We are taught to value ways of expression that are direct rather than roundabout, that are precise rather than vague, and that are concise rather than wordy. This concern with conciseness reflects a culture whose concern is the ‘bottom line’, and it is a response to the fact that we all are bombarded with too much information and too many demands on our time. The concern with precision reflects the need of readers of technical writing to know exactly what is meant by what they read. This reading examines basic strategies for making writing concise and precise.

**Strategies for achieving concise and precise writing**

1. **Avoid redundant or vague language.**

   Careful writers avoid saying the same thing twice. *In my opinion, I think* is not only redundant, it is a weak way to introduce a topic: it states the obvious. The author is making the statement because he or she thinks it is true. Beware of other common redundant expressions:

   - absolutely essential
   - advance forward
   - cancel out
   - completely eliminate
   - enter into
   - first and foremost
   - basic essentials
   - end result
   - unexpected surprise

   Finally, avoid double negatives such as *not unlikely* (just say, *likely*).

   Sometimes redundant language actually results in confusion about meaning, as in this example:

   ☒ The rise in CO₂ levels are increasing at an extremely alarming rate.

   Does the author mean that the rise is increasing, or simply that CO₂ levels are increasing? And what does ‘extremely’ add that ‘alarming’ doesn’t already say? A more concise sentence clarifies the meaning and the grammar (the error in the original compounds the confusion), and it avoids the hyperbole of the original:

   → CO₂ levels are increasing at an alarming rate.

2. **Avoid unfocused sentence structure.**

   Poorly-focused sentence structure often leads to wordiness. Don’t make the reader wade through long phrases to find the meat of the sentence. The first phrase in the following long example sentence tires the reader and provides little information:
Knowledge of how to perform force analysis of devices ranging in complexity from gears to gas springs is required as well, in order to understand what composite parts are required to make the whole that is our mechanical device.

The rest of the sentence is wordy and pompous. The authors could have cut words and added focus, perhaps even using a bullet list:

- Steps in determining the choice of parts include the following:
  - (First step here)
  - Force analysis of gears, gas springs, and other movable parts.

Writers frequently lose focus (and grammaticality) when they start with a poorly-chosen introductory phrase, as in this example:

- In a study comparing the three devices, the primary issues associated with these devices was that they had a poor user interface, were too expensive, and were not easily portable.

What is the author’s point? Rewrite the sentence to highlight it:

- A 1999 study of three devices found that they had a poor user interface, were too expensive, and were not easily portable.
- The device must have a good user interface, be portable, and be relatively inexpensive. A 1999 study found that three devices failed to meet these criteria.

3. Don’t eliminate important information in an effort to be concise.

Sometimes writers assume that it’s always better to use fewer words. Word-count limits such as those imposed by editors and professors encourage this misconception. However, do not eliminate words that are necessary to help the reader follow the logic of your argument. Here is an example:

Diet, exercise, and heredity all contribute to the development of adult diabetes. Of these three factors, only heredity is not controllable. By making wise lifestyle choices, a person can reduce his chances of developing this debilitating disease.

The italicized words provide the ‘glue’ that holds the paragraph together.

4. Avoid intensifiers for expressions that are already as intense as they can be. Use intensifiers that add real meaning.

Under point 1, we looked at a sentence containing the expression extremely alarming. Words such as extremely, really, very, and quite might just be space-fillers that don’t add meaning. (A
common expression in the writing of English learners is, “the food was very delicious.” Why not just say, “The food was delicious?” Native speakers love to sprinkle their sentences with expressions such as ‘incredibly expensive’ or ‘incredibly small.’ Is everything ‘incredible?’ Expressions like very unique and quite special are redundant – like saying, “the most tallest.” Careful writers don’t use them.

Are intensifiers always bad? No; here is a sentence which uses an intensifier to convey meaning:

- Although carbon monoxide levels are down, CO still accounts for by far the largest amount of pollution in the atmosphere: nearly 85 million tons in the U.S. in 2006 (down from nearly 180 million tons in 1980). The next ranking pollutant is NOx, with about 16 million tons in 2006. (Information from a discussion of national annual emissions in the EPA 2007 Report, ‘Six Principal Pollutants’)

5. Whenever possible, make the subject of the sentence the ‘doer’ of the action.

This guideline has two corollaries:

   a. Avoid hiding the actor and action in a ‘there is’ sentence.

In the following examples, there is appropriately introduces the existence or presence of something:

   - There are three ways to tackle the problem. (Three ways exist…)
   - There is a problem with the report you submitted. (A problem exists with the report.)

This is the appropriate use of there is/are.

However, the following sentences suffer from lack of focus, largely because of the mis-use of there were:

   ☣ When using Word’s spell check, there were four words that Word suggested alternate spellings for. For three of these words, the correct spelling was suggested. However, the word “coliform” was designated as incorrectly spelled even though it wasn’t.

Use of there were hides the true subject of the sentence and creates awkward structure throughout. (The introductory ‘when’ phrase adds to the confusion and should be eliminated.) Better:

   → Word’s Spell Check suggested alternate spellings for four words. For three of these words, the correct spelling was suggested. However, the word ‘coliform’ was designated as incorrectly spelled even though it wasn’t.
Note how the focus improves when the words *there are/that* are removed from these sentences:

- There are a number of factors that affect the design of the project.
- There are many aspects of the project that pose risks and obstacles.
- There are several refinements to Equation 1 that have been used with considerable success...

(We revisit these examples in Section 6.)

In the next example, the author got confused about grammatical agreement:

- While wind should continue to be invested in, there needs to be more alternatives considered.

The confusion disappears if the end of the sentence reads, *more alternatives need to be considered.*

b. **Do not switch from active to passive voice just to avoid writing “I” or “we.”** If you use passive voice, use it appropriately.

Aspiring scientific or technical writers are sometimes advised to avoid using “I” or “we” in their writing in order to put themselves in the background and the results in the foreground. This guideline is too simplistic and can lead to weak writing, for two reasons. First, it leads to sloppy use of the passive; and second, it ignores the fact that the use of “I” and “we” is actually quite common in published articles, in certain contexts.

**Sloppy use of the passive.** A writer might formulate a sentence, realize that the subject is “we”, and simply switch the sentence into the passive voice to avoid using the first person:

- By varying the cross-sectional area of the samples and then applying a uniaxial load on each one, the values of displacement at ultimate tensile strength were observed.

Misuse of the passive combines with other elements of poor writing to make this a weak sentence. Statement of the agent (“we”) will add clarity:

- By varying the cross-sectional area of the samples and then applying a uniaxial load on each one, we were able to determine the values of displacement at ultimate tensile strength.

The following revision uses the passive, but uses it appropriately, to place the focus on the result. Note that reordering parts of the sentence (and using a stronger verb, ‘determine’ rather than ‘observe’) increases the readability of the sentence, and at the same time eliminates the need to say ‘we’.
● The values of displacement at ultimate tensile strength were determined by varying the cross-sectional area of the samples and then applying a uniaxial load on each one.

Avoidance of first person also produces flabby sentences such as this:

- It is hypothesized that the pK\textsubscript{A} estimated using data from 1.0 mL increments of titration will be less accurate than titration data collected at 0.5 mL increments.

*It is appropriately* introduces statements about the weather or the time (It’s hot, it’s raining, it’s late). *It is* adds focus in expressions such as, *It is difficult to achieve valid results without the appropriate equipment.* However, in the above sentence, *it is* only serves to confuse the reader.

The improved sentence names the agent:

- We hypothesize that ….

Remember that, in the absence of a good reason for using the passive, an active sentence will be both clearer and more forceful.

**Appropriate use of first person in published papers.** The second reason why the admonition to avoid “I” or “we” is too simplistic is that such references are, in fact, common in published papers, as in this example:

The richest mycobacterial environment previously reported (~1% of the community) is a mildly acidic (pH 4) forest soil\textsuperscript{19}….. We used several imaging techniques to investigate the physical structure of [a different] community. (Excerpted from Walker, J, Spear, J & Pace, N, “Geobiology of a microbial endolithic community in the Yellowstone geothermal environment.” *Nature*, 21 April 2005: 1013)

Imagine the reader’s confusion if the authors had continued in the passive: “Several imaging techniques were used….” Would the writers be giving more background information, or reporting their new research?

**6. Whenever possible, give precise information instead of vague generalities.**

Remember these sentences (now improved with the deletion of *there are…that*)?

- A number of factors affect the design of the project.
- Many aspects of the project pose risks and obstacles.
- Several refinements to Equation 1 have been used with considerable success…

The precision of the sentences could still be improved (as could the grammaticality: ‘a number of’ technically requires a singular verb, though usage varies). Terms such as a number of, many, and several are often used as filler and can be eliminated or replaced with specific numbers:
Three factors affect the design of the project: the available materials, the need to support the weight of any one of the team members, and the time allotted for the completion of the project.

The aspects of the project which pose risks and obstacles are the following: […]

We consider three refinements to Equation 1 which have been used with considerable success: […]

Two more strategies

1. Get someone else to read your writing. You’ve read all the bad examples, and you’ve studied the good examples to see what makes them better. You’ve done your best to avoid the pitfalls. But is the result a clear, concise, well-written document? It’s hard for any of us to judge our own writing. The best check is to have someone else read what you’ve written. Try to find someone who will read with a critical eye: Is the organization clear? Is the information coherent? Does any content seem vague or unnecessary? Be ready to make changes based on the reader’s feedback.

2. Leave time for writing and revising. This is a very important strategy: Careful writing takes time, even for writers who are proficient. Don’t expect to produce perfect work in an instant, and don’t be discouraged if you need to revise more than once. Be encouraged, not just by improvements in your writing, but by improvements in your self-editing techniques. Don’t give up!