研究生英语

综合教程

研究生学术英语读译教程

主编　孙晓燕

ACE Reading & Translation

中国人民大学出版社

研究生英语综合教程

ACE Reading & Translation

研究生学术英语读译教程

主　编　孙晓燕
副主编　李中山　杨凤珍

中国人民大学出版社
·北京·

图书在版编目（CIP）数据

研究生学术英语读译教程 / 孙晓燕主编. —北京：中国人民大学出版社，2018. 5
研究生英语综合教程
ISBN 978-7-300-25546-0

Ⅰ. ①研… Ⅱ. ①孙… Ⅲ. ①英语—阅读教学—研究生—教材 ②英语—翻译—研究生—教材 Ⅳ. ①H31

中国版本图书馆 CIP 数据核字（2018）第 025694 号

研究生英语综合教程

研究生学术英语读译教程

主　编　孙晓燕
副主编　李中山　杨凤珍
Yanjiusheng Xueshu Yingyu Duyi Jiaocheng

出版发行	中国人民大学出版社		
社　　址	北京中关村大街 31 号	**邮政编码**	100080
电　　话	010-62511242（总编室）	010-62511770（质管部）	
	010-82501766（邮购部）	010-62514148（门市部）	
	010-62515195（发行公司）	010-62515275（盗版举报）	
网　　址	http:// www. crup. com. cn		
	http:// www. ttrnet. com（人大教研网）		
经　　销	新华书店		
印　　刷	北京鑫丰华彩印有限公司		
规　　格	185 mm × 240 mm　16 开本	**版　　次**	2018 年 5 月第 1 版
印　　张	14.5	**印　　次**	2018 年 5 月第 1 次印刷
字　　数	285 000	**定　　价**	34.00 元

版权所有　侵权必究　印装差错　负责调换

前　言

本教材是为高等院校非英语专业研究生编写的读译教程。为适应社会发展对高素质人才的需求，依据国家所指定的《非英语专业研究生英语（第一外语）教学大纲》，本教材旨在培养学生较流畅地阅读具有一定学术性质的通识类英文文献并在正确把握文本大意基础上较准确翻译的能力。

专业期刊上刊登的学术论文通常有太多的专业术语甚至数学公式，需要专业背景知识做铺垫，外行难以把握，并不适合用来做英语阅读技能训练。因此，在教材内容选取上，编者把考虑范围定在最适合英语学习的国外知名报刊、经典科普著作、畅销书、权威网站等。在此范围内，挑选逻辑层次清晰严谨、注重分析推理的文章，并确保阅读材料的真实性、可读性以及灵活多样性。

本教材分为 15 个单元，主题涵盖教育、经济、社会、文化、科技、心理、环保等诸多领域。每个单元包含 Part A 和 Part B 两篇文章。Part A 适合精读，课后附有词汇表、文化背景注释及练习。Part A 课文词汇表提供词汇的中英文释义，有助于使用者正确理解相关文本语境。Part B 为同主题文章，可供拓展阅读，以保证使用者有足够的阅读量。

课后练习分为阅读和翻译两类。阅读练习形式多样，包括略读扫描快速寻找关键信息点、文章结构大纲填空、段落标题搭配、总结文章要点信息、细节问答、判断正误等。这些练习旨在引导使用者主动（active）进行结构化阅读，高度重视文章整体结构、段落核心、句间关系、长句主干、逻辑提示词汇等。在阅读过程中，引导使用者遵循学术研究的思维模式（critical thinking），学习以英文为基础的逻辑分析，进而在重视文章逻辑结构的基础上，学会有取有舍、有详有略的阅读方法，提高阅读速度，提升阅读效率（effective）。这也是本教材英文书名中 ACE（Active, Critical, Effective）的由来——希望使用者能够通过做到上述三点（active, critical and effective reading）来搞定（ace）英语阅读。翻译练习主要是英译汉、汉译英两类题目，内容与单元课文相关。使用者可以借助文章阅读所获取的信息“输入”，学习并揣摩如何灵活运用主题相关的词汇，较准确地进行英汉 / 汉英互译。

读者可登录中国人民大学出版社外语分社主页 http: www.crup.com.cn/wy, 搜索本书后下载相关资源，或与 010-62512737、010-62513265、010-62515580、huangt@crup.com.cn、

chengzsh@crup.com.cn、jufa@crup.com.cn、jialk@crup.com.cn 联系索取相关教学资源。

本教材在策划期间受到北京师范大学自主科研基金资助项目（《非英语专业研究生英语阅读僵化现象研究》，项目批准号：SKZZY2013027）的支持。本教材在编写过程中，得到北京师范大学外文学院公外部领导的悉心指导。在书稿审校阶段，中国人民大学出版社的诸位编辑给予了很多帮助，在此表示衷心的感谢！

限于编者的水平，书中难免有疏漏和不足之处，恳请使用本书的读者批评指正。

编者

2018 年 4 月

试读结束：需要全本请在线购买： www.ertongbook.com

Contents

Part A

Who Was the First Scientist?

William Harris

❶ The word "scientist" entered the English language in 1834. That's when Cambridge University historian and philosopher William Whewell **coined** the term to describe someone who studies the structure and behavior of the physical and natural world through observation and experiment. You could make the argument, then, that the first modern scientist was someone like Charles Darwin or **Michael Faraday**, two iconic figures who also happened to be Whewell's **contemporaries**. But even if the term didn't exist before the 1830s, people who embodied its principles did.

❷ To find the very first scientist, we must travel back in time even further. We could go back to the most ancient of the ancient Greeks, all the way back to Thales of Miletus, who lived from about 624 B.C. to about 545 B.C. By many accounts, Thales achieved much in both science and mathematics, yet he left no written record and may have been, like Homer, a celebrated figure who received **credit** for many great achievements but who may never have existed at all.

❸ We could consider other ancient Greeks as well, such as Euclid (the father of geometry) or Ptolemy (the misguided astronomer who put Earth at the center of the cosmos). But all of these men, although great thinkers, relied on making arguments instead of running experiments to prove or disprove hypotheses.

❹ Some scholars believe that modern science had its origins in an impressive class of Arabic mathematicians and philosophers working in the Middle East decades before the European Renaissance began. This group included al-Khwarizmi, Ibn Sina, al-Biruni and Ibn al-Haytham. In fact, many experts recognize Ibn al-Haytham, who lived in present-day Iraq between 965 A.D. and 1039 A.D., as the first scientist. He invented the pinhole camera, discovered the laws of **refraction** and studied a number of natural phenomena, such as rainbows and eclipses. And yet it remains unclear whether his scientific method was truly modern or more like Ptolemy and his Greek **predecessors**. It's also not clear whether he had emerged from the mysticism still prevalent at the time.

❺ It's almost impossible to determine when the influence of mysticism had faded completely among scientists. What's easier to identify are the characteristics of a modern scientist. According to author Brian Clegg, a modern scientist must recognize the importance of experiment, embrace mathematics as a fundamental tool, consider information without bias and understand the need to communicate. In other words, he or she must be **unshackled** by religious **dogma** and willing to observe, react and think objectively. Clearly, many individuals doing scientific work in the 17th century—**Christiaan Huygens**, **Robert Hooke**, Isaac Newton—satisfied most of these requirements. But to find the first scientist with these characteristics, you have to travel to the Renaissance, to the mid-16th century.

❻ You probably think of Galileo Galilei at the mention of Renaissance science, and rightfully so. He overturned Aristotle's ideas on motion and began to explain such complex concepts as force, **inertia** and **acceleration**. He built one of the first telescopes and used it to study the cosmos. What he saw through the **lenses** of his device removed Earth from the center of the universe and put it in its proper place. In all his work, Galileo stressed the need for observation and experimentation. And yet Galileo owes much to another seminal figure born 20 years earlier.

❼ His name was William Gilbert, a rather obscure figure in the history of science. Along with Galileo, Gilbert had been busy practicing the scientific method in his work and setting an example for his peers after the first decade of the 17th century had past. Here's what John Gribbin had to say about Gilbert and Galileo in his 2002 book *The Scientists*:

> *Although Galileo is one of the towering figures in science, known by name to every educated person today, and Gilbert is less well-known than he deserves,*

Gilbert had the earlier birth date and, ***chronologically*** *speaking at least, deserves the title of first scientist.*

❽ Gilbert was born in 1544 to a prominent local family and attended Cambridge University between 1558 and 1569. Eventually, he settled in London and embarked on a successful career as a **physician**, attending to both Queen Elizabeth I and, upon her death in 1603, to King James I.

❾ It was Gilbert's investigations into the nature of **magnetism**, however, that may make him the first modern scientist. This work culminated in *De Magnete, Magneticisque Corporibus, et de Magno Magnete Tellure* (*On the Magnet, Magnetic Bodies, and the Great Magnet of the Earth*), the first significant book about physical science published in England. In the book's preface, Gilbert described the need for "sure experiments and demonstrated arguments" instead of "conjectures and the opinions of philosophical speculators." He also discussed the need to conduct experiments "carefully, skilfully and deftly, not heedlessly and bunglingly."

❿ The scientist followed his own advice. Gilbert's book recounted his investigations in so much detail that another person could replicate his work and verify his results. This research led to many important discoveries about magnetism. The learned fellow also turned his inquisitive mind to the heavens.

⓫ Gilbert directly influenced Galileo. The famous Italian scientist read ***De Magnete*** and repeated many of its experiments. It is easy to imagine Galileo **poring** over the book and nodding in affirmation at Gilbert's ideas about experimentation and observation—ideas that Galileo himself would apply in his groundbreaking work. Is it any wonder Galileo proclaimed Gilbert to be the founder of the scientific method? This endorsement alone may be enough to substantiate the claim that William Gilbert was the first modern scientist.

WHERE'S THE BACON?

⓬ Many science books identify Francis Bacon as the father of the scientific method. Doesn't that make him the first scientist? It depends. Bacon certainly popularized the methods and techniques of scientific inquiry, but he was more of a philosopher than an experimenter. William Gilbert and Galileo, by contrast, were **hands-on** scientists. They designed experiments, carried them out and recorded their results—just like you did

in your high school physics class. This commitment to conducting rigorous, repeatable experiments is one of the hallmarks of modern science.

(Source: http://science.howstuffworks.com/first-scientist1.htm)

Glossary

coin *vt.* to devise (a new word or phrase) 杜撰，构造

contemporary *n.* a person of the same time or age 属于同一时期的人，同时代的人

credit *n.* reputation, praise 荣誉

refraction *n.* the deflection of a wave, when it passes obliquely from one medium into another having a different velocity 折射

predecessor *n.* one who precedes another in time 前辈

unshackle *vt.* to free, liberate 释放

dogma *n.* a system of principles or tenets, as of a church 教条，信条

inertia *n.* the tendency of a physical object to remain still or to continue moving, unless a force is applied to it 惯性

acceleration *n.* increase of speed 加速

lens *n.* a piece of glass or other transparent material, used to converge or diverge transmitted light and form optical images 镜片，透镜

chronologically *adv.* arranged in order of time of occurrence 按时间顺序地

physician *n.* doctor of medicine 医生，内科医生

magnetism *n.* the property of attraction displayed by magnets 磁力，磁性

pore *vt.* to read, study carefully and attentively 细看，钻研

hands-on *adj.* involving active person participation 亲自实践的，动手的

Cultural & Background Notes

1. ***Michael Faraday*** was an English scientist who contributed to the study of electromagnetism and electrochemistry. His main discoveries include the principles

试读结束：需要全本请在线购买： www.ertongbook.com

underlying electromagnetic induction, diamagnetism and electrolysis. Although Faraday received little formal education, he was one of the most influential scientists in history. It was by his research on the magnetic field around a conductor carrying a direct current that Faraday established the basis for the concept of the electromagnetic field in physics.

2. ***Christiaan Huygens*** was a prominent Dutch mathematician and scientist. He is known particularly as an astronomer, physicist, probabilist and horologist. Huygens was a leading scientist of his time. His work included early telescopic studies of the rings of Saturn and the discovery of its moon Titan, the invention of the pendulum clock and other investigations in timekeeping. He published major studies of mechanics and optics (having been one of the most influential proponents of the wave theory of light), and pioneered work on games of chance.
3. ***Robert Hooke*** was an English natural philosopher, architect and polymath. He built some of the earliest Gregorian telescopes and observed the rotations of Mars and Jupiter. Based on his microscopic observations of fossils, Hooke was an early proponent of biological evolution. He investigated the phenomenon of refraction, deducing the wave theory of light, and was the first to suggest that matter expands when heated and that air is made of small particles separated by relatively large distances.

Exercises

I. Preview: Definition

Directions: Write a definition of the word *scientist* in no more than two sentences. Then check your answer in the text. To what extent is your definition the same?

_____

II. Reading for Specific Information

i. Directions: Skim the text as quickly as possible and find out who was the first scientist according to Harris.

_____

ii. Directions: Read the text again and complete the following notes.

- The Classical Era (8th century BC–5th century AD)
  - —Thales of Miletus
    - → achieved much in _____
    - → left no written record
    - → _____
  - —Other ancient Greek thinkers, such as Euclid and Ptolemy
    - → achieved much in mathematics and astrology
    - → proved or disproved hypotheses by way of _____
- The Middle Ages (5th century AD–15th century AD)
  - —_____, including al-Khwarizmi, Ibn Sina, al-Biruni and Ibn al-Haytham
  - —Great achievements of Ibn al-Haytham
    - → invented _____
    - → discovered the laws of refraction
    - → studied such natural phenomena as _____
  - —Reasons that al-Haytham was not the first scientist
    - → his scientific method _____
    - → may be biased by mysticism
- Renaissance (14th century AD–17th century AD)
  - —Galileo Galilei
    - → overturned Aristotle's idea on motion
    - → explained complex concepts like _____
    - → studied the cosmos using _____
    - → stressed the need for _____
  - —William Gilbert
    - → born to a prominent local family and graduated from _____
    - → had a successful career as _____, attending to both Queen Elizabeth I and King James I
    - → investigated into _____
  - —Francis Bacon
    - → identified by many science books as _____

→ popularized the methods and techniques of scientific inquiry

→ more of _____ than an experimenter

—Reasons that Gilbert was claimed as the first modern scientist

→ described in his work the need for _____

→ _____ older than Galileo

→ _____ in that Galileo read *De Magnete* and repeated many of its experiments

→ committed to _____ (one of the hallmarks of modern science)

Ⅲ. Reading for Specific Details

Directions: Read the text again and decide whether the following statements agree with the information in the text. Write

T	if the text confirms the statement
F	if the text contradicts the statement
NG	if it is impossible to know from the text

_____ 1. William Whewell coined the term "scientist" to describe someone like Charles Darwin or Michael Faraday, two iconic figures who were Whewell's contemporaries.

_____ 2. Ancient Greek thinkers mainly relied on demonstrated arguments to prove or disprove hypotheses.

_____ 3. At its start the Renaissance has defeated the influence of mysticism which was prevalent during the Middle Ages.

_____ 4. The Arabic mathematician Ibn al-Haytham was a celebrated figure who may never have existed at all.

_____ 5. William Gilbert made many important discoveries about magnetism which made him the first modern scientist.

_____ 6. Galileo used the scientific method to disprove Ptolemy's geocentric hypothesis.

Ⅳ. Identifying and Summarizing Key Points

Directions: Complete the following summary based on what you have read. You can use some of the answers in Exercise II to help you.

In "Who Was the First Scientist," William Harris gives his opinion on this question. According to Harris, the word "scientist" was coined by _____ in 1834, but the first scientist existed way earlier than that. The first modern scientist emerged during _____. Mathematicians and philosophers before that time were not modern scientists in that they gained their achievements by way of _____ and that they were, to various extent, influenced by _____. In contrast, a modern scientist makes scientific discoveries through _____. More specifically, he or she is aware of the significance of _____ and the need to _____, uses mathematics as a fundamental tool and evaluates data _____. Judged by such standards, William Gilbert deserves the title of the first scientist. The reason is not that he had a successful career as _____ working for the British royal family, but that he investigated into _____. He published the first significant book about _____ in England. In this book's preface, he suggested that instead of _____, one should conduct _____. In addition to magnetism, he also studies _____, and directly influenced Galileo. In Galileo's opinion, Gilbert was the founder of _____, though some scholars would give that title to Francis Bacon. The fact that Bacon was _____ and that one of the hallmarks of modern science is the commitment to _____ is evidence of the argument that Gilbert was the first modern scientist.

Ⅴ. Translation Practice

Directions: Please translate the following Chinese into English.

对现代物理学来说，威廉·吉尔伯特的科学发现意义重大。他对磁力和电力展开研究，甚至创造了"带电的"这个单词，把磁体的两端命名为"南极"和"北极"。也是他最先开始研究磁力与电力的关系，只可惜他最终没有完成。他的研究方法具有革命性，因

为他不是像古希腊哲学家那样用纯逻辑和推理而是通过实验。采用实验研究法是一种对待科学研究的新态度。在此之前，还不时兴科学实验。

Part B

The Nature of Scientific Reasoning

Jacob Bronowski

❶ What is the insight in which the scientist tries to see into nature? Can it indeed be called either imaginative or creative? To the literary man the question may seem merely silly. He has been taught that science is a large collection of facts; and if this is true, then the only seeing which scientists need to do is, he supposes, seeing the facts. He pictures them, the colorless professionals of science, going off to work in the morning into the universe in a neutral, unexposed state. They then expose themselves like a photographic plate. And then in the darkroom or laboratory they develop the image, so that suddenly and startlingly it appears, printed in capital letters, as a new formula for atomic energy.

❷ Men who have read Balzac and Zola are not deceived by the claims of these writers that they do no more than record the facts. The readers of Christopher Isherwood do not take him literally when he writes "I am a camera." Yet the same readers solemnly carry with them from their school-days this foolish picture of the scientist fixing by some mechanical process the facts of nature. I have had of all people a historian tell me that science is a collection of facts, and his voice had not even the ironic rasp of one filing cabinet reproving another.

❸ It seems impossible that this historian had ever studied the beginning of a scientific discovery. The Scientific Revolution can be held to begin in the year 1543 when there was brought to Copernicus, perhaps on his deathbed, the first printed copy of the

book he had finished about a dozen years earlier. The thesis of this book is that the earth moves around the sun. When did Copernicus go out and record this fact with his camera? What appearance in nature prompted his outrageous guess? And in what odd sense is this guess to be called a neutral record of fact?

❹ Less than 100 years after Copernicus, Kepler published (between 1609 and 1619) the three laws which describe the paths of the planets. The work of Newton and with it most of our mechanics spring from these laws. They have a solid, matter-of-fact sound. For example, Kepler says that if one squares the year of a planet, one gets a number which is proportional to the cube of its average distance from the sun. Does anyone think that such a law is found by taking enough readings and then squaring and cubing everything in sight? If he does, then, as a scientist, he is doomed to a wasted life; he has as little prospect of making a scientific discovery as an electronic brain has.

❺ It was not this way that Copernicus and Kepler thought, or that scientists think today. Copernicus found that the orbits of the planets would look simpler if they were looked at from the sun and not from the earth. But he did not in the first place find this by routine calculation. His first step was a leap of imagination—to lift himself from the earth, and put himself wildly, speculatively into the sun. "The earth conceives from the sun," he wrote; and "the sun rules the family of stars." We catch in his mind an image, the gesture of the virile man standing in the sun, with arms outstretched, overlooking the planets. Perhaps Copernicus took the picture from the drawings of the youth with outstretched arms which the Renaissance teachers put into their books on the proportions of the body. Perhaps he had seen Leonardo's drawings of his loved pupil Salai. I do not know. To me, the gesture of Copernicus, the shining youth looking outward from the sun, is still vivid in a drawing which William Blake in 1780 based on all these: the drawing which is usually called *Glad Day*.

❻ Kepler's mind, we know, was filled with just such fanciful analogies; and we know what they were. Kepler wanted to relate the speeds of the planets to the musical intervals. He tried to fit the five regular solids into their orbits. None of these likenesses worked, and they have been forgotten; yet they have been and they remain the stepping stones of every creative mind. Kepler felt for his laws by way of metaphors. He searched mystically for likenesses with what he knew in every strange corner of nature. And when among these guesses he hit upon his laws, he did not think of their numbers as the

试读结束：需要全本请在线购买： www.ertongbook.com