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STUDENTS

# 研究生英语

ENGLISH FOR  
GRADUATE STUDENTS

刘 宾 编

清华大学出版社

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# ENGLISH FOR GRADUATE STUDENTS

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## 研究生英语

刘 镔 编



南京大学出版社

1989 · 南京

## 内容简介

本书为英语教材。有课文22篇；题材多样，文笔优美。内容涉及科学、教育、语言、哲学、思想、社会问题和传记等，反映了美国社会和文化的各个方面。课文配有详尽的注释和各种练习。练习包括阅读思考和口语练习、词汇练习、综合填空和写作练习。书末附有词汇和综合填空练习的辅助性答案。本书可以进一步提高学生的英语阅读、鉴赏、写作和口语能力。

读者对象：全国文、理、工、农、医等各科硕士研究生和大专以上水平的广大读者。

English for Graduate Students

研究生英语

刘广银 编

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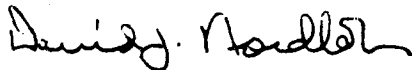
## FOREWORD

Despite all the mechanical inventions available to reproduce the sights and sounds of the world around us—inventions like the camera and the phonograph and the tape recorder—we still depend on the written word to fully understand our world and the people in it. After all, these inventions are very recent and very limited: they can hardly recover for us the history which took place before they existed, and they can barely convey the depth of thought which lies behind the actions reproduced on the movie or television screen or the sounds reproduced in the recording. The modern images may be vivid and immediate, but they are also superficial and incomplete.

On the other hand, though language was one of man's earliest inventions, it continues to be one of his most useful, conveying idea and emotion, science and poetry. Knowledge of a language is in turn the most useful acquisition for the person who desires to understand the civilization which employs that language. Thus the Chinese student who studies English in order to gain knowledge of developments in western science and technology also gains a means of understanding more about western peoples and cultures.

This English-language reader prepared for graduate students by Professor Liu Bin will be of great assistance to the student in further developing skill in reading and speaking and writing English. The questions and language exercises associated with the essays will increase the student's appreciation of good writing and deepen the student's feeling for both the meaning and the connotation of the vocabulary. Just as importantly, the contents of the essays which Professor Liu has chosen introduce various dimensions of the history and culture of the United States of America. By reading them the student will also understand better the American people and their interests and concerns. Through Professor Liu's selections the student will see the emotional and intellectual dimensions of the American mind, and the range and complexity of American attitudes, from political passion—like Martin Luther King's "I Have a Dream" speech on civil rights—to scientific thoroughness—like Carl Sagan's inventory of the chilling effects of "The Nuclear Winter."

The skill with which he has compiled this textbook is a credit to Professor Liu Bin as a teacher: he has made the study of the English language also the study of the America and Americans. I am most pleased that this fine work was done during the period of his research stay in the United States at Indiana University, where we met and where I was honored to have him as an associate.



David J. Nordloh  
Director, American Studies Program  
Indiana University

March 23, 1988

## **To the Graduate Student:**

Congratulations on being admitted to graduate study!

English is a required course unless you are exempted from it. Whether you have just finished undergraduate studies or just left your working position, you may feel the need to brush up on English or improve your facility with it.

This English reader is designed especially for you. It aims to further develop skill in reading and speaking and writing English. The 22 essays in the reader provide a realistic representation of engaging, witty, and elegant writing of current interest. I hope you will find them enjoyable whether you specialize in science, technology, the humanities, medicine, agriculture, law, or any other subject.

In addition to learning the English language through the reading material and the exercises associated with it, you will also acquaint yourself with a people who speak the language—that is, the American people—and with their history and culture, their joys and sorrows.

Detailed notes are given to facilitate your reading. Except for a few names of foods, plants, and animals, and several technical terms, all the notes are in English. Some words and phrases are also given Chinese equivalents to further clarify their meanings for you.

The questions after each essay will help you understand its content and increase your appreciation. Be prepared to answer and discuss these questions in class under the direction of your teacher. Whether you speak from notes or without notes, this oral practice will be useful to you in your future academic discussions with international scholars.

The vocabulary exercises are of two kinds. The first requires that you give the related forms of a number of words taken from the texts. It aims to enlarge your recognition vocabulary and enable you to gain insight into the formation of the English words. By doing these exercises you will automatically systematize the seeming chaos of the English vocabulary. There are altogether 402 given words, requiring from you in all 643 related forms. Appendix I is a list of the related forms of the given words which you may consult to ease your work. Since a word may have more than one adjectival form, you should try to distinguish the difference in meaning of these forms and choose the appropriate one.

The second kind of vocabulary exercise comprises 440 incomplete sentences. The words or phrases asked for are commonly used words, expressions, or idioms taken from the texts. Properly completed, the sentences may serve as models of good English and are therefore worth remembering.

The cloze task exercises consist of 27 short passages with 640 blanks to be filled. The content of the passages is related in one way or another to the essays or is intended to give you some hints on correct writing technique. Exactly one half of the required words are form words (articles, prepositions, auxiliary verbs, pronouns, and conjunctions). Correct use of form words is an important step toward the mastery of English. Appendix II consists of lists of the missing words in the cloze task passages in

alphabetical order.

Last but not least, in every other lesson there are suggestions for writing. You will be given directions on preparing outlines, summaries, or essays.

Ideally, you will read the selected writing, prepare to answer the questions, and do the language exercises and written work faithfully and conscientiously. And the result will be great improvement in your use of English and a respectable grade. So work hard and good luck!

Liu Bin

Department of Applied Foreign Language Studies

Nanjing University

March 10, 1988.

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# 1. The Method of Scientific Investigation

T. H. HUXLEY

*Thomas Henry Huxley (1825–1895) was an English biologist who also popularized science in the Victorian era. He was the principal proponent of Darwin's theories and coined the word agnostic to describe his own religious beliefs. Among his best-known works are Evolution and Ethics (1893), Collected Essays (1893–1894), and Scientific Memoirs (1898–1902).*

*In a series of closely knit paragraphs from his Autobiography and Selected Essays (1910), Huxley explains the logical processes of deduction and induction, indicating that these terms are merely technical names for thought habits we all use.*

The method of scientific investigation is nothing but the expression of the necessary mode of working of the human mind. It is simply the mode at which all phenomena are reasoned about, rendered precise and exact. There is no more difference, but there is just the same kind of difference, between the mental operations of a man of science and those of an ordinary person, as there is between the operations and methods of a baker or of a butcher weighing out his goods in common scales and the operation of a chemist in performing a difficult and complex analysis by means of his balance and finely graduated weights. It is not that the action of the scales in the one case and the balance in the other differ in the principles of their construction or manner of working; but the beam of one is set on an infinitely finer axis than the other, and of course turns by the addition of a much smaller weight.

You will understand this better, perhaps, if I give you some familiar example. You have all heard it repeated, I dare say, that men of science work by means of induction and deduction, and that by the help of these operations, they, in a sort of sense, wring from Nature certain other things, which are called natural laws and causes, and that out of these, by some cunning skill of their own, they build up hypotheses and theories. And it is imagined by many that the operations of the common mind can be by no means compared with these processes, and that they have to be acquired by a sort of special apprenticeship to the craft. To hear all these large words, you would think that the mind of a man of science must be constituted differently from that of his fellow men; but if you will not be frightened by terms, you will discover that you are quite wrong, and that all these terrible apparatus are being used by yourselves every day and every hour of your lives.

There is a well-known incident in one of Molière's plays, where the author makes the hero express unbounded delight on being told that he has been talking prose during the whole of his life. In the same way, I trust that you will take comfort, and be delighted with yourselves, on the discovery that you have been acting on the principles of inductive and deductive philosophy during the same period. Probably

there is not one here who has not in the course of the day had occasion to set in motion a complex train of reasoning, of the very same kind, though differing of course in degree, as that which a scientific man goes through in tracing the causes of natural phenomena.

A very trivial circumstance will serve to exemplify this. Suppose you go into a fruiterer's shop, wanting an apple—you take one up, and, on biting, you find it is sour; you look at it, and see that it is hard and green. You take up another one and that too is hard, green, and sour. The shop man offers you a third; but, before biting it, you examine it, and find that it is hard and green, and you immediately say that you will not have it, as it must be sour, like those that you have already tried.

Nothing can be more simple than that, you think; but if you will take the trouble to analyze and trace out into its logical elements what has been done by the mind, you will be greatly surprised. In the first place, you have performed the operation of induction. You found, that, in two experiences, hardness and greenness in apples went together with sourness. It was so in the first case, and it was confirmed by the second. True, it is a very small basis, but still it is enough to make an induction from; you generalize the facts, and you expect to find sourness in apples where you get hardness and greenness. You found upon that a general law, that all hard and green apples are sour; and that, so far as it goes, is a perfect induction. Well, having got your natural law in this way, when you are offered another apple which you find is hard and green, you say, "All hard and green apples are sour; this apple is hard and green, therefore this apple is sour." That train of reasoning is what logicians call a syllogism and has all its various parts and terms—its major premise, its minor premise, and its conclusion. And, by the help of further reasoning, which, if drawn out, would have to be exhibited in two or three other syllogisms, you arrive at your final determination: "I will not have that apple." So that, you see, you have, in the first place, established a law by induction, and upon that you have founded a deduction and reasoned out the special conclusion of the particular case. Well now, suppose, having got your law, that at some time afterwards, you are discussing the qualities of apples with a friend; you will say to him, "It is a very curious thing, but I find that all hard and green apples are sour!" Your friend says to you, "But how do you know that?" You at once reply, "Oh, because I have tried them over and over again and have always found them to be so." Well, if we were talking science instead of common sense, we should call that an experimental verification. And, if still opposed, you go further and say, "I have heard from the people in Somersetshire and Devonshire, where a large number of apples are grown, that they have observed the same thing. It is also found to be the case in Normandy, and in North America. In short, I find it to be the universal experience of mankind wherever attention has been directed to the subject." Whereupon your friend, unless he is a very unreasonable man, agrees with you and is convinced that you are quite right in the conclusion you have drawn. He believes, although perhaps he does not know he believes it, that the more extensive verifications are—that the more frequently experiments have been made and results of the same kind arrived at—that the more varied the conditions under which the same results are attained, the more certain is the ultimate conclusion, and he disputes the question no further. He sees that the experiment has been tried under all sorts of conditions, as to time, place, and people, with the same result; and he says with you, therefore, that the law you laid down must be a good one, and he must believe it.

In science we do the same thing: the philosopher exercises precisely the same faculties, though in a much more delicate manner. In scientific inquiry it becomes a matter of duty to expose a supposed law to every possible kind of verification and to take care, moreover, that this is done intentionally and not left to a mere accident, as in the case of the apples. And in science, as in common life, our confidence in a law is in exact proportion to the absence of variation in the result of our experimental verifications. For instance, if you let go your grasp of an article you may have in your hand, it will immediately fall to the ground. That is a very common verification of one of the best established laws of nature—that of gravitation. The method by which men of science established the existence of that law is exactly the same as that by which we have established the trivial proposition about the sourness of hard and green apples. But we believe it in such an extensive, thorough, and unhesitating manner because the universal experience of mankind verifies it, and we can verify it ourselves at any time; and that is the strongest possible foundation on which any natural law can rest.

## NOTES

1. reason (about)---to think or argue in a logical manner (about)
2. finely graduated---marked accurately with degrees for measuring
3. beam---the crossbar of a balance (秤) 杆
4. I dare say---I suppose
5. induction---reasoning from particular facts or individual cases to a general conclusion 归纳 (法)
6. deduction---reasoning from the general to the specific, or from a premise to a logical conclusion 演绎 (法)
7. in a sort of sense---in a sense; to a certain extent; from one aspect
8. wring---to get or extract by force, persistence, etc.
9. cunning---[Now Rare] skillful or clever
10. hypothesis (pl. -ses)---an unproved theory, proposition, supposition, etc., tentatively accepted to explain certain facts or to provide a basis for further investigation, argument, etc. 假设
11. apprenticeship---introductory training
12. Molière [,məʊli:'e]--- French playwright (1622-1673)
13. talk prose---to speak in prose
14. take comfort---to feel relieved from pain, discomfort, anxiety, etc.
15. occasion---a need arising from circumstances
16. set in motion---to cause to be moving
17. exemplify---to show by example
18. trace out A into B---to discover B by following the development of A
19. so far as it goes---within certain limits
20. logician [ləu'dʒɪfən]---an expert in logic
21. syllogism---an argument or form of reasoning in which two statements or premises are made and a logical conclusion drawn from them 三段论法
22. premise---a previous statement or assertion that serves as the basis for an argument; specifically, either of the two propositions of a syllogism from which the conclusion is drawn 前提
23. reason out---to think out systematically or logically
24. talk science---to speak about or discuss science
25. verification---establishment or confirmation of the truth or accuracy of a fact, theory, etc.
26. Somersetshire ['sʌməsɛtʃə]---a county in southwestern England, on Bristol Channel
27. Devonshire ['devənʃə]---a county in southwestern England, on the English Channel
28. Normandy [ˈnɔ:məndi]---a region in northwestern France, on the English Channel
29. whereupon---as a consequence of which
30. lay down---to assert or declare emphatically
31. philosopher---in the text it refers to a person who studies or is learned in natural philosophy, i.e., natural science
32. delicate---finely skilled

## QUESTIONS

1. What is Huxley's thesis? State it in your own words.
2. What is the strongest possible foundation on which any natural law can rest?
3. Based on the analogy between a baker or a butcher and a chemist in paragraph 1, what is the difference between our own investigations and those of science?
4. A familiar example of induction is the conclusion, from a few tastes, that hard, green apples are sour; a familiar example of deduction is the decision not to buy the untasted hard, green apple because it is sour. Can you draw inductive and deductive conclusions about boiling water?
5. Huxley proposes the following syllogism:  
 All hard and green apples are sour.  
 This apple is hard and green.  
 This apple is sour.  
 Set up the same kind of syllogism with the following major premise: All human beings are mortal.
6. What makes Huxley's article understandable to the general reader?
7. What is the purpose of the allusion to a character in one of Molière's plays?
8. Huxley is careful to illustrate all his scientific terms. Test yourself: Explain the meaning of *inductive*, *deductive*, *verification*, and *experiment*.

## VOCABULARY EXERCISES

1. Write in the blanks the related forms of the given words:

v.	n.	a.
reason	_____	_____
exemplify	_____	_____
_____	induction	_____
_____	deduction	_____
_____	variation	_____
_____	verification	_____
a.	n.	
trivial	_____	
delicate	_____	
_____	comfort	
_____	hypothesis	
n. (person)	n. (science)	
logician	_____	
philosopher	_____	

II. Complete each of the following sentences by selecting, from the choices given, the correct word, phrase, or clause to fill the blank, making changes if necessary:

(apparatus, as far as it goes, craft, delicate, exemplify, faculty, graduate, hypothesis, in a sense, inquiry, lay down, let go, premise, reason, reason out, trivial, variation, verify, whereupon, wring)

1. What you said was right \_\_\_\_\_, but the problem is rather more complex than you seem to think.
2. This castle \_\_\_\_\_ the architectural style of the period.
3. His report isn't bad \_\_\_\_\_, but there's not enough detail in it.
4. The rule book \_\_\_\_\_ what should be done in such a case.
5. The boy grabbed Jack's coat and would not \_\_\_\_\_.
6. He insulted her, \_\_\_\_\_ she slapped him.
7. In the desert there are great \_\_\_\_\_ in temperature.
8. Later findings \_\_\_\_\_ the scientist's theory.
9. A thermometer is \_\_\_\_\_ in degrees.
10. Acting on the \_\_\_\_\_ that people like to travel in comfort, he designed a new type of train.
11. An \_\_\_\_\_ is being held into her disappearance.
12. He handled the situation in a \_\_\_\_\_ manner.
13. Man alone has the ability to \_\_\_\_\_.
14. His book advances the \_\_\_\_\_ that whales are as intelligent as humans.
15. The police \_\_\_\_\_ a confession out of the murderer.
16. Weaving was the town's chief \_\_\_\_\_.
17. This \_\_\_\_\_ can purify a thousand gallons of water a minute.
18. Don't let such \_\_\_\_\_ things upset you.
19. The solution is there if you care to \_\_\_\_\_ it \_\_\_\_\_.
20. He has a \_\_\_\_\_ for saying the right thing at the right time.

## CLOZE TASK

Fill in each of the blanks in the following passage with the word that you think has been left out:

### Induction and Deduction (I)

The best way to convince a reader that your idea is worth considering is to offer logical support for your thesis. To check your own logic and that of others, a knowledge of the two kinds of logical thinking, induction and deduction, will be helpful.

Induction is the process of reasoning 1 the particular to the general. If, 2 example, you develop a stomach ache 3 time you eat green apples, you 4, without sampling every green apple in 5 world, safely conclude that green apples 6 you a stomach ache. You've made 7 generalization about all the members of 8 class *green apples* after examining some 9 its members.

Deduction is the process of reasoning from the general to the specific. Deduction, like induction, is a useful tool. You've concluded, for example, that Professor Hadley is likely to give quizzes on Friday. Your roommate suggests one Friday morning you cut classes and spend the day in the park, you say, "No, I can't go today. Professor Hadley is likely to give a quiz." You've applied a generalization (Fridays are likely days for quizzes) to a specific case (this Friday).

In its simplest form, the deductive process is stated as a syllogism: an argument of a major premise, a minor premise, and a conclusion.

Major premise: Fridays are likely days for quizzes

Minor premise: Today is Friday.

Conclusion: Therefore, today is a likely day for a quiz.

## SUGGESTIONS FOR WRITING

1. Write an outline of T. H. Huxley's essay.

Outlines are of two types, topic outlines and sentence outlines. A topic outline is one in which the writer uses just a few words or phrases to indicate the topics and subtopics the paper covers. Topic outlines are sufficient for many short papers, especially for papers that classify or present a process. Longer papers and those which develop theses often profit from sentence outlines.

To write a sentence outline, you must sum up in one sentence what you want to say on each topic and subtopic. The sentence doesn't merely indicate the topic; it states what is to be said about the topic. This kind of outline forces you to think through exactly what you want to say before you begin to write. By constructing a sentence outline, you will find out whether you really have proof for your position.

The outline for a longer, more complex paper might look like this:

Thesis—a one-sentence summary of the basic idea of an essay

### I. Major division

#### A. First-level subdivision

##### 1. Second-level subdivision

##### 2. Second-level subdivision

###### a. Third-level subdivision

###### b. Third-level subdivision

###### (1) Fourth-level subdivision

###### (2) Fourth-level subdivision

#### B. First-level subdivision

##### 1. Second-level subdivision

##### 2. Second-level subdivision

### II. Major division

#### A. First-level subdivision

##### 1. Second-level subdivision

##### 2. Second-level subdivision



**B. First-level subdivision**

**1. Second-level subdivision**

- a. Third-level subdivision
- b. Third-level subdivision

**2. Second-level subdivision**

- a. Third-level subdivision
- b. Third-level subdivision

**(1) Fourth-level subdivision**

**(2) Fourth-level subdivision**

**(a) Fifth-level subdivision**

**(b) Fifth-level subdivision**

2. Describe the inductive logic that led you to some important conclusion in your life.