Author's Toolkit

Writing Better Technical Papers

Ron Read

Human Global Communications Co., Ltd.

(formerly Kurdyla and Associates)

Words can be considered the building blocks of explanatory text, such as a journal article. Although there are clearly limits to this analogy, choosing the wrong type of brick can make the whole building come crashing down.

The Right Word

It's common for a set of words with very similar meaning (synonyms) to give nearly the exact same idea in a given context:

- A large number of previous works found...
- ✕ A big number of previous works found...

Although both expressions are clear and give the same idea, the second obviously has an unsuitably casual *tone* here. But we can't just ban "big" with a universal preference for "large":

- ✕ ...results had a large impact on our decision.
- ...results had a big impact on our decision.

Again, both expressions are very easy to understand and say the same thing. However, the first is somewhat *colder* and less dramatic here. In both cases above, one word fits best.

In technical writing, aiming for the right word often involves *precision* in making an idea immediately clear. This is a common problem:

- ✕ ...with residue spread over the whole surface.
- ...with residue spread over the entire surface.

These two expressions do have the same meaning, but the second one gives a firmer impression of *total coverage*, while the first seems less definite with its conversational tone.

Some phrases that seem fine when spoken sound oddly imprecise in writing:

- ✕ ...and then filtered the rest of the data.
- ...and then filtered the remaining data.

Similar to the previous case, the second expression more firmly implies *completion*.

Sometimes the bad effect of a poorly chosen word is much less subtle than the above cases:

- ✕ ...is a popular method of positron irradiation.
- ...is a commonly used method of positron irradiation.

The first expression can be understood, but it sounds a bit unnatural. *Popularity* generally implies a subjective human preference, that is, a kind of emotional decision:

- Starbright is a very popular toothpaste in Asia.
- The band is popular in both Japan and Korea.

A method, on the other hand, should be selected based on rational decision making.

Sometimes the word that seems the most obvious to clearly express an idea is not:

- ✕ ...could be completed in one procedure.
- ...could be completed in a single procedure.

In this case, the second expression more strongly conveys the idea of one than "one"!

Writing Recommendations

One special writing job is a letter of recommendation, typically for academic posts, technical society fellowships, or awards.

While this isn't difficult to write, some care is needed. First, start it by getting to the point:

- ✕ Professor Itoh is widely praised for his great...
- It is my honor to recommend Prof. Itoh for...

In describing achievements, be concrete and detailed rather than effusive:

- ✕ He has written widely and eloquently on...
- He has written 33 peer-reviewed articles on...

As an effective way to convey detail, don't neglect the powerful impact of *storytelling*:

- ✕ She managed the poster session of last year's conference successfully and effectively.
- For last year's poster session, she personally evaluated each accepted poster and consulted with the authors to raise quality.

Recommend people, not role-fillers.

Writing Questions? read@athuman.com

Mini Quiz: What's Wrong?

- 1) ...is considered as the best solution here.
 - 2) ...is considered the best solution here.
 - 3) ...is viewed as the best solution here.
- (Answers: 1) weak, somewhat old style; 2) better, more modern style; 3) fine)