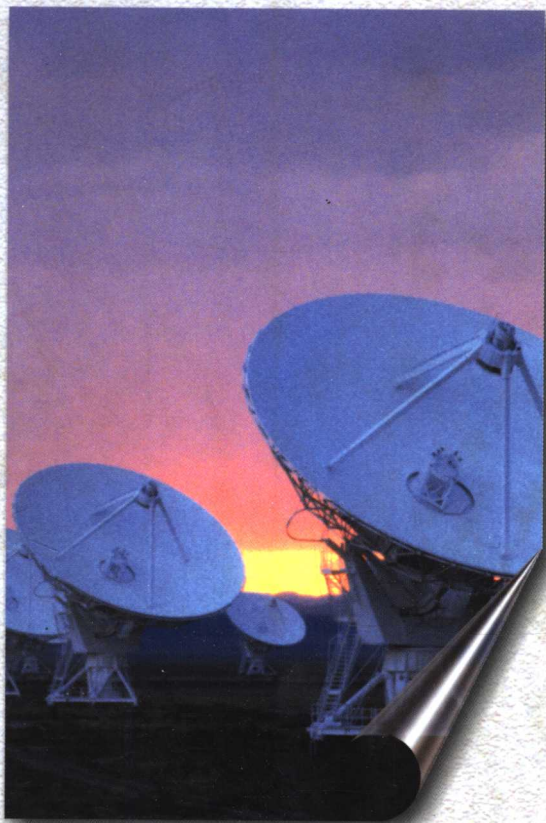




新世纪教育文库

金焕荣 主编



# 科技英语阅读

苏州大学出版社

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# 新世纪教育文库

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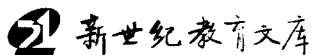
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## 科技英语阅读

A Glimpse into Science

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苏州大学出版社



总 策 划/朱永新

题 签/启 功

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# 新世纪教育文库·前言

新世纪教育文库 编委会名誉主任 博士生导师

王 珉

《新世纪教育文库》在李政道、季羨林等一大批著名学者的直接指导与关心下隆重面世了,这是中国教育史上的一件大事,是深化素质教育的一种有益尝试,也是献给新世纪的教师和学生的一份厚重的精神礼物!

读书自古以来就是为学与从教的重要基础,宋代教育家朱熹就说过:“圣人所以教人之法,其存于经。有志之士,固当熟读而问辨之。”他还提出了著名的“朱子读书法”。英国思想家培根更明确说明了读书的意义:“历史使人聪明,诗歌使人富于想象,数学使人精确,自然哲学使人深刻,伦理学使人庄重,逻辑学和修辞学使人善辩。总之,读书能陶冶个性。”在知识经济初见端倪的今天,如何使我们的年轻一代在具有创新精神与实践能力的同时,具有高尚的情操与人文的情怀,如何给他们提供和书本拥抱、与大师对话的机会,的确是每个教育工作者应该认真考虑的问题。《新世纪教育文库》的问世,无疑可以改变过去学生无书可读、无暇读书和不想读书的现象,使素质教育有了一个有力的抓手,也使语文教育有了一个很好的突破口。

教师是教育的关键。坦率地说,读书不多、无暇读书也是我们许多教师存在的问题,这多少影响了我们教师理论素养、知识水平和精神境界的提升,也影响了他们对学生读书的关注与指导。这套《文库》为教师精选

了一百种图书,也是一种首创,希望《新世纪教育文库》在我们教师继续教育中发挥重要的作用。

编选学生与教师的必读书目是一项非常艰巨的工作,既要考虑经典性,又要考虑时代的特征。希望《文库》的编委会能广泛听取社会各界的意见,不断充实和完善《文库》,使《文库》真正成为经得起时间考验的文化精品,成为学校教育的有机组成部分,成为新世纪学生与教师的精神家园。

1999年10月

# 新世纪教育文库·总序

新世纪教育文库 编委会主任 博士生导师  
朱永新

我们站在新世纪的门坎上,面对着一个科学技术日新月异、知识经济初见端倪、国力竞争日趋激烈的世界。严峻的现实告诉我们,要屹立于二十一世纪世界民族之林,就必须全面提高国民整体素质,激活民族创新能力。我们愈来愈迫切地感觉到,如何提高受教育者的文化素养,拓展他们的知识视野,开发他们的智力潜能,陶冶他们的思想情操,培养他们的创新精神和实践能力;如何更新教育者的教育理念,提高他们的理论素养和教育能力,提升他们的精神境界,已经成为我国教育不可回避的紧要课题。

一位作家说过:“热爱书吧,这是知识的源泉,只有知识才是有用的,只有它能够使我们从精神上成为坚强、忠诚和有理智的人,成为能够真正爱人类、尊重人类劳动、衷心地欣赏人类那不间断的伟大劳动所产生的美好果实的人。”这也正是我们编纂《新世纪教育文库》时所共同拥有的热情与信念。

在全面推进素质教育的进程中,我们觉得,应当为学生提供和书本拥抱、与大师对话的机会,从而点燃他们创造才华的火花。我们编纂《新世纪教育文库》,期待着它能为素质教育的全面深入发展提供一个良好的契机和新的生长点。

作为百年之交、千年之交的一次文化积累、整理和

总结,《新世纪教育文库》的编纂同时也是对文化更新、转换和创造的一种尝试。我们期盼着它在新的世纪结出丰硕的文化教育成果。

基于以上的思考,我们在编纂《新世纪教育文库》时力求遵循以下原则:

——经典性和广泛性的统一。《文库》注重所选作品的经典性和人文价值,同时也兼顾知识的广泛性与时代性,社会科学、自然科学等方面都要涉及,使经典著作的普及和现代科学知识的拓展相结合。

——深刻性和可读性的统一。《文库》注重所选作品思想内容的深刻性,但深刻性并不意味着晦涩、枯燥、味同嚼蜡,我们编选作品时充分顾及可读性,使那些具有丰富人文内涵的佳作成为学生们可亲可近的精神伙伴。

——层次性和整体性的统一。《文库》既考虑大中小学师生不同阅读层次的需要,也兼顾《文库》自身的连续性、整体性和系统性。因此,《文库》一方面尽量避免各系列之间的重复、雷同,另一方面在各系列书目有必要的交叉时,考虑篇幅、文本有所区别。

我们力求精选精编,使《文库》达到一流水准,用经得起时间考验的名著经典和文化精品为大中小学生和教师营造精神家园,使《文库》成为学校图书馆的必备书,成为有志使孩子成才的家庭的小型图书馆。

《新世纪教育文库》分小学、中学、大学、教师四个系列,分别由陈子平博士、单强博士、朱永新博士和周川博士担任系列主编,每个系列一百种(其中重点推荐书目二十种)。各个系列的书目有所侧重:小学—基础、自然、想象;中学—人文、情感、品德;大学—学术、视野、责任;教师—理论、创造、技能。但四个系列是一个整体,小学生也可以选读中学甚至大学系列中的名著,大

学生也可以读小学、中学系列中的一些经典,教师则更应该努力阅读各系列中所有重点推荐书目。

《新世纪教育文库》的出版得到了教育界、学术界、出版界的广泛关注与热情支持。于光远先生给予高度评价:“编好这个文库,其意义绝不亚于造一条高速公路。”张中行先生、钱仲联先生等年过九旬的前辈都亲自参加了《文库》的研讨会。中共中央宣传部、教育部、团中央以及江苏省人民政府、省教委和团省委等有关单位的领导均给《文库》很多鼓励和支持,江苏省新闻出版局把出好《文库》列为工作的重中之重。江苏吴中集团多年来奉行“既为青少年提供丰富的物质产品,更要为青少年奉献优秀的精神产品”的宗旨,他们慷慨解囊,全力以赴支持《文库》的出版、发行工作,为《文库》的成功奠定了坚实的基础。这些,都更增添了我们的责任感与使命感。

伴随着新世纪清晰可辨的脚步声,我们热切地倾听着莘莘学子们的朗朗读书声。我们执着地认定,未来的时代是一个竞争与挑战的时代,是一个充满生机活力的时代,同时,它也应该是一个潜心读书的时代。“风声雨声读书声,声声入耳;家事国事天下事,事事关心”。这才能俯仰于天地之间,塑造一代新人坚强的灵魂和崭新的形象,实现中华民族的伟大复兴。

“为天地立心,为生民立命,为往圣继绝学,为万世开太平”。古代的哲人曾经这样寄语一代书生,今天我们将赋予这句话以新的内涵。让我们以真正读书人的襟怀和气魄,昂首走进新世纪!



## 前 言

在当今日益开阔的国际交流环境下,知识经济全球化正在日益改变着人类的生产和生活方式。各个国家、各个民族之间的文化交流、科技交流和信息交流已成为人类生活的一个须臾不可缺少的重要方面。但是,我们的学生在英语学习中,仍存在着课外阅读量少、知识面窄的问题,尤其是科技信息摄取严重不足。为此,我们以高中生和广大英语学习者为主要读者对象编写了这本《科技英语阅读》,以开拓视野、扩充科技信息、提高英语阅读能力为宗旨,力求做到以下几点:

**内容新颖**——本书在内容上尽量选用反映最新的先进科技成果、富有当代生活气息的材料。

**知识面广**——本书在选材上涉及尽可能多的科学技术门类,如物理、化学、生物、医药、环保、宇航、心理学等方面的内容均有所反映。

**趣味性**——材料力求做到幽默风趣、生动活泼、引人入胜。通过趣味性强的材料,激发学生的学习兴趣。

**提高英语水平**——本书是一本英语读物,提高读者的英语阅读水平是编写本书的主要目的。为此,在每课之后都安排了翔实的注释和一定量的练习,以帮助读者抓住重点,一步一个脚印,学得更加扎实。

如果本书对于那些希望提高英语水平的高中学生有切实的帮助,能使他们从中获益,我们将感到十分欣慰。书中错讹之处在所难免,恳请读者批评指正。

本书部分选用了国内外资料,敬请作者与编者或出版社联系,领取稿酬。

编 者

2002. 11

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# Lesson 1

## A Big Mystery: Why Do We Laugh ?

人为什么笑? 令人吃惊的是,人不是因为觉得有趣、幽默而笑。笑是不由自主的,是同人与之间的关系相连的。科学家认为人的笑来自于人类灵长类祖先的喘息声。……

Contrary to folk wisdom<sup>1</sup>, most laughter is not about humor.

Laughter is part of the universal human vocabulary. All members of the human species understand it. Unlike English or French or Swahili, we don't have to learn to speak it. We're born with the capacity to laugh.

One of the remarkable things about laughter is that it occurs<sup>2</sup> unconsciously<sup>3</sup>. You don't decide to do it. While we can consciously inhibit<sup>4</sup> it, we don't consciously produce laughter. That's why it's very hard to laugh on

command or to fake laughter. (Don't take my word for it: Ask a friend to laugh on the spot<sup>5</sup>.)

Laughter provides powerful, uncensored insights<sup>6</sup> into our unconscious, it simply bubbles up from within us in certain situations.

Very little is known about the specific brain mechanisms<sup>7</sup> responsible for laughter. But we do know that laughter is triggered<sup>8</sup> by many sensations and thoughts, and that it activates<sup>9</sup> many parts of the body.

When we laugh, we alter<sup>10</sup> our facial expressions<sup>11</sup> and make sounds. During exuberant laughter<sup>12</sup>, the muscles<sup>13</sup> of the arms, legs and trunk are involved. Laughter also requires modification in our pattern of breathing.

We also know that laughter is a message that we send to other people. We know this because we rarely laugh when we are alone (we laugh to ourselves even less than we talk to ourselves).

Laughter is social and contagious<sup>14</sup>. We laugh at the sound of laughter itself. That's why the Tickle<sup>15</sup> Me Elmo doll is such a success—it makes us laugh and smile.

The first laughter appears at about 3.5 to 4 months of age, long before we're able to speak. Laughter, like crying, is a way for a preverbal infant<sup>16</sup> to interact<sup>17</sup> with the mother and other caregivers.

Contrary to folk wisdom, most laughter is not about humor; it is about relationships between people. To find out

when and why people laugh, I and several undergraduate research assistants went to local malls<sup>18</sup> and city sidewalks and recorded what happened just before people laughed. Over a 10-year period, we studied over 2,000 cases of naturally occurring laughter.

We found that most laughter does not follow jokes. People laugh after a variety of<sup>19</sup> statements such as “Hey John, where ya been?” “Here comes Mary,” “How did you do on the test?” and “Do you have a rubber band<sup>20</sup>?”. These certainly aren’t jokes.

We don’t decide to laugh at these moments. Our brain makes the decision for us. These curious “ha ha ha’s” are bits of social glue that bond relationships.

Curiously, laughter seldom interrupts the sentence structure<sup>21</sup> of speech. It punctuates<sup>22</sup> speech. We only laugh during pauses when we would cough or breathe.

## An Evolutionary Perspective<sup>23</sup>

We believe laughter evolved from the panting behavior of our ancient primate ancestors<sup>24</sup>. Today, if we tickle chimps or gorillas, they don’t laugh “ha ha ha” but exhibit a panting sound. That’s the sound of ape laughter. And it’s the root of human laughter.

Apes laugh in conditions in which human laughter is produced, like tickle, rough and tumble play, and chasing games. Other animals produce vocalizations during play,

but they are so different that it's difficult to equate them with laughter. Rats, for example, produce high-pitch vocalizations<sup>25</sup> during play and when tickled. But it's very different in sound from human laughter.

When we laugh, we're often communicating playful intent. So laughter has a bonding function within individuals in a group. It's often positive<sup>26</sup>, but it can be negative<sup>27</sup> too. There's a difference between "laughing with" and "laughing at". People who laugh at others may be trying to force them to conform<sup>28</sup> or casting them out of the group<sup>29</sup>.

No one has actually counted how much people of different ages laugh, but young children probably laugh the most. At ages 5 and 6, we tend to see the most exuberant laughs. Adults laugh less than children, probably because they play less. And laughter is associated with play.

We have learned a lot about when and why we laugh, much of it counterintuitive<sup>30</sup>. Work now underway will tell us more about the brain mechanisms of laughter, how laughter has evolved and why we're so susceptible to tickling—one of the most enigmatic<sup>31</sup> of human behaviors.

(by Robert Provine)

## Notes to the text:

1. contrary to folk wisdom: 不同于一般的常识;与一般人的看法相反

2. occur: (to happen, to take place) 发生
3. unconsciously: 无意识地
4. inhibit: (to hold back) 阻止;禁止;抑制
5. Don't take my word for it: Ask a friend to laugh on the spot.  
如果你不相信我的话,那就请你的朋友当场笑一笑,验证一下。
6. uncensored insights: (sudden understanding that is not examined or stopped) 未经审查的见解,无约束的见解
7. brain mechanism: 大脑的机理(或机制)
8. trigger: to start (a chain of events) 引起(一连串事件的)行动(或冲动等);激发;触发
9. activate: (to cause to be active; to bring into use) 使活动起来;使开始起作用
10. alter: (to become different) 修改;改变
11. facial expressions: 面部表情
12. exuberant laughter: 充满活力的笑声
13. muscle: 肌肉
14. contagious: 有感染力的
15. tickle: (to touch sb.'s body lightly to produce laughter) 搔痒痒
16. preverbal infant: 还不会讲话的婴儿
17. interact: (to have an effect on each other) 互相作用;互相影响
18. mall: (an area of streets where one can walk around to and around stores) 购物中心;商店集中区
19. a variety of: (all kinds of) 各种各样
20. rubber band: 橡皮筋
21. sentence structure: 句子结构
22. punctuate: (to interrupt) 打断,(语气)中断
23. an evolutionary perspective: 进化论的观点



24. primate ancestors: 灵长类的祖先
25. high-pitch vocalization: 高音
26. positive: 确定的;肯定的
27. negative: 否定的
28. conform: 顺从;遵守
29. ... casting them out of the group. ……把他们从队伍中赶出去。
30. counterintuitive: 反直觉的,反直观的
31. enigmatic: (puzzling, mysterious) 神秘的;令人迷惑的

## Exercises:

### I. Decide true or false statements

1. Human beings can produce laughter when told to.
2. Scientists have done a lot of research about laughter and now we are quite clear about which parts of human brain control laughter.
3. People seldom laugh when they are all by themselves.
4. All laughter is not about humor.
5. Human laughter roots from the panting sound of apes.

### II. Choose the right words or phrases which have the same meaning as the words or phrases in the text

1. One of the *remarkable* things about laughter is that it occurs unconsciously.
  - A. not worth speaking of
  - B. unusual or noticeable
2. It simply *bubbles up* from within us in certain situations.
  - A. to rise as bubbles
  - B. to produce bubbles