

## Advice to Scientist-Writers: Beware Old 'Fallacies'

by Henrietta J. Tichy.

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Bits of advice from fallacy land have a strong influence on writing. If cooking were controlled by such misconceptions, indigestion and poisoning would threaten at every meal. Unfortunately, scientists' writing has been poisoned by erring precepts that are no more accurate than a word passed around the circle is for the last listener.

Few people can concentrate on applying a dozen or more of these rigid rules without feeling so constrained that they hate to write. When they are forced to write, everything—diction, sentences, paragraphs—becomes awkward and unnatural, and every revision is made slowly and painfully. The best thing that scientist writers can do for themselves is to escape from the anxiety and strain caused by unnecessarily strict rules.

A good example of one such deadly rigid rule, “always use the passive voice,” is a prescription so frequently pressed on writers of informational prose that it has proved to be one of the most harmful of all the fallacies. It is frequently enunciated by a person in a position superior to a writer's, such as a graduate school professor who insists that students write as the professors do—in the passive voice—in order to appear scholarly, to show objectivity, or to acquire a style like that of journal articles. Unfortunately, some writers have had poor advice impressed upon them so strongly that they cling to the misinformation tenaciously. (A consultant, late for an appointment with a foreign-born engineer who had learned English during his two years in the United States, apologized effusively. “It is nothing,” the engineer replied courteously. “A cigarette was smoked and a book was read while waiting.”)

Now, adroit use of the passive voice where it is suitable benefits style by permitting variations in meaning, stress, pace, and rhythm; but excessive use of the passive limits all components of expression. To write entirely in the passive would seem not just unwise but impossible; yet some misled scientists attempt it. The passive voice weakens style when it is used, consciously and unconsciously, to evade responsibility. One popular passive construction is “It is thought that . . . .” When used anywhere in science and technology, the construction indicates that a general opinion or truth follows. But when scientist writers use it, they are likely to mean “I think that . . . .,” “we think that . . . .,” or even “I hope that somebody reading this thinks that. . . .” Writers using these and other examples of “the evasive passive” run the risk of having their careful readers sound like hoot owls as they ask, “Who? Who? Who?”

The truth is, the active voice in most cases is much neater and briefer. “The safety committee recommended . . . .” is better than “the recommendation was made by the safety committee . . . .”

Another taboo, the rule against ending a sentence with a preposition, is a point about emphasis incorrectly applied. Near the end of an English sentence a major stress falls, sometimes on the

last word, sometimes on a word just before the last word, sometimes on the final phrase. For effective emphasis, the word stressed should be important: “She said that she would complete the work on Monday.” The stress is on *Monday*. Careful writers avoid stressing an unimportant word, like a preposition. But in many a sentence that ends with a preposition, the stress falls on the word before it. If that word is important, there is no need to rephrase the ending. Thus, it is acceptable to write “He is a difficult person to agree with” or “Children should have bright objects to play with.”

Still another fallacy advises writers to avoid beginning sentences with certain words, such as “however,” “but,” and “and.” There is a better way to approach this matter, still keeping in mind that the first word or words in a sentence are usually stressed, and they should indeed be important words. Occasionally even the much maligned *however* may be important because a writer wishes to emphasize that an unexpected shift in thought follows. *But* and *and*, which are also listed as forbidden first words by some teachers, seldom are stressed when they introduce a sentence. But they are often useful as unobtrusive initial conjunctions.

And then we have the harmful fallacy telling us to “avoid all personal pronouns. Never use *I* or *we*.” First-person pronouns have long been absent from technical writing. They disappeared in the United States about 1920, when the impersonal style began to dominate in science and technology. (In the writing that comes out of the United States government —particularly from the Pentagon—*I* and *we* or any other indication that a human being is writing are taboo.) However, an attempt to achieve objectivity by avoiding personal pronouns is a mistake, and the idea that using the third person instead of the first person achieves modesty is equally wrong. Discarding necessary words like *I* and *we* merely leads to awkward writing marked by excessive use of the passive and by reliance on weak indirect constructions. Writers deprived of *I* and *we* turn to unnatural and objectionable substitutes: *the author*, *one*, *the present writer*, *this reporter*, and so forth. Sometimes, avoiding the use of the first person in an effort to sound modest backfires. Consider the sentence “The national secretary of the society initiated the following improvements in the management of the central office.” This sounds far more immodest than the simply stated “I initiated the following improvements . . .”

Today, prohibition of the first person is obsolete, although writers should avoid constantly using it. Most scientific and technical journals now permit authors to use *I* for a single writer and *we* for more than one writer, especially when the material is personal, as in interpretation of results and in predictions. Indeed, many editors urge this use whenever appropriate. The *American National Standard for the Preparation of Scientific Papers for Written or Oral Presentation* states, “When a verb concerns action by the author, the first person should be used, especially in matters of experimental design (‘To eliminate this possibility, I did the following experiment’).”

Half a century or so ago, when the personal pronouns and active voice were reduced to a minimum or eliminated, much writing on science and technology became lifeless and dull. This led to the fallacy that writing on professional subjects has to be dull and that there is no use trying to do anything about it. However, in my experience there is a marked correlation between the excellence of writers’ understanding of a subject and the clarity and grace of their written thoughts on it.

Indeed, many major businesses and industries are pressing hard for readable prose from their scientists. To achieve it, good writers and editors have been freeing themselves from unnecessary rules and regulations. Instead of droning *never use the active voice* and *never use personal pronouns*, they have been concentrating on the functions of the active and passive voices, on the functions of personal and impersonal pronouns, and on the avoidance of usage and style not suited to the idiom of the English language. It will be interesting to watch the changes that occur.