

Scientific Journals and Conferences

Javier Larrosa

UPC Barcelona Tech

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- Research Fora
- Conference vs Journals
- How to identify a good Journal

Journals and Conferences

- Intended to further the **progress** of science
- Reporting **new** research
- **Written** by scientists instead of professional journalists.
- **Read** by scientists in the field
- (peer) **reviewed** by scientists
- Ruled with high **ethical** standards (highly based on **trust**)

Research dissemination does not fit into this definition

Peer Reviewing

Peer reviewing

Peer reviewing is the standard method to filter out bad research

- Peer Reviewing: A researcher submits a paper to a journal and several colleagues (called **referees**) **anonymously** assess its quality
- Peer Reviewing is a time-consuming, non-trivial, non-rewarded task
- The next lecture we will cover it
- one of your assignments will be to peer-review a paper

Does it work?

Bohannon's experiment: fake paper accepted in 60% of journals

An Inflationary Model?

Fact

There are about 30,000 scientific journals managing around 2 million papers per year.

There has been an exponential growth in the last decades

This is clearly too much...

- Scientists are evaluated by their papers (Publish or perish)
- It is important to know what to read and where to publish

Fact

Scientific Journals are the most reliable source of (new, specialized) knowledge...

- Is drinking 8 cups of water per day good for your health?
- Is vitamin C good for colds?
- How should we sit on the toilet?



- Is dental floss useful?

Fact

... but the language is not accessible to everybody.

Conferences in CS

Unlike most other Sciences, Conferences are important publishing venues.

Warning: most disciplines use journals as the only important place for publishing

- Great for a rapidly evolving discipline
- Not always well-understood by colleagues from other fields

Acceptance is based on a **peer review** process

- **Workshops**

- preliminary work (some times just prospective ideas)
- light review process
- the emphasis is on discussion (having feedback from others)
- non-archival proceedings

- **Conferences**

- An atomic piece of original work (months of work)
- medium review process
- the emphasis is on discussion (convincing the other to take home the learned lesson)
- archival proceedings (**original** contribution)

- **Journals**

- A well presented substantial piece of original work (1 year of work)
- heavy review process
- the emphasis is on increasing knowledge corpus
- original work (may be extended from a conference)

- **Monographs** (comprehensive presentation of several years of coherent work by one or a few groups)
- **Handbooks** (compilation of main results on main sub-topics)
- **Textbooks** (it somehow proves that the topic is consolidated) → can be taught at graduate and master level

Peer Review: conferences vs journals

Journals:

- 3-5 reviewers
- unbounded number of reviewing iterations (typically 1 or 2)
- Slow turnaround (from months to years)

Conferences:

- 2-3 reviewers
- 0 or 1 reviewing iterations
- Time constraints
- Fast turnaround (1-2 months)

Types of Journals: Scope

Different scientific journals have different level of generality:

- Very High (*Science*), High (*Journal of the ACM*), Low (*Constraints*)
- Papers published on **generalistic** journals should report results of interest to a larger audience.
- Doing Research of interest to a large community is nice, but...
- ...it **does not** mean that research is better.

Types of Conferences: Scope

- General
 - Hundreds of presentations, thousands of attendees
 - Parallel sessions, satellite events
 - Many tracks
 - Best place to see (and even talk to) the big guys
- Specific
 - < 100 presentations, few hundred attendees
 - Best place to socialize

Conferences: types of submissions

- full paper (10-15 pages)
- short paper (5 pages)
- (extended) abstract (1-2 pages)
- Specific tracks (e.g. applications, doctoral,...)

Warning: Attendance is (in theory) mandatory

Choosing a Conference

Rankings:

- <https://www.core.edu.au/conference-portal>
- <http://gii-grin-scie-rating.scie.es/>

How likely am I am...

- to be cited
- to talk to researchers that I want to talk
- to get my paper accepted
- to get a visa
- to get funding

Warning: Beware of **fake** conferences!!

Fact

Journals have two parallel structures: Scientific and Editorial

Journal (scientific) structure:

- *Editor-in-Chief*: Ultimate responsibility
- *Area editors*: Responsible for all the editorial process of assigned papers
- *Reviewers*: Responsible for reading and evaluating papers

All these people are researchers affiliated to research institution

Fact

Closed access Journals had been increasing their price while decreasing their work-load

- **Open Access Journals** are freely available on-line
- There are several sponsorship models (institutions, authors,...)
- Journals vs Repositories
- **Critics:** may lack professionalism (there is no clear evidence)
- **Predatory Journals:** charging publication fees (\$200) to authors without providing the editorial and publishing services associated with legitimate journals
 - exponential growth (from 50000 to 400000 papers in 4 years)
 - **Bohannon's experiment:** fake paper accepted in 60% of journals

Fact

There are good (reliable) and bad (unreliable) journals. The frontier is fuzzy and well populated.

Some guidelines to identify good journals:

- Scientific staff:
 - rotates periodically (no loops, no *blood* line)
 - affiliated to prestigious institutions
 - (truly and honestly) international
- Authors: prestigious researchers publish good work

Fact

Quantifying journal quality is impossible, but metrics are here to stay (and sometimes can help)

- **Citations:** It is generally believed that good papers are highly cited
 - Critiques: negative references, hot topics, self-references, group-of-friends references...
- **Impact factor (IF):**
 - average number of citations received per paper published in that journal during the two preceding years
 - used to compare the **quality** different **journals within** a certain field
 - for those journals that are indexed in the *Journal Citation Reports* (JCR) (Thomson Reuters)
- **Journal Citation Ranking (Quartile):** Journals of each field are ordered by IF. First quartile journals (Q1) are the 25% ranked first.

T. McGlynn (realscientists) 2015

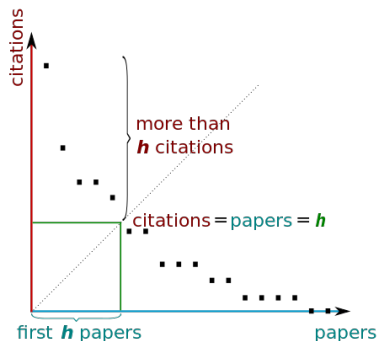
I have been in a number of committees. I do not remember anybody looking at anybody's papers. Number and IF of publications are what counts

The use of IF has many critiques:

- based on arithmetic mean,
- unstable along time
- editors play the game
- JCR controlled by a corporation (Thomson)
- moderate correlation with expert's opinion
- Useless when comparing different disciplines
- In CS, people often references conference papers

h-index

Metric proposed by Jorge E. Hirsch (2005, physicist at UCSD)



- Most popular author-level metric
- Measures number of impact papers

Fact

Researchers, groups, labs, institutions are frequently evaluated and metrics are heavily used (simple, objective)

- Arguably, a researcher is assessed positively if he/she publishes many papers and they have many citations
 - publish or perish
 - If number of papers is considered, researchers publish junk papers
 - If number of papers with citations is considered, researchers do not publish some types of research
- The IF should not be used to assess researchers (although in Spain it is customary)

On the use of Quantitative Indicators

Goodhart's Law

When a measure becomes a target, it ceases to be a good measure

- Cited papers have doubled every 9 years since the 40's
- Poor methods get results (closed-door symposium on biomedicine 2015)
- No one is incentivised to be right (Horton, The Lancet, 2015)

D.T. Campbell 76

The more any quantitative social indicator is used for social decision-making, the more subject it will be to corruption pressures and the more apt it will be to distort and corrupt the social processes it is intended to monitor

- Northeastern University rose from #162 to #42 in US News ranking by aesthetic changes
- several US Colleges have been caught cheating