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Reviewing, Reviewers and the Scientific Enterprise

Vincent Amanor-Boadu[®]

*Associate Professor, Department of Agricultural Economics, Kansas State University,
306 Waters Hall, Manhattan, Kansas, 66506, U.S.A.*

Abstract

Despite their critical importance to the scientific enterprise, reviewers receive no formal training and reviewing has become a skill that they pick up through trial and error. Additionally, because most reviewers do not receive any feedback on their performance, any bad reviewing habits become entrenched over time. This has contributed to significant and unnecessary anxiety about reviewing and to antagonistic encounters between reviewers and authors. This paper seeks to correct this situation by defining reviewers as co-creators of scholarship and the reviewing as a quality control process in the production of scientific scholarship. The paper provides three groups of activities aimed at creating the right mindset among reviewers to facilitate this co-creation and quality control perspective: relationships, commitment and honest decisions and recommendations.

Keywords: reviewers, reviewing, scientific enterprise, scholarship, co-creation

[®]Corresponding author: Tel: + 1 785 532 3520
 Email: Vincent@ksu.edu

Introduction

The scientific enterprise is a collaborative endeavor involving authors, reviewers and editors. Its purpose is to advance knowledge and address society's intellectual and/or practice needs. While authors' and editors' responsibilities in this enterprise are clearly defined within the framework of the scientific process (Popper 1994; Merton 1942) and the production of journals with high quality articles, reviewers' responsibilities have remained fuzzy despite their participation in the scientific enterprise since the early 1700s (Zuckerman and Merton 1971; Glen 1989). Poor understanding of reviewers and reviewing has led some to define reviewers as gatekeepers in the scientific enterprise (Crane 1967), and others to perceive reviewers as exhibiting higher propensities to exhibit superior knowledge over authors by seeking faults where there may, indeed, be none (Klahr 1985). The review process itself has been described as akin to divination (Glen 1989) and judged as being often careless in its outcomes (Bradley 1981). Jauch and Wall (1989) observe that reviewers are frequently seen as people hiding behind the cloak of anonymity who "stab, like braves, all who come that way" (Churchill, in Peyre 1967).

The root of the foregoing perceptions about reviewing and reviewers may be attributed to the absence of any "formal training for referees, who usually pick up their review skills through learning by doing" (Tsang and Frey 2007, 129). Because of their credentials, editors expect reviewers to know what to do when reviewing, and as a result rarely provide them any guidance or feedback on the review process and their reviews. The purpose of this paper, then, is to provide some guidance to reviewers by clarifying reviewers' role in the scientific enterprise as co-creators of scholarship and reviewing as a quality control activity. Although the author draws on his experience as an associate editor of the *International Food and Agribusiness Management Review* (IFAMR) in the framing of the issues discussed in the paper, the review of the literature suggests the relevance of the topic to the academy engaged in scientific enterprise.

Reviewers and the Scientific Enterprise

Science is dynamic and the scientific enterprise is cumulative, requiring authors to situate their activities against prior evidence. Science reaches the public in the form of scholarship, packaged for this purpose as journal articles. The partners in the production of this scholarship are authors, who write the articles (inputs) for publication; the editors who publish (produce) the products of scholarship; and reviewers who help authors in improving their articles (quality control) and editors in their selection decisions. Accelerated specialization resulting from the dynamic and cumulative characteristics of the scientific enterprise has enhanced reviewer's quality control role in the scholarship production process.

Reviewer's quality control responsibilities are accomplished by, among other things, evaluating manuscripts' content against prior knowledge in the field and assessing their contribution to advancement of science or practice. This implies that reviewers occupy the interesting nexus of contributing their time, knowledge and expertise to help authors, editors and their professional communities advance scholarship and produce *useful* scientific products. Thus, contrary to the criticism that the review process is a barrier to creativity in the scientific enterprise, reviewers help impose the discipline of logic and factual accuracy on authors to the benefit professional communities while protecting authors from embarrassing mistakes (Jaeger and Toft 1998).

The scientific enterprise's business is the production of knowledge, and the relevant performance metric for any progressive journal, therefore, is not rejection or acceptance rate, but rather article quality. However, there is no independent measure of manuscript quality prior to publication (Bakanic et al. 1987). Editors have depended on reviewers' knowledge and expertise to help identify articles that have the potential to be high quality after production. A *potentially* high quality article in the *International Food and Agribusiness Review (IFAMR)*, for example, will provide useful tools or insights for agribusiness researchers and/or practitioners and facilitate the advancement of the profession's scientific enterprise and/or its productivity. Post publication, an article's quality is measured by readership frequency and/or citation over time. Producing high *quality articles* consistently engenders a positive feedback effect, which enhances a journal's reputation and increases its readership and citations. Thus, like any producer bringing a new product to market, editors must focus on reducing uncertainty about the product's performance in the marketplace by minimizing potential defects *ex ante* using reviewers as quality controllers.

Given that the scientific enterprise is not purely altruistic—authors and publishers receive both pecuniary and non-pecuniary economic benefits—reviewers are deservedly perceived to wield the power to influence the realization of these benefits (see Mitra and Golder 2008). However, reviewers are the only ones in the production process who receive no benefits except their own contentment in their service, rooting reviewing essentially in idealism (Goldbeck-Wood 1998).

Editors select reviewers based on their expertise, but also on their willingness to serve as well as their past performance in providing quality reviews and on time. Assignment of review responsibilities have been shown to have direct effect on review outcomes (Peters and Cecci 1982). It is not uncommon for two reviewers of the same manuscript to reach diametrically opposed conclusions (Klahr 1985), leading some to argue that the review process is too careless (Glenn 1976). It is here argued that the frequent diversity of opinions about manuscripts results from reviewers' misunderstanding of their role and purpose in the scientific enterprise and the absence of standards in how to conduct and present reviews (Lepak 2009). It is argued that regardless of "real and legitimate differences of opinion among experts about what good science is or should be" (Cole et al. 1981, 885), appreciation of the role and purpose would drive reviewers to the same outcome, i.e., production of high quality scholarship products.

Reviewing as Quality Control

It has been argued that the reviewer's role in the scientific enterprise is quality control. Quality control in scholarship, as in everything else, is about "making better" through careful assessment against standards. This implies the existence of standards against which to measure quality. Given the dynamic and cumulative nature of science, a manuscript's quality is framed by a reviewer's scholarship paradigm. For example, if agribusiness scholarship is defined as research to inform management and leadership, and management and leadership practice to inform research, then reviewers are guided in the review process by the extent to which a manuscript advances scholarship in agribusiness research and/or practice. Framing responsibility in this way allows reviewers to position themselves as collaborating with authors to produce high quality articles. This increases the potential of a shared mental model emerging among multiple reviewers, even if they pursue quality from different perspectives, and eliminates any pretense that reviewers are gatekeepers (Crane 1967; Beyer 1978).

Popper's (1994) view of the scientific process is used to illustrate reviewers' role as co-creators of scholarship (Figure 1). Scholarship production process begins with authors identifying a problem situation (PS_1) and developing some tentative theories (TT_1) to explain it. They conduct experiments or build models to assess the validity of their tentative theories and produce their initial manuscript in time $t = 0$. Reviewers assigned to the manuscript focus on the elimination of errors using their knowledge and experience, the factual backbone of the problem situation, tentative theories revealed in the manuscript, and the authors' faithfulness to the logic of their thesis. Errors in fact or logic are quality problems to which good reviewers draw authors' attention, helping them see gaps and pointing them to facts that help them correct errors. The identified quality *defects* in the manuscript go back to authors in the form a clearly written review report that aims to encourage enhancing the manuscript's quality. The next version of the manuscript should exhibit an improvement in quality whether authors see reviewers' wisdom or not because any errors resulting from reviewers' interpretation of facts or logic can be attributed to lack of clarity in presentation, which when addressed, increases quality. Figure 1 shows manuscript quality improvement path resulting from the conversations between authors and reviewers as problem situations and tentative theories are refined and errors are eliminated.

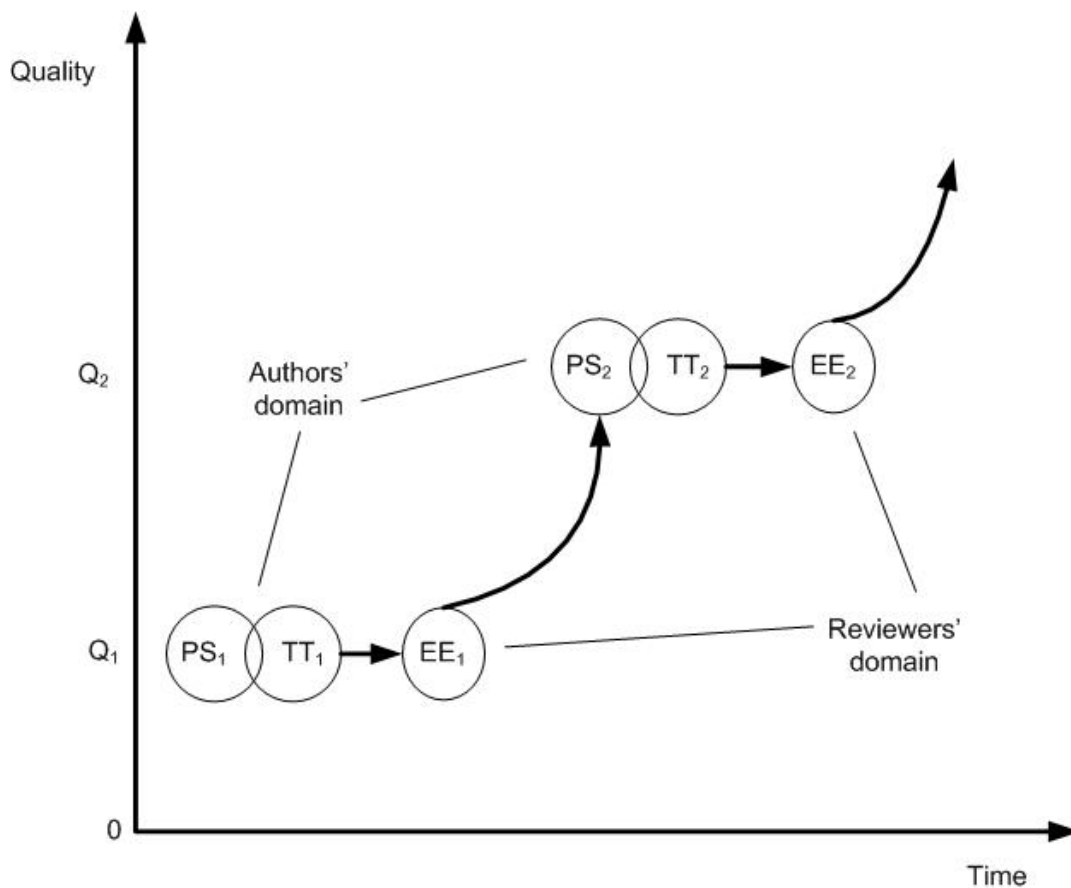


Figure 1. Popper's Problem-Solving Model Reinterpreted to Illustrate the Effect of Iterative Conversations between Authors and Reviews and Their Effects on Manuscript Quality

For interactions between authors and reviewers this to occur, authors and reviewers have to both accept that they suffer from incomplete information and awareness of the state of knowledge in their discipline. They also have to both agree that even if they have all the information, they will suffer from bounded rationality (Simon 1991), a malady that is exacerbated by the increasing specialization. The review process, thus, becomes both a learning and education process, in which both authors and reviewers expand their knowledge, discover new perspectives and improve their scholarship capability.

Guidelines to the Art of Reviewing

Tsui and Hollenbeck (2008, 19) note that an effective reviewer is one who “provides accurate, thorough, thoughtful, timely and constructive critique of a manuscript, along with instructive suggestions on how to improve it.” A great review, according to Carpenter (2009, 139) is one that “identifies a path or paths to remedy those weaknesses” that the reviewer has identified. Thus, it is not enough for a reviewer to merely point out the errors. How the errors may be eliminated should also be provided to ensure co-creation of scholarship occurs.

McNutt and Fletcher (1990) note that top quality reviewers discuss the originality, importance, design and interpretation of the study in detail, with references from within and outside the manuscript, while Goldbeck-Wood (1998) observes that good reviewers make specific, useful and constructive comments on presentation. In the spirit of the quality control metaphor adopted in this paper, a great review evaluates whether the author has made meaningful theoretical contributions, adequately defined constructs and clearly described relationships (Lepak 2009). A great reviewer assesses whether a manuscript’s underlying theoretical constructs and/or empirical observations have been well-explained with enough depth and completeness to provide new insights, better perspectives and/or superior performance protocols and processes. In other words, the great reviewer is focused on ensuring the consistencies of the manuscript’s internal logic and facts are not violated.

The anonymity of the review process used by most scientific journals, IFAMR included, implies that reviewing, essentially, is a thankless task. Yet, as participants in the scientific enterprise, authors need reviewers to achieve their publication objectives. Therefore, reviewing is a professional responsibility that all researchers must bear, motivated by their desire to preserve their craft and sustain the relevance of their creative activities (Harrison 2002).

Outlined below are seven guidelines, organized into three categories, aimed at improving reviewers’ engagement in the review process as co-creators of scholarship (Figure 2). These guidelines are by no means a complete formula for success, but a heuristic to acculturate reviewers into seeing themselves as co-creators of scholarship and quality controllers in the production of scholarship. They also seek to enhance the utility reviewers derive from performing their duty as active community contributors.

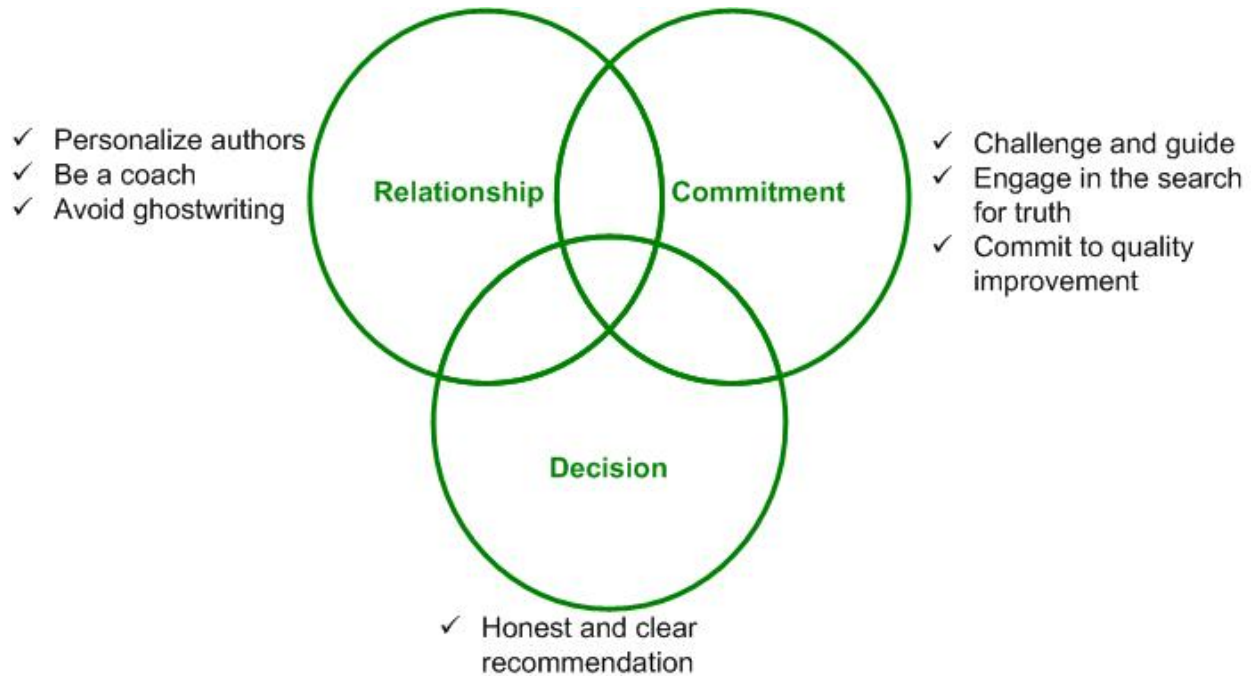


Figure 2. Schematic Overview of Reviewing Guidelines when Reviewers are Co-Creators of Scholarship

Relationship 1: Personalize the Author

Every reviewer is first and foremost an author. Therefore, it is imperative that the review process begins with the recognition of the humanness of the author, thereby facilitating reviewers' full engagement in the co-creation process. Failure to personalize authors often results in searing reviews that are crafted solely to wound and exhibit the reviewer's superiority over the author. These are destructive to the scientific enterprise, and often a waste of time for both reviewers and editors because such searing reports cannot be used to provide any useful guidance to authors on how to enhance their manuscript's quality. As noted by Goldbeck-Wood (1998, 86), "Courtesy . . . is a core attribute of good reviewing." One simple way to accord courtesy in the review process is to think and refer to the author in the second person, instead of the third, and let the author *feel* the ensuing conversation in the review report by crafting it carefully with appropriate language and, daresay, humor (Harrison 2002).

Relationship 2: Think like a Coach, Not a Warrior

By thinking of the author as a colleague or a potential collaborator, good reviewers situate their mind frame as good coaches. Like good coaches, they begin with the assumption of talent and an objective to provide guidance and make better—a mental model that helps facilitate a co-creation environment during the review process. Jauch and Wall (1989) report the process that some reviewers use in achieving this: They read the manuscript as soon as it is received to determine their expertise in being able to contribute and assess any potential for bias resulting from their own work and or violation of the blind review requirement. This is instructive because good coaches will have the requisite expertise to add value to the raw talent of their

wards and the confidence to express their own inadequacies. The most important aspect of thinking like a coach involves avoiding fruitless and destructive competition resulting from perceived threats to one's own work from the manuscript (Kuhn 1970). It is important to remember that being identified as a reviewer is acknowledgment from the editors of your knowledge, competence and expertise. There no need to prove anything to the editors.

Reviewers typically take on one of two personas: the evaluator (prosecutor) (Murphy and Cleveland 1995) or the developer (advocate) (Pondy1995). The evaluator seeks the weaknesses of the manuscript and focuses only on its gaps. The developer, on the other hand, seeks to identify the gem in the manuscript and help the author polish it. Sometimes, it is merely the choice of language in a model's description or framing of results that obfuscates clarity or even logical consistency. The reviewer as a developer takes the time to discover how this may be remedied and advises the author thus. Jauch and Wall (1989, 164) again provide some insights from reviewers' comment: "I focus on serious concerns that would stop me from recommending publication and suggest concretely what the author can do to eliminate these concerns . . ."

Relationship 3: Avoid Ghostwriting

With electronic distribution of manuscripts and track changes tools in word processors, it is becoming increasingly tempting to minimize frustration with a manuscript by making the edits or re-writing components that seem to be poorly presented. This is especially true when dealing with a manuscript that exhibits significant promise. Coaches do not perform; they allow their wards to perform, and in so doing, give them the glory. Being a co-creation of scholarship with authors implies allowing them to discover their own voices in their work—their syntaxes, language, idioms, metaphors and prose. When language and the grammar are substandard, often because authors are writing in a second language, reviewers would be most helpful in counseling authors to seek technical writing services.

Commitment 1: Challenge and Guide Authors

Reviewers have a responsibility to ensure that the authors are disciplined in their presentations of arguments and results in their manuscripts. Therefore, a good review is not a laundry list of errors and gaps in the manuscript. Good reviewers, like good coaches, provide directions to authors on how they may address identified gaps to enhance quality, taking time to point them to specific useful literature or constructs and models they have overlooked that could help them improve their thinking and presentation. In the words of Rousseau (1995, 153): "It is important for the reviewer to act as a commentator and a mentor in addition to acting as a critic."

Good review reports always begin with the manuscript's potential contributions because this helps the reviewer to focus on the critical and important aspects for quality enhancement instead of the trivia, such as spelling and grammar—which will be addressed by the editorial staff. Concentrating on the important facilitates prioritization of expectations and helps authors focus on the challenges that are being presented by the reviewer. The ensuing conversation creates the milieu for the co-creation of scholarship.

To ensure efficiency in the conversation process implies respecting authors' time and helping editors keep their promise of providing quick turnarounds on manuscripts. It is recognized that reviewers have full time day jobs. Therefore, if the assigned time to submit the review report is untenable, it is imperative that the editors are informed in order to ensure that the requisite time and attention is given to the review process. After all, careless reviews do no one any good and waste the reviewer's time.

Commitment 2: Engage in the Search for Truth

It is customary for authors to believe that the easiest approach to get a manuscript published is to agree with the reviewer on every point. The flaw in this view is that the reviewer is anonymous and any errors that may emerge in the final published article become the authors' sole responsibility. Therefore, in the interest of scholarship, reviewers must encourage authors to engage them in conversation as they collaborate in search of scientific truth, and in so doing, enhance the manuscript's quality.

A way to encourage engagement is for reviewers to assume that authors might be passionate about their points of view on particular aspects of their manuscripts. Therefore, they should present their review reports in ways that are cogent about errors in logic, facts or in interpretations and/or application limitations of particular theories. At the same time, reviewers must be humble enough to recognize that they may suffer from specialization bias, bounded rationality or sense-making limitations. This humility allows them to enter into learning conversations with authors, contributing to manuscript quality enhancement.

Decision 1: Be Honest and Provide Clear Recommendations

As co-creators of scholarship, reviewers have the responsibility to be efficient and effective in helping their collaborators not waste time. As quality controller, the reviewer is responsible for rejecting manuscripts that lack the quality to make it into publication. However, because of the inherent attachment of authors to their work, it is imperative that the rejection is done politely and with sensitive language and with supporting evidence from the literature.

Reviewers should remind the authors about the journal's mandate if the manuscript does not fit the journal's mandate, and, if possible, suggest an appropriate alternative journal. Even when this is the case, it is still important, in the spirit of co-creation of scholarship, to provide suggestions for improvements that can help improve the manuscript's chances of success in the suggested alternative.

If the manuscript addresses an interesting question but the authors have clearly done a poor job in their presentation, point that out, illustrate the potential contribution they could make and challenge them to undertake the improvements with clear guidance on how they can achieve the recommended output. If the reviewer cannot see how to salvage the situation, it is best to recommend a rejection after explaining the salvaging challenges the manuscript poses. This should help guide the authors in their search for a home for their manuscript. Editors depend on the honesty and clarity of reviewers' recommendations to make their decisions. Incidentally,

authors benefit from this honesty and clarity too, even when it hurts. This honesty is an integral part of the collaborative process involved in the scientific enterprise.

Conclusion

It is almost customary across disciplines that willingness to accept review assignment is inversely related to the how well-known and distinguished a researcher is (Harrison 2002). Treviño (2008, p. 8) laments researchers' propensity to "decline most, if not all requests to review." Yet, reviewing and reviewers are essential to the scientific enterprise. Therefore, it is important that researchers assume their share of the responsibility of advancing science through participating in reviewing.

This paper attributed the foregoing situation to a poor understanding of reviewers' role in the scientific enterprise, creating unnecessary burdens for those accepting to review manuscripts and for authors submitting their work for publication considerations. This poor understanding also contributes to the antagonistic relationship that frequently emerges in the anonymous review process that supports the scientific enterprise.

This paper has presented reviewers as quality controllers and co-creators of scholarship in the scientific enterprise. As quality controllers, they defend the journal from *defective products* making their way to readers, thereby protecting the journal's reputation and assuring readers' confidence in its quality. As co-creators of scholarship, they actively collaborate with authors who have something innovative and novel to offer, helping them polish it so that they are able to move it successfully into the marketplace of knowledge and ideas. Thus, although Harrison's (2002) observation that that reviewing is more like destroying than creating tends to be accurate, this paper explicitly challenges reviewers to undertake reviewing from the perspective of co-creating with authors without losing sight of their role as quality controllers.

To enhance appreciation for reviewing and help reviewers succeed in their new co-creators' role, seven activities, grouped into three categories, were presented as guidelines: relationship with authors; commitment to the enterprise of science; and honest and clear decision about the manuscript. Developing the appropriate relationship with authors demands that reviewers see them as colleagues and potential collaborators, and not antagonists; developing a coach mentality with respect to the author and the manuscript; and helping authors excel without doing their basic work for them. Committing to the enterprise of science requires that reviewers simultaneously challenge authors about their theories, constructs, models, results and interpretations and guide them towards clarity in their assumptions, logic and presentation of their facts for the singular purpose of enhancing the manuscript's quality. Reviewers must provide honest and clear recommendations to authors about their quality expectations in order to help them make the right improvements even as they protect the journal's reputation. They should also provide honest and clear recommendations to editors about whether the manuscript is good enough to accept for publication.

Although a seemingly thankless job, reviewing offers inherent long-term rewards by helping reviewers become better scholars and fostering in them the knowledge that they are contributing to scholarship in their profession. And while many institutions do not put any weight on the

service scholars provide as reviewers (and they should if reviewers act as co-creators of scholarship and quality controllers), the scientific enterprise will be the loser if the culture of reviewing pioneered by the *Journal des Scavens* in the early 1700s (Glen 1989) is not celebrated and enhanced in the 21st century.

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