



- H. DOMINIC COVVEY, EDUCATION EDITOR -

# Baksheesh or Peer Review?

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## Introduction

One of the fundamental tools to keep authors, presenters, applicants for grants, conference program and other selection committees, and educators “honest” is the process of peer review. What’s it all about, what’s involved in it, why do it, and what happens if we don’t do it?

To see what can happen without peer review, go to the Web and examine some of the “information” in the websites created by non-experts or those with their own “theories” of reality. You’ll be surprised with what you’ll find. Try, for example some of the conspiracy-promoters. One recently created site alleges that the U.S. government staged the September 11 events so it could go to war against terrorist organizations and states (Time magazine, May 20, 2002, page 4). On the Web, anyone can publish anything: a situation that means what’s shown there can be reality or fantasy, truth or fiction. The Web is not peer-reviewed medium, although efforts are underway to provide specialty peer review processes and to “certify” peer reviewed websites.

## What is Peer Review?

Peer review is the process whereby experts in a field review a paper, proposal, or other submitted information, prior to its publication or presentation or its acceptance for funding.

From a high-level perspective, some of the major characteristics of a good peer review process include:

- **Competent Reviewers:** The submission is, in fact, reviewed by peers: experts with significant knowledge of the area the submitter has addressed. At the very least, a good process should include a step wherein the reviewer states his/her level of competence (or “confidence” in his/her ability to review, as some review processes state) regarding the subject at hand. Sometimes several different types of expertise may be required for a competent assessment, for example, knowledge of both clinical decision processes and artificial intelligence related to an application of neural networks to medical decision-making.
- **Criteria-Based Reviews:** The submission is reviewed against a set of explicit criteria defined by the publisher, conference program committee, or funding agency. Usually, if not always, the reviewer documents the compliance of the submission with these criteria on a paper form, on a website, or on another recording medium.
- **Multi-Assessor Team:** The submission is reviewed by more than one peer (usually at least 3). These reviewers will not have access to the other reviewers’ assessments when

completing theirs. Their reviews will, however, eventually be combined to provide an overall assessment, sometimes by another individual or group.

- **Open Assessment:** The nature of the review process, the criteria themselves, the reviewers’ ratings (including the reviewers’ assessments of their own competence), the overall assessment, and the comments of the reviewers are made available to submitters.
- **Non-Disclosure Commitment:** The reviewers may only communicate with others on the review team regarding any aspect of the work they have reviewed, and they may not take personal advantage of it themselves.
- **Blinded Assessment:** In the best peer review processes for publications in journals and presentations at conferences, the identities of authors are not available to the reviewers in the first round of review.

There are many other details, including that of the review process itself, but these are the most important characteristics. Let’s look at each and show its importance.

## COMPETENT REVIEWERS

Some submissions may be basic enough that anyone in the general field of endeavor can review them. This might be possible for proposed educational sessions (tutorials) for a meeting, for example, or at least for those that are basic. But, what about a submission that contains innovative approaches or new insights? It’s hard to imagine that non-experts could decide if the innovation is in fact innovative, or useful, or even real. Many academics have reviewed grant submissions that proposed what amounted to nonsense approaches. There is another side to this, though. If something is turned down by a real expert, although rejection may be painful, there is the opportunity to learn from the feedback and to rewrite or revise for the next time. Some review processes even contain a step like this for almost-acceptable submissions. Actually, the use of truly competent reviewers, beyond being common sense, is a requirement of professionalism.

## CRITERIA-BASED REVIEWS

The only way to assess something is against a standard. The standard for the types of submission we are addressing originates in the heads of the program committee, the editors, or the professionals that set the objectives of the granting agency. Submitters and reviewers need to understand what the assessors expect, and the only way to achieve that effectively is to publish the standard as explicit documented criteria (perhaps including explanations to facilitate interpretation). Submitters should be able

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to understand what is an acceptable submission. Reviewers must be able to “measure” how close the submission comes to what is required. This means that the documented criteria and explanations must be available to both submitters and reviewers and must be used by the reviewers.

### **MULTI-ASSESSOR TEAM**

Until the world of Artificial Intelligence Nirvana is achieved, humans like you and me will do reviews. But each of us has biases, favorite saws, areas of intellectual blindness, and personal likes and dislikes. The only way to get around this is to have more eyes looking at something. It is essential, though, that those eyes look at the submission separately. Why? Because groups follow leaders, and one individual can quickly turn a bunch of separate people into the equivalent of a single set of eyes, and that’s what we’re trying to avoid.

### **OPEN ASSESSMENT**

Open assessment means that all submitters can assure themselves that the playing field is level. It includes the publishing of criteria and guidance on their interpretation, the list of reviewers (not who reviewed each paper), the review process and how selections are made, and the results (including reviewers’ comments). Nothing except personally-identified information should be excluded in achieving this transparency.

### **NON-DISCLOSURE**

The importance of this is apparent to anyone who submits a paper or a proposal that contains new ideas. These are the intellectual property of the authors and possibly their organizations. There have been documented cases of reviewers getting ideas from submissions and then rushing to the lab to take advantage of them. This characteristic will never be perfect in execution, because we all harbor the human genome, and we can’t actively forget or even ignore things (except possibly a spouse’s conversation). Lawyers at a trial not infrequently say something that should not have been said, and all of us laugh with them internally when the judge says: “The jury will ignore the last remark”. However, non-disclosure is one of the ethics of any review process, and violations should be addressed harshly.

### **BLINDED ASSESSMENT**

This is a challenging one, and is anything but universal. In certain instances it is impossible, since the assessment of research proposals, for example, requires assessment of the researcher(s). However, in a relatively closed community, personal biases (for or against individuals) do arise, and may need to be addressed by reviewing the content and submitter separately. One way this can be done is by a 2-stage process, where the content is assessed for innovativeness, relevancy, etc., the proposals are rated, and then the authors whose submissions have passed muster are then assessed, e.g., for their public speaking abilities.

## **Why is All This Important?**

Let’s assume our objectives on the information-receiver side include reading quality articles in journals, hearing quality presentations at conferences, and making sure good and relevant research is funded. How can that be assured without peer review processes that have most, if not all, of the characteristics listed? Do we really want to be educated regarding nonsense? Do we really want to risk wasting our tax dollars or donations on poor research?

Let’s not forget that there is also another side: the information-submitter side. I was just at a meeting in Arizona tasked with re-engineering a major conference. One participant articulated the frustration of students who found it impossibly difficult to get their papers accepted. The students associated the barrier to be an “old boys’ club”, seeing the review process as biased.

If we look at the submitter side, a lot of work goes into writing up work to produce a paper, or even an abstract, and certainly a grant proposal. Academics get positions and tenure based on their publications, educators get to educate through presentations and tutorials. Researchers get money to do research through grant proposals. How can any of these professionals do their “thing” if biases, ignorance, or just poor review processes create barriers to dissemination?

I would hope that my reflections would be of use to two audiences, those who seek educational opportunities, and those who provide them. We seekers should demand that a competent peer review process be part of the production of any course, journal, or conference created for our consumption. To see how it can be done, consider the review processes used by the AMIA or HIMSS organizations. Neither of these is perfect by any means, as neither uses blinded reviews. However, they are starting points. Without a competent peer review process anything goes and skepticism about quality and fairness is appropriate. On the other hand, those of us who provide these information opportunities should see competent peer review as our quality assurance process that ensures that we deliver valid goods and do no harm.

Maybe a personal reflection can drive the point home. I grew up in a big city in the U.S. where people who wanted something done (like getting a traffic ticket “fixed”) simply sent over a bit of baksheesh to the local judge. As a young teenager I even got to make such a delivery once. I claim, parenthetically, that it was the only legal system I ever understood! Poor quality peer review processes lead to a situation akin this, where the knowledge that is deployed is judged by anything but its quality, correctness, relevance, transportability or other valued characteristics. If we don’t have peer review we’re heading back to my old neighborhood where whom you know, where you’re from, how important you are, and how much money you have (or at least are willing to share) determine the success you have.

Take my word; don’t let’s go there.

