Opinion and Perspective

The Importance of Punctuation

Dennis Murphy
The United Graduate School of Agricultural
Sciences, Ehime University

In 2009, I started teaching scientific English to doctoral students, most of whom are from Southeast Asian nations, and therefore, their native language is not English. They read many scientific papers in English, so they understand the structure of a scientific paper and how to write one. However, they need help with their English, and that, of course, includes punctuation. In this brief article I would like to highlight why it is important to teach punctuation.

In writing, it would be safe to say that most people do not give much thought to punctuation. I certainly did not. I know how to write reasonably clearly, but I did not really think about why a comma is used in some places but not others, and why use an em-dash rather than a semicolon, for example. That blissful state of non-thinking ended when I started teaching the doctoral candidates. I had to quickly study the technical aspects of using punctuation, so I read reams of style guides, browsed a multitude of Web sites, and devoured *Eats, Shoots & Leaves: The Zero Tolerance Approach to Punctuation* by Lynne Truss (2003). Who would have thought a book on punctuation would be so interesting and entertaining? I also gained enthusiasm, inspiration, and interest from *Woe Is I: The Grammarphobe's Guide to Better English in Plain English* by Patricia T. O'Connor (1996).

Punctuation is not some arbitrary set of symbols used by pedants to make life difficult for learners (and teachers) of English. Punctuation marks help make writing clear and, therefore, make reading easier. In spoken English, we make ourselves understood by using stress, intonation, gestures, rhythm, and pauses (assuming what we are saying is not complete gibberish), but this is not possible in written English, so we use punctuation (Holtom & Fisher, 2006).

Punctuation marks perform four functions: separate, group or enclose, connect, and give meaning (McCaskill, 1998). A full stop (also called a period) separates sentences, a semicolon can be used in place of a full stop to separate two closely related sentences, and a comma, amongst many other uses, separates a dependent clause from an independent clause in a sentence. A pair of parentheses encloses extra information within a sentence, as could a pair of em-dashes (or em dash, m-dash, m dash, em rule, m-rule), and a pair of commas could, as in this example, enclose (and separate) a parenthetical remark within a sentence. A hyphen connects two or more words to form a compound adjective to modify a noun, e.g., three-stage experiment, and an en-dash (or en dash, n-dash, n dash, en rule, n-rule) connects continuing or inclusive numbers, e.g., 2011–2015. A question mark turns a statement into a question or indicates uncertainty, and an exclamation mark (also called an exclamation point) indicates strong feeling.

The marks help readers understand the structural relationship within a sentence (Matthews & Matthews, 2008). Each mark has a clearly defined role. In general, correctly used grammar and punctuation is not noticed by the reader. I seriously doubt anyone would read a sentence, passage, or article and exclaim, "Wow! That was excellently punctuated writing." You read a sentence, take in its meaning, and move on to the next sentence. On the other hand, incorrectly used grammar and punctuation are noticed; they make readers stop and can change the meaning of a sentence.

Perhaps you have seen the following hoary old chestnut: "A woman without her man is nothing." Hoary and old and a chestnut it may be, but it does a good job illustrating the power of punctuation. Judicious use of punctuation results in two sentences with the same words but two very different meanings:

A woman, without her man, is nothing. (Emphasises the importance of men.) A woman: without her, man is nothing. (Emphasises the importance of women.)

A great big raspberry to both meanings, but I think you get the idea.

Punctuation cannot be learned or taught in isolation; it must be taught with the various constructions that constitute English writing, that is, dependent and independent clauses, prepositional and infinitive phrases, and so on. One requirement for cohesive writing is clarity, particularly in scientific writing. Clarity in writing means avoiding needless complexity (unnecessarily complex words, phrases, and sentences) and avoiding ambiguity in choice of words, syntax, and use of pronouns and punctuation (Alley, 1996).

I have edited hundreds of scientific papers and have found that misused, incorrectly used, and missing punctuation, particularly the comma, are problems authors face in presenting clear and concise writing. Following are some common examples of punctuation errors:

1. Inserting a comma or colon after a verb or a preposition when introducing a series of items; neither a comma or colon is required:

The unit components include, a laser scanner, ultrasonic sensors, and a programmable logic controller.

The unit is separated into, a laser scanner, ultrasonic sensors, and a programmable logic controller.

2. Missing comma after a non-restrictive (which) clause:

Present-day greenhouse robots, which are generally designed for a single task only are expensive and prone to break down. (A comma is required after 'only'.)

3. Missing comma after an introductory clause to avoid confusion:

After 2010 loss of separation incidents between aircraft decreased.

(A comma is required after 2010 to avoid ambiguity.)

4. Insufficient use of commas in a list to avoid ambiguity:

"In our study, we examined pure methanol, pure ethanol, methanol and 10% water and ethanol and 10% water" (Alley, 1996, p. 95).

How many fuels were examined? The following revision removes the ambiguity:

"In our study, we examined four fuels: pure methanol, pure ethanol, methanol and 10% water, and ethanol and 10% water" (Alley, 1996, p. 96).

5. A profusion of commas within a long, complicated series of items.

The following is an example of a correctly punctuated sentence containing a list with semicolons separating the list items and an internal comma in the first list item:

"Cities responded by building centralized networks to deliver clean water, energy and safe food; to enable commerce, facilitate transportation and maintain order; and to provide access to health care and energy" (Pentland, 2013, p. 66).

Unfortunately, some writers use commas alone to separate list items, which could render a list confusing.

- 6. Confusing the possessive pronoun *its* and the contraction *it's* (or heaven forbid, *its*').
- 7. Unwanted hyphen: The theory is not well-understood.
- 8. Confusing use of hyphens: "five week-old chicks" versus "five-week-old chicks". The first indicates five chicks that are a week old, whereas the second indicates chicks that are five weeks old. To avoid ambiguity, the first should be rewritten as "five one-week-old chicks".

There are a large number of punctuation marks, some with fabulous names like solidus (/; (forward) slash to you and me), interpunct (·), octothorpe (#; otherwise known as the number sign, pound sign, or hash symbol), obelus (÷; more commonly called the division sign), pilcrow (¶; also called the paragraph mark or sign), and interrobang (¶; informally known as the quexclamation mark and often represented by !? or ?!). (See Wikipedia (Punctuation, 2015) for an extensive list of punctuation marks.)

Space does not allow for a discussion of the many punctuation marks (massive sigh of relief all round), or even just the main ones. Instead, I would like to talk a little about how I teach punctuation. First, there is no quick and easy method, there is no magic formula, and it takes effort.

As mentioned earlier, punctuation cannot be learned or taught in isolation; it must be taught with the various bits and pieces required for English writing. In general, the shorter and simpler a sentence, the fewer the problems with punctuation. However, writing only short, simple sentences would make reading very boring.

In my class, I teach the various types of clauses and phrases, as well as the punctuation that connects them. There are three 90-minute classes on punctuation alone. For each punctuation mark, example sentences are provided, many of them of a scientific nature. In addition, I try to provide, as far as possible, actual examples taken from science-related books or academic papers. For example, the following sentence shows a colon being used to introduce an explanation or elaboration of what comes before the colon. "The idea is simple: no scientific claim can be considered legitimate until it has undergone critical scrutiny by other experts" (Oreskes & Conway, 2011, p. 154). In another example (not from a science book or paper), the sentence "Venus is the hottest planet; Neptune, the coldest" shows an example of the use of the gapping comma to indicate when a missing word is a repetition of a previous word in the sentence. In this case, the gapping comma indicates the missing word is.

During the explanations of the punctuation marks, I briefly mention whatever sentence structure constitutes the example sentence. That is, a simple sentence consisting of a single independent clause, a compound sentence consisting of two or more independent clauses, or a complex sentence consisting of an independent clause with one or more dependent clauses. In later classes, those structures are discussed in more detail, and the rules of punctuation the students learned during the specific lectures on punctuation are reinforced.

At the end of the lectures on punctuation, the students do many in-class exercises, which we then discuss. Each set of exercises focusses on a single punctuation mark, so the students can concentrate on correctly using one of the punctuation marks. In the exercises, the students must correctly punctuate a sentence or choose the correctly punctuated sentence from a selection of sentences. The final exercise tests students' understanding of all the punctuation marks they have studied, requiring them to choose the correctly punctuated sentence from a selection of sentences. Following are examples of exercises:

- 1. (Apostrophe) Its an interesting hypothesis, but experimental evidence is needed to determine its validity.
- 2. (Comma) The culture media contained glucose sucrose fructose and galactose.
- 3. (Semicolon) Which of the following sentences can be connected with a

semicolon?

- 1. Using punctuation correctly is important____although it is difficult.
- 2. Using punctuation correctly is important___but some think it is boring.
- 3. Using punctuation correctly is important____it is essential for clear writing.
- 4. Using punctuation correctly is important____I dislike writing.

(To keep the exercises interesting, I occasionally provide a selection of sentences that are either all correct or all incorrect.)

When discussing the exercises, I am invariably peppered with many questions, which tell me that the students have listened and learned. They are not interested in punctuation per se; rather, they are very interested in learning how to write clearly and precisely to make it that much easier to get their papers published. The more time they devote to getting it right the first time may result in less time required working on journal-requested revisions.

So, I encourage anyone interested in good writing to learn a little more about punctuation. You too may come to love it.

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Author bio

Dennis Murphy has lived in Japan for 23 years. He created and teaches the course English for Scientific Writing and Presentations to doctoral candidates at the United Graduate School of Agricultural Sciences, Ehime University in Matsuyama, Ehime Prefecture. He is very interested in the correct and judicious use of punctuation. dennis@agr.ehime-u.ac.jp

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