

## Writing Skills

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This write up will only provide a brief overview of writing scientific English and identifying particular problems and conventions.

### Abbreviations and acronyms

They increase readability and avoid repeating the same long phrase again and again.

**Abbreviations** are short forms of words. They are only used in text; if used in conversation, they are spelt out or said in full. Standard abbreviations include *DNA*, *RNA*, *MS* and *PhD* (all spelt out); *Avg.*, *sp. gr.* (said in full).

**Acronyms** are names formed from the first letters of words. They are not abbreviations and are pronounced as words. *Enzyme Linked Immunoassorbant Assay* (ELISA), *Acquired Immune Deficiency Syndrome* (AIDS).

Try this: *Human Papilloma Virus* (HPV)

Is it an abbreviation or an acronym?

Answer: HPV is spelt out, therefore is an abbreviation

### Some important rules

- Avoid abbreviations or acronyms in the **abstract**, except for generally accepted ones like DNA or ELISA or standard units of measurement. If you need to use an abbreviation or acronym in the

abstract, write it in full the first time with the abbreviation in brackets afterwards. *Thereafter use only the abbreviation.*

- Never use abbreviations and acronyms in the title.
- Abbreviations in the main text: Place the abbreviation in brackets after the first mention of the term to be shortened [Example: *Enzyme linked immunoadsorbant assay (ELISA)*]. After that, **always use only the abbreviation.**
- Choose what you intend to abbreviate carefully; be careful of what the abbreviation sounds or looks like. [Example: *Functional User Capacity (FUC)*; *Sensor Navigation Orthogonal Tracer (SNOT)*].
- Plural of abbreviations
  - some abbreviations have special plural forms (Species: *sp.- singular, spp.- plural*; Page: *p.- singular, pp.- plural*).
  - An apostrophe indicates the possessive, not plural; be careful when using with abbreviations (Example: “*the DNAs were . . .*” **not** “*the DNA’s were . . .*” An apostrophe (DNA’s) is appropriate when you want to talk about a property of the DNA (Example: “*the DNA’s ability to . . .*”).
  - Units of measure do not have plurals (Example: *1 mL, 100 mL; 1 L, 100 L*).

### Spelling and typographical errors

Many words in English differ by only one letter. Spell-check will not detect these errors. For example: She went into a comma / *She went into a coma*; The doctor believed the operation would leave her with a scare / *The doctor believed the operation would leave her with a scar*; The doctor checked the wards and his spelling / *The doctor checked the words and his spelling.*

Note that the 1st error does not make sense but that with the 2nd and 3rd errors, both versions make some degree of sense. Re-read what you have written with particular reference to typographical errors, even after you have run spell-check.

### **Grammar: construction of sentences**

‘The patient was referred to a psychiatrist with a severe emotional problem.’

Did the psychiatrist have a severe emotional problem? No! *The patient with a severe emotional problem was referred to a psychiatrist.*

Similarly: ‘About two years ago, a wart appeared on his left hand, which he wanted removed.’

He did not want the hand removed! *About two years ago, a wart, which he wanted removed, appeared on his left hand* **or** *A wart appeared on his left hand two years ago; he wanted it removed.*

### **Active and Passive voice**

Customarily, the thesis is written in passive voice. Rather than writing ‘*We examined the patients for signs of anemia*’, write in the passive voice, ‘*The patients were examined for signs of anemia.*’

### **Jargon**

Scientific writing has created its own jargon or specialized word use, which grows because scientists think they should sound scientific.

*As a consequence of; based on the fact that; because of the fact that; due to the fact that; in light of the fact that; in view of the fact that; on account of; the reason is because:* these phrases all mean the same thing: ‘because’.

### **Redundancy**

Jargon phrases are redundant; they can just be left out as they add nothing. Other redundant phrases include, *as a matter of fact; in a very real sense; in a sense; it is interesting to note that; it should be noted that; let us make it clear that; needless to say*. Avoid them!

### **Collective Nouns**

Most nouns in English take a singular or plural form; for example: *Man/Men, Hand/Hands*. However, collective nouns usually take only the singular. One exception is ‘*Data*’ (collective noun for group of results) which does have a singular – *datum*; however, the meaning and use of the word has changed. Thus, ‘*data*’ is used as singular or plural so that both these sentences are correct: ‘*The data was collected*’; ‘*The data were collected*’.

#### **Correct contextual use of collective nouns:**

- *A pair of animals was housed in a cage.*
- *Pairs of animals were studied.*
- *The number of persons studied was 35.*
- *Thirty-five persons were studied.*

### **Multiple subjects**

When using neither/nor in a sentence, the verb should take the number of the closest noun.

‘*Neither the cats nor the dog was in the cage*’ is correct but reads poorly.

‘*Neither the dog nor the cats were in the cage*’ is also correct and reads well.

‘*Neither the cats nor the dog were in the cage*’ is incorrect.

### Conventions for numbers

*Numbers should be given as numerals in the following instances:*

All numbers above 10 (*35 animals*).

All numbers preceding a unit of measure (*10 cm*).

Decimals, fractions including a whole number (*7.38 mm; 4 ½ hours*).

Statistical or mathematical functions (*3.5 multiplied by 5; 2<sup>nd</sup> quartile*).

Numbers that are exact quantities (*IQ of 125; Rs. 25*).

Numbers below ten grouped with numbers above ten (*4 of 16 individuals*).

Numbers that indicate part of a series (*Figure 6; Chapter 3*).

*Numbers should be written in full in the following instances:*

Numbers that are not precise measurements (*A three-way interaction; repeated four times*).

Numbers below ten grouped with other numbers below ten (*Four out of six experiments*).

Any number that begins a sentence (*Twenty-five patients died*).

Fractions without a whole number (*Reduced by half*).

“Zero” and “one” in most places when not with another number (*And one plate was positive; The measurement remained close to zero*).

### Lists

Lists can cause problems when writing a scientific paper. In general, if it is not a short list, it would be better to put the information into a Table. Even a Table with two columns and six items is better than a list. Use a list in the text where there is only one category or information and less than six items.

## Types of Lists

The *simple comma separated list* is best used for lists that contain short individual items.

*The DNA was washed with phenol/chloroform, Tris equilibrated chloroform, and 0.05M EDTA.*

The *colon (:)* list is best used for longer lists and ones in which there are short phrases.

*The DNA was treated with the following: phenol/chloroform, Tris equilibrated chloroform, and 0.05M EDTA.*

### The *bulleted list*

It has dots or bullets to identify the clauses and sentences and to separate them. Do not use it in scientific writing.

When you need to use a preposition or article in a list, always repeat the preposition and/or article. For example: *'The patients were categorized by sex, age, place of birth and race'* is incorrect. The correct version is: *The patients were categorized by sex, by age, by place of birth and by race.* The latter tends to place more emphasis on the items making up the list.

If you change the preposition within the list, you must repeat all of them. For example: *'The patients were categorized by sex, age, place of birth and from other information on their form'* is incorrect. The correct version is: *The patients were categorized by sex, by age, by place of birth, and from other information on their form.*

If you change the article within the list, you must repeat all of them. For example: ‘*Group one was made up of a cat, dog, alligator and mouse*’ is incorrect. The correct version is: *Group one was made up of a cat, a dog, an alligator and a mouse.*

***Should you always use a comma before an “and” in a list?***

You may or you may not, but perhaps it is best to do so because it is never wrong. For example: ‘*He had a large head, short legs, a thick chest containing a strong heart and big feet*’ has resulted in the feet being placed in the chest. The comma will put them back where they belong: *He had a large head, short legs, a thick chest containing a strong heart, and big feet.*

**Commas**

The function of commas is to indicate pauses in reading; they separate clauses in a sentence.

For example: *On the whole, medicine is a complex subject.*

*This book, I think, teaches the subject well.*

Commas mark out a dependent clause. For example: *Calculus, like a number of subjects, is not usually taught to lawyers.*

Commas must improve readability rather than make it worse. Do not use too many in a sentence.

**Semicolons**

These separate independent clauses in a compound sentence; the clauses must have a link. For example:

‘*Lead me not to temptation; I can find the way myself.*’ ‘*Hanging is too good for the man; he should be drawn and quartered too.*’

Semicolons can be used with a conjunctive adverb. For example: '*Figure 1 clearly shows inhibition; however, the reproducibility is poor.*'

### **Colons**

Colons can be used in lists as mentioned earlier. They may be used to introduce a word or phrase, or a title. For example- '*Chastity: the most unnatural of the sexual perversions.*' '*Aldous Huxley: Brave New World.*'

### **The paragraph**

Begin each paragraph with a topic sentence; end it in conformity with the beginning. The object is to aid the reader to discover the purpose of each paragraph as he begins to read it, and to retain the purpose in mind as he ends it. Make the paragraph the unit of composition: one paragraph to each topic. Restrict to three or four sentences as follows:

- the topic sentence comes at or near the beginning;
- the succeeding sentences explain or establish or develop the statement made in the topic sentence; and
- the final sentence either emphasizes the thought of the topic sentence or states some important consequence, and links it to the next paragraph.

### **Suggested reading**

1. The AMA manual of style [American Medical Association].
2. William Strunk. The elements of style. Free download at <http://www.bartleby.com/141/>.
3. Lynne Truss. Eats, Shoots & Leaves: The Zero Tolerance Approach to Punctuation. GP Putnam's Sons; New York; 2006.