Handy editing tools to improve clarity at the sentence & paragraph level

Emergency editing help: Tool 1, the paramedic method

In *Revising Prose*, Richard Lanham, a professor of English at UCLA, invented an easy-to-use method for making your writing clearer and more concise. This method really does work! Here's how to do it:

1. **Circle the prepositions.** Prepositions are words that go with nouns or pronouns, usually before them (hence the 'pre' of preposition!). They show relationships among other words in the sentence. Examples include: of, by, at, in, through, for, from, on, to, over, under, etc. Really, you don't even have to know what a preposition is. Circle all the small words in your sentence! Too many prepositions can drain all the action out of a sentence. Get rid of the prepositions and find a strong ==active verb== to make the sentence direct:

   Original: In this passage is an example of the use of the rule of justice in argumentation.

   Revised:.

2. **Circle the 'is' or 'to be' forms.** (is, was, will be, seems to be, have been, etc.). Using "is" in a sentence gets it off to a slow start, and makes the sentence weak. Replace as many "to be" verbs with action verbs as you can, and change all passive voice ("is defended by") to an active voice ("defends").

   Original: The point I wish to make is that fish sleep with their eyes open.

   Revised:.

3. **Find the *action*.** If you get stuck in a passive sentence always ask the question: "Who does what to whom?" If you use that formula you will always write active sentences.

   Original: Burning books is considered censorship by some people.

   Revised:.

4. **Put this action is a simple active verb and rebuild the sentence**

   Original: The theory of relativity isn't demonstrated by this experiment.

   Revised:.

Some more non-scientific examples of #1-4:

a. This sentence <u>is</u> <u>in</u> need <u>of</u> an active verb.

b. <u>In</u> response <u>to</u> the issue <u>of</u> equality <u>for</u> educational and occupational mobility, it <u>is</u> my belief that a system <u>of</u> inequality exists <u>in</u> the school system.

c. The history <u>of</u> new regulatory provisions <u>is</u> that there <u>is</u> generally an immediate resistance <u>to</u> them.

d. There are many ways in which people resist change.

5. **Start fast—no slow windups.** Stick to the action and **avoid** opening sentences with phrases like these:

My opinion is that…
It is also worth pointing out that….
The fact of the matter is….
It is interesting to note that….
The important fundamental to remember is that….
Finally, the result of the use of all these new techniques and methods is that….
The traditional opposite notion to this is that there are….
The one thing that Belinda does not realize is that Dorimant knows exactly how to press her buttons.

Start the sentence with whatever follows the 'blah blah is that…"
Do a global search for 'is that' and revise it out!
For example, ~~The one thing that~~ Belinda does not realize ~~is~~ that Dorimant knows exactly how to press her buttons.

Look for and get rid of clumps of little words

Biological writing is plagued by countless wordy phrases, often placed at the beginning of a sentence, and by 'empty' words and phrases that add little to the author's meaning. Some of these are listed below but you will probably think of others to add to the list:

More often than not	One of the problems
At the present time	In only a very small number of cases
Because of the fact that	It is apparent that
In light of the fact that	Subsequent to
These observations would seem to suggest	Has the capacity for
In the possible event that	In the event that
In spite of the fact that	

Second editing tool: THE HOOK AND EYE TECHNIQUE

This technique is especially useful when writing about complicated processes or chains of reasoning. The *object* of the preceding sentence become the *subject* of the following sentence. (Recall that the subject of the sentence "does something" while objects "have something done to them.")

Here are two simple examples:
Sandeep hit the red ball toward the crowd. The ball landed in the west bleachers.
Sandeep hit the red ball toward the crowd. The crowd roared its approval.

Here are two more complicated examples:

Carbohydrate loading on the High Performance Diet was developed in the United States based on studies by a team of Swedish physiologists. These studies show that the average concentration of glycogen stores is 1.75 g/100 ml with a normal diet. If this diet is then changed for 3 days to one of high fat and high protein, then the glycogen level drops to .6 g/100 ml. If the diet is modified again to include large amounts of carbohydrate for 3 days, then the glycogen stores will increase to 3.5 g/100 ml. If this carbohydrate phase is accompanied by strenuous exercise, then the glycogen level will rise to 4.7 g/100 ml. This is almost a threefold increase in glycogen stores compared to a normal diet.

The factors that determine reovirus cellular host range are poorly understood. Because reovirus attaches to cells through interactions with broadly expressed receptors, one or more subsequent steps in the viral life cycle must also regulate cellular host range. Our recent studies indicate that one such step is the proteolysis of the capsid protein sigma 3 (uncoating). At the molecular level, reovirus uncoating has been best characterized in fibroblasts. In these cells, entry is pH sensitive and requires the activity of the acid-dependent lysosomal proteases cathepsins L and B to degrade sigma 3. The proteases that mediate sigma 3 degradation in vivo are completely unknown, except in the intestinal tract where pancreatic serine proteases are important.

In cell culture, the first step in infection is attachment to cellular receptors through interactions with the viral protein σ1 [27, 28][24,25]. σ1 interacts with two known receptors: sialic acid and junctional adhesion molecule 1 [26,27]. Because reovirus does not replicate in all receptor-bearing cells, there are clearly additional determinants that influence reovirus host range and pathogenesis. As detailed below, within the last funding period we have shown that one of these is the requirement for the virion to be uncoated by cellular proteases **[18][28,29]**. In the context of this proposal, the term *uncoating* will refer to proteolytic removal of the outermost capsid protein, σ3, from the infecting virion. Reoviruses can be productively uncoated both extracellularly and intracellularly. Within the intestinal tract, virions are uncoated by secreted pancreatic serine proteases (chymotrypsin [CHT] and trypsin). Extracellular uncoating is required for infection by the oral route [31, 32, 33][30-32]. Intracellular uncoating has been demonstrated in cell culture after virions are internalized by receptor-mediated endocytosis [33,34]. Endocytosis is an essential step in the viral life cycle under standard infection conditions [36]. Specific endo/lysosomal proteases convert virions into ISVPs that lack σ3 and have a cleaved form of μ1. In murine fibroblasts, where reovirus entry has been best studied, the acid-dependent cysteine proteases Cat L, and to a lesser extent Cat B, are required, whereas the aspartyl protease Cat D is not [37, 38, 39, 40, 41][36-40]. Interestingly, we have found that some cell lines that restrict reovirus infection at the step of uncoating still express mature Cat L **[28]**. This important result suggests that additional factors, as yet unknown, may be required for efficient intracellular uncoating of reovirus virions. Alternatively, endogenous protease inhibitors may restrict infection in some cell types [41]. The role that specific intracellular and extracellular proteases play in regulating tropism, spread, and disease in animals is largely unknown.

Pretty good 'how to' book: Writing Papers in the Biological Sciences by Victoria E. McMillan
Published by Bedford/St. Martin's Press

Tips on drafting and revising

Drafting

- Focus your first draft on content not mechanics or style

- Make an outline or rough plan

- Start the easiest writing first

- Remember your audience

Revising

- Break it down into steps

- Keep early drafts

- Don't do all revising on the computer

- Get help from others

- Check content and structure
  - Logic, continuity and balance
  - Omit unnecessary material
  - Check for completeness

- Improve paragraphs
  - Present coherent units of thought
  - Make paragraphs work as integrated parts of the text
  - Vary your sentences

- Write clear, accurate sentences
  - Use words precisely
  - Avoid slang
  - Avoid vague use of *this, that, it* and *which*

- Avoid wordiness
  - Omit unneeded words/phrases
  - Avoid repetition
  - Use passive voice sparingly

Tense makes me tense: Note about verb forms

Conventions also exist for using different verb forms in scientific writing. For example, active vs. passive voice and past vs. present tense are used differently in different types of writing.

- Active voice is often used in reviews written for general audiences because it is easier to follow, while passive voice has historically been used in primary research articles because it can sound more objective. Since active voice is easier to follow, you are encouraged to use active verbs to make your writing clearer!

- ➢ Past tense is used when you are referring back to data from a particular experiment, while present tense is used once you have concluded that something "is" true.

Here are some examples:

    <u>Active vs. Passive voice</u>:
Active: VP16 *activates* IE gene expression.
Passive: IE gene expression *is activated* by VP16.

    <u>Past vs. Present tense</u>:
Past: We found that VP16 expression *activated* IE gene expression.
Present: VP16 *activates* IE gene expression.

Both past tense and passive verb forms often end in "-ed." The difference is the "*is …-ed*" for passive voice. Past tense can also be passive voice: "*was …-ed.*"

More Examples:

<u>Suggest</u>:
Present tense, active voice:	suggest	(we suggest something)
Present tense, passive voice:	is suggested	(something is suggested)
Past tense, active voice:	suggested	(we suggested something)
Past tense, passive voice:	was suggested	(something was suggested)

<u>Show</u>:
Present tense, active voice:	show	(we show something)
Present tense, passive voice:	is shown	(something is shown)
Past tense, active voice:	showed	(we showed something)
Past tense, passive voice:	was shown	(something was shown)

<u>Know</u>:
Present tense, active voice:	know	(we know something)
Present tense, passive voice:	is known	(something is known)
Past tense, active voice:	knew	(we knew something)
Past tense, passive voice:	was known	(something was shown)