Reconsidering the Use of the Passive Voice in Scientific Writing

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ABSTRACT
I briefly review the use of the passive and active voices in scientific writing and formulate an argument in favor of the active voice’s use. I provide fictitious examples of each narrative type and make a side-by-side comparison. Each style has advantages and disadvantages. Papers written in the active voice are concise and clear, although they are also considered colloquial and unsophisticated. Those written in the passive voice, in turn, are centered on the actions—rather than on the individuals—and are perceived as more objective but can also be ambiguous and pompous. I conclude this essay by noting that the active voice—with its greater economy, simplicity, and precision—is now pervasive in scientific writing, and I urge educators to greatly reduce teaching and enforcing the use of the passive voice.

Key Words: active voice; ESL science writers; American; European; and world scientific journals.

People unfamiliar with scientific papers—including students and the general public—find scientific writing arid, impersonal, and alien (Hyland, 2002b). Professionals and professionals-in-training also agree with these perceptions (Millar & Budgell, 2019). I think this can be attributed not only to the complicated subjects and specialized jargon of scientific writing, but to its use of the passive voice. The passive voice—a writing style in which the action takes center stage and the subject (I or we) is removed from it—is much less present in scientific papers than it used to be (Arnaudet & Barrett, 1984). The active voice, in turn, with its more personal way of placing actors first, followed by their actions, has gained popularity for its many advantages over the passive voice.

In countries where English is the first language, or that have a long tradition of publishing scientific papers in English, many (most?) scientific disciplines seem to have settled this dispute in favor of the active voice (e.g., Moore, 1991; Hyland, 2002a; Kalkestinova, 2011). In those countries, the prevalent use of the passive voice has largely been dropped—though unevenly in different disciplines—and it now seems to be a thing of the past (down to about 10–30% of text constructions analyzed in periodicals; Millar et al., 2013; Leong, 2014).

By contrast, the adoption of the active voice in places where English is a second language seems to be lagging way behind. Periodicals published in English in those countries—and this extends to the thousands of papers annually written by authors from non-English-speaking nations and submitted to North American and Western European journals—continue to be written in the passive voice, a practice that limits the reach and clarity of their communication. There, the passive voice is not only prevalent and pervasive but heavy-handedly enforced in universities, research institutes, and the aforementioned regional scholarly publications.

This old-fashioned writing style is at odds with the clarity, precision, and ease of the active voice. Here, I issue an appeal to teachers, scientific writers, and journal editors to substantially—even drastically—reduce the use of the passive voice in the narrative of their works. In this short piece, I discuss the use of the passive voice in scientific writing in North American and Western European journals, as well as the teacher- and editor-enforced (but often self-inflicted) prevalence of this writing style in many scientific journals from many regions of the world. I provide examples of the active and passive voices in scientific texts, highlight the advantages and disadvantages of each, and question whether the choice of passive vs. active voice is a valid stylistic dichotomy that we need to choose from—and why the solution to this debate may lie in the use of a mixed style that maximizes the advantages of either narrative strategy while reducing the pitfalls of each.

“This article is not a fundamentalist call to stop the use of the passive voice, but rather a plea for acceptance of the active voice.”

The American Biology Teacher, Vol. 82, No. 8, pp. 563–565, ISSN 0002-7685, electronic ISSN 1938-4211. © 2020 by The Regents of the University of California. All rights reserved. Please direct all requests for permission to photocopy or reproduce article content through the University of California Press’s Reprints and Permissions web page, https://www.ucpress.edu/journals/reprints-permissions. DOI: https://doi.org/10.1525/abt.2020.82.8.563.
The passive voice has been criticized plenty for creating an impersonal, faceless discourse (Jolly et al., 1996; Hyland, 2002b). The passive voice denies the subject the emphasis that the actual action deserves. Now it is clear that the authors performed the fieldwork and obtained the results described. Some authors argue, however, that scientific writing in the active voice loses credibility and reads as less objective and scholarly (Leather, 1996).

Examples of Narratives in Active & Passive Voice

In the passive voice, what matters is the action (Hyland, 2006). The subject responsible for the action is largely or totally removed from the narrative. Colloquially speaking, the passive voice denies the importance of the discoverer in order to focus on what is deemed truly important: the value of the actual discovery. This is illustrated by the following two examples.

- **Example 1 (from a methods section):** “Blood samples were processed directly in the field. Each sample was placed in an Eppendorf tube and processed with a portable ABC123 battery-powered centrifuge in order to obtain its plasma. Plasma samples were transported from the field in a cooler, and later stored in a freezer at −4°C until analyzed for contaminants.”

- **Example 2 (from a results section):** “The sex ratios of birds in both populations were similar ($\chi^2 = 0.16, df = 3, P = 0.08$). However, the reproductive success of colony A was found to be higher than that of colony B.”

In both of these examples, what happened in the field takes priority over who did it. Much more than that, the subject executing those actions is completely removed from what happened in the field. Was it one, two, or three collectors? Did the paper’s authors actually participate in fieldwork? Questions like those arise immediately upon reading. The impersonal style of the passive voice has been criticized plenty for creating an impersonal, faceless discourse (Jolly et al., 1996; Hyland, 2002b). The active voice, in turn, is not shy at all about who performed the actions, as seen in the following revisions of the first two examples.

- **Example 3:** “We processed blood samples directly in the field. We placed each sample in an Eppendorf tube and processed it in a portable ABC123 battery-powered centrifuge in order to obtain its plasma. Before storing them in a freezer at −4°C for contaminant analysis, we transported field plasma samples in a cooler.”

- **Example 4:** “We found similar sex ratios of birds in both populations ($\chi^2 = 0.16, df = 3, P = 0.08$). However, we also found that the reproductive success of colony A is higher than that of colony B.”

Advocates of each voice have stated the pros and cons of each (Table 1). The active voice is criticized for being colloquial and for granting the subject the emphasis that the actual action deserves. The passive voice, in turn, is criticized for unnecessarily making texts convoluted, for being responsible for misattribution of the subject, and thus as doing “a disservice to students and teachers” (Hyland, 2002b). One author has called use of the passive voice a “distancing strategy” (a way to disengage the doer from an unacceptable action; Bohner, 2001). Another author (Leather, 1996) has even blamed the active voice for the increasing occurrence of fabrications and fraud in scientific papers!

### Table 1. Advantages and disadvantages of using the active and passive voices in scientific writing. I list the most common descriptors used to define these narrative styles.

|                      | Passive Voice                  | Active Voice                 |
|----------------------|--------------------------------|------------------------------|
| **Advantages**       | Stresses what was done         | Clear                        |
|                      | Perceived as more objective    | Short                        |
|                      | Traditional                    | Direct                       |
| **Disadvantages**    | Ambiguous actors               | Perceived as colloquial      |
|                      | Lengthy                        | Risks focusing on the actor  |
|                      | Pompous                        | Unsophisticated              |

Three Reasons Why We Should Greatly Reduce Our Use of the Passive Voice

As noted above, the passive voice survives in a number of North American and Western European journals of certain disciplines and is still widespread and dominant in scientific publications from many countries where English is not a first language. Its adoption doesn’t seem to be hindered by language structure: I am unaware of any grammatical or syntactical rules that prevent the adoption of the active voice in other languages. For example, the construction of sentences in the passive voice in Spanish requires the same combination of the verb to be in the infinitive (used as an auxiliary) and the sentence’s verb as a past participle, just like in English (López Fernández, 1998).

The common overuse of the passive voice by authors from non-English-speaking countries in their submissions to North American and Western European journals results in numerous rejections or lengthy requests to change the narrative style to the active voice. In my opinion, the continued use of the passive voice by many native as well as non-native English speakers – and their unwillingness to adopt and harness the advantages of the active voice – simply reflects an ingrained habit defended by the single argument of
tradition. That tradition is enforced in higher education and by journal editors in some places, in spite of being archaic.

Should the passive voice be fully replaced by the active voice? (The reader may have noticed that I have written several sentences in the passive voice in this article!) The answer is no. I offer three reasons in support of reducing or eliminating the overuse of the passive voice: (1) The active voice’s straightforward, vigorous precision and economy makes it much more valuable than the passive voice in writing. It enhances comprehensibility and is more personal and friendly to the reader (Millar et al., 2013). (2) Insistence on the passive voice tends to result in lengthy, entangled sentences, difficulty in conjugating verbs, and an awkward, ambiguous narrative style (Millar & Budgell, 2019). (3) The active voice is now prevalent in most North American and Western European literature, chosen for its advantages (Leong, 2014). In these regions, sociolinguists and other analysts posit that the active voice has already overcome the barrier of being seen as less objective and less credible (Kahn, 1992; Jolly et al., 1996; Hinkel, 2004).

**Conclusion**

Should the passive voice be replaced by the active voice in every instance? I don’t think so. Both voices have important roles in writing (Strunk & White, 2000, p. 18). For example, the active voice can be awfully repetitive in initiating sentences: “I did...,” “We compiled...,” “We processed....” (The reader may also have noticed that I modified the syntax of the last sentence in example 3 to avoid excessive focus on the first person.) The passive voice – even in the aforementioned North American and Western European scientific journals – is still somewhat common in some sections of manuscripts, particularly in the methods and results sections.

This article is not a fundamentalist call to stop the use of the passive voice, but rather a plea for acceptance of the active voice. The active voice can be taught early in the training of future scientists – for example, in the writing of report and essay assignments. Such openness can help us advance, improve, and simplify our writing. And this is a particularly important issue for writers for whom English is a second language.

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**References**

Arnaudet, M. & Barrett M. (1984). Approaches to Academic Reading and Writing. Englewood Cliffs, NJ: Prentice Hall.

Böhner, G. (2001). Writing about rape: use of the passive voice and other distancing text features as an expression of perceived responsibility of the victim. *British Journal of Social Psychology, 40*, 515–529.

Hinkel, E. (2009). Tense, aspect, and the passive voice in L1 and L2 academic texts. *Language Teaching Research, 8*, 5–29.

Hyland, K. (2002a). Authority and invisibility: authorial identity in academic writing. *Journal of Pragmatics, 34*, 1091–1112.

Hyland, K. (2002b). Options of identity in academic writing. *ELT Journal, 56*, 351–358.

Hyland, K. (2006). *English for Academic Purposes: An Advanced Resource Book*. Abingdon, UK: Routledge.

Jolly, C.J., Goodman, N.W. & Baskin, T. (1996). Hazards of the passive voice. *Nature, 381*, 730.

Kahn, M. (1992). The passive voice of science: language abuse in the wildlife profession. *Trumpeter, 9*, 152–154.

Kallestinova, E.D. (2011). How to write your first research paper. *Yale Journal of Biology and Medicine, 84*, 181–190.

Leather, S.R. (1996). The case for the passive voice. *Nature, 381*, 467.

Leong, P.A. (2014). The passive voice in scientific writing: the current norm or possible’: the impact of style guidelines in medical journals. *Journal of Science Communication, 13*, 1–16.

López Fernández, J. (1998). La voz pasiva y la construcción impersonal en español: dos maneras de presentar, manipular y seleccionar información. *Instituto Cervantes/Centro Virtual Cervantes, Madrid, Spain*. https://cvc.cervantes.es/ensenanza/biblioteca_ele/asele/pdf/09/09_0570.pdf.

Millar, N. & Budgell, B.S. (2019). The passive voice and comprehensibility of biomedical texts: an experimental study of 2 cohorts of chiropractic students. *Journal of Chiropractic Education, 33*, 16–20.

Millar, N., Budgell, B.S. & Fuller, K. (2013). ‘Use the active voice whenever possible’: the impact of style guidelines in medical journals. *Applied Linguistics, 34*, 393–414.

Moore, R. (1991). How we write about biology. *American Biology Teacher, 53*, 388–389.

Strunk, W. & White, E.B. (2000). *The Elements of Style, 4th ed.*. Needham Heights, MA: Longman.

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