

## What Are Reviewers Looking For? A Qualitative Analysis of Open-Ended Responses from a Questionnaire Sent to Faculty in Agricultural Communications

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### Abstract

While peer review is the best system available for assessing the quality of research manuscripts, the system is imperfect at best. How peer review is conducted is often guided by unwritten rules, which can make writing articles for peer review more difficult. New reviewers also lack information on what other reviewers are looking for. This project assessed what reviewers were looking for when evaluating research papers. An anonymous link was sent to agricultural communications faculty members who were eligible to review papers. There were 22 responses from the 43 faculty members who were sent the link to participate. Processes for reviewing varied, but it was typical to take notes while reading the article. About half of reviewers spent less than two hours per article. Overarching criteria reviewers were looking for were connection between sections of the paper, overall quality of work, writing quality, clarity, and the contribution of the work. Each section of research papers was also addressed in the study. The results of this study provide an overall roadmap for what agricultural communications reviewers are looking for, but it needs to be noted that different reviewers were looking for different things, so there will likely never be a single right approach for authors trying to clear the peer review hurdle. Future research is needed to further clarify the peer review process, including authors and those who have overseen the peer review process, such as editors and conference organizers.

### Keywords

peer review, manuscript preparation, journal publications

### Cover Page Footnote/Acknowledgements

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### Introduction & Literature Review

Peer review is central to modern academic scholarship (Johnson & Hermanowicz, 2017). “The fundamental principle is straightforward: experts in a given domain appraise the professional performance, creativity, or quality of scientific work produced by others in their field or area of competence” (Lee et al., 2013). Ideally, these experts act as a filter to ensure the work published in journals is at an acceptable level of quality (Lee et al., 2013). However, every system has inherent flaws, and publication through peer review is a system in which even those deeply ingrained in the process have “organized skepticism” (Johnson & Hermanowicz, 2017, p. 487).

No field has found an ideal process for peer review, which makes it necessary to look at peer review in all disciplines (Shoulders et al., 2015). While guidelines typically exist for reviewers, these vary by journal and discipline, and the guidelines are not always formally indicated (Adamson, 2012). Peer review is socially organized, so there are rules, but the rules are not always written down (Johnson & Hermanowicz, 2017), which creates the potential for an in-group that understands the rules and an out-group that does not.

### Issues with Peer Review Process

“Most researchers agree that peer review is the least imperfect way of upholding the quality of scientific publications,” (Bad peer reviewers, 2001). While it is the best option available, there are a variety of critiques. Casati et al. (2006) stated the model of peer review is inefficient, can corrupt good papers via bias in the system, and a lack of widespread dissemination because some journals take public funding from universities to publish research that is not widely available to the public. On multiple occasions researchers were intentionally sent “bad” papers to expose issues with the peer review system (Bohannon, 2013; McLachlan, 2010; Sokal, 1996). In these instances, the “bad” papers with improper methods or made up data successfully navigated the peer review process. Other studies have found that the peer review process includes exact opposite statements by reviewers with a publication result that is similar to a coin flip or sheer chance (Smith, 2006).

There are multiple issues in the peer review process. The subsequent sections will discuss varying levels of knowledge about research practices, varying expectations for what should be included in a research paper, lack of truly blind review, bias against null results, coercion by editors and reviewers, reviewer fatigue, and lack of reliability in the peer review process.

**Varying Levels of Knowledge about Research Practices.** One issue in the review process is varying levels of methodological knowledge, which impacts what reviewers believe is appropriate. For example, Sun et al. (2010) found that frequency of reporting effect size varied by discipline. Effect size is particularly important because of “p-hacking,” which is the decision of a researcher to select particular data or statistical analyses with the singular focus of finding significant results and ignoring nonsignificant results (Head et al., 2015). Another example is the use and misuse of Likert-type scales, which Warmbrod documented in the *Journal of Agricultural Education (JAE)* (2014), finding only about half of the articles evaluated were congruent in reporting of Likert-type measures and reliability for said measures. Johnson and Shoulders (2017) identified that the majority of articles published in *JAE* lacked the statistical power to detect even large effect sizes when addressing nonresponse error.

**Varying Perspectives of What to Include in the Paper.** Reviewers also have different perspectives on what should be included in a paper. For example, there is disagreement in the use of theoretical and/or conceptual frameworks. For some researchers, the terms are distinct and should both be included in a paper (Dyer et al., 2002). Camp (2001), on the other hand, argued that a conceptual framework is basically a lower-level theory and argued against the use of conceptual framework as a term entirely. And, even though theoretical frameworks are important for underpinning research, there are times that atheoretical research (e.g., evaluation and action research) have value (Kitchel & Ball, 2014). Each discipline and journal differ in the request for and application of theory. In Baker and King's (2016) analysis of *JAC* articles between 1995 and 2015, only 35% of articles used a theory or model.

**Lack of Truly Blind Review.** A double-blind process is often used so reviewers do not know who authors are and vice versa. The problem is academic fields often have "invisible colleges" (Johnson & Hermanowicz, 2017), whereby reviewers can recognize authors based on topics addressed, theories used, and so on, so the review process is not always as blind as it should be. In a field as small as agricultural communications, this issue is especially likely when so many of the most prolific researchers have shared social connections (King & Settle, 2019). Some disciplines and journals have a single-blind review process to allow for reviewers to exclude themselves in areas of potential conflict and to allow reviewers to assess the work in relation to the author(s) previous work. However, research has shown that acceptance rates are lower in a double-blind review process (Blank, 1991) and discrimination against women (Budden et al., 2008) and authors from lower-prestige institutions is mitigated in a double-blind review vs. a single-blind review process (Blank, 1991; Tomkins et al., 2017). Conversely, some research indicates that a double-blind review is a myth, as reviewers were able to determine author identity through the use of authors' references and background knowledge contained within the submitted manuscript at a 40-45% accuracy rate, with identifiability increasing for well-known authors (Hill & Provost, 2003).

**Bias against Null Results.** One issue with peer review is a bias for novel results and bias against null results (Johnson & Hermanowicz, 2017; Lee, 2011), which is related to the previously mentioned p-hacking issue (Head et al., 2015). Franco et al. (2014) stated that null results are published at a much lower rate than strongly significant results. The majority of null results they assessed were not even submitted for publication. Even when null results were submitted, they were not accepted at the same rates of strongly significant results (Franco et al., 2014). There were even cases of authors publishing smaller convenience sample studies that supported the initial hypotheses when the larger studies did not validate the previous work. This bias for novel results and against null results is particularly important in an era when many studies are failing to replicate previous work, which has been called a replication crisis. Many attempted replications are failing to meet statistical significance and have diminished effect sizes (e.g., Open Science Collaboration, 2015).

**Coercion by Editors and Reviewers.** Another form of bias is coercion by editors and reviewers to cite certain sources that are not necessarily warranted (Johnson & Hermanowicz, 2017). For editors, this would be requiring authors to cite the journal they are publishing in, which artificially inflates the metrics of that journal (Johnson & Hermanowicz, 2017). Reviewers could also exert coercive force to have authors cite the reviewers' work (Johnson & Hermanowicz, 2017). Both of these go against the ethos of peer review being an objective evaluation of the work.

**Reviewer Fatigue.** Another issue for the peer review process is reviewer fatigue, which is exacerbated by the incentive structure in academic publishing. Johnson and Hermanowicz (2017) put the structure in economic terms: Authors are selling goods (i.e., papers) to journals who act as buyers. Reviewers are a necessary component, but they do not have the same level of incentive to participate in the process, aside from some capital gained by adding that they review in their CV and being acknowledged by the journal as a reviewer. Every attempt to make the publication process more efficient (e.g., shorter turnaround times, expedited review, no financial cost of submission), can contribute to this issue of reviewers and editors being increasingly burdened by the peer review process (Tiokhin et al., 2019). This can lead to submitting the same paper repeatedly until the paper is published, requiring a review every single time. Tite and Schroter (2007) found that many potential reviewers were overworked and undermotivated to provide reviews to academic journals. Many who did choose to review did so because they felt a topic was very relevant to the subject or their own work (Tite & Schroter, 2007).

**Lack of Reliability in the Peer Review Process.** In his note to authors on keeping the faith in the peer review process, Kachelmeier emphasized that reviewers often disagree and that “empirical studies of actual reviewer ratings reveal correlations that are embarrassingly low” (p. 152, 2004). A similar low correlation between reviewers’ ratings has been found for conference papers for the national meeting of the American Association for Agricultural Education (AAAE) (Shoulders et al., 2015), which is a common outlet for agricultural communications research. No research has been found that looked specifically at agricultural communication reviews or reviewers prior to the present work.

The lack of consensus about how concepts and theories are defined worsens the reliability of peer review (Johnson & Hermanowicz, 2017), which is important in agricultural communications where there are varying definitions among scholars and administrators (Kurtzo et al., 2016). The varying definitions of agricultural communications is not unexpected given how the discipline has evolved over the past century (Cartmell & Evans, 2013; Irani & Doerfert, 2013), but if reviewers have different definitions for what constitutes agricultural communications, they are likely to have different beliefs for what counts as agricultural communications research.

### **Improving the Review Process**

While bias happens and will likely never fully go away, there are efforts to standardize the process of peer review. *JAC* utilizes guidelines for reviewers that were adapted from Leila Jones’ 2017 recommendations in the Taylor and Francis Group’s editor resources (Jones, 2017). These guidelines, however do not describe the processes that many reviewers use when reviewing articles for their selected journals. And, even when a process exists, it may not be followed correctly. Shoulders et al. (2015) identified errors in scoring in a small percentage of articles; while small, those errors could be the difference between a paper being accepted or not.

Different individuals and publications have produced recommendations for reviewers over the years in a variety of disciplines. Kachelmeier (2004) shared his advice for reviewers: summarize (contribution then assessment), consider optimal length, be aware of bias, and be tactful. His final point of tact is noted due to the lack of humanization that occurs when reading a manuscript (Kachelmeier, 2004). In an editorial to *Learning, Media and Technology*, Enyon (2014) encouraged reviewers to keep their reviews between 300-500 words and to think about their audiences, be specific, be strict but fair, be timely, and upfront. In terms of looking at qualitative research, Pratt (2009) emphasized that there is not a one-size-fits-all model for papers, and that

reviewers need to be flexible in how they review while still applying rigor. Daly et al. (2007) stated that a good qualitative researcher would be able to recognize quality research but novice reviewers and readers might not be able to do so, which raises questions as to what point in their career someone should be asked to review for a journal.

Lee (2011) recommended that authors “Make sure that the topic is within the scope of the journal.... Pick an important problem to study.... Be extremely careful in preparing the manuscript.... [and] Read the instructions to authors before preparing the manuscript, and follow them closely” (pp. 898-899). Lee (2011) found that editors of health and toxicology journals “frequently have to make a judgement call about the potential impact of submitted papers” (p. 898). The editors shared that many times papers fit their journal criteria, but data have been spliced down to the “least publishable unit” and is not contributing new information from the dataset (Lee, 2011, p. 898).

Adamson (2012) recommended that journals implement mentorship programs to assist new reviewers, as many young reviewers were already seeking mentors. Adamson found that not only did these mentorship programs assist new reviewers, they also helped more senior editors and reviewers have a heightened purpose (Adamson, 2012). Shoulders et al. (2015) recommended trainings for reviewers to help improve the review process.

The importance of understanding what agricultural communications reviewers are looking for stems from the nature of constant change in the discipline. Agricultural communications as a discipline has evolved over the past century, including the type of research being published (e.g., Baker & King, 2016; Cartmell & Evans, 2013; Williford et al., 2016). As such, the discipline needs to understand what reviewers are looking for now. Ideally, this reflexivity will occur periodically to document shifts in reviewer preferences in addition to noting shifts in what is being published in agricultural communications. Of particular note is how this evolution affects the review process. There have been calls for increased use of theory (Baker & King, 2016) and increased variety/innovation in methods (Rodriguez & Evans, 2016) in agricultural communications, and increased rigor in methods should be expected as a discipline evolves (Bapuji & Crossan, 2004),

Pain (2016) wrote an article for *Science* that asked reviewers across a variety of disciplines about reviewing research papers. When assessing if they would review a paper, the most common criteria was if they had requisite expertise in that area. Approaches to how they reviewed varied, though the most common responses had to do with making sure they understood the context of what the paper was talking about. Some were reading the whole thing and taking notes, and some were looking at specific sections for red flags before looking at the full paper. Drafting of reviews generally consisted of outlining strengths and weaknesses, with varying criteria for what should be included in the review. In terms of how long it takes to review, some would have their review done within a few hours and others were taking more than a day. Recommendations for new reviewers generally consisted of being fair, recognizing bias, and being open-minded to new ideas.

### **Purpose & Objectives**

The peer review process has a long history in science, one that will likely continue, but as with any area of science, the peer review process should continue to be studied and improved (Smith, 2006). Publishing is an integral component of success for graduate students and faculty, but to publish, you need to survive the peer review process. The purpose of this article is to delve into what agricultural communications reviewers are assessing in research articles. By understanding what reviewers are looking for, the agricultural communications discipline can better understand itself, including areas to improve as authors and reviewers.

## Methods

A list was developed of 43 agricultural communications reviewers based on a list compiled to recruit conference paper reviewers nationally. The reviewers were sent an anonymous link to an open-ended questionnaire on Qualtrics. While keeping the link anonymous limited our ability to target only non-respondents in follow-up emails, we deemed anonymity more important to help foster honest responses. In the initial recruitment email, prospective respondents were told the questionnaire was anonymous and two follow-up emails would be sent. The emails were sent over a 13-day span. There were 22 responses (51.2%).

The developed questionnaire was based in part on Pain's (2016) article that asked researchers across disciplines about reviewing. Respondents were first asked about what they look for as a reviewer and why. The next section asked for what they were looking for in each of the following sections and why: introduction, literature review, theoretical framework, methods, results, conclusions, and recommendations. The next question asked how they decide if they are going to accept a paper. The next two questions asked about time allotted to review papers and the process they use when reviewing papers. The last two open-ended questions asked what advice they would give to new reviewers and new authors. The final question asked for job classification of respondents. Eight were assistant professors, seven were associate professors, and six were full professors.

The results were imported into MAXQDA to be analyzed for themes. Responses were first categorized by question, with the exception of questions that broadly addressed the full process: what they look for as a reviewer overall, red flags they look for, and how they decide if they will accept a paper. The responses were then coded for themes within those categories. As analysis progressed, some overarching themes emerged that were broader than any specific section of a paper. Notes were kept within MAXQDA as analysis occurred documenting when codes were merged in analysis, as well as documenting codes that were similar but why they were not merged. This served as means maintaining an audit trail to help ensure confirmability and dependability (Ary et al., 2010; McMillan & Schumacher, 2010). The results were written up using verbatim responses from participants to substantiate the analysis process and decrease dependence on researcher interpretation (LeCompte & Goetz, 1982).

## Results

### Process of Reviewing

When asked how long they spent reviewing a paper, three said it depends on the paper: "Whatever time it takes. Depends on how well it's written." Seven said one hour or less. Four said 1-2 hours. Seven said at least two hours, with the longest time being 6-8 hours.

A common tactic was taking notes as they were reviewing. Some read the paper in its entirety before taking any notes: "I read the paper in its entirety. I then make notes about each section. These become my notes to the reader. I will re read it again and sections to make final comments." Others took notes as they went along: "I read the document (preferably in .doc format) and use track changes or markup to leave comments and highlight problem areas." There was also a mix of taking notes digitally and on paper.

Some folks review the rubric before reading the paper: "I first review the instructions or rubric for reviewers." There are also some who review as they go along: "I stop and score along the way when the rubric calls for a sub-score for sections. I also stop and make comments after each section of the rubric."

Some will read the paper more than once. One individual reported, “I read the article at least three times and make evaluations based on the criteria previously mentioned.” Others mentioned reading the paper, and then going back to individual sections: “I read it and then go back through each section and put in my evaluation.”

### **What Reviewers Are Looking For**

**Connection between Sections of Paper.** A common criteria reviewers were assessing was the connection between sections of the paper, looking for consistency. One reviewer stated a red flag they look for was “Lack of connection between objectives, findings, conclusions, and/or recommendations.” Another said,

I look to ensure the literature review covers all constructs associated with research questions. I look to ensure methods match the research questions. I look to ensure the recommendations are based on the results and are not generalized outside of the scope of the study.

**Quality of Work.** A common thread in the theme of quality of work was looking at papers holistically. “Overall quality. It’s not one aspect of the paper that leads to a rejection. Instead, a culmination of errors or lack of rigor,” said one reviewer.

While this broad category could be considered its own code, there was some nuance that led to subcodes being developed. The first subcode was for meeting criteria. Usually this referred to the reviewer’s personal criteria:

Is the methodology sound? Are the results and conclusions clearly stated? Do the results and conclusions make me care? Are the recommendations applicable to many? Was it well written? If I can answer yes to most of those, or if the paper is almost there, then I’ll accept.

One reviewer explicitly mentioned going by the review form but still applied their own criteria:

I follow the rubric provided closely, but I also base my decision on a holistic view of the paper first, considering clarity of the problem, purpose and objectives; strength of lit review; clarity of methods, and quality and clarity of findings, conclusion, and recommendations. If any of these characteristics is not satisfactory, I reject the paper, but I am willing to accept any paper that is satisfactory across all sections.

Another criteria addressed the amount of errors in a paper. One reviewer said, “I decide based on the overall evaluation of the paper. If they are weak in one area I don’t count it out, but if it is multiple errors then it needs to be rethought.” Another said, “Acceptance is based on amount of errors that will need to be addressed and the time it takes to address them.”

Adequate detail was an overall piece of criteria used. One reviewer said, “Adequate detail is needed to help the reader fully understand what was done and why and if those details are missing, I usually will not accept it.” One wanted to see that “all sections are complete and comprehensive.” Another reviewer mentioned a red flag when “sections are not thorough.”

**Writing Quality.** The most common comments related to writing quality were that the paper was generally well written. One reviewer in stating how they decide if they accept said, “My first criterion is writing quality.” Poor writing was repeatedly mentioned as a red flag when reviewing.

Grammar was a common issue that was mentioned, especially as a red flag. An example quote was “Grammar, spelling, and punctuation must be effectively used,” though others were just listing grammar as a red flag area. Most were fairly succinct in how they mentioned grammar, but one reviewer said,

I try not to place too much weight on typos and grammatical errors, but if they are so numerous that it impacts the flow and there are other issues then it borders on the line of revisions/rejection. I will accept with minor revisions if only typos and minor details missing.

The aspect of flow was something another reviewer mentioned as well: “I also like a well organized paper and a paper that flows well.”

**Clarity.** While clarity as a theme could be argued to belong under writing quality, respondents were consistently referring to clarity on its own and across different sections of research papers. Clear and easy to read were other terms commonly used in this theme. One reviewer said, “Clarity because if it isn’t clear and free of errors, it is far less readable.” Another reviewer said, “A paper that can explain the research process undertaken and its significance to our field in an easy to read and understand manner is vital.” There was also clarity mentioned with respect to ideas: “Not having a clear theory or literature backing. A methods section that isn’t complete and clear and correct analysis.”

**Contribution.** That the paper had a contribution and was relevant were key criteria for many. Sometimes reviewers were fairly nonspecific in the explanation. One reviewer mentioned “relevance of the study.” Another said, “I look for papers that are timely, relevant, and, where applicable, show a degree of creativity in subject matter or approach.”

For more specific contributions, need was the most frequently mentioned. One reviewer said, “Although there can be a particular context or application for the study, if the authors don’t explicate a compelling need and impact for the study, I have a tough time considering it acceptable.” It was commonly mentioned with regard to the introduction of the paper: “Clear needs of the research. because it builds the case for the significance of research.” It was also mentioned as a red flag area: “Inability of researcher(s) to provide context for study and clear need for research.”

Another aspect of contribution was advancing the discipline. One review said, “I look for how the authors tied the research results to their recommendations on how to advance the discipline.” Another reviewer said, “Something that is relevant to the journal, that moves the profession forward in terms of not being the same thing I’ve seen published, and is sound research.”

Implications for practice was another aspect of contributions. One reviewer said, Results and implications the reader can use - the researcher should draw connections for the reader as well as work hard to deliver actionable suggestions from the research. To[o] often, I end my reviews not being able to answer the “so what?” question.

In speaking about the literature review, a reviewer said, “This section should show a clear tie to our field and why the topic under investigation helps inform what we do.”

Novelty was also one of the criteria commonly mentioned. One reviewer was looking for a novel study or a replication: “I am looking for quality research that adds to the knowledge base either as new research or a replication of a previous study.” Another said, “Something that is relevant to the journal, that moves the profession forward in terms of not being the same thing I’ve seen published, and is sound research.”

**Introduction.** When reviewing the introduction of papers, the three areas most commonly mentioned by reviewers were justification, background/context, and problem statement/purpose. One reviewer mentioned all three: “Short background, ‘justification’ for the research, and either a

problem statement or purpose of the research.” For justification, one reviewer said, “Compelling reason for the study - what makes this study necessary? What makes it unique?” Another reviewer said they were looking for “a ‘sales pitch’ - tell me why this is important.” For the background/context, one review said, “Sufficient background literature that supports the topic being investigated is also important.” Another said, “I want enough context to know the topic area.” For the problem statement, one reviewer said, “Build up to the problem to be investigated and why it is significant to our field and what we do.”

**Literature Review.** Two criteria emerged the most consistently: source quality and completeness of previous research listed. A key aspect was that, compared to other sections, there was more disparity in what reviewers were looking for and the terminology they were using. So even though there are two broad categories of what is being assessed, there is a lot of variety within those categories.

Source quality primarily referred to the idea of citing the “right” sources. Sometimes this referred to important or seminal research: “If the authors are citing seminal studies, are those studies appropriately applied to the problem at hand.” Up-to-date sources were also commonly mentioned. Lack of new literature was a commonly mentioned red flag: “Having no citations from the last 5 years is a red flag.” Quality also referred to what reviewers considered appropriate sources. One reviewer mentioned specific journals: “What have others done that is relevant. For [agricultural communications] research, I like to see some references from [Journal of Applied Communications or Journal of Agricultural Education.]”

Completeness of previous research was reviewers looking for thoroughness. One reviewer said, “Enough depth to know the researcher has exhaustive knowledge of the subject.” Another review said, “Thorough investigation of the concepts and constructs,” which relates to the theoretical framework. Some reviewers mentioned wanting to see that the current work is grounded in past literature. One reviewer asks in reviewing, “How does it build on prior research?” Two reviewers specifically mentioned looking to see that the study filled a gap in the literature. One said, “Where does this fit in the [literature] and is it filling a gap and developed in sound research [literature].” The other said, “Show knowledge of the literature and gaps -- where this study fills [a] gap.”

**Theoretical Framework.** For the first subcode support of theory choice, one reviewer said, “Is this the right theory? I like to see at least one reference to the seminal piece.” Some reviewers were looking for a solid theoretical model: “Depending on the journal, I may also look for very strong theoretical framework that informs or guides the study if it is one with primary a researcher/academic audience.”

In the second subcode of explanation of theory, one reviewer said, “The theory should be well enough explained for the reader to understand its connection to the study and how it helps to inform and develop the investigation of the topic.” Another said, “Mention of the seminal pieces as well as newer developments that describe and define the theory and relevant variable.” A pair of reviewers specifically mentioned wanting short explanations of the theory: “I’m not a ‘big’ theoretical framework person. I think a brief overview is all that is necessary in most journal articles, [because] everyone is pretty familiar with most of the theories anyway.”

One of the aspects of reviewing theoretical frameworks calls back to one of the earlier themes: connection between sections of the paper, which is the third subcode. One reviewer looks to see that authors “correctly selected theory in that it aligns with study purpose and objective.”

Another asks “Does it operationally fit with the idea in question?” A third reviewer said, “That a theory is being used to guide and wasn't just tacked in.”

The final subcode is that reviewers look to see that the study is rooted in theory. One reviewer said, “Theory should always be present in my book.” Another said, “Rooted in theory and prior research.” For many, lack of theory was one of their red flags.

**Methods.** The most frequently mentioned aspect looked for was sound methods. This was one of the most important criteria for papers overall. Of the 21 reviewers, 14 mentioned sound methods in the opening question asking what they were looking for in general. Typical quotes were “sound methodology,” “rigorous research,” and “In general I’m looking for a well conducted study that contributes to the knowledge of our field.” Seven also mentioned it when asked about the red flags they look for. Quotes include “Second red flag would be using ill-suited methods or making claims beyond what the results can support,” “Poor choice of methodological approach,” and “Poor methods also create problems.”

The other most commonly mentioned criterion was wanting details, especially as it relates to replicability. One reviewer said, “details, details - I should be able to use this section as a recipe for re-running the study.” Another said, “Methods should fully explain how the research was conducted and should be detailed enough that the study could be replicated with relative ease.”

Beyond that, there was far less consistency in what specific details people were looking for. There were mentions of data analysis (“I look at analysis techniques to make sure conclusions are supported by findings.”), data collection (“After that, it is methods especially sampling procedures and data collection including instrument development. If poor, then data collected and resulting conclusion and recommendations come into question.”), participant selection (“If the study was poorly executed, or if it relies on convenience sampling, I typically throw it out.”), and validity and reliability (“Methods need to have a discussion of reliability and validity or triangulation/dependability etc.”).

**Results.** The most frequently mentioned criterion relates back to the earlier theme of clarity: clearly presented results. One reviewer said, “Clear display of data (tables/other visuals); well-organized narrative explaining data.” Another reviewer said, “Results should clearly, and in an easy to understand manner, detail the findings of the research.” A third reviewer said, “That they are stated clearly and complete.” Poorly written results were also mentioned commonly as a red flag. One reviewer said “poorly organized or confusing results” was a red flag, while another listed “haphazardly written results section” among their red flags. Part of this organization was reporting results by objective: “Logically reported - use research questions as a guide to report the result.”

Correct interpretation of results was commonly mentioned. Three of the reviewers mentioned it more than once in their responses. One reviewer said, “In both quantitative and qualitative studies, I look for appropriately selected and interpreted analyses.” Another reviewer said, “I look at analysis techniques to make sure conclusions are supported by findings.” A common red flag was misinterpretation of results: “Making comparisons and inferences from descriptive statistics is a red flag for me.”

**Conclusions.** The two most frequently mentioned criteria related to conclusions were that they were supported by findings and tied to the literature. No other criteria were mentioned by more than two reviewers.

For supported by findings, one reviewer said, “Concrete answers to research questions/objectives that are supported by the findings.” Another reviewer said, “Summary of the major insights with plausible and supported explanations.” Part of being supported by findings was making sure authors were not overstating their findings. One reviewer said, “Don't conclude beyond the results and ties back to the literature.” Another said, “Conclusions are not draw[n] beyond the scope of the findings.”

For tying back to literature, one reviewer said, “Conclusion should make a clear tie back to the literature presented in the intro, lit review, and theoretical framework sections to help make sense of what was found for the reader.” Another reviewer asks, “Do they incorporate information from the lit review and framework?” Introducing new literature in the conclusions was mentioned as a red flag: “Introducing new literature in the results/conclusions/recommendations sections.”

**Recommendations.** In their recommendations criteria, there was not consistency between reviewers in what they were looking for. The two most frequently mentioned things were recommendations for practice and research, though the responses were not typically specific, and the two were usually mentioned together. One reviewer said, “Clear, practical advice for practitioners and for future research.” Another reviewer said, “Clear and practical recommendations should be made for both practice and future research. Many times, authors miss some major recommendations that come out of the results. Making sure thorough and applicable recommendations are made is important.” One reviewer who was more interested in practical implications made the comment in reference to future research: “Suggestions that extend beyond the next study - answer the question ‘how will/can readers use this information to inform practice or study.’”

One of the other criteria mentioned was that the recommendations were applicable, which was also relatively vague. One reviewer in making the decision to accept or reject asks, “Are the recommendations applicable to many?” Another reviewer said, “Making sure thorough and applicable recommendations are made is important.”

The last criterion was that the recommendations were related to the study. One reviewer said, “Related to the study and ‘don't go off topic’ to reflect personal opinions or biases.” Another reviewer said, “I look to ensure the recommendations are based on the results and are not generalized outside of the scope of the study.”

### **Conclusions**

In terms of time spent reviewing, reviewers had varying responses. The variation is not unexpected because peer review expectations are not always formally acknowledged (Johnson & Hermanowicz, 2017). About half took less than 2 hours to review, while the other half took more than two hours to review. For process, notetaking was a common tactic, though some were reading the paper before taking notes, while others took notes as they went along. Rubrics were also used before reading, but this was not mentioned by all reviewers. And some were reading the paper or sections more than once as they completed their review. The use of the rubrics/guidelines in the review process is not unexpected (Lee, 2011).

While there was variance in terms of what reviewers were looking for, there were some trends. In terms of big picture commonalities, reviewers were looking for connection between sections of the paper, overall quality of the work, writing quality, clarity of what is written, and the overall contribution of the paper. Some of these require work prior to the paper being written

(i.e., overall quality of work and contribution of the paper), while the others are more geared toward the writing process.

In specific sections, there were commonly mentioned criteria. For the introduction, reviewers generally looked for justification, background/context, and problem statement/purpose. For the literature review, source quality and completeness of prior research listed were the most commonly mentioned. For the theoretical framework, reviewers were looking for support of the theory choice and explanation of the theory. The two most frequently mentioned criteria for methods were sound methods and wanting details in that section. For results, reviewers were looking to see these were clearly presented and correctly interpreted. For conclusions, reviewers wanted to see these were supported by the findings and tied to the literature. For recommendations, there was a lack of consistency between reviewers' responses. Reviewers wanted to see recommendations for practice and research, though they were not more specific in what that meant. Applicable recommendations that were related to the study were about as specific as reviewers got in their responses.

These findings can be seen as a general roadmap for what reviewers commonly look for, but it should be noted that not all reviewers mentioned every criterion. Variety between reviewers is common in peer review (Johnson & Hermanowicz, 2017; Kachelmeier, 2004; Shoulders et al., 2015). There is also the possibility that reviewers did not mention all of what they assess because they either did not remember at the time of their response.

In analyzing responses from reviewers, there were a couple of times responses included aspects that could be red flags. One of those red flags was the desire to see citations from *Journal of Applied Communications* and *Journal of Agricultural Education*. This is a gray area because it is common to expect authors to cite relevant literature and these journals will have much of the agricultural communications literature, but it could be argued that this is evidence of the type of citation coercion that is to be avoided (Johnson & Hermanowicz, 2017). Another red flag was a reviewer stating they did not want to see the same thing they have seen published. Because this was an anonymous questionnaire, the reviewer could have meant research that had multiple replications, but it is worth noting the response because of the increasing attention given to studies with results that did not replicate, which necessitates more replications to ensure the published literature is accurate (Open Science Collaboration, 2015).

## **Recommendations**

### **For Practice**

The biggest recommendation for authors is to understand that different reviewers are looking for different criteria. There are some commonalities, but the results of this data and past research indicate that variance should be an expected part of the peer review process (Johnson & Hermanowicz, 2017; Kachelmeier, 2004; Shoulders et al., 2015). Demystifying the peer review process is important, but authors should continue to expect variation between reviewers. The goal should not be cookie-cutter papers that never challenge the status quo, but academia exists in a “publish-or-perish” model and authors need to understand what reviewers are looking for if the authors are to be successful.

For reviewers, the results of this paper can show different practices and preferences reviewers can employ. Ultimately, the peer review process is about trusting the expertise of the reviewers (Lee et al., 2013), so reviewers should not change how they review simply to match what others are doing, though reviewers should always strive to stay up-to-date with theory and research being employed in the discipline (Daly et al., 2007; Pain, 2016), including remaining

aware of issues facing social science, such as the replication crisis (Open Science Collaboration, 2015) and misuse of statistical significance (Head, Holman, Lanfear, Kahn, & Jennions, 2015). Reviewers should also strive to be open-minded in the review process because research is not a one-size-fits-all model. An example is the use of theory. While most research should contribute to theoretical knowledge (Baker & King, 2016), theory is not appropriate for all types of research (Kitchel & Ball, 2014). This current paper, for example, does not employ a theoretical model and is not meant to contribute to a theory base. It is instead meant to contribute to the improvement of the peer review process in agricultural communications.

For reviewers looking to understand what the baseline review process looks like, they should allot about two hours, take notes in the review process, and be prepared to read at least some parts of the paper more than once. But functionally, this recommendation can only serve as a starting point. Reviewers need to find a process that works for them. Reviewer fatigue is a common woe of academia (Johnson & Hermanowicz, 2017; Tiokhin et al., 2019; Tite & Schroter, 2007), so reviewers need to find a sustainable way to serve the important role of reviewing even though reviewers are the least incentivized component of the peer review process (Johnson & Hermanowicz, 2017).

For journals and conferences, it is important to note that using the review form was a common practice to prepare for a review, so ensuring clarity of the review form could aid reviewers. It is also recommended that authors have access to the rubrics to understand how they are being evaluated as they prepare their manuscripts.

The common lament of reviewer fatigue (Johnson & Hermanowicz, 2017; Tiokhin et al., 2019; Tite & Schroter, 2007) combined with the lack of incentives for reviewers (Johnson & Hermanowicz, 2017) indicates a need to find a way to lessen the burden on reviewers and/or help incentivize review. One key consideration is that everything that makes it easier to submit papers increases the burden on reviewers (Tiokhin et al., 2019). Increasing the cost of submission, literally or figuratively, can help ensure authors are not submitting papers that are not ready for the peer review process (Tiokhin et al., 2019). While financial cost can be used, it is also possible to increase the figurative cost of submission by limiting the number of submissions that can be made (Tiokhin et al., 2019). Limiting submissions can be have different manifestations, including limiting the number of times an article can be revised before it is rejected, preventing submitting a paper at more than one conference, and limiting the number of articles any individual author can submit to a conference. Within agricultural communications, there are multiple journals and conferences where agricultural communications research is published, but those outlets often have overlapping pools of reviewers.

Part of this process, though, depends on the quality of peer review. If only high-quality papers are accepted, authors lack incentive to submit low-quality papers, but if reviewers are accepting low quality papers, authors will keep submitting low quality papers. Improving the peer review process is necessary to decrease the burden of the peer review process (Tiokhin et al., 2019).

Mentorship and training are avenues for taking some of the unwritten rules of peer review and making them known (Adamson, 2012; Shoulders et al., 2015). An online session has already been held by the Society of Agricultural Communications Scholars (Doerfert & Abrams, 2018). Another option is for graduate programs to include peer review as a component of their coursework. Research methods courses would be an ideal place for this to occur, but it could also be its own standalone seminar course, which was done at Texas Tech in 2008 by M. Todd Brashears.

While systematizing the review process could alleviate author stress that arises from different reviewers having different expectations, homogenizing the review process should not be the goal; instead this research can be used to help improve awareness of what reviewers are looking for (Adamson, 2012). Bias is an inherent part of the peer review process and will never be completely removed, but the more the discipline knows about what is going on in the black box of the review process, the more readily agricultural communications can adjust and improve to the peer review process. A more practical recommendation for dealing with bias is for reviewers to clearly explain the rationale for their decisions on papers so that authors understand why the decision was made, even if they may end up disagreeing.

### **For Future Research**

This research is a first step for looking at peer review in agricultural communications, but there is more research that can be done. Some participants gave vague responses. Each reviewer's interpretation of what those concepts should look like in a research paper could differ, which has ramifications for the review process. Interviews could be conducted that allow for follow-up questions to be asked when vague responses are given.

Another aspect of the review process would be conducting research similar to the Shoulders et al. (2015) study that addressed reliability between reviewers in AAAE conference reviews. While identical reviews should not be the goal of peer review to ensure multiple perspectives of research, it is still worth knowing how much variability is already present to assess if it is at an appropriate or inappropriate level.

While perspectives of reviewers are important, it is also worth exploring authors' perceptions of the process, as well as those who have overseen the peer review process for conferences and journals to lend a different perspective. From the authors' perspectives, it would be worth determining what they have found helpful and unhelpful from the review process. From those who have overseen the review process, it would be worth noting what they have seen behind the veil of peer review, though they would not be able to be specific given the nature of blind peer review still needing to be blind.

Future research could also look at the acceptance rates of research by various criteria to see if there is certain research that is more likely to be accepted or research by certain groups of people. For example, this could look at acceptance rates by theories and models used. Because peer review is inherently biased, if research were to show an unwarranted preference for certain theories and methods, then that is something the discipline could address.

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