AST1501 - Introduction to Research

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Refereeing and referee reports

Peer review and referee reports

- Peer review is an essential part of the publication process for academic papers
- Peer review also typically involved for grant, telescope, and computing proposals
    - But typically no back-and-forth, just sometimes receive comments

Peer review when submitting papers

- After you submit a paper to a journal, editor sends it out for *peer review*
- Editor identifies expert(s) and asks them whether they can/are available to review (referee) your paper.
    - Editor sends abstract to prospective reviewer.
- If they accept, editor sends full paper, asks for comments in the form of a *referee report*
- The referee report makes a recommendation about the paper (accept/revise/reject). First report generally asks for revisions (major/moderate/minor)
- Editor then forwards the referee report to author(s) and asks them to respond by revising the paper and submitting a formal response to the report
- After re-submission, editor sends the paper and response back to referee, who can either say the paper is now okay, or start another round

Peer review when submitting papers

- Typical timeline:
    - Submission —> paper with editorial staff for a day or two (basic checks, identify editor)
    - Editor identifies prospective referee —> week or two, in exceptional cases more
    - Referees typically given three weeks to write a report (shorter for ‘letter’ journals), but often take at least four and anything up to two months is quite common
    - Editor generally forwards the report within a few days
    - Then given ~6 months to revise if revision necessary —> but try to do this faster!
    - Second (and third…) cycle often takes as long as the first…

Peer review when submitting papers

- Some tips:
    - Submission portal often asks to identify possible referees, but not necessary
    - Submission portal typically asks whether referees should be excluded —> use very sparingly (i.e., never unless really necessary)
    - Some portals allow you to check where in the process a paper is —> generally useful to track so you know when to raise concern
    - Main reason to complain about the process: referee takes too long. Reasonable to ask about what's going on after two months. Experience shows that asking is often important to push the process along…

The referee report: what you'll get

Referee reports

- Referees are tasked to check papers for correctness, clarity, and context and they will comment on all of these
- Context:
    - Introduction: is the new research well situated in the existing literature (with reasonable referencing)?
    - Discussion/conclusion: are the new results contextualized well within the existing literature
    - Other sections like methods, data, etc.: again, are new methods, data sets etc. well contextualized

Referee reports

- Referees are tasked to check papers for correctness, clarity, and context and they will comment on all of these
- Clarity:
    - Is the paper laid out and written in a style that makes it easy to understand the research?
    - Are all the necessary details given
    - Can the paper be shortened?
    - Are figures clear?

Referee reports

- Referees are tasked to check papers for correctness, clarity, and context and they will comment on all of these
- Correctness:
    - Referees generally do not (cannot) directly re-run the analysis described to check for correctness (except for pure theory papers)
    - Thus, paper needs to be plausibly correct (to broader expert):
        - Methods/data/etc. discussed in enough detail to assess, deviations from standard practices need to be justified
        - Sequence of intermediate steps needs to make sense, intermediate results given make sense
        - All results assessed for plausibility based on discussion: more scrutiny for ‘bigger’ claims

Referee reports: format

- Paper referee report is a separate text document with a list of comments (no in-text comments)
- Format and length varies widely: I have received referee reports anywhere between one short paragraph to pages and pages of plain text accompanied by fifteen pages of PDF comments
- Some reports go through the paper from front to back, listing all issues the referee found
- Some reports list bigger issues first, then more moderate and minor issues (including typos)
- Some reports are more free-flowing meditations on the merits of the paper
- Editors generally forward reports without any editing or even reading the report for its suitability

Referee reports: responding

- Response to a referee report consists of two components:
    - Revisions to the text —> all need to be clearly labeled in the resubmitted version (my preferred way: save original tex and use latexdiff)
    - A point-by-point response to the referee's comments in the report
- Rule-of-thumb: change something in the paper for every referee comment, even if you disagree with the comment
- My advice: always try to include the revised paper text in the point-by-point response, so referee can assess changes largely by reading your response "To address this comment, we changed the text in the paragraph to read '…..'"
- Okay to push back on referee comments, but you generally don't want to push back on all or most comments

Referee reports: responding

- Stay neutral in your response, try not to guess who the referee is (you're probably wrong)
    - Don't get defensive
    - Give arguments for your viewpoint when pushing back, but always good to acknowledge differences of opinion and that you are taking them into account
- Generally not that useful to include figures just for the referee, but occasionally useful
- Responding to referee report generally your highest research priority (given length of process and importance of getting stuff published)

The referee report: how to write one

Writing a referee report

- Not unheard of for graduate students to be called upon to referee papers, so be prepared!
- First time: okay to ask your advisor for advice, respecting confidentiality of the process (can ask editor whether it’s okay to share info with advisor)
- A good referee report:
    - Makes it clear the referee has read the paper and understood its main points
    - Clearly identifies major, moderate, and minor issues
    - Gives clear recommendations for improvements and how to address concerns. Don’t just say there is a problem, say how it can be fixed

Referee report structure

- I prefer to write and receive reports on the shorter end of the spectrum (my colleagues clearly disagree based on the reports I get!)
- My preferred structure:
    - Opening paragraph with brief summary of the paper, its main conclusion(s), and its main method
    - Recommendation for the eventual fate of the paper (“would be acceptable as long as the concerns below are adequately addressed”)
    - <4 major issues with the paper and clear recommendation for how to address them
    - Moderate concerns: still big enough to be concerning, but should be easy to address
    - Minor concerns: minor issues with figures (colours, line styles, illegible, …), mis-citation, innocuous math errors, typos not easily spotted by spell-check (I don’t do lists of typos)

The paper [redacted] by [redacted] conducts an in-depth investigation of [redacted] The analysis is clearly informed by the detailed understanding of the data processing and of the [redacted] The authors find significant [redacted] with complex (and often sharp!) trends as a function of [redacted] although the magnitude of the [redacted] is somewhat less than that in [redacted]

The analysis is thorough and the community will strongly benefit from having this anaysis available [redacted] I have some concerns about the methods used and the presentation of the results and their uncertainty that I would like to see addressed to at least some degree before I can recommend this paper for acceptance.

My main concern with the paper is a methodological one: the paper goes through a series of steps using different samples of [redacted] and different subsets of the [redacted] to build up a complex function that describes the behavior of the [redacted] it feels a bit like a house of cards, because the function is extended more and more by adding [redacted] reference sources while keeping other parts of the function constant, [redacted] fit.

Lesser comments

The following are some smaller comments or requests for changes that I think would help the paper:

* The [redacted] sample is central to the analysis in this paper, but very little is said about it. This would be good to add to the data section. How is the [redacted] sample obtained? Does it have any possible contamination?

* It makes sense to use [redacted] as the parameter for the [redacted] function, but it would be helpful to give an approximate relation between [redacted] and [redacted] for people to quickly translate between a quantity that they are used to and one that's specific to [redacted]

Minor comments

Some typos and figure clarifications:

* Fig. [redacted]: caption doesn't state what the different lines
  are. Captions also don't mention that one is for [redacted] and the
  other for [redacted].

* Sec. [redacted], [redacted] paragraph: space at the end and an awkward sentence.

* Fig [redacted] was the overall [redacted] removed for this figure?
  Presumably not! Might be good to overlay it.

* p. [redacted] "should no be [redacted]" --> "should noT be [redacted]"

Referee report structure

- Length really depends on how many and how major the major issues are, but generally not longer than a few pages
- Focus on the paper you were sent, not the paper you would have written yourself
    - Focus is on making sure the paper is a useful addition to the literature that is plausibly correct
- When finding major concerns: generally ask the editor to see the revision and review it
- When finding only moderate concerns: determine whether you think the editor can just determine whether concerns are adequately addressed, then don’t see the paper again (speeds up the process significantly; generally only the case for second revision)

Potential issues with peer review

Potential issues

- Most astronomy journals use only a single referee:
    - Good because you only have to deal with one person's comments (and guaranteed no conflict between comments)
    - But if you get a very negative review, you have little recourse for dealing with it
- Waiting length: reasonable to ask what's going on after two months, but aside from gentle inquiring, you can't really do anything to speed things up

Potential issues

- Referee recommends rejection (editor might say “your paper is rejected”):
    - Generally possible to ask for another referee to review the paper (for one-referee astro journals). New referee might see the previous report. If second review is positive, paper would generally be on track to be accepted
    - Have to make the case somewhat to the editor why your paper should still be considered
    - Or submit to another journal to start afresh
    - If you think the paper is worthwhile, re-submit somewhere (and use any feedback to improve)
    - Good and occasionally even great papers were originally rejected. Process is flawed, don’t let it get you down