Finding the action in your writing: Avoiding nominalisation

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Abstract
Dense, hard-to-follow writing obfuscates complex subject matter, but writers can improve their ability to communicate complex topics with clear writing that is easily understood on a first read. Science and medical writing often contain grammatical constructs, including nominalisations, which require the reader to perform "mental gymnastics" to discover the actors and the action of the sentence. Reading for nominalisations and rescuing the verbs that they hide reveals the action. The writing becomes more engaging, easier to understand, and more likely to capture the reader's interest. Here I discuss how to recognise and edit nominalisations, concluding the article with some short sentences for practice.

Communicating the Passion of Science

For me, communicating science is a passion. Nothing is more thrilling than listening to a scientist present her work, conveying not only the scientific principles but also her wonder and amazement of the questions explored and the new things discovered. Good science writing communicates both the subject matter and the enthusiasm and wonder of the scientist to the reader. Unfortunately, when ploughing through the scientific or medical literature for an article assignment, I often end up bogged down in dense text that often obscures the science and dampens my enthusiasm. Science and medical scholarly articles can be deadly reading; they can take an amazing and wonder-filled story and make it

dense, officious, and boring, draining all of the vitality from the science.

Complex subjects such as scientific and medical topics, however, do not require dense, hard-to-follow writing; nor do they require "dumbing-down" the text in order to be readable.[1] On the contrary, writers who genuinely care about their readers and their subject matter work hard to ensure that their writing is clear, engaging, accurate, and easy to understand. They edit their work by looking at several key features that serve as flags for poor writing.

Nominalisations can hide the action of your science story

Nominalisation is a key flag of dense writing. When we nominalise words, we take verbs and turn them into nouns. Students and academic writers tend to nominalise words when they are writing to impress, creating officious-sounding text. Nominalisations are often associated with passive voice constructs and hide the action.

Often you can recognise a nominalisation by the "–ment" or "–tion" endings on the word. Consider the sentence: "A luminometer is required for measurement and subsequent establishment of ATP levels." Both measure*ment* and establish*ment* are nominalisations (of the verbs "measure" and "establish").

The example sentence above came from a draft of directions for performing an assay to detect microbial contamination. To edit the sentence so that the person performing the assay can understand it easily, I would do two things: first, speak directly to the person performing the action, and second, rescue the verbs "measure" and "establish" from the nominalisations. Consider my edit: "You will need a luminometer to measure luminescence and establish ATP levels."

Strunk and White address the issue of "noun used as verb" in *The Elements of Style.* They indicate that while not all nominalisations are bad, all are suspect.[2] This is an important point to acknowledge, particularly in science and medical writing where new terms are being coined continuously and editors need to consider the evolution of our language and the specialised vocabularies of our audience. For instance the phrase "gene expression" contains a nominalisation. "Expression" is a nominalised form of "express", but "gene expression" is a phrase that has a specific, well-understood meaning in scientific circles, and it should not be edited to remove the nominalisation. If you remove the nominalisation, your scientific readers will think that you are unfamiliar with the science, and you will lose your credibility as a knowledgeable source.

The Duke University Graduate School Scientific Writing Resource has a nice lesson about nominalisations.[3] The Duke guide suggests that when you review your writing, you ask yourself as you read each sentence: Is the action shown in the main verb? If the action isn't in the main verb, where is it? Is it hidden in a nominalisation?

As science and medical writers we strive to communicate complex topics as clearly and accurately as possible. One way to do this is to edit difficult constructs like nominalisations that rely on our readers to decipher the actors and actions in our sentences. Bringing the action of your sentences out into the open can make your science writing more engaging for your readers, and engaged readers are more likely to remember what they read and even return for more.

Exercises

Here are some sentences for practice. Identify the nominalised words and see if you can make the meanings more clear by editing some of the nominalisations. Remember all nominalisations are suspect, but not all should be corrected.

1. Exposure to test compounds for several days is commonly used to determine if they cause an inhibition of cell proliferation.

2. Recover time and labour savings from the elimination of sample preprocessing and the use of predispensed reagents.

3. The isolation of DNA directly from whole blood minimises the negative effects of storage.

4. This paper gives an analysis of the brca-2 gene expression in breast cancer cells treated with the newly developed biologic.

5. The physician performed an examination of the patient to make a determination of whether or not surgery would be necessary.

6. Often the challenge is selection of the appropriate treatment protocol for implementation in the patient's care plan.

7. Indeed a major impediment to the interpretability of microarray data is the current lack of comparability from laboratory to laboratory.

8. Data provided by these non-invasive diagnostic assays are found to be in agreement with the more traditional methods used by physicians.

9. This figure provides an illustration of the high-quality results we obtained using this assay method.

10. The quality inspector came to the conclusion that the food product contamination occurred during packaging.

Answer key

1. **Original:** Exposure to test compounds for several days is commonly used to determine if they cause an inhibition of cell proliferation.
   Nominalised words: Exposure, inhibition, iroliferation
   Suggested edit: Cells are often exposed to test compounds for several days to determine if the compounds inhibit cell proliferation.
2. **Original:** Recover time and labour savings from the elimination of sample preprocessing and the use of predispensed reagents.
   Nominalised words: Elimination, use
   Suggested edit: Save time and labour by eliminating sample preprocessing and using predispensed reagents.
3. **Original:** The isolation of DNA directly from whole blood minimises the negative effects of storage.
   Nominalised word: Isolation
   Suggested edit: Isolating DNA directly from whole blood minimises the negative effects of storage.
4. **Original:** This paper gives an analysis of the brca-2 gene expression in breast cancer cells treated with the newly developed biologic.
   Nominalised words: Analysis, expression
   Suggested edit: The authors of this paper analysed brca-2 gene expression in breast cancer cells treated with the newly developed biologic.
5. **Original:** The physician performed an examination of the patient to make a determination of whether or not surgery would be necessary.
   Nominalised words: Examination, determination
   Suggested edit: The physician examined the patient to determine whether surgery was necessary.
6. **Original:** Often the challenge is selection of the appropriate treatment protocol for implementation in the patient's care plan.
   Nominalised words: Selection, Implementation
   Suggested edit: Often the challenge is selecting the appropriate treatment protocol for the patient's care plan.
7. **Original:** Indeed a major impediment to the interpretability of microarray data is the current lack of comparability from laboratory to laboratory.
   Nominalised words: Interpretability, comparability
   Suggested edit: Interpreting microarray data is difficult because we cannot easily compare data among laboratories.
8. **Original:** Data provided by these non-invasive diagnostic assays are found to be in agreement with the more traditional methods used by physicians.
   Nominalised word: Agreement
   Suggested edit: The data provided by the non-invasive diagnostic assays agree with the more traditional methods used by physicians.
9. **Original:** This figure provides an illustration of the high-quality results we obtained using this assay method.
   Nominalised word: Illustration
   Suggested edit: This figure illustrates the high-quality results we obtained using this assay method.
10. **Original:** The quality inspector came to the conclusion that the food product contamination occurred during packaging.
    Nominalised words: Conclusion, contamination
    Suggested edit: The quality inspector concluded that the food products were contaminated when they were packaged.

Author information

Michele Arduengo received her B.A. in Biology from Wesleyan College in Macon, GA, USA, and her Ph.D. through the Biochemistry, Cell and Developmental Biology Program at Emory University in Atlanta, GA, USA. She has worked as an editor and writer in the life sciences for over 15 years and is certified by the Board of Editors in the Life Sciences (BELS). Currently she is a content strategist, editor and writer for Promega Corporation, in Madison, WI, USA.