



The Review–Editing Process

The process of converting a manuscript into a published technical paper is complex, involving numerous people with various areas of expertise. The dual goal of all these people is to maintain the high standard of the publication and to help authors present their information clearly, succinctly, and conforming to style.

Before the Review Begins

As noted in Chapter 1, no paper may be accepted for publication in an ASA, CSSA, or SSSA scholarly publication unless at least two unbiased, professional scientists independently agree that the paper merits publication. Also, no paper that has been entered into the formal review process may be released by an ASA, CSSA, or SSSA scholarly publication unless at least two unbiased professional scientists independently agree that the paper is unacceptable for publication.

The first responsibility of the journal editor is to determine if the paper is ready for review. Potential problems with papers may be nonscientific or problems of content. Potential problems may be recognized by the technical or associate editor as well.

Nonscientific Problems

Nonscientific problems render a paper “not ready for review” and require action before the paper is entered into the review process.

Structural Problems

Structural problems include, but are not limited to, such things as lack of line numbering, page numbering, or double spacing, major format flaws, or unreadable graphics. For those journals that use a double-blind review, lack of conformity to the particular needs of that review process fall into this category. Somewhat more serious problems include such things as the lack of a major component, such as an abstract.

Problems with English as a Second Language

Manuscripts from authors whose first language is not English may present difficulties. Currently we do not provide translation services for papers. Any manuscript with poor English that impedes understanding should be returned and the authors instructed to contact professional translators.

The challenge comes with those papers in which language problems make it difficult to assess the quality of the science. Judgment and tact are necessary for the editorial board member who has been sent such a paper.

Problems of Content

Scientific

Scientific problems include serious flaws in the work itself, such as the design of the experiment, lack of necessary replication, or inadequate statistical treatment that make it impossible to draw the stated conclusions from the data. These are the sort of flaws referred to in Cases 1 and 2 below.

The associate editor should study each assigned paper carefully to see if it has one of these intrinsic problems before moving the paper to the formal review stage. If such a problem exists, the associate editor should discuss the paper with the technical editor or editor to discuss whether it should be released immediately for those problems rather than waste the time of reviewers. (Such a release is possible because two editors—two scientists—agree to it.)

Suitability

It is possible that a manuscript submitted to one journal might be better suited for another of the ASA, CSSA, SSSA journals. The editorial board member who receives the manuscript should consider contacting the author and ask if the author would consider a transfer to that journal. If the author and the editor of the journal to which it might be transferred agree, the manuscript may then be released from the first journal and submitted to the second journal.

If the author disagrees, the manuscript will be reviewed by the editorial board of the journal the author chooses.

Once the editor and technical editor determine that it is ready for a review, the paper is assigned to an associate editor.

Reviewers

Locating Reviewers

Finding reviewers for manuscripts can be one of the most frustrating jobs for the person assigned this task. The current online submission management system used for ASA, CSSA, SSSA journals has a Reviewer Locator feature that uses metadata to link paper topics with authors from Web of Science in similar fields. Other strategies include using the reference list of the manuscript as a start for identifying reviewers. One can also search ASA, CSSA, and SSSA journals for related papers using key topics or words in the title or abstract. Annual meetings abstracts show who is recently working on a topic. Note that reviewers do not need to be members of ASA, CSSA, or SSSA.

In addition to well-known researchers in the area of the manuscript, one can also seek out reviewers from under-represented groups, such as international scientists, early career scientists, and Ph.D. students. Asking for leads from those who turn down the opportunity to review the paper is another strategy.

Ensuring Unbiased Reviews

If there is a concern that a potential reviewer may have an actual (or even the strong appearance of a) conflict of interest with one or more of the authors, the associate editor should select another reviewer. Similarly, they should heed the wishes of a reviewer who asks to be excused from reviewing a paper for a similar reason. The following list (adapted from USDA-ARS guidelines) is by no means exhaustive, but a positive response to any of the following (or similar) questions is a sufficient reason to select a different reviewer.

- Have you had significant and acrimonious disagreements with the authors in the past?
- Are you and the authors co-investigators on a current research project?
- Have you and the authors jointly published an article in the past five years?
- Are you close friends with one or more of the authors?
- Are you working in the same area of research with the authors so that you might be considered to be a competitor or gain an advantage by reviewing the manuscript?
- Are you at the same location as the authors?
- Did you review and approve the manuscript as a peer reviewer prior to its submission to the journal?

Obtaining Anonymous Reviews

The policy of ASA, CSSA, and SSSA journals is to keep the reviewers anonymous from authors and from each other. Some of the journals also keep the names of the authors anonymous from the reviewers (double-blind review).

If a reviewer inserts their name into their review comments, the policy is to edit out the reviewer's name from the review. There is, of course, no way to prevent a reviewer from contacting an author after a paper is published.

Obtaining Timely Reviews

All scientists want fair reviews of their papers, but they also want them as soon as possible. Initially assigning more reviewers prevents delays if the first reviews received do not agree. The downside to assigning a large number of reviewers to a single manuscript is increased difficulty in finding new reviewers for other assigned manuscripts.

Specifically, all three societies recommend that the associate editor serve as one of the reviewers unless the subject matter is too far outside their area of expertise. If there is no substantial disagreement between the first two reviews (complete agreement is rare), associate editors do not need to wait for a third review before they begin summarizing the key comments of the reviewers. If another review arrives before work on the paper is completed and if that review contains valuable information overlooked by the other two reviewers, that information can also be passed on to the author. If not enough reviews have been submitted to make a decision, the

associate editor should contact delayed reviewers and encourage completion of their review.

It makes good practice for associate editors to contact potential reviewers by phone or email before assigning a manuscript. This will determine (i) if the person still has the same email and other contact information, (ii) if the person will be available to review a paper in a timely fashion, and (iii) if the person has a potential conflict of interest (as outlined above) that might preclude reviewing that paper.

An associate editor should review the paper within the recommended time (which differs per journal) before the outside reviews are uploaded. This will both speed the process and eliminate the possibility that the associate editor's own review will be biased by reading the other reviews.

Obtaining Sufficient Reviews

When a paper is deemed to be suitable for review, the task of the editorial board is to then determine if the paper is suitable for publication. Such a decision can be reached only upon the agreement of at least two unbiased, professional scientists.

Thus, the first task of an editorial board is to obtain those two recommendations for acceptance or release. Editorial board members are expected to exercise professional judgment in reviewing a paper and not simply tally up “yeas” and “nays” and act accordingly. If a reviewer has recommended acceptance without change for a paper that has a major flaw, or recommended release of an excellent paper, the associate editor has the obligation to discount that review and, if necessary, obtain another.

A few hypothetical cases are below, all of which take place within the editorial board of a journal whose structure calls for a technical editor to receive a manuscript and assign it to an associate editor who is to handle the review process.

CASE 1. A technical or co-editor receives a manuscript, studies it, and notes a serious flaw that by itself could preclude publication. The technical or co-editor contacts an associate editor before assigning the manuscript and says, “Read this carefully before you assign reviewers. I do not believe it is suitable for publication.” The associate editor reads the paper and agrees with the technical or co-editor's assessment. These two agreements allow the release of the manuscript without additional input.

CASE 2. The technical or co-editor is assigned several manuscripts on the same day and, so as not to delay review, assigns them to the associate editors without studying them thoroughly. An associate editor who is assigned one of the papers notices a serious flaw in it and, before assigning it to reviewers, contacts the technical or co-editor to discuss the paper. The technical or co-editor reads the manuscript thoroughly, agrees with the associate editor, and the two agree to release the paper.

CASE 3. The associate editor assigns a paper to three volunteer reviewers, then

reads it while awaiting the return of the three additional reviews. The associate editor finds serious enough problems with the manuscript to believe it should not be published. Two of the outside reviews within two or three days recommend “accept as submitted” with no further comments. The associate editor instead waits for the third outside review. This third reviewer has written a thoughtful series of comments pointing out not only the problems that the associate editor had noted but several others as well. The associate editor now has recommendations from two independent professional scientists who read the manuscript thoroughly and agree the manuscript should not be published. The associate editor releases the manuscript, even though two reviewers recommended acceptance and two reviewers recommended release.

CASE 4. The associate editor and another scientist believe they have read an excellent paper, but three other scientists, all of whom had the same major professor in college, say the paper should be released. After studying the three release recommendations, the associate editor determines that the reasons given for release are personal rather than scientific. Again, two independent scientists who have carefully studied the paper agree it is suitable for publishing, allowing publishing to proceed.

If examples such as those given in Cases 3 and 4 were to happen—and we have no evidence that they ever have—the associate editor would be wise to thoroughly document the reasons for the action, whether it be acceptance or rejection. It would also be a good idea to consult the technical or co-editor and perhaps the editor as well, so that at least four scientists have agreed to the chosen action, regardless of the number of responses the other way.

Agreement of Reviewers

The matter of agreement is at least as subjective as it is objective. While unanimous agreement for acceptance or release of a paper is always theoretically possible, it rarely happens. More likely, there will be at least some disagreement. The following is one fairly common set of reviewer recommendations:

- Reviewer 1: accept with minor alterations
- Reviewer 2: accept with major alterations
- Reviewer 3: reject

Note that the exact wording of the recommendations may vary among journals.

The associate editor who receives recommendations like these must exercise judgment. Was Reviewer 1 unduly lenient, or was Reviewer 3 unduly harsh? Once that question is answered, the comments of Reviewer 2 could be used to bolster the remaining recommendation.

Revisions

Another consideration is how often to seek further revisions of the manuscript. Rather than allowing a manuscript to go back and forth several times between author–reviewer–associate editor, it could be appropriate to recommend release for a borderline manuscript and encourage resubmission.

The associate editor or technical editor should keep in contact with the author if there are delays with the author uploading the revised manuscript or for the author's inadequate response to reviewers comments. Once the revised manuscript is uploaded, the associate editor should attempt the review of the second revision alone without assigning outside reviewers again. This would still count as two scientists recommending acceptance if one reviewer had previously recommended minor revision (i.e., accept after incorporating reviewers comments) or if the technical editor or editor looks at the manuscript before making the final accept decision. If the changes are extensive or the area is too far out of the associate editor's background, the associate editor might review what they can and send it to one reviewer. The associate editor should try to prevent numerous cycling with the authors; one should not demand unnecessary changes, but it is appropriate to insist that authors correct scientific flaws or a presentation that would prevent readers from understanding the manuscript. The associate editor should get back-up support from the technical editor or editor, if necessary.

Types of Papers Reviewed

By far the most common type of paper to appear in ASA, CSSA, and SSSA journals is the standard research paper, and the greatest portion of this section is devoted to the review of those papers. Our journals also publish other paper types, which are outlined first.

Review and Analysis Papers

Most ASA, CSSA, and SSSA journals accept invited and volunteered review papers, which are usually less formal than research articles. They may not be presented in the common form for research papers (introduction, methods, results, and discussion). They also typically do not present the results of a single research project. Such papers should not be penalized for following a less traditional format.

Good review papers provide a synthesis of existing knowledge and give new insights or concepts not previously presented in the literature, or at least not with the same level of detail. One should consider rejecting papers that fail in these areas.

Review articles are not to be considered exhaustive reviews of the literature but should include enough literature review to provide a basis for discussion and interpretation of the topic under consideration.

A good review is often one of the most important ways to advance an area of science. Readers expect a review paper to

- deal with an important subject that needs a scholarly review,
- cover the entire spectrum of the subject, not just the segment the author of the review paper has published papers about,
- present a balanced coverage that is fair to all the work it reviews, and
- add a perspective to the entire subject; contribute significantly to understanding.

Opinion Papers

Opinion papers may be called perspectives, forums, or issues papers, depending on the journal. They give a broader and often more personal perspective on a subject than a review paper. They may discuss contemporary issues from a combination of scientific, political, legislative, and regulatory perspectives. These papers often have more of a philosophical bent to them but must still be based on a foundation of good science. They may be invited or volunteered.

The intent of these papers is to stimulate discussion and possibly a rethinking of current views. They can be provocative and controversial. A reviewer or editor who does not agree with a paper's content should not use that as a reason to recommend its rejection but instead should include constructive comments regarding the logic and arguments used to convey the ideas presented. In addition, the reviewer should evaluate the quality of the writing and make comments as appropriate.

Letters to the Editor

Letters to the Editor may contain comments on articles appearing in the journal or general discussions about agronomic, crop, soil, or other pertinent research, according to the nature of the journal. The suggested length of a Letter to the Editor is one page or less. The letter must be approved by the journal editor and may be peer-reviewed. If a letter discusses a published paper, the author of that paper will be invited to submit a response to the comments, which will generally be published with the letter.

Notes and Short Communications

The name of this category varies from journal to journal. In *Agronomy Journal* they are called Notes and Unique Phenomena, in *Journal of Environmental Quality* they are called Short Communications, and in other journals they are called Notes.

Regardless of their designation, these are a separate category of scientific manuscripts that describe research techniques, apparatus, and observations of unique (usually unrepeatable, such as hail or frost damage) phenomena. These papers also are usually shorter than research papers. For the suggested length of these papers, authors should check the specific journal's instructions to authors.

Occasionally, an editor may believe a paper submitted as a regular research paper will better fit this category, or vice versa. If the author agrees, the manuscript can be transferred to or from this category of papers.

Book Reviews

Several of the journals publish book reviews; these journals generally have one person appointed to the editorial board specifically to handle book reviews. Headquarters staff will forward appropriate review copies or online links received from publishers to these book review editors.

The book review editor selects books suitable for review in the journal and a scientist who is competent to review the book and sends the book copy to that scientist. The book review editor examines the reviews upon its receipt from the reviewer. Reviewers are allowed to keep the copy of the book they reviewed as compensation for their efforts.

The Review

The purpose of scientific editing and review is to determine if the research project written about in the paper sought information that either was previously not known or not completely understood; that the research was properly designed, accurately conducted, and accurately recorded; and that the results were correctly interpreted and presented completely and accurately.

Scientific Accuracy

Although the primary responsibility for accuracy and completeness of the paper rests with the author(s), the technical editor, associate editor, and reviewers can often provide valuable assistance in the presentation of that information. For example, authors certainly know their material but may be too close to the situation to present—in a way others can follow—the logic used in approaching the problem.

Errors and ambiguities can be grouped into two general categories: (i) scientific and technical and (ii) grammatical. Although there is substantial overlap in duties, problems in the first category are the basic responsibility of technical and associate editors and reviewers and those in the second category are the basic responsibility of the headquarters staff. Editors, technical editors, associate editors, and reviewers cannot ignore grammatical problems, however. If an author who is unfamiliar with writing in English submits a manuscript that is nearly unintelligible, editors should not hesitate to send the manuscript back to the author for improvements before beginning serious scientific review.

Once a manuscript is readable, scientific editors and reviewers should give it a thorough review. Specific aspects of this are outlined in the checklist at the end of this chapter.

Style

The manuscript should follow the ASA, CSSA, SSSA style. Refer to the ASA, CSSA, SSSA Publications Handbook and Style Manual (<https://www.agronomy.org/publications/journals/author-resources/style-manual>) for information about specific parts of a manuscript, specialized terminology, statistics, mathematics, tables, and figures.

Supplemental Information

Supplemental material must undergo peer review and should be submitted along with the original manuscript. A one- or two-sentence description of the supplemental material should be included in the main manuscript right before the acknowledgment section. Supplemental tables and figures should be cited in order in the main manuscript.

The Paper's Language

Editorial board members often ask for guidelines as to when it is okay to leave writing problems in an otherwise acceptable manuscript to be addressed at the copyediting stage and when they should insist that the author repair the problem before accepting the paper. It is difficult to provide unequivocal guidelines. Without question, awkward writing is difficult, if not impossible, to interpret. But many scientific reviewers and editors are willing to overlook flawed writing in a manuscript in the interest of publishing the important scientific information expressed in the paper.

There are different degrees of errors in writing. Some can be corrected fairly easily by a professional copyeditor; others require the guidance of the author or a scientific editor.

The location of the error within the paper will often influence the severity of the problems caused by that error. Ambiguity or opacity of language in the introduction damages the effectiveness of a paper because this is where the authors orient their study to similar studies and place their investigation within the context of established knowledge. The same can often be true for the Materials and Methods section. Poor language presentation may cause fewer problems in the Results and Discussion sections, where context has already been established. Similarly, the study's conclusions must be stated clearly, unambiguously, and in a way that is consistent with the preceding sections because this is where the authors are attempting to justify both the performance of the research and the publication of the study. Without a clear presentation here, readers may miss the significance of the study's findings.

When in doubt, determine whether the key concepts and arguments of the study have been adequately expressed. Are the key statements free from ambiguity and vagueness in their meanings? Be less concerned if they are clear but merely not fluent.

Headquarters staff use software to check citation/reference matching. It is not necessary for editors and reviewers to spend a lot of time checking this. Of course, if a key reference is omitted, it is good to mention that to the author.

Errors That Require Consulting the Author

Serious defects in scientific writing are those of vagueness, missing information, and missing indications of relationships between pieces of information. The headquarters staff is not qualified to correct these sorts of errors without input from authors or scientific editors. Scientific editors are expected to resolve all problems in this category before accepting the paper. The following examples fall into this category.

VAGUE STATEMENT/POOR WORD CHOICE. “Also SOC concentration is more a function of residue and roots (Hanes et al., 1990) after harvest than actual grain yield since virtually no yield can be obtained (corn in dry years, corn after sunflower), yet biomass and residue are produced.”

The above statement is unclear as to when or under what conditions no yield can be obtained. With the author’s help, this sentence was revised to read: “Also, SOC concentration is more a function of residue and roots (Hanes et al., 1990) remaining after harvest since, at times, little or virtually no yield is obtained (of corn in very dry years, or of corn after sunflower has dried out the soil profile), yet leaf and stem biomass and residue are produced.”

EXCESSIVELY LONG STRINGS OF COMPOUND MODIFIERS; ADJECTIVAL NOUNS MODIFYING A HEAD NOUN. “...mixed bed exchange resins...” Does the author mean “mixed-bed exchange resins,” or “mixed bed-exchange resins?”

INCOMPLETE COMPARISONS. “It seems reasonable to conclude that the fallow plot should be capable of dissipating nitrate more rapidly.” More rapidly than what? Under what conditions?

TOPIC SHIFT FROM SENTENCE TO SENTENCE. In the following example the reader cannot tell which exposure of soils is being referred to. “Denitrification rates under ambient C conditions were higher in the surface 10 cm of the first test plot compared with the control soil but not in the second test plot. Exposure of soil to agricultural runoff has a significant impact on the soil microbial community.”

Errors That Headquarters Editors Routinely Correct

Writing problems are annoying and can make interpretation of statements laborious but can usually be fixed relatively easily by the copyeditor. These errors can be more significant when they occur in orienting statements and concluding claims, however. Awkward sentences in non-key areas and minor ambiguities even in key areas can be left in the hands of the professional editing staff.

Checklist for Detailed Comments

Scientific Content

- _____ *Duplication.* Does the manuscript unnecessarily repeat already published work?
- _____ *Review of Literature.* Is due credit given to relevant contributions? Is the author’s contribution placed in its proper perspective in relation to the state of knowledge? Is the number of references adequate, too small, or excessive?
- _____ *Objectives.* Is the statement of objectives adequate and appropriate?
- _____ *Methods.* Are the methods appropriate? Have suitable measurements been performed? Have proper control measurements been made? Have the methods been presented in sufficient detail (not just what reagents were used, but in what manner and for how long, for instance) to allow a competent

scientist–reader to repeat the work? If not, are the sources cited where sufficient detail is available?

- _____ *Calculations*. Randomly select a few instances and verify the calculations made by the author.
- _____ *Effectiveness of Data Presentation*. Would data presented in tables be better presented in figures, or vice versa?
- _____ *Tables and Figures*. Are tables and figures understandable and complete apart from the text? Are they scientifically accurate? Are figure parts labeled sufficiently? Are they identified with the manuscript number?
- _____ *Table Row and Column Headings*. Is the interpretation clear, unequivocal, and in SI units?
- _____ *Table and Figure Captions*. Do the captions accurately and completely state the content, or could they be improved?
- _____ *Conclusions*. Are they adequate and supported by the data?
- _____ *Conjecture*. Does the author clearly distinguish between fact and conjecture? Is the amount of conjecture excessive, or too little? As long as they are properly identified, speculation and extrapolation are encouraged.
- _____ *Appropriate Units*. Is SI used throughout? (At their discretion, authors may also use other units as well as the SI—usually parenthetically—in text, tables, and figures.)

Scientific Presentation

- _____ *Title*. Does the title adequately describe the subject of the manuscript and contain 12 or fewer words (not including conjunctions and prepositions)? Can the wording be improved, particularly so it does not begin with weak words such as “effects of”?
- _____ *Abstract*. Abstracts are the most widely read section of any paper, often being seen without the paper itself. Does the abstract briefly (≤ 250 words for a full paper, ≤ 150 words for a Note) tell what was done and what was found? More information about abstracts can be found at the end of this list.
- _____ *Clarity*. Does the author present the information in a relatively simple, straightforward manner that can be understood by a reasonably competent scientist–reader?
- _____ *Organization*. Does the manuscript develop the subject logically and effectively?
- _____ *Duplication*. Can the manuscript be shortened without loss of content? Are all figures needed if the same data are also given in tabular form? Is there unnecessary duplication in the text or between the text and tables and figures?
- _____ *Correspondence of Text with Tables and Figures*. Are all tables and figures referred to in the text? Do statements in the text correspond with the content of tables and figures?
- _____ *Graphs*. Do they conform to the guidelines outlined in the ASA, CSSA, SSSA Publications Handbook and Style Manual? Are they properly labeled?

Do they contain all observations? Is the plotting of the data accurate?

___ *References.* Is the required information there, complete, and in the proper format? Are there obvious errors, such as misspelled names of authors or publications?

Manuscript Style

___ *Editorial Style.* Does the manuscript conform to current ASA, CSSA, SSSA editorial style and format?

___ *Consistency.* Are the same spellings and abbreviations used throughout? Are all abbreviations and variables defined and used uniformly? If an abbreviation is defined in the paper, is it used more than once? If not, it can often be eliminated.

___ *Abbreviations.* Does the paper have an excessive number of author-made-up abbreviations that serve only to hinder ease of reading and interpreting the information? Are all ad-hoc abbreviations defined in a list immediately after the abstract? If not, work with the author to create the list.

___ *Sequence of Tables, Figures, and Equations.* Are all serially numbered items presented in the proper sequence?

Abstract

___ Strive for an impersonal, noncritical, and informative account.

___ Give a clear, grammatically accurate, exact, and stylistically uniform treatment of the subject.

___ Provide rationale or justification for the study. The statement should give a brief account of the purpose, need, and significance of the investigation (hypothesis or how the present work differs from previous work).

___ State the objectives or hypothesis clearly as to what is to be obtained.

___ Give a brief but specific account of the methods, emphasizing departures from the customary.

___ Give the full soil classification if it is a factor in interpreting the results.

___ Clarify whether it is a greenhouse or field experiment.

___ Identify scientific names of plants.

___ State results succinctly.

___ Outline conclusions or recommendations, if any. Emphasize the significance of the work, conclusions, and recommendations. This may include new theories, interpretations, evaluations, or applications.

___ Use specific figures whenever possible to avoid use of general terms, especially in presenting the method and reporting the results. For example, if two rates of a treatment are used, state what they are.

___ Never cite references.

___ Contain about 200 to 250 words for articles or 100 to 150 words for Notes.

___ Avoid statements such as “is discussed” or “is presented.”