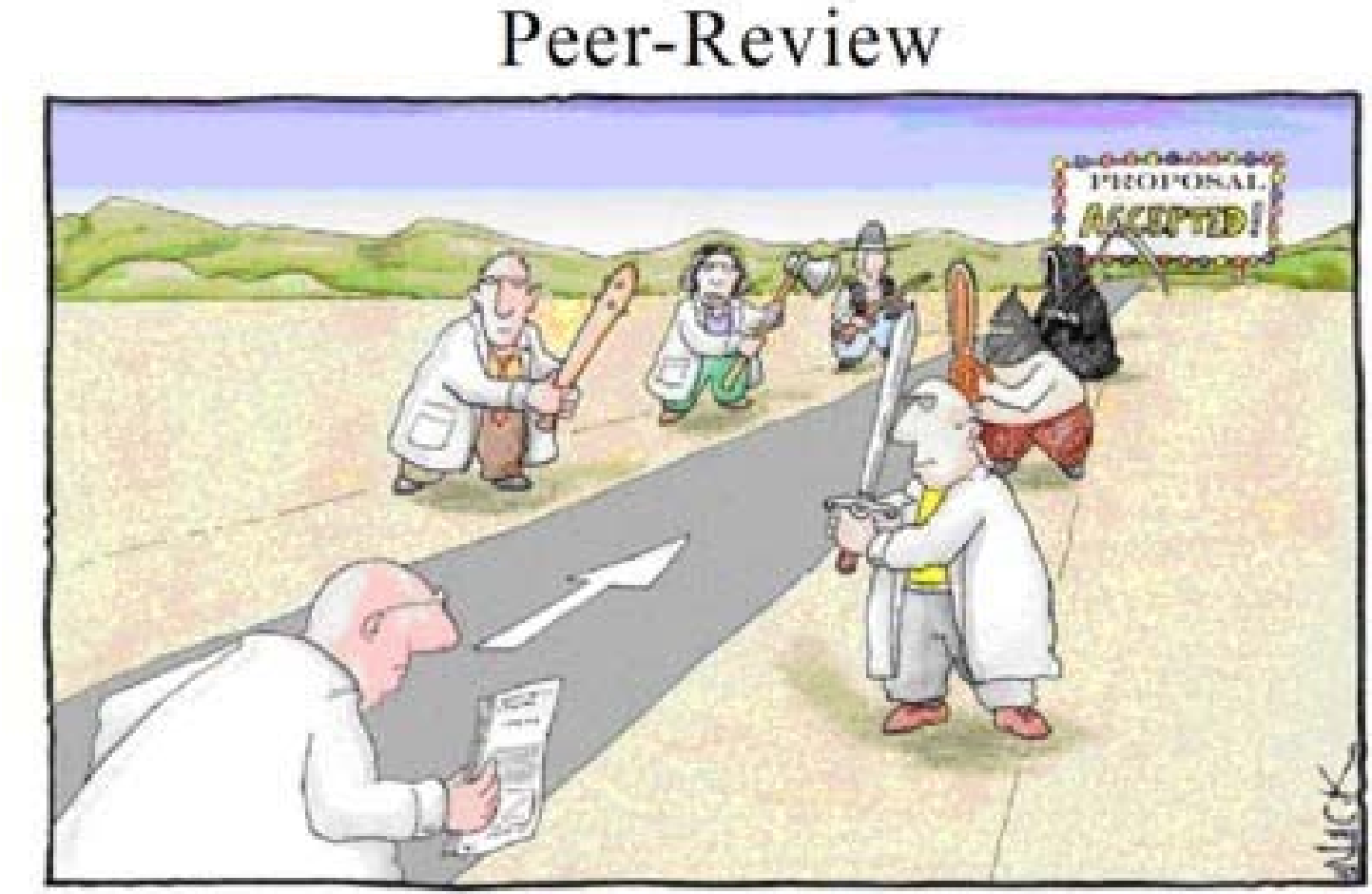
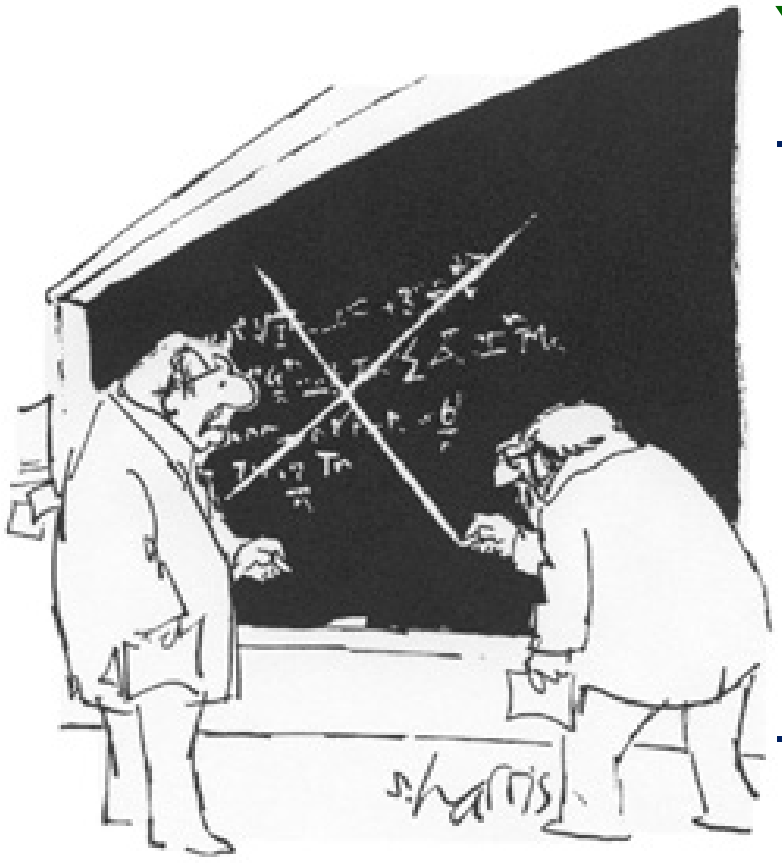
The Publication Process and Writing Referee Reports



Scientific Publication Process: the Editor



That's it? That's peer review?"

To see what an editor at PRL does, see "Editorial Experience At Physical Review Letters", by Dr. Saad Hebboul

Your article will first go to an editor

-- The editor will:

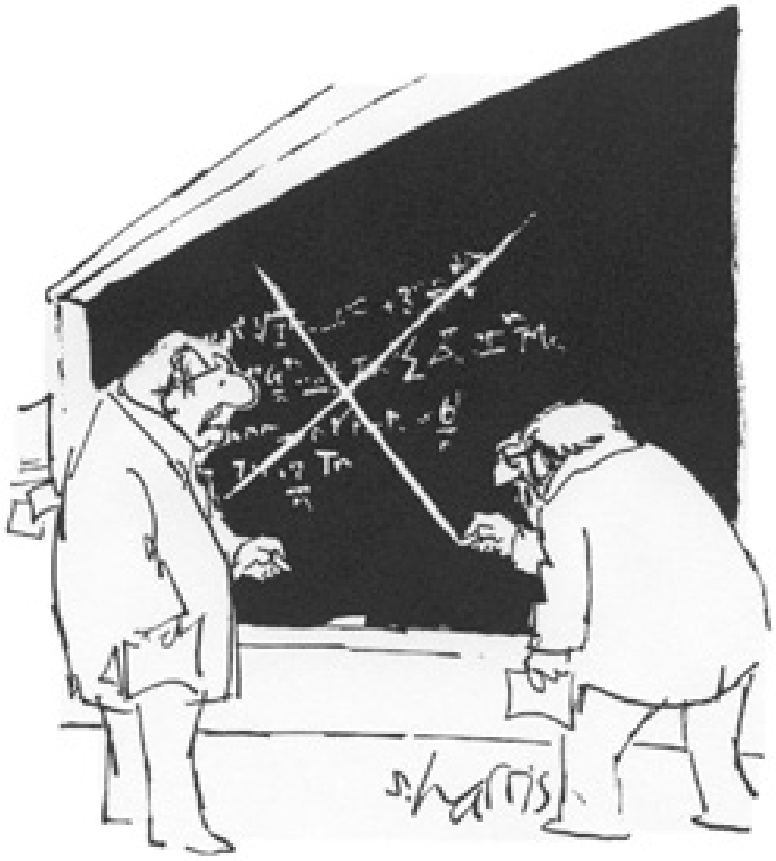
review the paper to make sure it is appropriate for the journal (editorial review)

select the referees who will review the paper anonymously

-- The editor will ultimately decide, based on referees' input, whether to publish your paper

-- You will need to write a persuasive cover letter justifying why your paper should be considered for publication in the journal

Scientific Publication Process



That's it? That's peer review?"

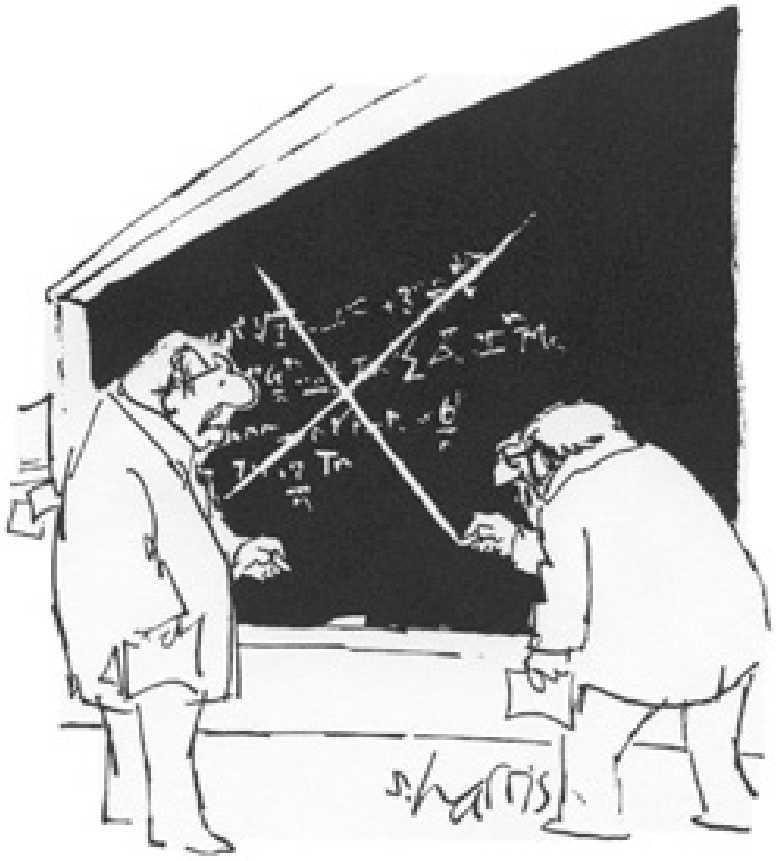
-- Your paper can be rejected by the editor prior to sending the paper out for review

-- Your paper will be peer-reviewed by anonymous referees (usually 2 or 3)

-- Your paper will be evaluated based upon the review criteria of the journal, so you should read these before submission!

-- The review + publication process can take 6 months to >1 year, depending on the journal

Scientific Publication Process (cont.)



That's it? That s peer review?"

More interesting details:

-- If your paper is published, you will need to pay for this honor (usually from grant funds)

-- You will eventually be asked to participate in the review process by serving as a referee for others' work!

Ethical Issues in Scientific Publication*

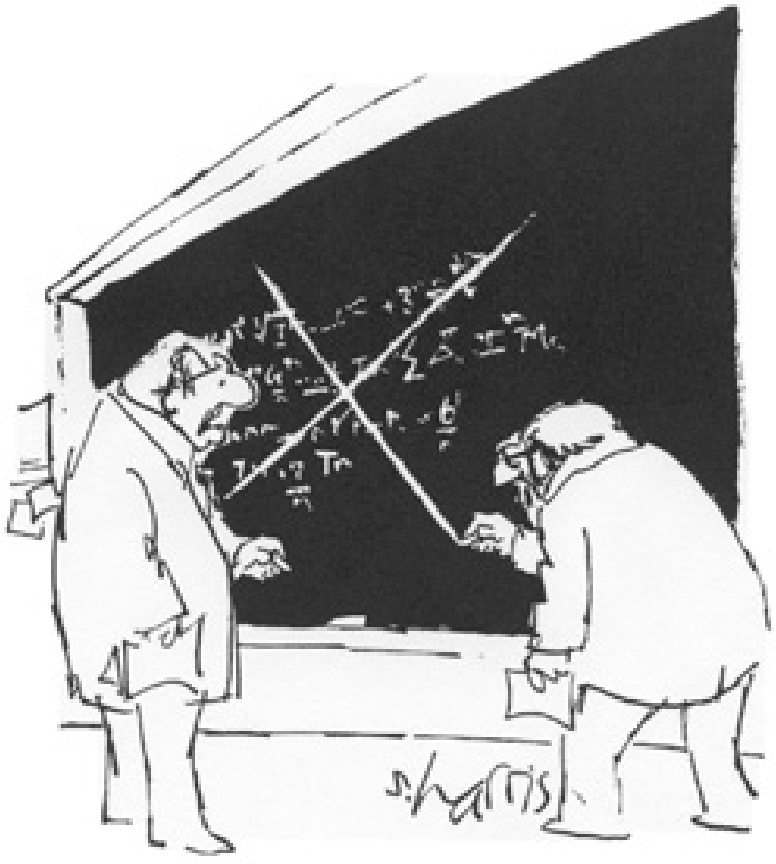
It is unethical for an author to publish manuscripts describing essentially the same research in more than one journal of primary publication.

Submitting the same manuscript to more than one journal concurrently is unethical and unacceptable.

When an error is discovered in a published work, it is the obligation of all authors to promptly retract the paper or correct the results.

***From AIP statement of ethics and responsibilities of authors:**
http://www.aps.org/policy/statements/02_2.cfm

The Refereeing Process in Science



That's it? That's peer review?"

An enormous number of scientific articles are submitted daily

Most journals rely on impartial, external reviewers to help evaluate, and decide the fate of, submitted papers

This is generally performed as a service to the community, i.e., you don't generally get paid to referee papers!

What does a referee do?

From Physical Review Letters:

ADVICE TO REFEREES

Physical Review Letters aims to publish papers that keep broadly interested physicists well informed on vital current research. Papers are expected to satisfy criteria of **validity**, **importance**, and broad **interest**. We seek your guidance regarding how well this paper meets these criteria, as revealed by your answers to the questions which appear below.

Your assessment is particularly important with regard to scientific soundness. If you advise the editors that the paper is unacceptable for scientific reasons, it will not be published without further review. Your advice on the more subjective aspects is also requested. These aspects require a subjective judgment by you and a subjective editorial decision. Amplification of your point of view is therefore important. It is essential to cite references if the work is judged not new.

- **VALIDITY**
  Is the work scientifically sound? If not, do you believe the paper can be revised to correct the scientific defects you find?
- **IMPORTANCE**
  Does the manuscript report substantial research? Is the conclusion very important to the field to which it pertains? Is the research at the forefront of a rapidly changing field? Will the work have a significant impact on future research?
- **INTEREST**
  Papers are of broad interest if they report a substantial advance in a subfield of physics or if they have significant implications across subfield boundaries. Is this paper of broad interest?

In some cases, the apparent importance and interest of a manuscript may be enhanced by stylistic revision. We welcome your suggestions and ask that you consider the following questions:

> Is there an introduction which indicates, to the interested nonspecialist reader, the basic physics issues addressed, and the primary achievements? Is the research placed in the proper context, e.g., are the references appropriate and adequately discussed? Are assumptions clearly presented? Is unnecessary jargon avoided? Do the title and abstract stand alone? Are tables and figures, if any, well used and effectively presented?

The fundamental criteria for publication are validity, importance, and interest. Over the years, various statements of criteria have been published, and many of these retain value if they are regarded as secondary to the fundamental criteria. With that in mind, we ask that you consider the following remarks:

> The focus of the journal is basic physics, and publishable Letters should conform to this emphasis. However, it is not our intent to exclude texts that might also contain important results in, for example, applied physics, biological physics, etc.
>
> The journal does not accept marginal extensions of previously published work. For example, when the discovery of a new effect in one system is published, reports of similar explorations in other systems are usually considered inappropriate for the journal's pages, as are confirmations of previous results.
>
> The journal declines publication of papers which appear to parcel research results into fragments for multiple publication.
>
> We welcome speculative ideas provided that their consequences and ramifications have been sufficiently well considered and, to the extent possible, have been spelled out.
>
> We hold the authors responsible for demonstrating adequate awareness of published prior research and for proper acknowledgment of colleagues. We invite the referees' comments on these issues, but we do not hold referees responsible for deficiencies, nor does the journal accept responsibility for them.

Journal editors have established criteria for the suitability of publications in their journals

These criteria vary and generally depend on the nature of the journal's readership

The role of the referee (you!) is to provide an opinion as to whether the paper satisfies the stated criteria of the journal for publication!

Refereeing vs. Reading Scientific Papers

When you read a journal article you are more likely to presume that the details of the experiment or calculation are correct, and that the research is original and significant (although you are likely to form your own impressions about this, of course!)

As a referee, your job is to carefully evaluate the originality and significance of the work, the validity of the experiments/calculation, and the reasonableness of the conclusions drawn

In other words, no presumptions should be made about the quality of the work when you're serving as a referee…you should read the paper with an open and critical mind

The Essential Components of a Good Referee Report

(1). Briefly summarize the main points of the paper

- to educate the editor
- to convince the editor and other referees that you've actually read the paper (not a joke!)

(2). Provide brief evaluations of the different criteria provided by the journal

These generally include:

(i) the quality/appropriateness of the methodologies and techniques used in the research

(ii) the quality of the logical arguments made to arrive at the key conclusions of the paper

(iii) the clarity of the presentation

The Essential Components of a Good Referee Report

(3). Provide a recommendation for or against publication

Your recommendation can be equivocal if you provide sufficient discussion of the pros and cons of publication

If you do recommend rejecting a paper, you can suggest alternate journals to which the paper might be more appropriately submitted

(4). List essential and suggested changes to the paper

This is an important component of a report even if you recommend rejecting the paper, as your suggestions might allow the paper to be published elsewhere, or even in the same journal after revision!

For More Guidance

For your future reference, the Institute of Physics has a great online resource on Introduction to Refereeing, that deals with all aspects of the refereeing process, including the Ethics of Refereeing!

http://images.iop.org/referees/

The *Physical Review Letters* (PRL) Criteria

(1). Importance

(2). Broad interest

(3). Validity

(4). Accessibility

REFEREE RESPONSE FORM

(Please include this form with your full report)

Referee Please Note: This form is not a substitute for a full report

This form is to assist the Editors and is not a substitute for your written report. It may be useful, however, as an outline for your report, which should explain why the paper does, or does not, meet our criteria.

I. Letters published in PRL must meet a high standard of importance and interest.

a) Please judge the importance of the paper to its specific field.

not important ☐ ☐ ☐ ☐ ☐ very important

b) Please judge the broad interest of the paper, apart from its importance to its specific field, to a wide spectrum of physicists.

not interesting ☐ ☐ ☐ ☐ ☐ very interesting

c) Please judge the validity of the paper.

probably not valid ☐ ☐ ☐ ☐ ☐ probably valid

II. A Letter should have an introduction and conclusion that explains, in terms accessible to a broad audience, the physics context of the work: why it is important and what has been accomplished.

Please judge the introduction and conclusion.

not accessible ☐ ☐ ☐ ☐ ☐ very accessible

III. Recommendation:

NOTE: IF YOU ARE RECOMMENDING PUBLICATION IN PRL, PLEASE PROVIDE, IN YOUR REPORT, A SEPARATE STATEMENT AS TO WHY THIS PAPER IS APPROPRIATE SPECIFICALLY FOR PRL.

a) The paper should be published in PRL as it is. ☐

b) The paper should be published in PRL after minor revisions are made, without further review. ☐

c) The paper with revisions and further review, might be publishable in PRL. ☐

d) The paper with extensive revisions, and further review could possibly be published in PRL. ☐

e) The paper should not be published in PRL. ☐

IV. Would you be willing to review the paper again? ☐ yes ☐ no

If not could you suggest alternative referees?

The *Physical Review Letters* (PRL) Criteria

Validity - Is the work scientifically sound? If not, do you believe the paper can be revised to correct the scientific defects you find? Are the arguments made to draw the conclusions logically constructed and well-founded?

Importance - Does the manuscript report substantial research? Is the conclusion very important to the field to which it pertains? Is the research at the forefront of a rapidly changing field? Will the work have a significant impact on future research?

Broad interest - Papers are of broad interest if they report a substantial advance in a subfield of physics or if they have significant implications across subfield boundaries. Is the paper of broad interest?

Accessibility – Is the paper written so that it is understandable by the broad PRL audience? Is there an introduction which indicates, to the interested non-specialist reader, the basic physics issues addressed, and the primary achievements? Are assumptions clearly presented? Is unnecessary jargon avoided? Do the title and abstract stand alone? Are tables and figures, if any, well used and effectively presented?