data unaided.

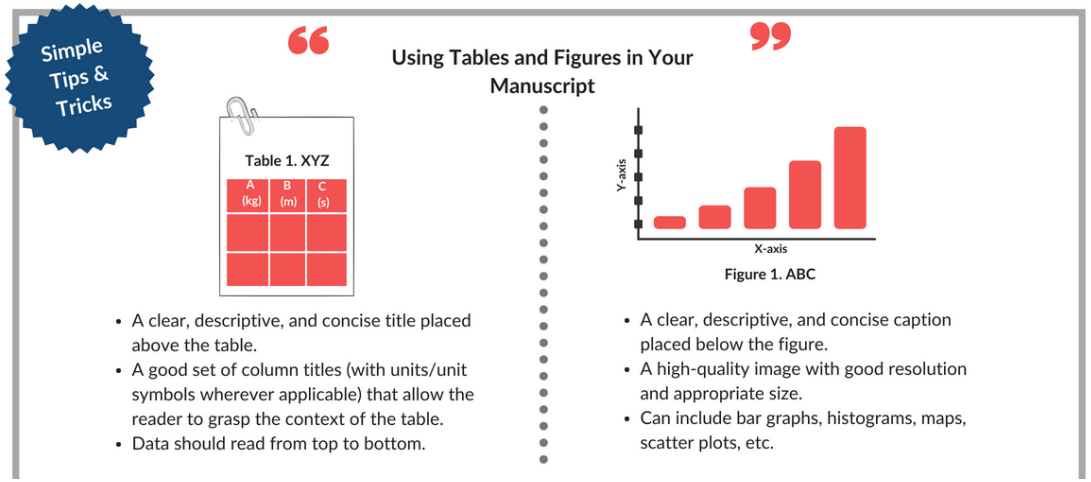


Tip 5 - Results: present findings without interpretation!

Figures & Tables

- Should complement the results.
- Should be self-explanatory
- Do not cram the figures/tables with data points and text! Chose your scale wisely.
- Final figures should be of good resolution.
- Refer the figures in the text.
- Title of a table should be at the top and that of a figure at bottom.

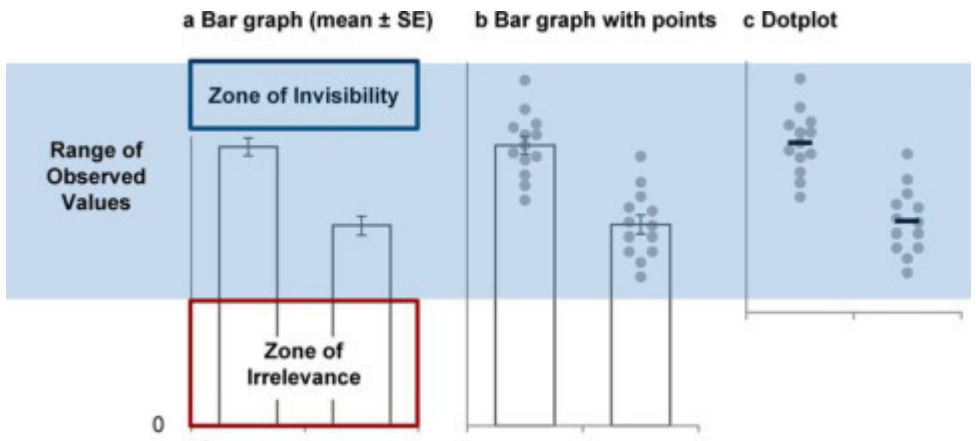
Tip 7 - Tables and figures: make them self-explanatory!



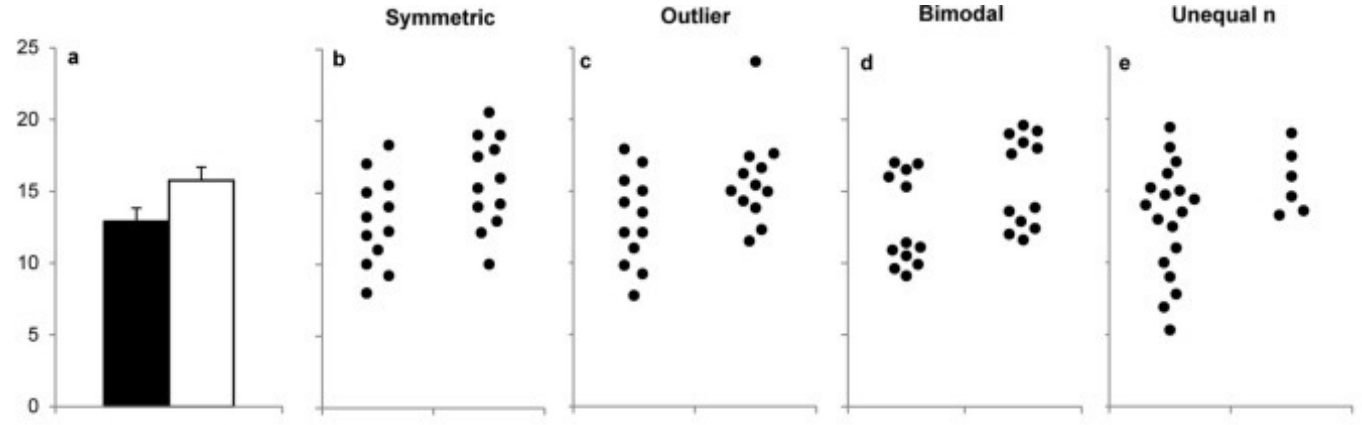
https://www.enago.com/academy/how-to-use-tables-and-figures-to-effectively-organize-data-in-research-papers/

Transparency in Data Visualization

Bar Graph Anatomy – Different datasets can lead to same bar graph



Weissgerber et al., 2017, J Biol Chem



Test	p value			
T-test: Equal var.	0.044	0.041	0.040	0.124
T-test: Unequal var.	0.044	0.041	0.040	0.054
Wilcoxon	0.053	0.065	0.014	0.177

For a quick guide to figures that basic researchers most often use refer Weissgerber et al., 2016, *Journal of Neuroscience Research*

Discussion

Discussion should be concise but informative. Focus on the important and unexpected results. Not on small details.

- Interpret the results considering what was already known about the subject of the investigation
- Provide answers to the testable hypothesis
- Do the findings agree with what others have shown?
- What is our new understanding of the problem investigated and outlined in the Introduction; what are the logical next steps?
- Do the authors consider how the results of other studies may be combined to derive a new or perhaps better substantiated understanding of the problem
- What are the limitations of the study and what has not been addressed.
- No new results are introduced in the Discussion (or speculations)
- **Do not over-interpret.**

Tip 6 - Discussion: be frank in acknowledging limitations!

Discuss **what is** and **not what if !!**

The Revision Decision

KEEP CALM & IMPROVE YOUR MANUSCRIPT

- Carefully consider referee comments
  - Not all changes have to be made…
  - …but need convincing (scientific) arguments for changes not made

- Prepare revision
  - Revise manuscript
    - Highlight changes in manuscript
  - Point-by-point response to all referee criticisms
    - Changes made
    - Why changes not made
  - Response may go back to referees!
    - Need to convince editor and referees

The peer-review process is not a private conversation between authors and referees. Try to work your answers to the reviewers in the revised manuscript!

Open Publishing Practices

Increasing transparency and reproducibility of the research process and published product

Open Publishing Practices

Registered Reports

Preprints

Resource Identification

Transparent/Open Peer Review

Registered Reports – Publishing Study Design

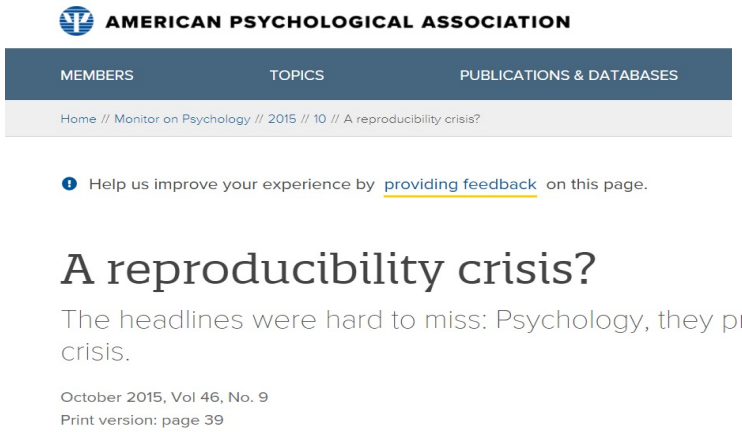
Open Publishing Practices

- Emphasizes the importance of the research question and the methods.
- Reduce questionable research practices, including low statistical power, selective reporting, and publication bias.
- 287 journals publish this article type, including Wiley Journals, like *Cancer Reports!*
- Resources:

  Wiley webinar - http://www.workcast.com/?pak=15761438617828 66&cpak=5842247851117480

  COS: https://cos.io/rr/

A Paradigm Shift is Needed: "Success" can no longer be dependent on studies with exceptional outcomes


AMERICAN PSYCHOLOGICAL ASSOCIATION

MEMBERS TOPICS PUBLICATIONS & DATABASES

Home // Monitor on Psychology // 2015 // 10 // A reproducibility crisis?

Help us improve your experience by providing feedback on this page.

A reproducibility crisis?

The headlines were hard to miss: Psychology, they proclaimed, is in crisis.

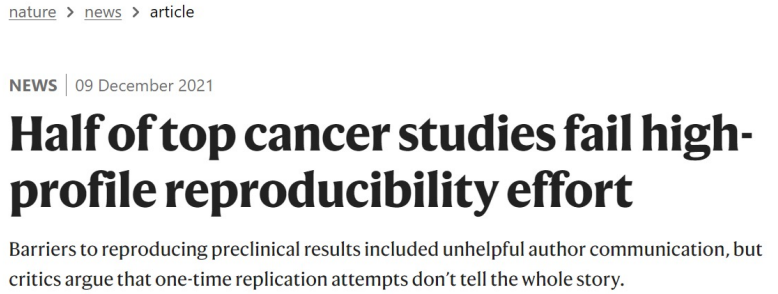
October 2015, Vol 46, No. 9
Print version: page 39


REPORT

Evaluating replicability of laboratory experiments in economics

COLIN F. CAMERER, ANNA DREBER, ESKIL FORSELL, TECK-HUA HO, JÜRGEN HUBER, MAGNUS J HANG WU +9 authors Authors Info & Affiliations

SCIENCE • 3 Mar 2016 • Vol 351, Issue 6280 • pp. 1433-1436 • DOI: 10.1126/science.aa


nature › news › article

NEWS | 09 December 2021

Half of top cancer studies fail high-profile reproducibility effort

Barriers to reproducing preclinical results included unhelpful author communication, but critics argue that one-time replication attempts don't tell the whole story.

- Registered Reports focus on issues investigators, reviewers and editors can address:
  - ✓ rational hypothesis and robust experimental (or clinical trial) design
  - ✓ inclusivity - complete and detailed reporting of methods and results over and above the "direction" of the research findings
  - ✓ statistical competency

REGISTERED REPORT STAGE 1: STUDY DESIGN

WILEY Cancer Reports

A phase III randomized controlled trial of radiation dose optimization in non-Hodgkin lymphoma-diffuse large B-cell lymphoma (DOBL study): Study protocol and design

Registered Reports aligns with innovation in peer review and publishing

- Implementing peer- review methods and publication processes that avoid publication bias / selective publishing and promote research reproducibility

- Adopted Registered Reports to:

  - ✓ reinstate greater credit to the ‘Why’ and ‘How’ of a scientific study versus its outcome and perceived impact

  - ✓ strengthen the core framework of preclinical and clinical cancer research that has a direct impact on patients’ lives

The Evolving Publishing Landscape

Thank You!

Nidhi Bansal, PhD

nbansal@wiley.com

Twitter: @NidhiB2282

LinkedIn: www.linkedin.com/in/NidhiB2282

Assistant Editor Position Available!

Materials Science & Physics group of Wiley is offering an Assistant Editor position based in the United States for its portfolio of internationally renowned journals. (e.g Advanced Materials, Annalen der Physik, Small, Advanced Science).
https://careers.wiley.com/en/position/assistant-editor-united-states-nj-hoboken-corp-hq-4

WILEY