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Scientific Publishing: Journals

Research Methodologies and Scientific Communication

Author(s):

Co-funded by the Erasmus+ Programme of the European Union

Scientific publishing

Learning objectives

- Why publishing
- Where to publish
- How journals work
- Peer-review system

Scientific publishing

Why publishing

Academic publishing is the subfield of publishing which distributes academic research. The way of publishing has changed tremendously over the past decades. While 20 to 30 years ago, scientific achievements have been made available in printed in form, these research results are nowadays online available through different forms of publications. Most of the academic work is published in scientific journals, online books or thesis form.

In this module we will only focus on publishing **journal articles**.

Scientific publishing

Why publishing

Why do you think publishing is important for researchers?

Scientific publishing

Why publishing

Apart from the personal pleasure of sharing and writing about your work, one of the advantages of publishing a paper is the additional line it provides on your CV!

Another advantage of course is to become more popular in your specific research field.

Being in publishing enables you the chance to share your ideas within and outside your community across boarders! It‘s an amazing experience to watch the flow of ideas come in with the manuscripts to consider for publication.

Scientific publishing

Why publishing

When publishing you share your own original work with other scientists and vice versa you have the opportunity to review the research conducted by others.

However, you as a scientist and other scientists have to convince the audience that the research presented is

- important
- valid
- relevant

to other scientists in the same field.

Scientific publishing

Why publishing

Publishing results enables the scientific community to evaluate the findings themselves. It also provides instructions so that other researchers can repeat the experiment or build on it to **verify** and **confirm** the **results**.

Advantages include:

- Establishes the validity of research based upon the expert knowledge of other researchers in the discipline, therefore preventing falsified work from being accepted within an area of study.
- Provides valuable feedback so that researchers can revise and improve their papers before publication.

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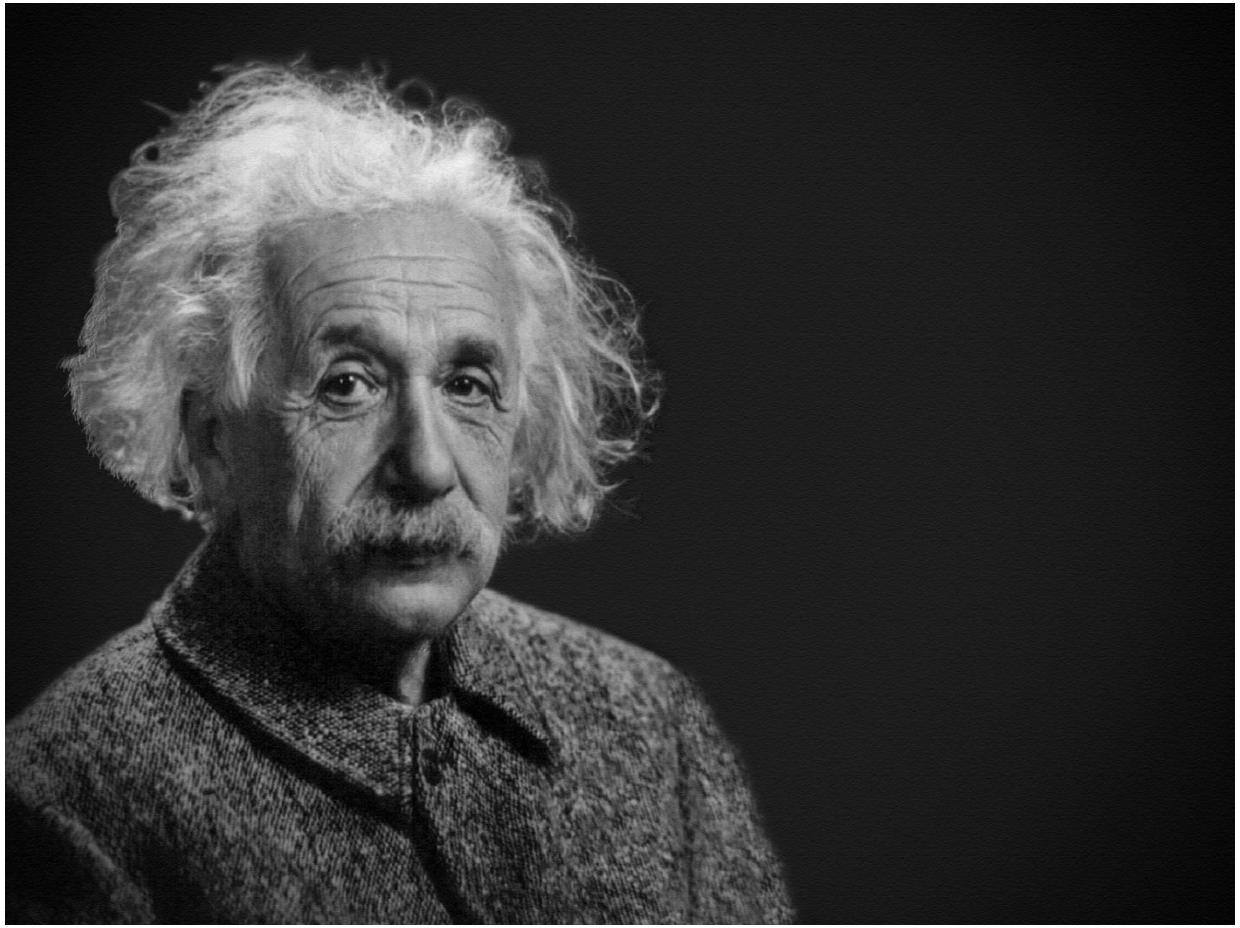
Why publishing

Another key issue is to understand why publishing determines which PhD students will become future academics, we can compare it to the concept of Natural Selection. Competition for academic positions is hard, and **publishing** is **one way** to **select** outstanding **students**.



Scientific publishing

Where to publish

Scientific publishing

Where to publish

When you have finished your scientific article you have to question yourself in which journal you would like to publish. The following thoughts have to be considered:

- the prestige of the journal (often measured by the impact factor);
- the subject covered in the journal;
- the type and length of article published in the journal;
- readership of the journal (who you wish to engage with);
- the turnaround time between submission and publication

Scientific publishing

Where to publish

Ranking

Journal ranking is widely used in academic circles in the evaluation of an academic journal's impact and quality. Journal rankings are intended to reflect the place of a journal within its field, the relative difficulty of being published in that journal, and the prestige associated with it.

The most common journal level metrics are:

- ISI Impact factor
- H-Index
- SCImago Journal Rank
- Altimetrics

Scientific publishing

Journals

specialist vs. more general journals

Articles in **general** geography journals need to engage with broader debates in the discipline, need more background information → raise your profile widely and demonstrate your ability to engage with wide ranging debates.

disciplinary or even **sub-disciplinary** journals often focus on a more narrow set of debates and take more background information for granted.

It is important to check that your material maps on to the advertised remit of the journal. If your piece does not fit, save yourself time and energy and submit it somewhere else.

Scientific publishing

Where to publish

fast turnaround times

- if you would like your work published as soon as possible, it is safer to submit to a journal you think is likely to accept it.
- Turnaround times from submission to publication can vary dramatically (e.g. 2 years recently in “Intern. Journal of Remote Sensing”)
- Turnaround information is usually available on the journal website or from the editors (but this information does not guarantee a paper will be dealt with within the average specified period).

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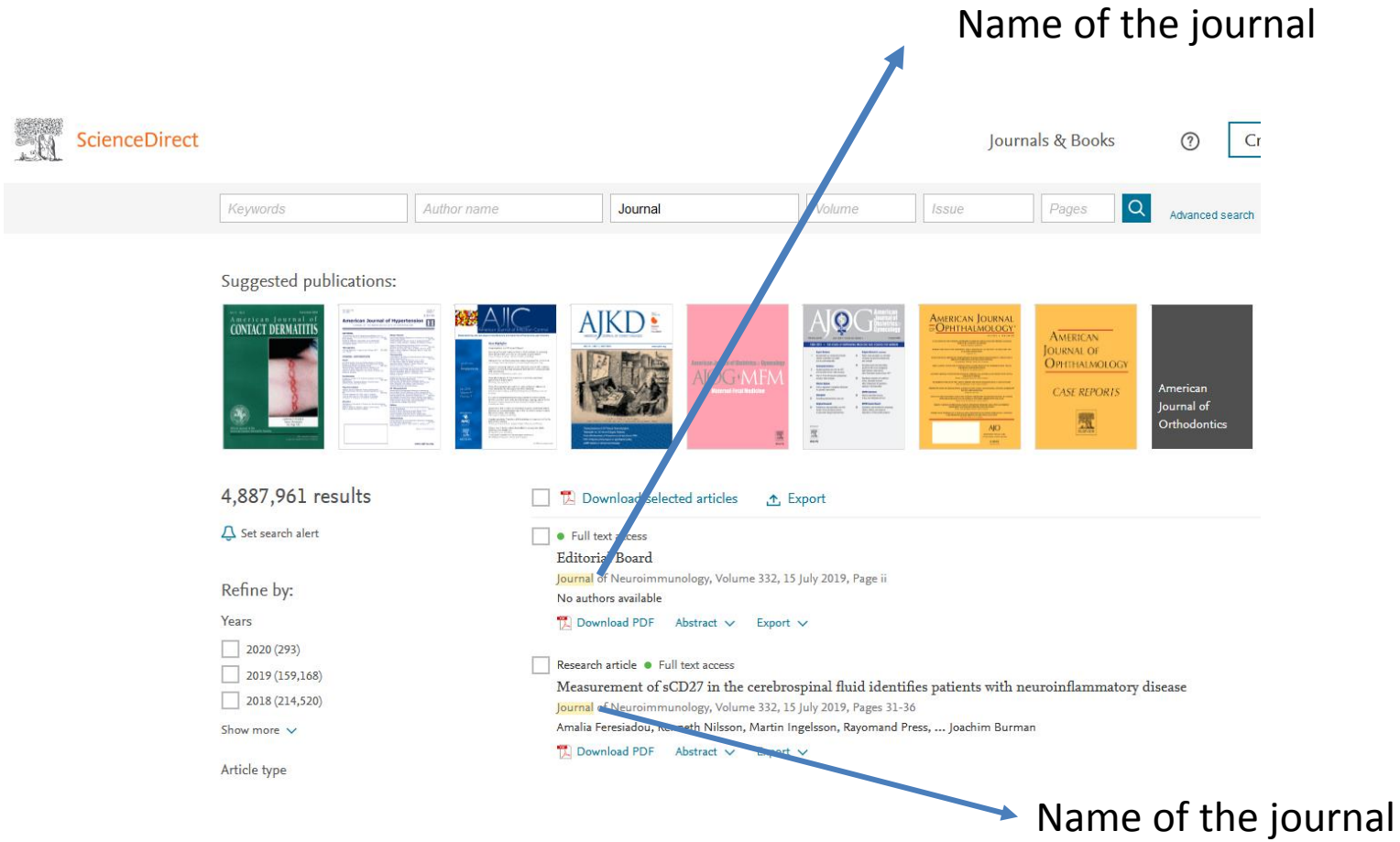
Where to publish



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How to publish

Learning by doing (the hard way)

Source: magazin Tour

Scientific publishing

How to publish

Alone or in a team?

Source: pixabay.com (3/6/2019)

Scientific publishing

How to publish

There are several kinds of journal articles. Some journals publish several of these kinds, whereas others primarily publish one or two. The most common kind of article reports one or more **empirical studies.**

Another kind is the **literature review**, which summarizes all relevant articles presenting research on a particular issue.

A third kind of article is the **theoretical paper** that presents new concepts, theories, or models but not new empirical results. The methodological/statistical article presents new methods for collecting or analyzing empirical data, or critiques existing ones.

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How journals work

Selecting a journal

- **Research area(s) covered by journal:** Research of one's manuscript should match research areas covered by journal (if not clear, email abstract of manuscript to journal editor and ask)
- **Journal readership:** Who reads the journal? Manuscript content should match readership's interest.
- **Prestige/reputation of journal:** If more than one journal covers the same research area;
  - Considerations are: National vs. international journal, journal ranking, Impact Factor (IF) (strategy - submit to intern. journal with highest ranking and highest IF first)

Scientific publishing

How journals work

Selecting a journal

- **How do you know it is an international journal?**
- **Title of journal:**
  - *International Journal of Geographical Information Science* (*IJGIS*)
  - *International Journal of Health Geographics* (*IJHG*)
- **Journal description:**
  - Can be found at the journal's homepage
  - Example: *Cartography and Geographic Information Science* (*CaGIS*)

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How journals work

Research area covered by a journal

- Usually stated on the journal's homepage
- Caron et al. (2008) analyzes **46!!!!** journals with research areas in GIScience

- However – list not complete
- *ISPRS International Journal of Geo-Information* — Open Access Journal (http://www.mdpi.com/journal/ijgi/), not included in Web of Knowledge

Scientific publishing

How journals work

Research area covered by a journal

- *International Journal of Applied Geospatial Research* (http://www.igi-global.com/journal/international-journal-applied-geospatial-research/1138), not included in Web of Knowledge
- *Annals of GIS* (http://www.tandf.co.uk/journals/TAGI), not included in Web of Knowledge
- *Chinese Geographical Science* (http://www.springer.com/new+%26+forthcoming+titles+(default)/journal/11769), included on Web of Knowledge and has IF

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How journals work

Example: International Journal of Geographical Information Science (IJGIS)

Subject Classifications

Cartography, Computation, Computer Science, Computer Science (General); Earth Sciences; GIS, Remote Sensing & Cartography; Geographic Information Systems; Geography; Human Geography; Location Based Services; Navigation; Networks; Systems & Computer Architecture; Systems & Computer Architecture of Databases; Topography; Transport Geography

Scientific publishing

How journals work

Example: (IJGIS)

The **aim** of this **interdisciplinary** and **international journal** is to provide a forum for the exchange of **original ideas**, techniques, approaches and experiences in the rapidly growing fields of **geographical information science (GISc**) and **geocomputation**. It is intended to interest those who design, implement and use systems for monitoring, modeling, planning and policy-making. Published research covers **innovative applications of geographic information in natural resources, social systems and the built environment, and developments in computer science, cartography, surveying, geography and engineering in both developed and developing countries.**

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How journals work

Example: (IJGIS)

- **Instructions for authors**
- Specifies formatting guidelines for
- **Manuscript as a whole:** Language, general structure, length (often measured in number of words)
- **Style guidelines for text** (font type, font size, margins, title, keywords, etc.), **references**, *equations*, etc.
- **Figures:** Size, color or b&w, resolution (300-1,200 dots per inch (dpi), file format, submit separate or inserted within the main text, figure captions, etc.
- **Tables:** Usually inserted within the main text, table captions

Scientific publishing

How journals work

Example: (IJGIS)

- **Instructions for authors (continued)**

- **Reproduction of copyright material:** *Author(s) need to secure permission for the reproduction of any figure, table or extensive extract (more than fifty words) from the text of a source that is copyrighted or owned by a party other than Taylor & Francis or the contributor* (often relates to figures, only; strategy – always make your own figures or change an existing figure that has already been published)

- Always secure permission AFTER manuscript has been accepted for publication.

Scientific publishing

How journals work

Example: (IJGIS)

- **Instructions for authors (continued)**

- Manuscript is often submitted through an online submission system (“ScholarOne Manuscripts” - most popular, others are “Editorial Manager”, “Elsevier Editorial System”, etc.)

Scientific publishing

Peer-review process

Length of review process (“turn-around time”):

One important question: Does a journal come out on time? This can be found out when visiting the journals homepage.

Strategy: Submit manuscript to Special Content issue of a journal. Special Content issues usually have a fixed publication date.

Some journals also publish articles first on-line and then in print (“online-first”)

Article can already be referenced when published on-line.

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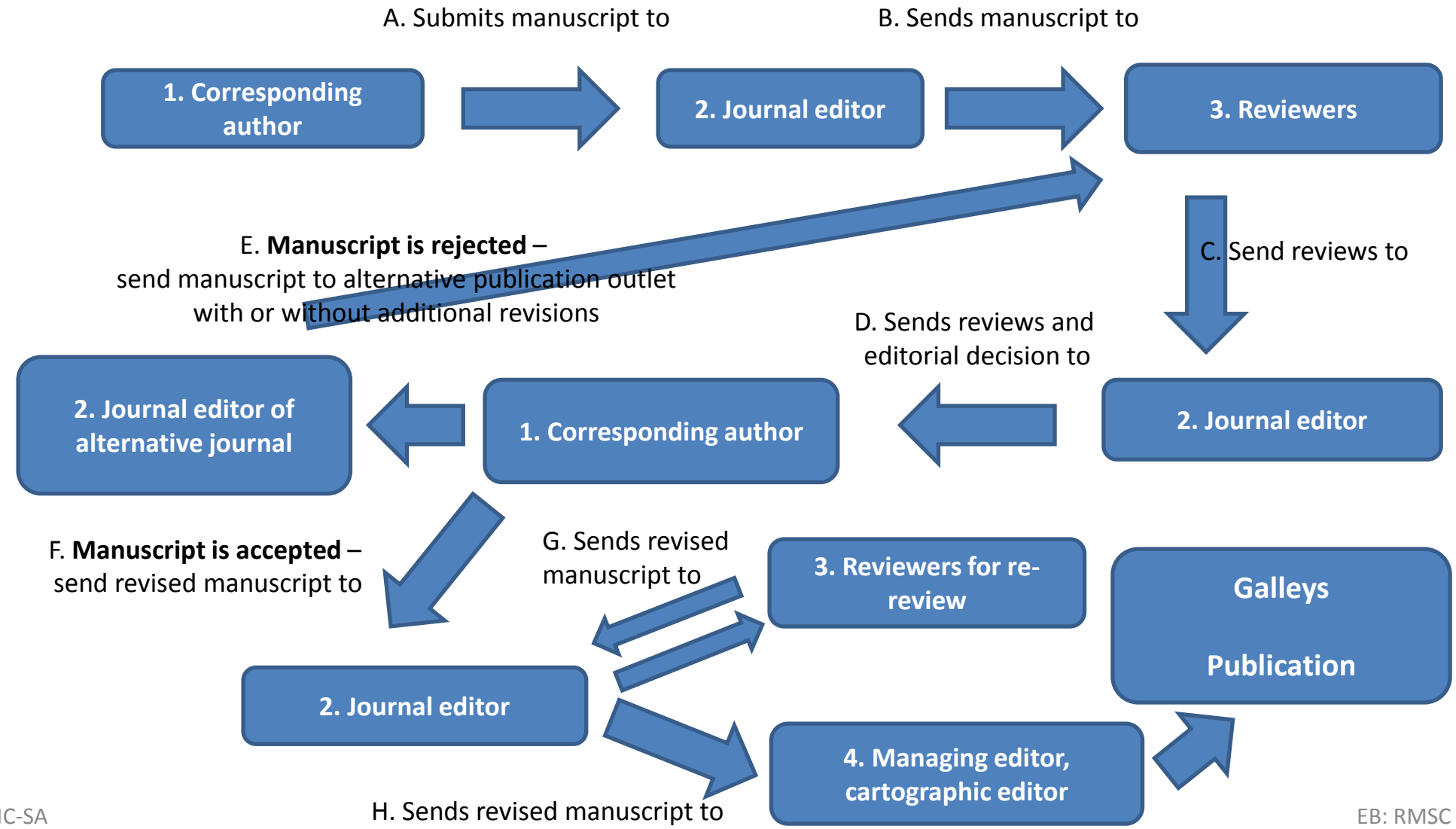
Peer-review process



Scientific publishing

Peer-review process

corresponding author

- Corresponding author is the contact person between all authors of the manuscript and the editor
- He/she submits manuscript to editor and receives reviews and editorial decision from editor and communicates this information to all other authors
- **Single-authored manuscripts:** Manuscript is written by a single person; less common in GIScience; only author is corresponding author
- **Multiple-authored manuscripts:** Very common in GIScience; any of the authors can be corresponding author (often first or second author or most senior author)

Scientific publishing

Peer-review process

Journal editor

- Is usually appointed by a Board/Council (examples: *CaGIS* editor is appointed by CaGIS(ociety) Board; *ANNALS* or *The Professional Geographer* editors are appointed by the AAG Council, etc.)
- Smaller journals have one Editor
- Larger and International Journals have one Editor-in-Chief and Regional Editors responsible for certain regions (mostly continents)
- Editor is supported by Associate Editors, Editorial Board, managing editor, book review editor, cartographic editor, etc.

Scientific publishing

Peer-review process

Journal editor

- **Editor's main tasks:**
- Solicits manuscripts from authors
- Responsible for entire review process (selecting reviewers, making editorial decisions, etc.)
- Submits final (revised) manuscript to **managing editor** (language check, copy-editing, layout) and **cartographic editor** (checks figures, especially maps)
- Promotes the journal
- Appoints members to the Journal Editorial Board

Scientific publishing

Peer-review process

Journal editor

- Submits reports about the status of the journal to the Board/Council (CaGIS(ociety), AAG Council)
- Writes editorials to report on relevant issues related to the journal
- Editors for small journals do work as service to the discipline for free
- Editors for large journals get some modest stipend (travel money, student assistance, etc.)

Scientific publishing

Peer-review process

Reviewer

- **Type of reviews:**
- **Open (non-blind reviews):** Do not really exist
- **Single-blind reviews:** Reviewer knows the name(s) of the author(s); author(s) do not know the name of reviewer; mostly with conference proceedings and **grant proposals**
- **Double-blind reviews:** Reviewer does not know author(s) and author(s) do not know reviewer; the norm for reviewing journal articles
- **Important:** Reviewer should never communicate with the author(s) about the manuscript

Scientific publishing

Peer-review process

Reviewer

- Should be experts in the specific research area of the manuscript
- Are selected by the editor
- Usually a combination of members of the Editorial Board and others (often people listed in the references section of the manuscript)
- Reviewer can accept or decline the review – this should be communicated to the editor soon after being invited to do the review
- Time-Frame to do the review varies, but reviewer has at least 4 weeks

Scientific publishing

Peer-review process

Reviewer

- Reviewer can ask for extension of review deadline
- Review is usually structured based on some guidelines provided by the editor
- Reviews usually very in length and details
- Most reviews are useful to the editor and to the author(s), very few reviews are useless
- Reviewer can include reviews that they have done on their CV – seen as a service to the discipline

Scientific publishing

Peer-review process

Reviewer

The most **important question** to be answered by a reviewer**:**

Is the research **innovative** and is it a new contribution to the discipline – if not, then manuscript is usually rejected, no matter how good it is written, etc.

“Innovative” is meant in terms of

New research question(s)

New methodology

New application (for applied journals mostly, e.g. *Applied Geography*)

Scientific publishing

Peer-review process

Reviewer

- Reviews should always be
  - Objective
  - Providing suggestions to improve manuscript
  - Evaluation of shortcomings but also positive aspects
- Reviews should never be
  - Condescending, or
  - **U**sing foul or derogative language

Scientific publishing

Peer-review process

Editorial Decision

- **Acceptable for publication as is** (very rare, mostly impossible)
- **Acceptable, with minor revisions** (also rare)
- **Acceptable, with moderate revisions** (more common)
- **Acceptable, but only with major revisions** (frequent)
- **Not acceptable** (frequent)

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Peer-review process

Decision by (corresponding) author(s)

- Authors revise manuscript and sent it back to the editor together with a revision report
- There is often no timeline how long the revisions should take (exceptions are book chapters, articles for a special content issue of a journal)
- A revision report describes how the reviewers' comments were addressed
- Authors do not always have to revise everything that the reviewers criticize, but 80%-90% should be addressed

Scientific publishing

Peer-review process

Some Ethics

- An article can only be submitted to one journal at the same time and that can be stated in a cover letter, when journal is submitted
- When an article is rejected, it can be submitted elsewhere
- An article can also be withdrawn from a journal at any time and submitted elsewhere (simple email to editor would suffice to withdraw the journal from further consideration….)
- The same research can be published more than one time as long as you make sufficiently enough changes between the contents of the manuscripts (what “sufficiently enough” means changes from discipline to discipline; changing 30-40% of the article could be enough) – this referred to as “**recycling**” of research