Research Methodology: Lecture 7

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Publishing a Scientific Paper

(“Publish or Perish”)



The Publication Process

- Submission to an appropriate outlet.
  - Peer-reivewed: Journal or conference.
  - Non-reviewed: posting as a technical report on appropriate internet sites.
- Review report and editorial decision.
- Submit revised version.
- Submit to another journal/conference.



Evaluating a Work

- Significance.
  - Is the problem of current interest?
  - How much of the theory will be affected?
  - What are the practical implications?
- Originality/Novelty.
  - Does your work use new tools (in the context of the work)?
  - Does your work combine known methods?
- Completeness.
  - Have you considered all consequences of your results?
  - Have you worked out the necessary details?
  - Have you done any implementation (if appropriate)?
- Correctness.
  - Is your work technically correct?
  - Have you provided enough details for verifying correctness?



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Where to Submit? Parameters

- Circulation among the relevant community.
  - People want to get noticed.
  - These days dissemination is easy to achieve.
  - But, it is still hard to make ‘experts’ notice your work.
- Stamp of quality.
  - Papers in a ‘top’ journal are more likely to be taken more seriously.
  - Enhances the bureaucratic value of your CV.
- Time to publication and/or decision.
  - Claims of priority.
  - Follow-up work.



Where to Submit? Strategies

- Begin at the ‘top’ and work ‘down’.
  - Pros: maximizes bureaucratic value.
  - Cons: subjectivity of ‘rankings’; delays in publication; holding up of further work; using up reviewer time.
- Submit to the appropriate journal.
  - Form a proper evaluation of the work.
  - Form a proper evaluation of how prospective reviewers will evaluate the work.
- Near simultaneous submission of more than one paper to the same journal.
  - Related papers: these may get a common reviewer.
  - Unrelated papers.
  - No clear answer: depends on your options.



Where to Submit? Selecting a Journal

- Aims and scope of the journal.
- Instructions to authors.
- Instructions to reviewers (if available).
- Editorial board.
- Some recent issues.
  - Topics of the papers.
  - Authors of the papers.
- Does your paper build on (or reference) papers published earlier in the same journal?
- Circulation of the journal.



When to Submit?

- 'Submit a final draft, not a first draft.' (Terence Tao)
  - If you are still finding typos or adding results, improving the writing, etcetera, then the paper is not yet ready for submission.
  - A poorly prepared paper is almost certain to be rejected.
- Similar comments hold when you are sending the paper to a colleague for comments.
  - Read each others papers and provide helpful comments.
- Proofread a paper carefully before submission.
  - If the reviewer detects a casual attitude, then this creates a negative bias.
  - Errors discovered after submission has to be reported and slows down the process.

"A man who has committed a mistake and doesn't correct it, is committing another mistake."

– Confucius



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The Review Process

- Editorial phase.
  - The editor-in-chief assigns to an appropriate associate editor.
  - Some journals allow direct submission to an associate editor.
  - In some cases, the E-in-C and/or the associate editor may reject a paper without further review.
- Referring by anonymous reviewers.
  - Allows free (unrestrained) expression of opinion.
- (Double) Blind review. A policy allowed by some journals/conferences.
  - The identity of the author(s) is also hidden from the reviewer.
  - No obvious references and/or acknowledgements.
  - Motivation: level 'playing ground' for all authors.
- Editorial decision.
  - Based on reports from one or more reviewers.
  - Associate editor collects reports/recommendations from the reviewers and forwards to the E-in-C.
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A Review Report

- Recommendation.
  - Accept; accept after minor revision; submit after major revision; reject, but, encouraged to submit after substantially more work.
- Comments to the author(s).
  - Comments on the technical content.
  - Editorial comments.
- Comments to the editor.
  - These are not meant to be passed on to the author.
- Some journals ask for quantification of recommendations as well as for quantification of other aspects.
  - Confidence in the recommendation.
  - Technical depth and novelty.
  - Editorial quality and organisation.
  - List of references: over or under usage.
  - Quality of the introduction.



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Reacting to a Review Report

- Do not get upset; do not react personally.
- Do not complain to the editor.
  - Editors usually back their reviewers.
- Try to believe that the reviewers have been fair; usually they more or less are.
- Try to believe that the reviewers' comments will help to improve the paper; they usually do.



Revising a Paper

- Read the reviewers' comments very carefully several times.
- Break down the comments into specific tasks to be carried out.
- If in doubt ask a colleague; there is no point in being ashamed to do so.
- Revise your paper very carefully to ensure that all the comments are taken care of.
  - Reviewers do not like it when their comments are not properly addressed.



Revising a Paper (Contd.)

- If two or more reviewers have made conflicting comments be careful to ascertain this fact.
- If you disagree with the reviewer over some point, then ensure that you *actually* disagree.
  - Think about the point from the reviewer's point of view.
- Time taken to revise a paper.
  - Journals usually provide a deadline, but, one may ask for extensions.
  - Do not procrastinate: if you want to do it, then you should get it done.
  - No need to rush: take your time to 'digest' the reviewers' comments and appropriately revise the paper.



Action Taken Report (ATR)

- To be submitted with the revised version of the paper.
  - If you are submitting to a different journal, then this is not required.
- Be polite in the ATR; do not express dismay at being asked to revise.
- Be careful in preparing the ATR.
  - This tells the editor the extent to which you have complied with the reviewers' comments.
  - The reviewer is also very likely to forget the report that he/she had written.
- ATR structure.
  - Summary of the changes. Often the editor may read only this part.
  - Specific details of the changes.
  - If you disagree with some of reviewers' points, then this should be clearly discussed; make your point forcefully but politely.



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Conference Publication

- Accept or Reject: Usually one-shot with no scope for revision.
  - Some conferences allow ‘shepherding’ which allows author(s) a chance to revise the paper.
- Selecting a conference for submission.
  - Working top down: each rejection ‘costs’ you about 3/4 months.
  - Each submission to a new conference gets you a potentially new set of reviewers.
- Reviewer comments and revision.
  - Reviewer sets will potentially be different.
  - But, the reviewers comments should still be carefully examined and the revision properly done.
  - If reviewers from a previous submission made substantial technical comments, then you should acknowledge that. Especially, if you use those comments in your work.
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“Publish the Same Result Several Times”

“. . . The mathematical community is split into small groups, each one with its own customs, notation, and terminology. It may soon be indispensable to present the same result in several versions, each one accessible to a specific group; the price one might have to pay otherwise is to have our work rediscovered by someone who uses a different language and notation and who will rightly claim it as his own.”

– Gian Carlo Rota (Notices of the AMS, January 1997)



Early Version Versus ‘Definitive’ Version

- First publish a conference version and then follow it up with a journal version.
  - Pros:
    ensures timeliness of the results;
    gives you more time to prepare the final version.
  - Cons:
    journals have started to ask for ‘significantly’ more material;
    failure to publish the final version leaves only the conference version available to the readers.



Reviewing a Scientific Paper



The Reviewer Viewpoint

- Get a review request from an editor or a member of some technical program committee.
- Accept or decline the review.
- Prepare a review report.
- Interact with the editor regarding the review.
- Go through further rounds of review.



Accepting a Review Request

- Make sure that you will be able to review the paper.
- Reviewing is a voluntary task.
  - Some journals pay reviewers (and also charge submission fees).
- There should not be any conflict of interest.
  - Positive bias: a current co-worker.
  - Negative bias: a competitor.
  - Overall this is a subjective issue. But, if you accept, then you should try to be fair.
- Agreeing to review papers make you part of the community.
  - Your papers are reviewed by other people in the community.
  - Declining review requests without a good reason shows your disinclination to be part of the community.
  - Reviewing papers gives you an insider look into the publication process.
- Meeting the review deadline.
  - For conferences, review deadlines are sharp.
  - For journals, you should try to meet the deadline; remember, your paper may also be similarly held up.



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The Actual Task of Reviewing

- Understand the main contribution of the paper.
  - In most cases, this is possible without understanding many details in the paper.
- Form a judgement on the significance of the main contribution.
  - By this time, you would have almost made up your mind.
- Verify the details.
  - For conference papers, due to time restrictions, it is sometimes not possible to verify details.
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Writing a Review Report

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  - This should capture your view of the work. The editor may not look beyond the summary.
- Recommendation.
  - This is crucial but not absolute. Should be corroborated with later comments. Also, the editor will contrast with comments from other reviewers.
- Detailed comments to the authors.
  - Give concrete reasons for your recommendation.
  - In case you did not understand some part, then clearly mention this and try to suggest how the author(s) may revise the relevant part.
  - If relevant, try to provide specific technical comments.
  - Possible references that you think is appropriate for the work.
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  - Use sparingly, if at all.
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