

China Medical Board

Biomedical Writing Course

Lessons on Scientific English:

- Stock Phrases
- Tenses, Jargon, and Abbreviations
 - Prepositions
- Use and Misuse of English
 - Use of Articles
 - Writing Concisely
- Revising and Proofreading

Source:

BIOMEDICAL WRITING COURSE

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Lesson Twelve

Recognizing "Stock Phrases" and Writing the Introduction (Part 1 of 2)

OBJECTIVES OF LESSON TWELVE

By the end of this lesson, you will be able to

1. Recognize stock phrases and use them to improve your writing and to make the writing process easier
2. Apply information about standard format and content to your Introduction sections

ASSIGNMENTS FOR LESSON TWELVE

1. Look through at least 2 of the research articles published in the journal you have chosen for submission of your article. (If this is not possible, look through 2 of the articles in your reference list.) From these articles, make a list of at least 3 stock phrases that you might use in your Introduction, Methods, Results, or Discussion; indicate for each phrase where you might use it.
2. Read Chapter 7 ("How to Write the Introduction") in Day's book. If you have any questions, ask your local instructor.

Stock Phrases

The more you read research articles in English-language journals, the more you will realize that there are standard phrases ("stock phrases") that are used in many of these articles. If you begin to look for stock phrases as you read articles in your field of interest, you will find phrases that you can use in your own papers. For scientific writing, it is not essential that every word or phrase be "new"; "creativity" in scientific writing is much less important than clarity. Just as readers are used to seeing articles organized according to the standard format (abstract, introduction, methods, results, discussion), they are also accustomed to seeing certain phrases and they quickly understand the meaning of these phrases.

The following examples of stock phrases were found primarily in 1996 issues of the *Journal of the American Medical Association (JAMA)* and the *Journal of Physical Chemistry*:

STOCK PHRASES FROM INTRODUCTION SECTIONS

- "significant and widespread problem"
- "it is estimated that _____"
- "there is a need for _____"
- "At present, little is known about _____"
- "Recent studies have focused on _____"
- "In this paper, we will establish _____"
- "Previous studies have revealed _____"
- "Evidence suggests _____"
- "The mechanisms that underlie _____ remain unclear"
- "To test whether _____, we _____"

STOCK PHRASES FROM METHODS SECTIONS

"descriptive statistics"

"sociodemographic factors"

"eligible and consenting patients were randomly assigned"

"We used _____"

"The experimental apparatus has been described in detail elsewhere.¹⁹"

"We also measured _____"

STOCK PHRASES FROM RESULTS SECTIONS

"Our findings suggest _____"

"the dose-response relationship appears to be slightly stronger for _____"

"We found no clear relationship between _____ and _____"

"overall response rate"

"We have calculated _____"

"Figures 8-10 show _____"

"Typical data are shown in Figure 7."

"We found a marked difference between _____ and _____."

STOCK PHRASES FROM DISCUSSION SECTIONS

"several limitations"

"There are other possible explanations"

"efforts should be made to _____"

"This method could be used to _____"

"We have shown _____"

"In the future, we will extend the present studies to _____"

"Our data leave open the question of whether _____"

"These data suggest that _____"

"Our results indicate that _____"

"One possibility is that _____. Alternatively, _____"

"It is possible that _____"

"The experiments show that _____"

"We have demonstrated that _____"

By suggesting that you look for and use stock phrases, we are NOT encouraging you to copy someone else's writing. Rather, you are taking advantage of standard ways of expressing ideas, although the content of the ideas will differ in every research paper. Using stock phrases will make your writing easier and more clear to the readers of English-language journals.

Chapter 7 in Day's Book: "How to Write the Introduction"

Now that you have written drafts of your Methods, Results, and Discussion, you are in a good position to draft the Introduction that will lead the readers into those sections.

Day starts Chapter 7 with some advice about the order in which to write a scientific paper. We have followed, in the first 11 lessons here, the order suggested by many other experts in scientific writing. Day notes that some experienced writers write the Abstract and Title last. That is what you will be doing in the coming weeks.

The second paragraph on page 33 indicates that it is a good idea to start writing the paper while you are still doing the research work. This timing will be true for some of you in this class, but not for all of you. As you write papers in the future, you should consider his advice: as you are designing and conducting your studies, think about how you will present the your materials and methods in the Methods section and how you may want to present the data in the Results section. By doing this, you will make sure to note all the information for the Methods and Results sections you plan to write.

Other authors, as we shall see in the next lesson, state that the purpose of the Introduction is to provide for the readers the basic research question and the reasons for pursuing it. This is very similar to what Day says, "you should state briefly and clearly your purpose in writing the paper," as well as provide the background information and rationale that led to your research.

Note that the present tense is used for much of the Introduction because you are writing mostly about existing knowledge and the problem that your research is addressing.

Day's 5 rules for a good Introduction are worth reading several times. Be sure you understand these rules and apply them as you are writing this section:

1. Present very clearly the nature and scope of the research problem
2. Review the pertinent literature
3. State the method of investigation
4. State the major findings
5. State the main conclusions

By the way, his reference to "An O. Henry surprise ending" relates to an American author, O. Henry, whose short stories inevitably end with a surprise. In the third paragraph, Day makes a joke based on English grammar by saying that trying to build suspense in a scientific paper "goes over like a double negative at a grammarians' picnic." He's referring to an expression such as "I don't know nothing" (two negatives: "don't" and "nothing"). This type of expression is never pleasing to English grammarians, whether they are in a classroom or on a picnic.

As Day says, you are not writing fiction here; you are trying to write an Introduction that will convince the reader that your research question and answer are important. To do that, some experts recommend that you briefly summarize the important findings and conclusions in both the Abstract and the Introduction.

At the end of the first paragraph on page 35, Day suggests that the Introduction needs a "hook" (something that will make the readers want to read further), and his suggested "hook" is a clearly stated summary of what you want to convey in your Introduction: "Why did you choose that subject, and why is it important?"

The third paragraph on page 35 ends with the statement that "a bit of redundancy with the Abstract is often desirable." You probably have not written your abstract yet, but we think now is a good time to point out the differences between the Abstract and the Introduction. Your Abstract will provide a summary of each section of the paper; one or two sentences will be devoted to each section. Therefore, the Abstract describes the research problem and its background very concisely, whereas the main content of the Introduction is the statement of the problem and background information that gives its context and importance. The "bit of

redundancy" applies to the final parts of both the Abstract and the Introduction, which may succinctly summarize the results and conclusions (both of which will be more fully explained in your Results and Discussion, respectively). Whether the results and conclusions belong in the Introduction is controversial; we will discuss this controversy in more detail in the next lesson.

In the last section of this chapter, Day recommends that you mention in the Introduction any previous presentation or publication of this study. Some journals, however, prefer that you note any previous presentations or partial publications of the material in a footnote. Look at the Instructions to Authors and at articles published in your target journal to see how this situation is handled there. If you have published much of the information in a Chinese-language journal, it is appropriate to cite that publication in the Introduction.

Finally, the last paragraph deals with the problem of defining technical terms and abbreviations. It is particularly important for authors who do not speak English as their first language to tell the readers what they mean by scientific terminology, acronyms, and abbreviations. If you are not sure whether you need to provide an explanation, provide it. The journal editors can always remove an explanation or definition if they think their readers will not need it; however, leaving out a needed definition may confuse or mislead the readers. Remember that acronyms may mean different things in different countries, so take the extra time and effort to define each of these completely.

Each acronym or abbreviation should be explained the first time it is used (often in the Introduction); the full definition is given first, followed by the acronym in parentheses. For example, if the acronym SLE is used throughout your paper, it should look like this the first time it appears: "systemic lupus erythematosus (SLE)." After that, you can use SLE without defining it again. But it is very important that you define every acronym the first time you use it in your paper.

Notes on the Assignments

1. As you look for stock phrases in your journal of choice, you may find a better way to express something that you have already written in your Methods, Results, or Discussion. If this happens, go back to that section and make the change now so that you don't forget to do it. Find at least three phrases that seem to you to be "stock phrases," like those listed above, and give the list to your local instructor for feedback.
2. Read Chapter 7 in Day's book and begin to think about or write the Introduction for your own paper. In next week's lesson, we shall provide some more information about writing an effective Introduction, and we will look at and analyze the Introductions from the 5 sample articles.

AN ENDING NOTE: Please feel free to contact your local instructor with questions about this lesson or assignment.

Lesson Seventeen

Submitting Your Article To The Local Instructor; Tenses, Jargon, And Abbreviations In Research Articles

OBJECTIVES OF LESSON SEVENTEEN

By the end of this lesson, you will

1. have submitted a complete draft of your research article to the local instructor for final review before submission to the American expert editor
2. have learned more about the specialized use of English tenses, jargon, and abbreviations in research articles

ASSIGNMENTS FOR LESSON SEVENTEEN

1. Read through your article (including text, tables, illustrations, legends, and references) with particular attention to changes previously suggested to you. If you have any questions about the suggestions, ask your local instructor.
2. By the end of the week, submit the complete article to the local instructor for feedback. If any parts of the article are preliminary or not available, state the reason on a separate piece of paper, which you should also give to the local instructor. The next section of this lesson contains more information on this part of the assignment.
3. Read the course materials on tense in scientific writing, and read the section on verb tense on pages 164-166 of Day's book.
4. After you have submitted the paper to the local instructor, read the following:
 - > Chapter 28: "Avoiding Jargon"
 - > Chapter 29: "How and When to Use Abbreviations"
5. Look at the material in the following appendixes:
 - > Appendix 2: "Abbreviations That May Be Used Without Definition in Table Headings"
 - > Appendix 3: "Common Errors in Style and Spelling"
 - > Appendix 4: "Words and Expressions to Avoid"
 - > Appendix 5: "Prefixes and Abbreviations for SI [Système International] Units"
 - > Appendix 6: "Accepted Abbreviations and Symbols"
6. Make a note of anything in these chapters and appendixes in Day's book that might specifically apply to the paper you are writing. (This part of the assignment can also be done next week if you need all this week to prepare the paper for the local instructor.)

NOTES ON ASSIGNMENTS

Submitting Your Entire Article to the Local Instructor

Follow these steps to prepare your paper for the local instructor:

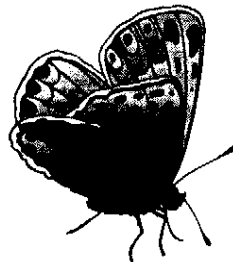
1. If you have not already done so, incorporate the changes suggested in the earlier reviews of the sections. (If you disagree with some of the changes, either discuss this

with the local instructor or provide a typed note stating your reasons for not making the changes.)

2. Carefully read through the entire article. Now is the time to stop looking at the pieces separately and to start looking at the paper as a unified piece of writing. As you read through your article, make sure that it meets the following criteria:
 - A. There are no spelling or math errors.
 - B. The different parts of the paper are consistent--for example, the sections of text are consistent with each other and with figures and tables.
 - C. All your tables, figures, and references are cited in order in the text.
 - D. The format matches that requested in your target journal's "Instructions to Authors." (When you submit your article, provide a copy of the "Instructions to Authors" from your target journal. If you have not been able to obtain a copy of these instructions, ask your local instructor about trying to get a copy through the Chinese interlibrary system.)
 - E. Each section contains the appropriate information for that section. (To review what belongs in each section, see Lesson 16, the last lesson of the first semester.)
 - F. Every page is typed neatly, and everything is double-spaced (including the references, the tables, and the legends).
 - G. You have provided copies of permission requests, if any, that you have sent to obtain permission to reproduce a table or figure from another source. (Keep the original signed permission to send to the journal when you submit the paper.) If you have not yet written such permission requests, next week's lesson will explain this process. Please make a list of the tables and illustrations that you have used from another source, and give the list to your local instructor.
3. Once this version is ready to give to the instructor, you may attach to it any questions about English usage or style. Type your questions on a separate sheet of paper, specifying clearly the page and section to which each question refers.
4. Remember that your local instructor is likely to be reviewing the full papers of several students in the next 2 weeks. To allow your local instructor to work efficiently, please give this version to him or her by the end of this week at the latest.

Tenses in Scientific English

Verb tenses are complicated in English, but you need not know every detail about their use to write a good scientific article. There are 12 tenses in English, but in most scientific articles, you will use only 2 of them. Let's look at an example of each of the 12 tenses first.



TENSE

Simple present
Simple past
Simple future
Present perfect
Past perfect
Future perfect
Present progressive
Past progressive
Future progressive
Present perfect progressive
Past perfect progressive
Future perfect progressive

EXAMPLE

You write a paper.
You wrote a paper.
You will write a paper.
You have written a paper.
You had written a paper.
You will have written a paper.
You are writing a paper.
You were writing a paper.
You will be writing a paper.

You have been writing a paper.
You had been writing a paper.
You will have been writing a paper.

All these tenses have their uses in English. However, in a scientific paper, you are generally describing something that is known to be true (and therefore you're using simple present tense) or something that was done or that happened (and therefore you're using simple past tense).

As you read Day's section "Tenses in Scientific Writing" (pages 164-166), notice that Day emphasizes the use of the simple present and the simple past tenses. He indicates the general rules for use of tense in the various sections of the research paper as follows:

ABSTRACT--use mostly simple past tense

INTRODUCTION--use mostly simple present tense

MATERIALS AND METHODS--use mostly simple past tense

RESULTS--use mostly simple past tense

DISCUSSION--use mostly simple present tense

In general, you should use simple present tense to discuss what has been found to be true (and validated by publication). However, you should use simple past tense to discuss what you did and what happened in the research you are describing in your paper. For example, look on page B-5 of Appendix B (the first page of the sample article by Nichol et al.).

> The first sentence of the Introduction is in the simple present tense: "Although most deaths from influenza occur among elderly people, all age groups are affected by this illness."

> Sentences in the Methods section of this paper generally are in simple past tense: "Subjects were recruited . . . Informed consent was obtained . . . The study was a randomized . . . Subjects received . . ."

> On page B-6, simple past tense is also used in the Results section: "A total of 849 subjects were enrolled . . . 3 subjects were dropped . . . vaccination was associated . . ."

> However, in the Discussion section of this paper (page B-7 of Appendix B), the authors

use both the simple present tense and the simple past tense: "The results of this placebo-controlled trial show . . . Immunization decreased the frequency . . ." Day explains this type of combination in his section on tenses. Such combinations occur most often in the Introductions and in the Discussions of research papers.

Now turn to pages 164-166 in Day's book and read his short, but comprehensive, explanation of the use of tenses in scientific writing.

Preview of Chapter 28 in Day's Book: "Avoiding Jargon"

In biomedical writing, jargon is sometimes the technical language of the appropriate scientific field, but sometimes it is pretentious language that can be simplified. As Day points out, it is not always possible to completely avoid the jargon used in a specific area of science. However, the researcher who wants the research to be understood clearly should avoid unnecessarily complex words or phrases that may confuse the readers.

Day's chapter on jargon is full of good advice, and you should read it carefully. We believe Day's most important message is on page 174: "If the terminology is not recognizable to any portion of your potential audience, you should (i) use simpler terminology or (ii) carefully define the esoteric terms (jargon) that you are using."

In the following paragraphs, we will note by page number some of this chapter's English idioms or humor. Some of these items will be helpful for you to understand; others are difficult to translate and can be ignored.

On page 173, the first word of the heading, "MUMBLESPEAK," is not a real word. Day is using it to mean all the strange or obscure terms that scientists sometimes use. The word "mumbling" means to speak softly or to run the sounds together so that the listener can't understand the words. A writer who writes unclearly is writing "mumblespeak." "Mumblespeak" must be avoided in research papers. The last parts of this section are jokes that are difficult to translate and not essential to the chapter's message.

On pages 174 and 175, in the section called "MOTTOES TO LIVE BY," Day lists 7 phrases of advice that are well-known to Americans. He has rewritten these phrases into hard-to-understand sentences and wordy jargon. Here we shall give you the actual sayings as most Americans know them. You can see they are much more concise and clear when put into simpler language. Perhaps they will remind you of some similar sayings in Chinese.

1. Let sleeping dogs lie.
2. Curiosity killed the cat.
3. When the cat's away, the mice will play.
4. An apple a day keeps the doctor away.
5. You can't teach an old dog new tricks.
6. A rolling stone gathers no moss.
7. Don't beat a dead horse.

On page 176, Day provides what seems to be a silly example of extra words. He is correct that his "translation" is clearer, but remember that the longer version might be necessary for legal reasons in some cases.

Day ends this chapter with a series of jokes that start on the bottom of page 177 and go through page 178. These jokes also are difficult to translate and are not necessary to the message of the chapter.

Before you go to the next chapter, please look at Appendix 4, which starts on page 195. It contains long words or phrases that you may see in some scientific articles and suggests shorter, simpler phrases that can often be used in their place. Your paper will be more readable if you can keep your writing concise and simple. You can use Appendix 4 as one guide to help you do that.

Preview of Chapter 29 in Day's Book: "How and When to Use Abbreviations"

Some people say that you should NEVER use abbreviations in scientific writing. Their intentions are good; they want everything to be very clear to the reader. Others think that you should use every possible abbreviation. Their intentions are also good; they want your paper to be as brief as possible and thus readable.

Both these extreme positions are dangerous. If you never use abbreviations, your papers will be unnecessarily wordy. If you always use abbreviations, you may confuse some of your readers, including reviewers and editors. Therefore, a balance is needed in which you use abbreviations to make your writing more concise without sacrificing clarity.

In most scientific writing, some abbreviations are necessary, and most of your readers will understand them readily. For example, you need not explain the abbreviations for well-known units of measure. Anyone reading a scientific journal will know that "4 mm" means "4 millimeters."

You should define most other abbreviations and acronyms at least once. Although Day gives a list of accepted abbreviations in Appendix 6, some journals will not allow their use. Whether a journal uses abbreviations depends on what the journal editor considers best for the readership of that journal. Check the "Instructions to Authors" for your target journal; it may contain specific advice about abbreviations. Also, look at other articles in that journal to see how abbreviations are handled and which ones are used.

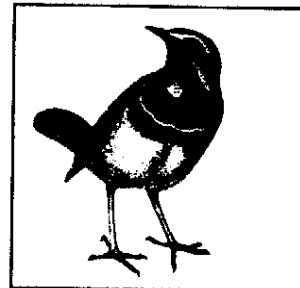
A summary of the main points from Chapter 29 ("How and When to Use Abbreviations") appears on the next page.

MAIN POINTS FROM DAY'S CHAPTER 29 "How and When to Use Abbreviations"

1. Keep abbreviations to a minimum.
2. When you use an abbreviation, spell the word or phrase out the first time you use it, then follow it with the abbreviation in parentheses. After that, you may use the abbreviation by itself in the rest of the paper.
3. Don't use abbreviations in the title or the abstract of an article.
4. Except for the standard abbreviations (see Day's Appendix 6), use abbreviations only for long terms that occur often (more than 6 times) in the paper.
5. Use abbreviations for genus names after the first time the genus name is spelled out. Make sure, however, that the abbreviation will not be confused with another genus

- name that starts with the same letter and is also mentioned in your paper.
6. Use SI abbreviations for units of measure; there is no need to spell these out.

AN ENDING NOTE: Congratulations on completing your paper for review in its entirety for your local instructor! Please feel free to contact your local instructor with questions about this lesson or assignment.



Lesson Eighteen

Using English Prepositions

OBJECTIVES OF LESSON EIGHTEEN:

By the end of this lesson, you will

1. Gain more familiarity with the use of English prepositions, especially in expressions of time and in scientific expressions
2. Be able to finish within the next 2 weeks any further work needed to your drafts of the Methods, the Results, the Author List, and the Reference List

ASSIGNMENTS FOR LESSON EIGHTEEN:

1. Finish any previous assignment not yet completed and give them to your local instructor for feedback. Revise the sections of your paper according to feedback from instructor.
2. Give your answers to Worksheet 9-1, 9-2, and 9-3 to your local instructor for feedback.

THE USE OF PREPOSITIONS IN ENGLISH

Prepositions are words that show the relationship of 1 word or group of words to another. Without prepositions, we would really be lost. In the following pairs of sentences, the preposition is underlined. You can tell from these sentences that it is important to choose the right preposition if you want to write clearly in English.

- "The bird is on the house." vs "The bird is in the house."
- "The rats with tumors died." vs "The rats without tumors died."
- "The patient is in the room." vs "The patient is near the room."

In biomedical English, the use of prepositions can be somewhat idiomatic. We will

discuss 3 types of idiomatic uses of prepositions in this lesson (for some of you, this will be a review):

- time terms
- academic and location statements
- clinical and research statements

Time Terms

Three prepositions are used especially often to show time relationships: at, in, on.

•At is often used when the writer is specifying a certain time: at 9:00, at breakfast, at the appropriate time.

•In is often used for three purposes:

>>to indicate a part of the day--in the morning, in the afternoon (exceptions: at night, at dawn)

>>to indicate a year or month in which something occurred: in 1996, in September

>>to indicate a span of time in which some act was (or will be) completed: in an hour, in 10 years

•On is often used in specifying a certain day or date: on May 10, on Friday.

Other prepositions used with time terms include during, within, for, after, before, of, between/and, and from/to.

•During is used to express a range of time. Rather than write that something happened at a certain time, you can write that it happened during a year or even during a decade. Examples:

>>During the past year, we performed two of the experiments.

>>She contracted the disease during her stay in Africa.

•Within is used to express a range of time in which an action took place or will take place. Examples:

>>We need the medicine within 4 days.

>>Within the next 2 years, he will receive his degree in biochemistry.

•For is used to express a certain length of time (often used with verbs preceded by have or has). Examples:

>>She hasn't eaten for 2 days.

>>They have been working in that laboratory for 18 years.

•After and before are used to show the chronological connections between 2 events. Examples:

>>After the accident, the laboratory was rebuilt.

>>I will go to England the week after next.

>>We talked to the patient before her surgery.

•An of phrase is sometimes after a within phrase(as in the examples below) to show a time relationship. Examples:

>>The victims died within 2 hours of the accident.

>>You must add the second ingredient within 30 seconds of adding the first ingredient.

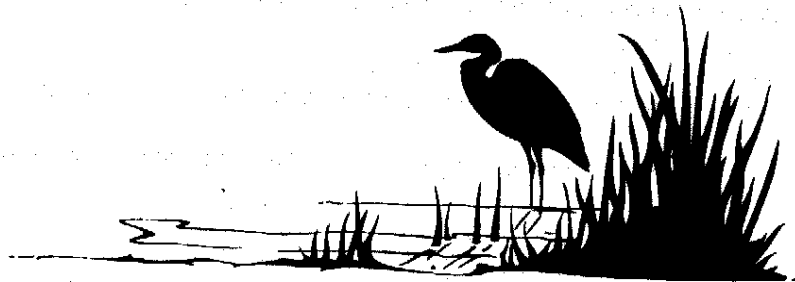
•Between and and are used together to show ranges of times. Examples:

- >>The patients were all between 20 and 40 years old.
- >>This procedure will take between 1 and 3 hours.

•From and to are used together to show ranges of times and other quantities as well. Often this pair is used with the verb "range." Examples:

- >>The patients' ages ranged from 80 to 93 years.
- >>The data from the study indicated that the time for total destruction of cells ranged from 8 to 45 hours.

Use the principles and examples above to fill in the answers on Worksheet 9-1. Please put the answers on a separate page, label the page "Worksheet 9-1," and give the page to your local instructor for feedback.



WORKSHEET 9-1: PREPOSITIONS IN TIME TERMS

1. Today is November 1, 1996. My sister moved to Beijing on November 1, 1994. In other words, she has lived here _____ 2 years.
2. Now it is January 1, 1997. Since January 1, 1994, we have published 7 papers. _____ the past 3 years, we have published 7 papers.
3. Now it is 9:30 A.M. on November 5. I will visit you at 7:30 P.M. on November 5. In other words, I will visit you _____ the evening.
4. Now it is 1996. My nephew will go to America in 1998. In other words, he will go to America the year _____ next.
5. When did Mr. Smith become ill?
 - A. He became ill _____ 1994.
 - B. He became ill _____ the summer.
 - C. He became ill _____ July.
 - D. He became ill _____ July 4.
 - E. He became ill _____ the morning.
 - F. He became ill _____ 6:30 A.M.
6. One infant died at age 30 days. The other died at age 52 days. Both died _____ 2 months _____ birth.
7. The first treatment will be surgery. The second treatment will be chemotherapy. Therefore, the patient will undergo surgery _____ chemotherapy.
8. The ages of the patients were 16, 17, 19, 21, and 24 years. The patients were all _____ 15 _____ 25 years of age.
9. The ages of the patients were 95, 98, 102, 103, and 105 years. In other words, patients' ages ranged _____ 95 _____ 105 years.
10. Ms. Lee began the project on January 1 and finished it on March 15. In other words, she finished it _____ 3 months.



Prepositions in Statements of Academic Position and Geographical Location

Discussing your work in an academic institution entails using English prepositions in certain ways. Prepositions that are used in this type of discussion include at, by, from, of, on, in, and with. You can use the following sentences to guide you in correct usage in conversation or in business letters:



I teach at the University of California in San Diego.
I am a professor of writing.
I hold a master's degree in counseling.
I graduated from Rockhurst College in Kansas City, Missouri.
I am also a graduate of Arizona State University.
Phoenix is the capital of Arizona.
He will soon finish his fellowship in medical writing at Columbia University, which is in New York.
I am writing a book on English grammar.
Dr. Gastel has written a book on science journalism.
Dr. Jones specializes in pediatric oncology.
The lecture on Thursday will be given by Dr. Chen, who has worked closely with the researchers at the National Institutes of Health.
He teaches in the department of pediatrics.
Those students are from Oxford University. They studied at Oxford for several years.
Dr. Li has a very good article in press now; the article is on pediatric cancer, and it has been accepted by JAMA.
I teach at a university, but I also do writing projects for several companies.
We are impressed by the recent advances in AIDS research.

Place Names and Prepositions

Some of the sentences above also related to place names (at a university, in a city). The general principles for using prepositions for place names are as follows:

1. Use at for a meeting place or location (at his house, at the party); for closeness to an object or place (at the desk, at the counter, at the corner or crossroads); or for a target (throwing something at his little sister).
2. Use on to indicate closeness to a flat surface (on the chair) or to indicate a street location (on Shanghai Street).
3. Use in to indicate inside another object (the koala in the refrigerator) or to indicate a geographic location (in Boston, in the USA).
4. With "go" use the preposition to: I will go to school soon.
5. With "return" use the preposition from: I will return from class at 10 o'clock.
6. Depending on the meaning, you can use either to or from after the word come: He will come from Germany on Wednesday, but I will come to the meeting tomorrow.

Use the principles and the examples above to fill in the answers on Worksheet 9-2. Please put the answers on a separate page, label the page "Worksheet 9-2," and give the page to your local instructor for feedback.

WORKSHEET 9-2: PREPOSITIONS IN ACADEMIC/LOCATION STATEMENTS

1. I teach ___ the department ___ biochemistry.
2. I teach ___ Beijing Medical University.
3. I teach ___ Beijing.
4. I am a professor ___ psychology.
5. Beijing is the capital ___ China.
6. My son is a graduate student ___ the department ___ anatomy.
7. ___ the past 3 years, I have been doing research ___ cancer treatments.
8. I am collaborating ___ a group ___ scientists ___ the National Cancer Institute.
9. I specialize ___ neurology.
10. Professor Smith will give a lecture ___ recent advances ___ immunology.
11. Mr. Gao has a master's degree ___ pharmacology.
12. Dr. Li will soon begin a fellowship ___ pediatrics ___ Yale University, which is ___ Massachusetts.
13. Last year I gave a lecture ___ family planning.
14. Our article is now ___ press. It has been accepted ___ the *Chinese Medical Journal*.
15. I graduated ___ Beijing Medical College.
16. I am a graduate ___ Beijing Medical College.
17. He has written a book ___ neonatology.
18. The guest speaker has written a textbook ___ biochemistry.
19. He has gone ___ the United States.
20. He soon will return ___ the United States.
21. She works ___ the World Health Organization.



Science (Clinical/Laboratory) Terms

In many clinical or laboratory terms, prepositions are used to indicate relationships. The phrases below (in alphabetical order) are examples of some of the idiomatic phrases used in biomedical English.

accompanied by loss of appetite

admitted to the hospital

aggregate in the cells

alternative to traditional Western medicine

as a last resort

cases of the disease

cause of the disease

changes in the patient's weight

clinical features of Down syndrome

complicated by the side effects

complication of the treatment

consistent with our results

consists of

course in biostatistics for the graduates

developed in all but 1 patient

devotes several hours to the material

diagnosis based on the results

the diameter of the shadow

died of the disease

different degrees of success

disease of this origin

drops of substance A added to substance B

effects of the treatment on the disease

evidence of cardiac failure

[I am] familiar with the study

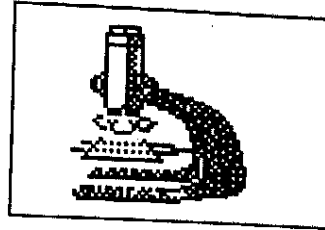
[the study] is familiar to me

finding occurred in a small percentage of patients

5 of 10 students



follow up on these cases for 2 years
instructions for the device
in critical condition
in detail
influence of variable A on variable B
in good [or poor] health
in his left eye
injected into the muscle
in diameter
in Table 3
in the experimental group
in the same class
in two cases
limit the number of cases to 2000
most common of the side effects
occurs in women only
occurs late in the course
of the same belief
of long [or short] duration
on physical examination
patients with AIDS
reasons for the relapse
recovery from a disease
recovery of material
related to the experimental treatment
reported in the literature
research on pancreatic cancer
same as our findings
similar to our findings
stained with hematoxylin and eosin
students at the university
take someone on a tour of the school
wait for the results
within normal limits



worry about the symptoms

increased by 4°C (indicates that the difference between "before" and "after" measurements was the number indicated)

increased to 47°C (indicates the value of the "after" measurement)

Use the phrases above and the other information in this lesson to fill in the blanks in the sentences on Worksheet 9-3. Please put the answers on a separate page, label the page "Worksheet 9-3," and give the page to your local instructor for feedback.



WORKSHEET 9-3: PREPOSITIONS IN CLINICAL OR LABORATORY STATEMENTS

1. A 12-year-old girl was admitted ____ the hospital.
2. The results were ____ normal limits.
3. He had a hearing loss ____ his right ear.
4. ____ physical examination, it was discovered that the patient's reflexes were weak.
5. The patient was ____ critical condition.
6. We are ____ the same belief.
7. ____ a last resort, we administered the experimental drug.
8. I took the visitor ____ a tour ____ my department.
9. The patient died ____ the infection.
10. The effects of the drug ____ the disease were apparent.
11. The compounds induced different degrees ____ mutation.
12. The effect is related ____ its incorporation into DNA.
13. The molecules have a strong tendency to aggregate ____ the solution.
14. Please send me the instruction manual ____ the instrument.
15. Gentian violet was injected ____ the fistula.
16. The patient had emphysema ____ long duration.
17. Diabetes mellitus is the most common ____ these disorders.
18. Each animal ____ Group B received the drug.
19. The conclusion is consistent ____ our data.
20. This finding occurred ____ 58% ____ the patients.
21. These symptoms were accompanied ____ fever.
22. I have seen this film four times. I am very familiar ____ it. It is very familiar ____ me.
23. The influence of stress ____ diabetes has been proved.
24. The book discusses the topic ____ detail.
25. This field is nearly the same ____ medical microbiology.
26. This field is similar ____ medical microbiology.
27. We are studying the reasons ____ the clicking of the joint.
28. The gels were stained ____ Coomassie Brilliant Blue R-250.
29. The results were favorable ____ six cases.
30. Many scientists worry ____ these problems.

31. Don't hurry; I'll wait ____ you.
32. This symptom occurs early ____ the disease.
33. Many such findings have been reported ____ the literature.
34. Before the procedure, the weight of the substance was 1.2 g; after the procedure, its weight was 44.8 g. Its weight increased ____ 43.6 g.
35. We give a required course ____ environmental health ____ the undergraduates ____ the school of public health.
36. The disease usually occurs ____ middle-aged men.
37. Cushing's disease ____ nonpituitary origin is called ectopic ACTH syndrome.
38. This organism is a common cause ____ meningitis.
39. The diagnosis is based mainly ____ mycological examination.
40. The main clinical features ____ botulism will be listed.
41. The lesion was 1.2 cm ____ diameter.
42. The mixture consists ____ A, B, and C.
43. She does research ____ liver disease.
44. This is a common complication ____ the treatment.
45. None of the subjects had evidence ____ heart disease.
46. The results are shown ____ Table 1.
47. The rate of recovery ____ the disease was 78%.
48. Of the 47 cases, 21 were complicated ____ septic shock.
49. All patients ____ carotid arteritis recovered.
50. We studied 29 cases ____ intestinal polyposis.
51. Previously, he had been ____ good health.
52. The book devotes 3 chapters ____ this subject.
53. Tumors developed ____ 14 animals.
54. The new treatment is an alternative ____ surgery.
55. A few drops ____ the dye were added ____ the buffer ____ the upper tank.
56. These measures were taken in order to limit the population ____ 1.2 billion.
57. ____ the control group, the tumors were larger.
58. We identified 3 other cases ____ the same family.
59. Seven ____ the 9 patients were followed up ____ more than 1 year.
60. There are several changes ____ the cells during fusion.

AN ENDING NOTE: Please feel free to contact your local instructor with questions about this lesson.

Lesson Nineteen

Use and Misuse of English in Scientific Writing; Use of Articles

OBJECTIVES FOR LESSON NINETEEN:

By the end of this lesson, you will

1. know more about some of the more advanced rules for using English
2. be more aware of the English-usage reference books available to you
3. know more about the correct use of English articles

ASSIGNMENTS FOR LESSON NINETEEN

1. Read this entire lesson.
2. When indicated in these materials, read the following pages in Chapter 27 ("Use and Misuse of English") in Day's book: 157, 158 (paragraphs 1 and 2), and 166-170.
3. When indicated in these materials, read page 26 of Iles's "How to Write & Publish More Journal Articles."
4. Do the exercises on the use of articles in this lesson, and give the answers to your local instructor for feedback.

NOTES ON ASSIGNMENTS

Chapter 27 in Day's Book ("Use and Misuse of English")

This chapter introduces important concepts that will help you write better in English. Because the book was written for an American audience, Day has tried to make the concepts easier by illustrating them with puns, stories, and jokes that are not always easy to translate. Therefore, as we go through this lesson, we ask you to read only some sections of the chapter to introduce or supplement this course material.

Please read page 157 in Day's book now.

KEEP IT SIMPLE

The 1st quote in this chapter is wonderful. It emphasizes 2 things:

1. Short, simple words can be powerful.
2. Long, obscure words are sometimes used because authors are trying to hide their lack of knowledge.

Long words are sometimes necessary in scientific writing, but, when possible, it is better to use shorter, less complicated words or phrases. Look again at Appendix 4 in Day's book ("Words and Expressions to Avoid"). Note, for example, that you can use "many" (or "several") instead of the vague, longer expression "a number of"; instead of the 4-syllable word "facilitate," you can use 1-syllable word "help." Such substitutions help readers understand your meaning more quickly and easily.

The last paragraph on page 157 contains a very important message: "Use simple declarative sentences whenever you can." For example, "Mr. Day wrote this book" is a simple declarative sentence. The next paragraph explains the grammatical meanings of "simple" and

"declarative."

In English, a "simple" sentence is a sentence with one independent clause (subject plus verb that expresses a complete thought). Most of the sentences in Day's book are simple sentences. "Declarative" means that the sentence states a fact or opinion. It is neither a question ("Why do leaves turn red in the autumn?") nor a command ("Read this chapter."). Once, in an advanced writing class, the instructor warned Elizabeth not to use a question to begin her paper because it may lose some readers. The question was, "Is there a philosophy of editing?" The teacher said that some readers will either say "No" or "Who cares?" and not read further. Instead, he encouraged her to define the philosophy of editing in a simple declarative sentence at the beginning of the paper.

Please read paragraphs 1-3 on page 158 in Day's book now.

SPLIT INFINITIVES, DANGLING MODIFIERS, AND MISPLACED MODIFIERS

Day begins this section by defining "syntax": "that part of grammar dealing with the way in which words are put together to form phrases, clauses, or sentences." Both split infinitives and dangling modifiers are types of problems with word order.

Split infinitives: In English, an infinitive is a grammatical structure consisting of the word "to" (or "to be") plus a verb. Some examples of infinitives are "to read," "to write," "to be published," and "to be honored."

Many years ago, teachers of English said that it was always wrong to "split" an infinitive (that is, to put one or more words between the "to" and the verb). Now, most writers and editors understand that splitting an infinitive is acceptable, as long as it doesn't confuse the reader or make the sentence hard to read. Some editors still use the rule, so the best policy is to avoid split infinitives when possible.

The left column below shows 4 split infinitives; the right column shows how the word order can be changed to avoid a split infinitive.

Split Infinitive

to carefully examine
to quickly recover
to not follow up
to be specifically chosen

Corrected Word Order

to examine carefully
to recover quickly
not to follow up
to be chosen specifically

Dangling and misplaced modifiers: A "modifier" is a word that describes another word in the sentence. A sentence with a "dangling modifier" (often a word ending in "-ing") contains a modifier but no word that it can logically modify. In the example below, the dangling modifier is underlined in Sentence A-1 and corrected in Sentence A-2.

A-1. Using this method, the new equipment was tested.

[This is a very common dangling modifier in biomedical writing. It is a dangling modifier because no person is mentioned for "using"; the sentence seems to say that the equipment is "using the method."]

A-2. Using this method, we tested the new equipment.

[Now there is a person in the sentence to do the "using." If it is not important to indicate

who "used" the method, you could also correct this sentence by changing it to this: "This method was used to test the equipment."

A "misplaced modifier" is a modifier that has been put in the wrong place in a sentence. (By "wrong place," we mean in a place that can confuse the reader.) In the example below (taken from the 2nd paragraph on page 158 of Day's text), the misplaced modifier is underlined in Sentence B-1 and corrected in Sentence B-2 shown on the next page.

B-1. Lying on top of the intestine, you will perhaps make out [that is, "see"] a small transparent thread.
[It is the thread, not you, that is lying on top of the intestine. The modifying phrase must be moved closer to the word it modifies.]

B-2. You will perhaps see a small transparent thread lying on top of the intestine.
[Now it is clear that the thread is lying on top of the intestine.]

From the 3rd paragraph on page 158 through page 160, the text is mostly humor that is hard to translate and not essential to this lesson. Note, however, if you look at the list of rules on page 160, that this list is a joke. The statement of each "rule" breaks that rule, so don't use those sentences as examples of good writing. You can also skip the material on pages 161 through 163. In Lesson 2-3, we covered pages 164 and 165, which discuss tenses in English scientific writing.

Now, please read page 166 (starting at the section called "ACTIVE VERSUS PASSIVE VOICE") through page 170.

ACTIVE AND PASSIVE VOICE

Let's start by clearly defining active and passive voice. "Voice" is a characteristic of a verb used in a sentence; it indicates the relationship between the subject and its verb.

In active voice, the subject performs the action. In the sentence, "John hit the ball," the verb "hit" is in the active voice because the subject "John" is doing the hitting.

In passive voice, the subject receives the action. In the sentence, "The ball was hit by John," the verb "was hit" is in the passive voice because the subject "ball" is receiving the action—in this case, it is being hit.

Now let's look at a few more sentences as they would be written in active voice and passive voice.

ACTIVE: The researchers fed the mice.

PASSIVE: The mice were fed by the researchers.

ACTIVE: The surgeon performed the operation. OR
The patient underwent the operation.

PASSIVE: The operation was performed by the surgeon.
The operation was performed on the patient.

ACTIVE: We studied the development of the bacteria.

PASSIVE: The development of the bacteria was studied.

In the first paragraph in Day's section on voice (page 166), you can ignore the second sentence in parentheses. The most important points of this section are clear from the rest of the text:

- Usually the active voice is clearer and more powerful than the passive voice. It also tends to be shorter.
- It is acceptable to use "I" or "we" in biomedical writing.
- It is sometimes acceptable to use the passive voice.

In the 3rd paragraph of this section, Day discusses using "The authors found" to avoid passive voice. Most journal editors agree with him that "We found" is preferable to "The authors found."

EUPHEMISMS

Day concentrates on words for "dying" in his paragraph on euphemisms (pages 166 and 167). "Euphemism" means a word that sounds less harsh or direct than the normal term. For example, saying that someone "passed away" sounds less harsh than saying that someone "died." Most journal editors prefer "died" (for people) and "were killed" (for laboratory animals) instead of less direct terms. Although such thoughtful phrases as "passed away" may be better to use at a funeral, "died" is preferable in scientific writing.

The message here is that you should use the most clear, direct words. Remember that you are writing for other researchers who know that people die and that laboratory animals are killed for experimental studies. As we discussed before, the short, clear word is usually best for scientific writing.

The last sentence in Day's paragraph on euphemism gives two humorous answers to the test question being discussed. "Get the lead out" is funny because it is a slang expression for "Hurry up" (that is, get the lead out of your shoes). "Some were dead from the lead in the bread" is a short sentence with 3 rhyming words, which is unusual in English and not acceptable in biomedical writing (because the rhyming of the words will interfere with the reader's focus on the scientific message).

SINGULARS AND PLURALS

This short but important section does not need much explanation. On the top of page 168, in the last sentence of the first paragraph, note that "solecism" means "a nonstandard use of a word." The final paragraph of this section contains a sample indented paragraph. This indented paragraph contains many errors in the use of plural forms (such as using "Memoranda" when singular form ["Memorandum"] should be used). This sample paragraph is an example of bad writing. It is always wise to check a dictionary for correct singular and plural forms.

NOUN PROBLEMS

An "abstract noun" is any noun that does not name a thing or person that can be touched or sensed. As Day points out on page 168, it is often better to change abstract nouns into verbs so that your sentence will be more clear and powerful. Remember that nouns name things (like "examination") and that verbs name actions (like "examine"). Day's examples in the first paragraph of this section are very good.

The last few sentences in the second paragraph of this section present humorous examples. First, the use of "child psychiatrist" is ambiguous because the psychiatrist either may be a

child or may treat children. Second, "sewer" is an English word with at least 2 meanings, as Day indicates: It may mean someone who sews (as it does in the headline quoted), or it may mean the pipe system for disposal of sewage.

The third paragraph (pages 168 and 169) talks about noun strings (or noun-clusters). Day's point here can be expressed with 2 rules:

1. When you have 3 nouns together, make sure that the meaning is clear.
2. When you have more than 3 nouns together, try to change the structure to clarify the meaning.

Look at Appendix 3 in the text, and mark the problem words that might apply to your writing. Reviewing this list during one revision of your paper might improve the noun usage in your paper.

NUMBERS

This rules given on page 109 about numbers are used by some journals. However, not all journal editors use these rules. Check the "Instructions to Authors" in your target journal; you may find guidelines there about use of numbers. The 2 major style manuals for biomedical editing also give rules for use of numbers (*American Medical Association Manual of Style*, 8th ed, 1989, and *Scientific Style and Format: The CBE Manual for Authors, Editors, and Publishers*, 6th ed, 1994). Your local instructor has copies of these 2 manuals.

ODDS AND ENDS

As you read this section, note that even many native English speakers have trouble writing correct scientific English. As Day says, English is a strange language. But the more you write and the more you look carefully at suggestions from editors, the better your writing will become. The last paragraph in this section (pages 170 to 171) recommends a book by Strunk and White and a book by Fowler. These are classic books on writing in English, but they are somewhat out of date. Thus, rather than trying to buy these books, it is better for you to work with your local instructor to improve your writing.

The last two sentences in this section are jokes. "Do not pass go; do not collect \$200" is a reference to a popular U.S. game called MONOPOLY. The last sentence refers to Day's own book *Scientific English*; although he is joking about your buying 3 copies of the book, we think that *Scientific English* might be very helpful for you as you continue to improve your writing for English-language medical journals.

Resources Mentioned in "How to Write & Publish More Journal Articles" by Iles

On page 26 of this booklet, Iles talks about the usefulness of a general English dictionary and a good medical dictionary. Your local instructor has the 1994 edition of *Dorland's Illustrated Medical Dictionary*, which is a dictionary that many biomedical journals use. It is interesting that, in the 4th paragraph on this page, Iles makes a joke about those people who still believe that "data" is plural. You can see that even the writing experts disagree on correct English usage (Day says that "data" must be plural). Such differences are one reason that



editorial styles differ among English-language biomedical journals. (Also, notice that Iles recommends that biomedical writers read the book by Day that we are using as a text in this course! So, you can see that it is a well-respected book among American biomedical writers.)

You can skip pages 27-36 in Iles's booklet.

Resources Available to You

Your local instructor has the following books that provide additional information on biomedical writing and English usage:

1. Huth EJ. *How to Write and Publish Papers in the Medical Sciences*, 2nd ed. Baltimore: Williams & Wilkins, 1990.
2. Iverson C, Dan BB, Gitman P, et al. *American Medical Association Manual of Style*, 8th ed. Baltimore: Williams & Wilkins, 1989.
3. Style Manual Committee, Council of Biology Editors. *Scientific Style and Format: The CBE Manual for Authors, Editors, and Publishers*, 6th ed. New York: Cambridge University Press, 1994.
4. Zeiger M. *Essentials of Writing Biomedical Research Papers*. New York: McGraw-Hill, 1991.
5. *Dorland's Illustrated Medical Dictionary*, 28th ed. Philadelphia, PA: W.B. Saunders Co., 1994.



THE USE OF ARTICLES IN ENGLISH

There are only 3 articles in the English language: the indefinite articles a and an and the definite article the. Many English grammar books do not tell much about the use of articles. Those of us whose native language is English know when it "sounds" right to use 1 of these 3 words.

The following 4 principles and discussion concern the use of articles in English. These are based on material from Diane Hacker's *A Writer's Reference* (pages 169-172).

In general, these 3 articles are used to show that a noun is soon to follow. Sometimes the noun comes right away, and sometimes there are 1 or more words between the article and its noun, as shown in the 3 examples below:

1. the goat, the old goat, the slow old goat
2. a cat, a black cat, a friendly black cat
3. an apple, an expensive apple, an extremely expensive apple

Notice that a is used whenever the sound following it is a consonant sound (a nest, a young girl, a United Nations agency, a humorous man). However, if the sound following the indefinite article is a vowel sound, an is used (an umbrella, an honor, an eagle, an estimated amount).

There are other words in English that also mark nouns. These include possessive nouns (Chang's house); numbers (one apple); and some pronouns (all, any, each, either, every, few, her, his, its, many, more, most, much, my, neither, our, several, some, that, their, these, this, those, whose, and your). Usually, if one of these words is used, you don't use an article (you wouldn't write "one of these the words"; delete this "the"). However, there are a few common exceptions, including a few (as in "a few men"), the most (as in "the most helpful person"), and all the (as in "all the horses").

Four Principles

The following 4 principles should help guide you in using the three English articles:



PRINCIPLE 1. Use a or an with singular nouns that name things that can be counted but whose specific identity is not known to the reader.

We use the name "count nouns" for nouns that name things that can be counted. There are many count nouns in English. Here are 3 examples: a boy, two boys; a desk, three desks; a pie, four pies.

This rule shows that it is correct to write about "a patient." However, it is incorrect to write about "a biology" (because "biology" is not a count noun). And, of course, you would not write "a patients" (because "patients" is a plural count noun).

PRINCIPLE 2. Do not use a or an with singular nouns that name things that cannot be counted.

Logically, "noncount nouns" are nouns that name things that cannot be counted. Again, there are many such nouns in English, including such words as chocolate, water, tea, rice, oil, cereal, celery, dirt, air, silver, plastic, carpeting, furniture, peace, happiness, justice, truth, and jewelry, work, weather, traffic.

This rule shows that you cannot write "a water was given to the patient," but you can write "a glass of water was given to the patient," because "glass" is a count noun.

PRINCIPLE 3. Use the with most nouns whose identity is known to the reader.

You would use the to refer to a specific member of a group. For example, you might ask for "the computer disk" that has data you need, rather than just asking for "a computer disk," which may be empty or have some other irrelevant information on it.

Here are some situations in which the reader will know the identity of a specific noun.

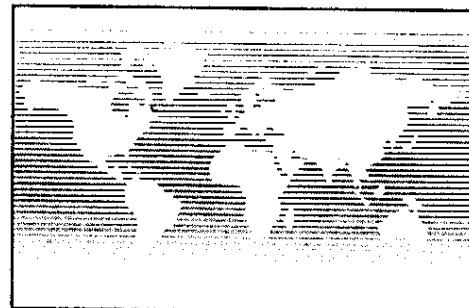
- A. The noun has been mentioned already.
Example: "This patient had a tumor in her right lung. We removed the tumor."
- B. A group of words following the noun limits its identity.
Example: "We first treated the patients who were most severely injured."

- C. A word like best or most intelligent limits the identity of the noun.
Example: "The best formula for that compound was developed 3 years ago.")
- D. The noun describes a person, place, or thing that is unique.
Example: "I was very lucky to see the Great Wall."
- E. The identity of the noun is made clear by the context or situation.
Example: "We were all very interested in Dr. Li's experiment. We hoped the results of the experiment would prove that his theory was correct."

PRINCIPLE 4. Do not use *the* with plural or noncount nouns that mean "all" or "in general"; do not use *the* with most singular proper nouns. As you may know, proper nouns are nouns that name specific places or people (the first letter of a proper noun is capitalized in English); for example, "city" is a common noun, but "Beijing" is a proper noun.

Example #1: "Astronomy is the study of the stars." Do not put "the" before "astronomy"--it is a noncount noun with a general meaning. This is true of most fields of study, including those ending in -ology. You don't receive a degree in "the pathology"; you receive a degree in pathology.

Example #2: "We went to see the festivities in Tienanman Square." Do not put "the" before "Tienanman" here. There are some exceptions to this rule. We saw one of these exceptions above ("the Great Wall"); other exceptions include names of large regions or deserts ("the Gobi Desert"), the names of large bodies of water ("the Pacific Ocean," "the Yangtze River"), and the names of some countries ("the USA," "the PRC," but "China" with no "the").



All these principles are helpful, but all of them have some exceptions. Sometimes it's a matter of custom. One good way to develop the habit for using English articles correctly is to notice how a, an, and the are used in the English-language scientific papers that you read.

Use Worksheet 10 to practice these 4 principles. As you do the worksheet, remember these points:

- Noncount nouns usually are not preceded by articles.
- Count nouns often are preceded by articles:
 - >>by a or an if the noun is not a specific thing
 - >>by the if the writer is referring to a specific thing

WORKSHEET 10: USE OF ARTICLES

Using the 4 principles above to help you choose, circle the better choice from each of the pairs in parentheses.

1. I am interested in (gastrointestinal, the gastrointestinal) physiology.
2. An association of the disease with (malformations, the malformations) of the urinary tract has been reported.
3. He noticed (rash, a rash) on his feet.
4. As I mentioned in (last, the last) letter, I will arrive on Tuesday.
5. According to the agreement that we made before I left (USA, the USA), they will pay his expenses.
6. The results conformed to (Michaelis-Menten equation, the Michaelis-Menten equation).
7. According to (literature, the literature), these results are unusual.
8. (Transmission electron microscope, The transmission electron microscope) consists of 4 parts.
9. (The pain, Pain) is in the right lower quadrant of (abdomen, the abdomen).
10. The diagnosis is (cancer, the cancer) of (pancreas, the pancreas).
11. The disease is usually treated with (penicillin, the penicillin).
12. The cells were scraped from the bottom of (erosion, the erosion).
13. (Author, The author) used this case to teach the class.
14. The pathogenesis of (AIDS, the AIDS) is not yet fully understood.

THE WRITING ASSIGNMENT

There is no additional writing assignment for this lesson except the exercise on the use of articles in English. Give your answers to your local instructor for feedback.

AN ENDING NOTE: Please feel free to contact your local instructor with questions about this lesson or assignment.

Lesson Twenty-Seven

Writing Concisely, Revising and Proofreading

OBJECTIVES OF LESSON TWENTY-SEVEN

By the end of this lesson, you will

1. understand better the need for writing concisely
2. have learned some ways to make your writing clearer and more concise
3. be more ready to use the changes suggested by the U.S. editor for your article
4. be more ready to begin the final revision stages (revising and proofreading) before submission to your target journal

ASSIGNMENTS FOR LESSON TWENTY-SEVEN

1. On the basis of the material provided in Appendix 4 of Day's book, do the 2 exercises at the end of this lesson. Give your answers to your local instructor.
2. If you have time, read through the paper that you have sent to the U.S. editor or look through your most recent draft. If you find places that can be made more concise, mark them. It may be interesting to see how many of those changes are also made by the U.S. editor.
If you have received the edited article from the U.S. editor, do Assignments 3 and 4.
3. After reading the course material, look through the editing marks and queries on your article. Begin to revise your paper according to the comments that you understand and agree with. If there are some that are not clear or that you do not agree with, either ask the local instructor or send your questions directly to Dr. Dong for guidance.
4. If time allows, proofread your paper, double-check that you have followed the Author's Guidelines, and use the writing checklist in this lesson to check whether you have presented your material in the best possible way.

WRITING CONCISELY

The Importance of Writing Concisely

Writing concisely is important for 2 reasons:

1. Your paper is more likely to be accepted for publication because editors of biomedical journals appreciate conciseness.
2. Your published paper is more likely to be read. As you know, biomedical researchers have lots of reading to do. Thus, they are more likely to read short articles than they are to read long, wordy articles.

Appendix 4 in Day's Book

This appendix (pages 195-200) can be very helpful in making your writing more concise and precise. Almost all of Day's "Preferred Usage" suggestions are appropriate for biomedical research articles. Note that several of the problem phrases begin with "it is." If you can avoid starting sentences with "it is," "there is," or "there are," your English

writing will be stronger.

In the list below, we will try to clarify some suggestions by Day that may need further explanation.

1. **"a majority of":** In many cases, you can substitute "most" for "a majority of." However, remember that "a majority of" means anything over 50%. On the other hand, some readers interpret "most" as meaning "nearly all." The clearest approach is to give the actual percentage.
2. **"as a matter of fact":** Throughout this list, when Day adds "(or leave out)," he means that often the phrase can be omitted. For example, suppose you have written this sentence: "As a matter of fact, the new drug did not increase the survival rate." You can improve it by changing it to, "In fact, the new drug did not increase the survival rate." However, the following revision is even better (more concise): "The new drug did not increase the survival rate."
3. **"based on the fact that":** You can't always easily change this to "because," but you can usually shorten it by deleting "the fact that." Note the example and explanation below.
 - > This sentence is too wordy: "These conclusions are based on the fact that all patients survived 6 months."
 - > In English, it is not correct to write, "These conclusions are because all patients survived 6 months."
 - > However, there are at least 2 ways to improve the sentence:
 - "These conclusions are based on the survival of all patients for 6 months." OR
 - "We reached these conclusions because all patients survived 6 months."
4. **"finalize":** In the sentence "The study was finalized on October 1," you can substitute "end" as Day suggests ("The study ended on October 1"). However, there are some sentences in which "finalized" is appropriate, such as "the report was finalized."
5. **"for the reason that"; "on the grounds that"; "owing to the fact that":** Most English editors prefer to substitute "because" for the word "since" and for the phrase "for the reason that." ("Since" should be used only to refer to time, as in "Since I graduated, I have worked for many companies.")
6. **"impact (v.):"** Many people use "impact" as a verb now ("The decreases in budget will impact our staff"). However, as Day implies, the preferred use of "impact" is as a noun ("The impact of the budget cuts surprised us"). Thus, the former sentence is better with the substitution Day suggests: "The decreases in budget will affect our staff."
7. **"in order to":** Although most editors agree with Day that this should be changed to "to," occasionally an editor may change "to" to "in order to" for clarity and grammatical reasons.
8. **"it is apparent that"; "it is clear that"; "it is worth pointing out in this context":** Often, these phrases and others like them can simply be deleted from the sentence without any loss of meaning.

9. **"it is clear that much additional work will be required before a complete understanding"; "let me make one thing perfectly clear"; "our attention has been called to the fact that":** None of these phrases add much to a sentence, and they can usually be deleted.

10. **"it is doubtful that":** "Possibly" may be the wrong word to substitute for this phrase; We recommend using "probably not" instead. Consider the sentence "It is doubtful that the chemotherapy was effective." Saying "The chemotherapy was possibly effective" seems to change the meaning. It would be more appropriate to say "The chemotherapy was probably not effective."

11. **"it may be, however, noted that":** If this occurs in the middle of a sentence, it is fine to substitute "but." However, some editors prefer not to use "but" or "and" at the beginning of a sentence. So, if this phrase occurs at the beginning of the sentence, substitute "However," as shown in the following example: Change "It may be, however, noted that the measurements were obtained under varying conditions" to "However, the measurements were obtained under varying conditions."

12. **"relative to":** Sometimes "about" can be substituted for this phrase. For example, the sentence "The discussion relative to the diagnosis was lengthy" would be improved by Day's suggested change ("The discussion about the diagnosis was lengthy"). However, if you are talking about one variable relative to another (for example, "the tumor was hypointense relative to healthy tissue"), it is fine to use "relative to."

13. **"utilization":** This word can almost always be changed to "use." For example, for "utilization of some equipment," it is better to write "use of some equipment." There is, however, at least 1 exception in biomedical English: When a writer is discussing "glucose utilization," the word "utilization" is correct.

Now please proceed to the end of this lesson. Do Exercises 27A and 27B under THE WRITING ASSIGNMENT, PART 1.

REVISING AND PROOFREADING

If you have received your edited paper from the U.S. editor, you are ready to revise and proofread your paper for submission to your target journal. If you have not received your paper yet, please read this material now and then review it before you work on these final stages.

Editing Marks

During the past months, your local instructors and the principal teacher have been marking sections of your papers. So most of you have already seen sections of your paper marked with editing marks and queries. Do not be surprised if there are many suggestions and questions from the U.S. editor. Even when a U.S. author receives an edited paper, there are many marks. The best way to approach your edited manuscript is to look carefully at every mark and question, because each one may help improve the clarity and correctness of your paper.

Editors use symbols to save time and space, and many authors don't understand all the

symbols. If you do not understand a question or a mark made by the U.S. editor, please ask your local instructor. Your local instructor has learned about copyediting marks and queries (that is, questions to authors) and probably can quickly explain what the U.S. editor meant. For your information, we have provided a sample at the end of this lesson that shows the most common editing marks.

It is important to pay attention to every mark and question from the U.S. editor. These may help not only to write your current paper but also to write better in the future. If you decide not to follow a suggestion of the editor, be sure that you have a good reason. On the other hand, editors sometimes don't understand what the author is saying, and editors make mistakes, too. Thus, you cannot automatically assume that every suggested change is correct. CONSIDER each change, and implement those changes that make your paper more clear, more concise, or more correct.

Occasionally you may find that the U.S. editor has an opinion that differs from our opinion or that of your local instructor. This sometimes happens in English editing. Even people who teach English in U.S. schools don't agree about all the grammar rules. For now, revise your paper according to the suggestions of the U.S. editor. If the paper is accepted, the copyeditors for the journal will probably change some of the grammar, punctuation, and even spelling to fit the style of the journal. This should not be a surprise, but always check that the copyeditor has not changed the meaning of your sentence while trying to correct or clarify it.

Proofreading

When you have revised your article in accordance with the advice from the U.S. editor, the next step is the final proofreading of the manuscript. All of us make typographical errors when we revise our writing (you may have found some typographical errors in this Course Packet!). So, after revising your paper and running the computer's spell-check program, you and someone else should read through the paper word-by-word to find the obvious errors. The Writing Checklist below indicates the most important items (including the proofreading process) to consider before submitting your manuscript to a journal. If you answer all the questions YES, you are ready to mail your manuscript.

We highly recommend that you ask someone else to proofread your paper. One reason that there may be typographical errors in this Course Packet is that, after Elizabeth completed the first draft, she did the final editing and proofreading herself. When Barbara looked at the draft of each lesson, she gave many good suggestions and found several errors. When Dong was finishing the final version, he asked an outsider to do the final proofreading. Undoubtedly, more typos and mistakes had been found. It was hard for the writer to proofread the last version perfectly because she is so familiar with the material. We can promise that you will submit a better manuscript if you have another person proofread it before submitting it to the journal.



WRITING CHECKLIST

Instructions: Answer each question below YES, NO, or NOT SURE (NS). On a separate piece of paper, list each question that has a NO or NS answer. Consult your local instructor about these questions, and revise your paper so that all the answers are YES before you submit it.

BASIC PREREQUISITES*

- ____ 1. Do you have something important to say?
- ____ 2. Are you saying it to the right audience?

GENERAL QUESTIONS

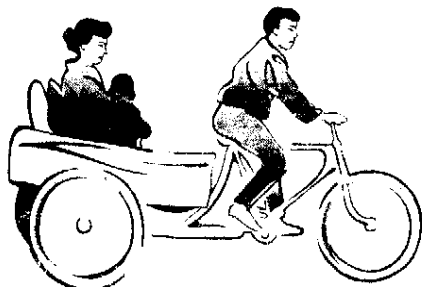
- ____ 3. Is the information in the paper complete?
- ____ 4. Is all the information in the paper relevant?
- ____ 5. Is the reasoning logical?
- ____ 6. Is the paper in the IMRAD format?
- ____ 7. Are the relationships among the ideas clear?
- ____ 8. Are the style and amount of detail appropriate for the audience?
- ____ 9. Are illustrations and/or tables used effectively and appropriately?
- ____ 10. Is the paper prepared according to the journal's "Instructions to Authors"?

ENGLISH USAGE QUESTIONS

- ____ 11. Is the wording clear? (Ask a colleague who is working on another topic in a related field to read your paper with this question in mind.)
- ____ 12. Is the wording concise?
- ____ 13. Is the grammar correct?
- ____ 14. Is the spelling correct? (Remember to use the spell-checker on your word processor.)
- ____ 15. Is the punctuation correct?
- ____ 16. Are the proper words capitalized?
- ____ 17. Are the verb tenses correct?
- ____ 18. Are the correct prepositions used?
- ____ 19. Are the articles (a, an, and the) used correctly?
- ____ 20. Are all time expressions correct?

*You answered these during the 1st semester of this course. Now, check that the answers to both questions are still "yes" now that you are ready to submit the paper.

Now please proceed to THE WRITING ASSIGNMENT, PART 2.



THE WRITING ASSIGNMENT, PART 1

Do Exercises 27A and 27B below. Give the answers to your local instructor for feedback.

EXERCISE 27A: Use Day's list in Appendix 4 to make the following sentences more concise. Hint: In each sentence there is more than 1 change needed to make the sentence more concise.

- A-1. We employed this method for the reason that we wanted to test it.
- A-2. It is believed that this method will be effective in a considerable number of cases.
- A-3. With this method, the fatal outcomes may be smaller in number.
- A-4. We have been engaged in a study of the body's very unique utilization of this drug.
- A-5. It is of interest to note that no side effects were seen prior to the second phase.
- A-6. With the exception of Patient 5, no side effects were reported in the course of this study.
- A-7. It is clear that these molecules have the appearance of little pandas.
- A-8. We apprised each patient of the results at the conclusion of the study.
- A-9. It is crucial that the patient receive an adequate amount of the study drug.



EXERCISE 27B.

The following sentences can be improved by deleting some words that are not needed because they are repetitive or by substituting shorter expressions for longer words. Cross out the unnecessary words to make the sentences more concise.

[Note: If the reasons for some of the changes needed are not clear, ask your local instructor to explain or send questions to Dr. Dong.]

- B-1. A CT scan was taken that showed a solid mass.
- B-2. Dr. Li held the position of visiting professor.
- B-3. The IVP showed that there was a filling defect.
- B-4. Its effects had never been studied before.
- B-5. The color of her urine was red.

- B-6. During the 20-year-period from 1960 to 1980, the crisis developed slowly.
- B-7. Hepatitis is a common disease in China.
- B-8. Thirty patients were studied by the methods of videorecording and sound recording.
- B-9. The results showed that the concentration decreased.
- B-10. Its approximate molecular weight is about 20,000.
- B-11. There were 200 men and 50 women, and the male-to-female ratio was 4:1.
- B-12. Two different kinds of click were heard.
- B-13. We conducted the study to determine whether or not a relationship exists.
- B-14. We are introducing 2 new, innovative concepts in the field of biochemistry.
- B-15. The nuclei were round or oval in shape.
- B-16. Most of the epidemics have taken place in the summer months.
- B-17. This case was the first case in China, as well as in our hospital.
- B-18. We studied the blood coagulation process in piglets.
- B-19. Of a total of 714 patients studied, 643 survived the 6-month follow-up period.
- B-20. The values obtained are only preliminary figures awaiting further verification.

NOW, PLEASE READ THE SECTION ABOUT REVISING AND PROOFREADING.



THE WRITING ASSIGNMENT, PART 2

If you have received the U.S. editor's comments on your manuscript, revise it accordingly, asking your local instructor about any suggestions or questions that are not clear. After you finish your revision, proofread it yourself and have someone else proofread it for typographical errors. Use the Writing Checklist provided in this lesson to prepare your paper for mailing next week to your target journal.

AN ENDING NOTE: Please feel free to contact your local instructor with questions about this lesson or assignment.

Sample: COMMON MARKS USED BY COPYEDITORS

Function	Marked Sentence
Delete 1 character	I read e the book.
Delete >1 character	I read este ^g the book.
Delete & close up	I read d ^g the book.
Insert ≥1 character	I ^e rad the book.
Insert several words	I read ^{the new red} book.
Insert & close up	I am read ^g ing the book.
Insert a period	I read the book.
Insert a comma	I read the book, but Joe did not read it.
Insert a colon	I made the following comments: check the punctuation, run the spell checker, and submit the article.
Insert a semicolon	I planned to read the book; however, I had too much work to do.
Insert an apostrophe	The reader's reaction was a positive one.
Insert a hyphen	He needs to improve his self-esteem.
Insert quotation marks	He said, "Did you finish the book?"
Replace 1 character	Will he read ^a the book?
Replace >1 character	Will she rock ^{read} the book?
Leave text as it was	I want to read the book.
Spell out	He is the (1) who lives in the (U.S.).
Capitalize	<u>read</u> the book before class.
Use lowercase letter	R ead a chapter each day.
Italicize	I love to read books <u>carefully</u> .
Boldface	READING AND THINKING