

大学英语泛读

科 技 前 沿

Reading English at the Scientific Forefront

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序 言

大学英语泛读教材**科技前沿**是一本令人耳目一新的英文科技报道纵览，反映了当今世界科技前沿的最新信息与研究动态，涉及医学、电子、农业、化学、材料、海洋、考古、航天、动物、植物、生命科学、生物工程、人工智能等众多科技领域。资料详实，内容新颖，引人入胜，语言简练，生动有趣。能使读者接触到当今新颖别样的科技报道文体风格，也是读者了解科学发展的窗口，学习科技英语的好教材。

书中选编的科技报道有：世界最大规模的科学实验——百万儿童齐蹦引发“地震”；卫星图像检测记录分析，气候转暖引发南极冰架崩塌；医疗革新与社会的关爱延长了唐氏综合征患者的生命；美国妇女首开先河，二百万美元预订“太空七日游”；干细胞研究新突破——科学家从人体胚胎干细胞中造出微循环血管以修复动脉和心脏；测试证实了空气污染收缩健康血管；新型合成材料可以“自愈”裂隙；超长时微型燃料电池将取代锂电充电电池；科学家神奇发现——水在它不喜欢的环境中激烈波动；人体内埋置细微电极阵可使计算机与中枢神经细胞双向交流，给成千上万肢体损伤的病人带来福音；人类留在西藏高原的足迹距今 20000 年；基因专家让树叶开花；你知道转基因食品虚假经济背后的成本吗？静音手机让窃听变得更加容易；眼科专家“点亮”大脑诊断眼疾；母亲词汇贫乏严重影响儿童的未来发展；世界观察研究所的最新报告——丰富的自然资源是 21 世纪战争频发的根源；个体家庭数目的膨胀威胁着野生动物生存，破坏生物多样性……

本书编者花费了近两年时间收集了大量语言材料，精心筛选，仔细作注，周密设计阅读理解题，这才最终呈献给读者一本最具知识性、科学性、时代性、可读性的好书。本书可作为高等院校文理科各年级泛读教材，也是广大英语爱好者

的良师益友。

俞杰 1/10 2005

前 言

阅读科技报道是了解当今世界最前沿的科技进展、扩大科技英语词汇量、开阔知识视野最快捷、最有效的手段之一，也是英语学习者从基础英语阅读向专业英语阅读的过渡。大学英语泛读教材**科技前沿**一书的编写正是试图为英语学习者架起一座这样的桥梁。

本书选材力求广泛，所选文章涉及医学、电子、农业、化学、材料、海洋、考古、航天、动物、植物、生命科学、生物工程、人工智能等众多科技领域。资料详实，内容新颖，引人入胜，语言简练，生动有趣。展现了各学术领域最新的语言表现形式和当今新颖别样的科技报道文体风格，是读者了解科学发展的窗口，学习科技英语的好教材。为了帮助读者深入理解，每篇文章后精心设计了阅读理解题，对文章难点、重点及整体信息通过问题形式启发引导、归纳梳理。对每个问题干扰项的设计注意了干扰的客观性、相关性及间接性，既考察读者对文章字面意义的理解，又检验读者对文章内容的领悟，有利于提高读者逻辑判断能力。书中对一些新词、生词和专业词汇所做的脚注在为读者扫清阅读障碍的同时丰富了读者的背景知识，针对每道阅读理解题的参考答案与解析更加方便读者

自学。科技文摘写作知识简介一览介绍了科技文摘的四种类型，衡量文摘质量的标准和要求，并从词的选用、常用句型、篇章的逻辑统一连贯性上概括地介绍了科技文摘的语言表达特点，有助于读者了解科技报道的语言及文体，更加深入地体会科技报道的文体风格，同时提高文摘写作能力。

本书主要有以下几个特点:一是信息量大，内容新颖；二是语言简练，通俗易懂，兼科普与新闻报道文体风格；三是顺应大学四、六级、研究生英语水平考试阅读选材趋势，有助于拓宽读者的知识面，丰富阅读理解的背景知识；四是汇集了大量科技英语新词汇，有益于读者扩展科技词汇量；五是英文文摘写作简介从时代发展的视角关注了大学生、研究生摘要写作要求。

本书可作为高等院校泛读材料，适合于英语四、六级和考研应试者以及科技工作者，也有益于广大英语爱好者。

由于编者水平有限，错误纰漏在所难免，望广大读者批评指正。

张 利 平

2005 年 10 月

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Big British Jump

Children Cause Minor Tremble In Science Experiment

L O N D O N, Sept. 7, 2001 — Around a million British school children succeeded in causing an earthquake today, jumping up and down simultaneously in the world's largest scientific experiment.



Thousands of schools around Britain were asked to send children out into the playgrounds at 11 a.m. local time today to jump up and down for a minute in hopes of creating a measurable quake.

Organizers of the Giant Jump event, held¹ to mark the launch of the government's Science Year², said it had been a success.

"We're almost sure we had a million people out there jumping for us. We got some kind of result at every single seismometer³ around the country," Nigel Pain, director of Science Year, told Reuters.

"We generated something like a hundredth of a serious earthquake — that's not an enormous amount of energy but it's significant."

The exact number of people taking part would have to be verified, but he said it was an unofficial world record.

Early estimates suggested 75,000 tons of energy had been released during the minute of jumping.

"Because it's dissipated⁴ across the whole country it didn't do very much damage. But drop that in one spot and it would have caused quite a big hole in the ground," he added.

¹ hold: 使发生, 举行。

² Science Year: “科学年”, 由英国教育部发起主办, 是一项主要针对全英国 10~19 岁少年的科普活动, 从 2001 年 9 月起持续一年, 期间通过各种活动、讲座、发放科普材料等形式, 帮助青少年了解科学, 鼓励他们应用科学, 进而投身于科技事业。

³ seismism: [总称]地震现象。

⁴ dissipate: 使消失, 使散开, 失去, 消散。

Over the next two weeks the results from around the country will be analyzed to see if the event registered on the Richter scale¹.

Scientists said a million children with an average weight of 110 pounds jumping 20 times in a minute would release two billion joules² of energy and trigger the equivalent of an earthquake measuring three on the Richter scale.

The event has also attracted serious attention from scientists including the Atomic Weapons Establishment³(AWE), which maintains Britain's nuclear warheads⁴.

Fortunately the world didn't split in two as one of the children surveyed before the event believed would happen, nor did the Earth leave the Sun's orbit as feared by another.

A third came up with⁵ a more likely, if less exciting scenario⁶: "There will be lots of hospital visits from people with sprained⁷ ankles."

Comprehension Check

1. What is the report about?
 - A. It is about a quake in London on Sept. 7, 2001.
 - B. It is about an unofficially recorded quake.
 - C. It is about a successful earthquake by a million children's simultaneous jumping in a scientific experiment.
 - D. It is about a 3.0 quake by a million children's simultaneous jumping.
2. Which of the following statements about the big jump is not true?
 - A. It draws serious attention from many scientists including those from AWE.
 - B. The Big Jump has caused a big hole in the ground.
 - C. A million people are out jumping simultaneously.
 - D. It causes a minor earthquake.
3. Scientists claim that _____
 - A. a million children's simultaneous jumping creates a 3.0 quake.
 - B. the big jump releases two billion joules of energy.

¹ the Richter scale: 从 1 到 10 的一种对数标度, 用以表现地震放出的能量总数。在这种标度中增加 1 代表放出的能增加 32 倍。

² joule: [物]焦耳。

³ establishment: (英) 研究所。the Atomic Weapons Establishment: (英) 原子武器研究所。

⁴ nuclear warhead: 核弹头。

⁵ come up with: 宣布或发现。

⁶ scenario: 想定游戏的关或是某一特定情节, 方案, 事态, 局面。

⁷ sprained: 扭伤了。

- C. the energy of the Big Jump measures 75.000 tons.
 - D. 20-time jumping in a minute by a million children of about 110 pounds probably release two billion joules of energy and cause a 3.0 quake.
4. Which of the following statements is true according to the article?
- A. All the seismometers around the country have registered some kind of the big jump's result.
 - B. The quake was measured 3.0 at all the seismometers around the country.
 - C. Only one seismometer got the result of the quake.
 - D. The exact result of the quake was registered at every single seismometer around the country.
5. The article tells us that the amount of energy generated by the big jump _____
- A. is like that of one hundredth earthquake.
 - B. is similar to that serious quake.
 - C. is about one hundredth of a serious earthquake.
 - D. is like the hundredth serious earthquake.

Oscar Winners Live Long Lives



Katharine Hepburn¹ celebrated her 94th birthday this month, and all her Oscars² (she's got four of them) may have something to do with³ it: According to a study published in the 15 May issue of the *Annals of Internal Medicine*⁴, winners of Academy Awards live longer than other successful actors.

A growing body of research shows that high-status people live longer than people lower on the ladder of life. For instance, a huge longitudinal study⁵ of British civil servants, called the Whitehall Study, has shown that even in a population with good income and health benefits, the higher-status folks live longer.

The latest study indicates that even the cream⁶ separates into discernible⁷ layers. Physician Donald Redelmeier and Sheldon Singh of Sunnybrook and Women's College Health Sciences Centre⁸ in Toronto sorted⁹ through the vital statistics¹⁰ of all 762 actors and actresses who have been nominated for Academy Awards¹¹ in leading or supporting roles—including 235 winners—since the first awards ceremony in 1929. They also established a control group¹² of 887 actors, matched as closely as possible for age and sex, who had appeared in the same movies. Of the total, 772 had died by March 2000.

¹ Katharine Hepburn: 凯瑟琳·赫本生于 1909, 美国女演员, 其独特的喜剧化和戏剧化表演成为许多佳片的特色, 如《费城故事》(1940 年), 《亚当的肋骨》(1949 年) 和《非洲皇后》(1951 年)。

² Oscars: 奥斯卡奖, 世界上最有影响的电影奖之一, 由美国电影艺术与科学学院颁发, 创立于 1929 年, 1929 年 5 月 16 日举行了第一届奥斯卡奖颁奖仪式, 此后每年评选一次, 从无间断, 到 1988 年已举行了 60 届。正式名称为“学院奖”(Academy Awards), 第四届起才有了“奥斯卡”的别名, 即以此名而远播四海。其来历说法很多, 较普遍的说法是, 学院的女图书管理员赫里奇认为奖品上的人像与她的叔叔奥斯卡相似, 经记者的渲染, 不胫而走。它以英语影片为评选对象, 设奖项 30 个, 非英语影片参加最佳外语片的评选, 由学院的会员投票选出。获奖影片基本反映了美国电影的艺术水平, 其题材广泛, 风格各异。

³ have something to do with: 与……有点关系。

⁴ the Annals of Internal Medicine: 《内科年鉴》。

⁵ Longitudinal study: 跟踪研究。

⁶ cream: 精华, 优秀分子。

⁷ discernible: 可辨别的。

⁸ Women's College Health Sciences Centre: 加拿大多伦多的妇女学院健康科学中心。

⁹ sort: (常与 out, over 连用) 整理, 分类。

¹⁰ vital statistics: (出生、结婚、死亡等) 人口动态统计。

¹¹ Academy Awards: “学院奖”, 即奥斯卡奖。

¹² a control group: 对照组。

The researchers found that life expectancy¹ was 3.9 years longer for the winners than the controls² (79.7 versus 75.8 years). The life expectancy of nominees who'd lost looked more like that of the controls, with life expectancy of 76.1 years. In all groups, the women outlived the men by 2.5 years, but winning had the same tonic³ effect on survival for both sexes. What's more⁴, the authors report, there was a dose-response effect: Those with more than one Oscar had an even greater advantage—surviving controls by an average of 6 years. The results couldn't be accounted for⁵ by age of Oscar-winning, country of birth, number of films made (an indicator of income), or other factors; Redelmeier suggests that "the peace of mind⁶" of winning an Oscar "may make a person much more resilient⁷ to all sorts of stresses."

"If the authors have properly ruled out confounding⁸ with childhood circumstances and [other factors] ... then one must add this intriguing result to what we know about the personal factors that contribute to⁹ human longevity," says psychologist Ian Deary of the University of Edinburgh.

Comprehension Check

1. According to a study published in the 15 May issue of the *Annals of Internal Medicine*, _____
 - A. Katharine Hepburn got all her Oscars on her birthdays.
 - B. Katharine Heburn has won several Oscars in her life.
 - C. It's possible that Katharine Heburn's longevity is related to her Oscars.
 - D. The 94th birthday of Katharine Heburn may have something to do with all her Oscars.
2. A growing body of research shows that _____
 - A. status seekers in society live longer than ordinary people.
 - B. high status folks live longer than lower status folks.
 - C. people with high IQ live longer than people with low IQ.
 - D. Male Oscar winners live as long as actresses.
3. "The cream" in the first line of the third paragraph refers to _____

¹ life expectancy: 预期寿命。

² control: 对照物个体, 在对照实验中被用作对照标准的一个或一组物体。

³ tonic: 滋补的, 强身的, 使精神恢复的。

⁴ what is more: 更甚者, 此外。

⁵ account for: 导致, 引起构成决定性的或主要的因素, 解释……原因。

⁶ the peace of mind: 内心的宁静。

⁷ resilient: 有弹性的, 能立即恢复精神的, 心情开朗的。

⁸ confound right and wrong: 混淆是非。

⁹ contribute to: 起作用, 有助于, 促成。

- A. high status people
 - B. the actors and actresses nominated for Academy Awards.
 - C. Oscar winners.
 - D. the researchers.
4. According to the dose-response effect produced by Oscars, _____
- A. one Oscar will add 6 years of life to the winners.
 - B. one more Oscar will add an average of 6 years to the winners' life.
 - C. the tonic effect of winning Oscars help the winners outlive other people.
 - D. the more Oscars the winners win, the longer they live.
5. Which of the following factors may account for the longevity of the Oscar winners?
- A. Age of Oscar-winning
 - B. Country of birth
 - C. Number of films made
 - D. The peace of mind of winning an Oscar

Bacteria Dye Jeans

Biotech Bugs Turn Indigo Blue In A Green Way



Jeans dyed blue by bacteria may soon be swaggering down¹ the streets. Researchers have genetically modified bugs² to churn out³ the indigo pigment used to stain denim. The process could be a greener rival to chemical indigo production.

Originally extracted from plants, indigo dye is now made from coal or oil, with potentially toxic by-products. Bacteria have previously been adapted as alternative indigo manufacturers, but a trace by-product renders jeans an unfashionable shade of red.

Walter Weyler and his colleagues of Genencor International in Palo Alto, California tweaked the genes of the bacterium *Escherichia coli* to eliminate the red pigment. The final colour is "indistinguishable" from the globally popular deep blue of the chemically made dye, says Doug Crabb, vice president of Genencor.

The bugs offer an environmentally friendly substitute for chemical synthesis: they use sugar as their raw material and create less waste. "Biological indigo would probably be more environmentally friendly," agrees UK environmental consultant Michael Griffiths. But industry is unlikely to use it until it is also as cheap and effective.

Biotech indigo starts with a chemical called tryptophan⁴, which bacteria produce naturally. Tryptophan is ideal for conversion to indigo because it already contains the ring-structure at the core of the indigo molecule. A few chemical alterations convert tryptophan into the dye.

¹ swagger (down): 昂首阔步地走，趾高气扬地走。例句: He swaggered down the street after winning the fight. 打赢架之后他趾高气扬地走了。

² bug: 细菌。

³ churn out: 大量产出，以一种丰富的和自动的方式产生。

⁴ tryptophan: 色氨酸 (C₁₁H₁₂N₂O₂), 一种重要的氨基酸，在消化过程中，通过蛋白水解作用酶的运动而由蛋白质形成。