

Structuring Scientific Papers Using Language Elements of Style

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Abstract: This paper aims to provide guidance on structuring scientific papers using elements of style in language. It is particularly valuable for novice scientific writers who need to grasp the fundamental concepts of language elements. This knowledge is essential for students, scholars, teachers, and scientists who seek to enhance their language skills for effective communication. The paper emphasizes the use of hedging, addressing issues, and proposing solutions. Furthermore, the article outlines the Elements of Style for Writing Scientific Journal Articles, including fundamental rules of manuscript language. It emphasizes the importance of avoiding common errors and being mindful of the reader's perspective. The language in scientific writing should prioritize accuracy, conciseness, clarity, and objectivity. The use of a spell-checker is recommended to prevent errors, and adherence to basic rules of manuscript language is crucial. The paper also addresses various language aspects such as tenses, grammar, sentence structure, and paragraph organization. It underscores the significance of understanding and using professional jargon in the respective field. Authors should double-check unfamiliar words or phrases. Abbreviations and acronyms should be avoided, and contractions like "it's" and "isn't" are not suitable for professional writing. Direct and concise sentences are generally more effective, with the recommended sentence length averaging around 12 to 17 words. The concept of hedging, which involves using words like "suspect," "could," "might," "possibly," "seems possible," "may," and "if," is explained. These terms allow writers to express their interpretation and indicate their attitude toward the accuracy of the statements they accompany. Hedging helps present unverified claims with caution while softening categorical assertions. It is advisable to frame sentences in positive form whenever possible.

Keywords— hedging, words, phrases, elements, style

1. INTRODUCTION

Hedging and the use of language to express possibility are fundamental elements in scientific writing, as statements in this context are rarely presented without subjective assessments of their validity. Hedging serves as a significant means through which a proficient researcher signals their affiliation with the scientific community. It

contributes to a better understanding of the methods employed for reasoning and persuading on various issues and outcomes. The skill of hedging statements is essential for achieving success in contemporary academic endeavours. However, mastery of these implicit social and linguistic rules is not easily acquired, and there are no quick fixes. In addition, the response to this issue should encompass three primary areas.

Firstly, science faculties need to acknowledge the impact of cultural shifts on students' ability to communicate effectively. In recent times, university departments have often overlooked the distinctions between scholars' and subject cultures. Moreover, science faculties should recognize that students may not possess sufficient awareness of the socio-pragmatic aspects of language use. Learners will only develop appropriate discourse strategies when they grasp the importance of catering to academic audiences. Nevertheless, research indicates that classroom writing scenarios are frequently contrived, primarily aimed at demonstrating knowledge without fostering genuine communication.

For instance, many graduate students in the sciences often write reviews, lab reports, and project proposals without a clear understanding of hedging. There is a definite need for subject-specific lectures that introduce written work with a variety of purposes and audiences. English for Specific Purposes (ESP) instructors should broaden their perspective beyond the notion that scientific writing is solely about precision and detachment. It should be acknowledged that the use of hedges is a subtle and agreed-upon practice within academic culture.

Unfortunately, only a few published ESP courses delve into the interpersonal aspects of writing. Moreover, it is quite rare for students to receive explicit instruction on the concept of hedging. Therefore, there is a pressing need to ensure that students are thoroughly educated about hedging. Furthermore, students must be made aware of the specific expectations of their audience, including the required level of accuracy, caution, and deference. Achieving this goal can be accomplished by encouraging authentic writing tasks and by evaluating and manipulating model texts.

In the pursuit of a solution, it is essential for all of us to eventually turn to applied linguistics to analyze hedges and their role in genre construction. One of the primary reasons for scholars not receiving adequate training in the use of hedges is the lack of empirical evidence regarding the conventions of different academic communities. Existing corpus studies have either encompassed a diverse range of registers or have been primarily focused on spoken discourse or modal verbs.

2. ELEMENTS OF STYLE FOR WRITING SCIENTIFIC JOURNAL ARTICLES

2.1 Basic rules of manuscript language

When it comes to manuscript language, precision is paramount and should be characterized by precision, brevity, clarity and objectivity. To minimize errors, it is advisable to use a spell checker. In addition, it is important to pay attention to aspects such as tenses, grammar, sentence structure and paragraph organization. Specifically:

Tenses: Correct tenses should be used to make your post easy to understand. The guidelines for times are as follows:

Present Tense: Use the present tense when presenting facts and hypotheses, such as: "The average lifespan of a dog is 10 years."

Past Tense: Use the past tense to describe experiments and their results, for example: "The average lifespan of dogs in our environment was 8 years." Avoid shifting tenses within a single unit of text, be it a paragraph or a subsection.

Voice: For shorter sentences, it is recommended to use the active voice. However, in the section devoted to methods, the passive voice may be more appropriate. The active phrase "we found that" is preferred because it is simpler and more effective than the passive construction, "it was found that" or "it was."

Abbreviations and Acronyms: Avoid using abbreviations and acronyms in professional writing. Avoid contractions like "is" or "isn't". Abbreviations should not be used as a substitute for citations. We generally do not recommend them in the abstract and conclusion sections. Be sure to eliminate redundant words and phrases.

Elements of style for writing articles for a scientific journal: Get into the habit of double-checking unfamiliar words or phrases to maintain clarity and accuracy in your writing.

By following these guidelines for language and style, your scientific writing will be more effective and communicate your research findings with greater impact.³ For a successful manuscript, pay attention to sentence structure. Direct and short sentences are better. The average sentence size should be about 12-17 words. Keep only one piece of information per sentence. No short sentences to avoid confusing readers. No more statements in one sentence. For a clear story, it is better to express a single idea, even complex sentences, etc. in a paragraph. Related words should be together. The subject and verb should be closer to each other for better understanding. Then the reader should pay attention to the way you write.. Hedges, such as "suspect," "could," "might," "possibly," "seems possible," "may," and "if," serve to articulate interpretations and enable writers to communicate their attitude toward the accuracy of the statements they are linked to, thus ensuring a more careful and nuanced presentation of unproven claims.

2.2 Simple rules of manuscript language

Tenses, Grammar, Sentences, Paragraphs

Tenses

We need to be attentive while using the appropriate tenses when discussing work and outcomes. Being reliable and grammatically acceptable in the practice of tenses makes your paper easier to comprehend.

Present tense:

It is better to go with the present tense for well-known facts and hypotheses, for instance, "The normal range of fasting blood sugar is 70-110 mg/dl."

Past tense:

It is better to go with the past tense for discussing investigations that have been conducted and the outcomes of these experiments, for instance, The normal range of random blood sugar was < 140 mg/dl. Consider avoiding shifting tenses within a paragraph.

Grammar

Consider using the active voice for brevity. The passive voice can be used in the method part of the work, but the active voice generally makes the sentences shorter, more dynamic, and more engaging to the reader. Feel free to use the active phrase "We found this...". This allows you to quickly let the reader know that he is referring to one of your findings. This expression is much more concise and concise than writing in a passive voice like this: B. "It was determined that there was...". Abbreviations and acronyms should be avoided. Also, avoid abbreviations such as "it's," "isn't," and "weren't," which are not often used in professional writing. Do not use abbreviations/acronyms unless they are well known. Do not use acronyms instead of citations. Avoid acronyms in summaries and conclusions. Remove redundant words and phrases.

A writer needs to be aware of the jargon used in his/her professional field. Other Elements of Style for Writing Scientific Journal Articles include

Has → occupies

Tells → informs

Tells → defines

Arrangement → configuration

Outermost → valence

Qualities → properties

Check for unfamiliar words or phrases.

Sentences

To produce a compelling manuscript, it is crucial to focus on sentence structure. Writing short and direct sentences is recommended, with an average sentence length of around 12 to 17 words in academic writing. Each sentence should convey only one piece of information to maintain clarity. Short bursts of factual information are preferred, as long and complex sentences can bewilder readers. Avoid packing multiple statements into a single sentence, and ensure that each sentence conveys a distinct idea.

Link sentences within paragraphs to establish a coherent narrative, keeping related words close together. Place the subject and verb in close proximity to clarify the subject's action for the reader. Be mindful of sentence order, utilizing the "stress position" for new information to emphasize it, while the "current position" contains the

preceding or "old" information, leading to the emphasis. Arrange sentences to place the current position before the accent position.

For instance, instead of saying, "Based on the analysis of the self-assessment report, this participant performed better in 2017 than any period found in the observational database," a more effective approach would be to emphasize the crucial information: "In 2017, this participant outperformed all other periods in the observational database, as revealed by the analysis of the self-assessment report. "Wrote: "Self-assessment report performed better than any period found in this 2017 observational database, based on our analysis. "Put statements in a positive form.

For instance,

Positive: "They normally came early."

Negative: "They are very often on time."

Paragraph

To craft an effective manuscript, consider the following guidelines for paragraph structure and coherence:

One Topic, One Paragraph: It is advisable to dedicate each paragraph to a single topic. Commence each paragraph with a clear and concise topic sentence that encapsulates the main point. Conclude the paragraph in a manner that relates to the initial topic. Avoid the practice of stringing together disconnected sentences within a paragraph.

Consistent Parallel Structure: Maintaining a parallel structure within a paragraph aids the reader in comprehending the content. Ensure that the structure and format of your sentences are consistent, making it easier for the reader to follow your line of reasoning.

Tense Consistency: Maintain consistent tenses within each paragraph. This uniformity in tense usage contributes to the coherence of your writing and aids in the reader's understanding.

Logical Transitions: Create a smooth and logical transition between paragraphs. These transitions should guide the reader from one thematic area to the next, ensuring a clear flow of ideas throughout your manuscript.

Well-Structured Paragraphs: Organize your paragraphs effectively, with sentences that allow the reader to transition from familiar concepts presented at the beginning to new ideas introduced toward the end of the paragraph. This structure enhances the reader's comprehension and engagement with the text.

By following these recommendations, you can enhance the clarity and organization of your writing, making it more accessible and engaging for your readers.

2.3 Classic errors to avoid

Avoid using "this" unqualified.

Avoid: "We found this to be the most important facet of the liver function tests."

Write: "We found this feature of the blood to be the most important facet of the liver function tests."

What does "this" refer to? If the reader must guess, then the guess could be wrong. Even when it is "obvious" what "this", "that", "these", or "those" refers to the author serves the reader well by clearly qualifying. Avoid too many successive prepositional phrases.

Avoid: "We ran a model imitation for research into the evolution of the blood cells."

Write: "We ran a model simulation to conduct research into blood cell evolution."

Run-on prepositional phrases are awkward to read. They can rapidly lead to reader fatigue. Avoid subjective or redundant words or phrases that will date the paper.

Avoid subjective or judgmental adjectives.

"Simple" has meaning to the reader only when the authors explain the opposite "complex" "realistic" or "complete".

Readers should not be asked to read the minds of the authors or to share the authors' opinions.

Avoid expressions of belief.

Avoid: "We believe this model results to be true."

Write: "Our analysis demonstrates the consistency of this model's outcome with the empirical evidence."

Communication of science is not about conveying belief.

Instead, effective scientific communication involves the methodical development of lines of evidence that logically lead to the formulation of hypotheses, theories, or conclusions based on the available evidence. It is important to refrain from making vague statements and using consecutive adverbs.

2.4 Always remember your reader

The abstract serves as a brief yet comprehensive summary of the primary objectives and outcomes of your work. If it lacks clarity and fails to pique the reader's interest, they may not proceed further.

In the introduction, you should establish the context for why the paper is worth the reader's attention and delineate its place within the existing body of literature. Highlight the novel aspects of your work within the introduction to engage the reader's interest and motivate them to explore the main content. Nonetheless, keep the introduction concise to avoid overwhelming the reader.

Efficiently guide the reader to the crucial sections of the paper early on. They need to understand what they've read and why it carries significance. Remind them of the value of your paper and why it warranted publication. The concluding sections also offer an opportunity to set the stage for potential future research directions. In the case of "writing," scientists use definite scientific writing styles to interconnect their findings in a way that simplifies across many disciplines. Scientific writing, like all formal writing, necessitates a firm basis in English sentence construction, usage, and punctuation

3. CONCLUSION

In summary, when it comes to writing scientific journal articles, it is crucial to prioritize the Elements of Style, which encompass basic rules of manuscript language, avoidance of common errors, consideration of the reader, proper use of cross-references and figure captions, and the process of writing and rewriting. Additionally, attention should be given to the aspects of tenses, grammar, sentence structure, and paragraph organization. Writers should also be well-versed in the jargon specific to their professional field. The strategic use of hedges, such as "suspect," "could," "might," "possibly," "seems possible," "may," and "if," is essential for conveying interpretations and indicating the author's stance on the veracity of accompanying statements. This approach allows for the careful presentation of unverified claims and softens the tone of categorical assertions in scientific writing.

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