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# 通信科技英语

## 文选

南京大学外文系公共英语教研室编



19

# 通俗科技英语文选

第十九辑

南京大学外文系公共英语教研室编

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## Dear Heart

About 65,000 Americans are set beating every year by the surgical implantation of cardiac pacemakers. Or, put another way, it is estimated that one in every 800 hearts in the United States is under artificial control①.

In some patients, the equipment had been implanted in anticipation of later problems after their electrocardiograms had shown patterns suggestive of impending heart block②.

Research workers at Stanford University and Montefiore Hospital in New York report success with a new pacemaker. It delivers bursts of electrical impulses to slow the heart.

It is seen as a possible answer to tachycardia which fails to respond to drug treatment.③

The doctors are enthusing over the flexibility of the machine which can be adjusted to the needs of each patient. The frequency and duration of the pulses needed to control an attack can be programmed by radio signal④.

The pacemaker is usually activated by a sequence of eight abnormally fast heartbeats and takes between 1.3 and 4 seconds to restore normal activity. It can be monitored by the patient's doctor over the telephone.

The machine is powered by a sort of battery and will last about six years.

## 词 汇

**surgical** ['sə:dʒikəl] *a.* 外科的  
**implantation** [ˌimplɑ:n'teɪʃən] *n.* 移植  
**cardiac** ['kɑ:diæk] *a.* 心脏的  
**pacemaker** ['peɪs,meɪkə] *n.* 起搏器  
 put (in) another way 用另一种方式表达  
**anticipation** [ænˌtɪsɪ'peɪʃən] *n.* 预料  
**electrocardiogram** [i'lektreɪ'kɑ:diəgrəm] *n.* 心电图  
**impend** [ɪm'pend] *vi.* 即将发生  
**burst** [bɜ:st] *n.* 一阵迸发

**impulse** ['ɪmpʌls] *n.* 脉冲  
**tachycardia** [ˌtæki'kɑ:diə] *n.* 心动过速  
 respond to 对...作出反应  
 enthuse over 对...表示热心  
**flexibility** [ˌfleksə'bɪlɪti] *n.* 灵活性  
**duration** [dʒuə'reɪʃən] *n.* 持续时间  
**activate** ['æktɪveɪt] *vt.* 使活动  
 a sequence of 连续  
**abnormally** [æb'nɔ:məli] *ad.* 不规则地  
**monitor** ['mɒnɪtə] *vt.* 检查

## 注 释

- ① it: 形式主语,真正的主语是主语从句 **that one ... control.**
- ② suggestive of impending heart block: 形容词短语作定语,修饰 **patterns.**
- ③ It is seen as ... treatment: It 指上文中的 **a new pacemaker;** 介词短语 **as ... treatment** 作主语补足语,说明主语 **it.**
- ④ needed to control an attack: 过去分词短语作定语,修饰 **the frequency and duration of the pulses.**

## 参考译文

### 珍贵的心脏

每年大约有 65,000 名美国人通过外科手术,植入心脏起搏器来调节心脏跳动。或者,换句话说,估计在美国每 800 个心脏中就有一个心

脏是由人工控制的。

有些病人在心电图显示即将发生传导阻滞的图象后，为防不测而植入心脏起搏器。

斯坦福大学和纽约蒙蒂菲奥里医院的研究人员报告说，他们已研制成一种新型起搏器。这种器械发出一阵阵电脉冲来减缓心律。

他们认为，这种机械也许可以治疗药物无法治疗的心动过速病。

医生们对这种可以根据每个病人需要予以调节的机器的反应至为热烈。控制发病所需的脉冲频率和持续时间，可以由无线电信号控制。

心脏连续不规则地快速搏动8下，一般就可使起搏器工作，而且仅需1.3至4秒就能使心脏跳动恢复正常。医生还可以通过电话对病人进行检查。

这种起搏器用一种电池作为能源，使用时间可达6年之久。

(拓笔)

## Electrical Help for the Deaf

The “stone deaf”<sup>①</sup> who can't be helped by any conventional aids can now hear — through electricity. True, it is only a primitive kind of hearing, but it's adequate for recognizing the doorbell ringing or a siren wailing, a motor running or a dog barking. It is not yet able to make the spoken word understandable (speech sounds as if in a totally foreign language<sup>②</sup>).

Sounds are picked up by a tiny microphone (like a conventional hearing aid in appearance); from it, wires carry the electrical signals to a battery device and then to a transmitting coil (placed behind the ear) from which they are transmitted through the skin to a buried receiving coil



which passes them on to electrodes implanted deep in the inner ear. These electrodes in turn stimulate the nerves of hearing which carry the information to the brain where the nerve impulses are interpreted (as a bell or siren, etc.). Some 150 such implants have been made.

In an attempt to make the blind<sup>③</sup> see, images registered by a TV camera are passed on electrically to a computer which then activates electrodes implanted in the visual center at the back of the brain<sup>④</sup>. Here a grid of 64 electrodes are fired so that the blind person sees dots of light and can sometimes tell if a triangle points up or down, or even read Braille letters<sup>⑤</sup>. Although this is still a long way from actual use, it seems to hold hope for the future.

## 词 汇

**conventional** [kən'venʃənl] *a.* 普通的

**aid** [eid] *n.* 辅助物器

**primitive** ['prɪmɪtɪv] *n.* 简单的

**adequate** ['ædɪkwɪt] *a.* 足够的

**siren** ['saɪərɪn] *n.* 警报器

**wail** [weɪl] *n.* (警报器)尖啸

**transmit** [trænz'mɪt] (transmitted; transmitting) *vt.* 发射

**coil** [kɔɪl] *n.* 线圈

**electrode** [i'lektroʊd] *n.* 电极

in turn 依次

**stimulate** ['stɪmjuleɪt] *vt.* 刺激

**interpret** [ɪn'tɜ:pɪt] *vt.* 解释

**image** ['ɪmɪdʒ] *n.* 图象

**visual** ['vɪʒuəl] *a.* 视觉的

**grid** [grɪd] *n.* 栅极

**dot** [dɒt] *n.* 小点

**triangle** ['traɪæŋɡl] *n.* 三角形

hold hope 抱有希望

## 注 释

① the "stone deaf": 完全的聋人; deaf 前加 the, 表示该形容词已名词化, 可表示人。

② as if in a totally foreign language = as if it (指 speech) were

made in a totally foreign language.

- ③ the blind: 盲人. 参看注 1.
- ④ implanted ... the brain: 过去分词短语作定语, 修饰前面的 electrodes.
- ⑤ Braille letters: 布莱叶盲文文字 (法国人 Louis Braille 创制的凸点符号, 供盲人书写、摸读。)

## 参考译文

### 聋人的电传听器

完全聋的人使用普通助听器无济于事, 现在借助于电却可以听到声音了。是的, 这种听力是十分简单的, 但是足以辨别究竟是门铃声, 还是警报器的尖啸声, 是汽车行驶的响声, 还是犬的吠声; 然而还听不懂别人讲话 (讲话听起来完全象外语似的)。

声音由微型传声器 (外形与普通助听器相似) 接收。导线把传声器送来的电信号传给一个电池装置, 然后传给安在耳后的发射线圈, 信号再从那里发射出去, 穿过皮肤到达埋在耳内的接收线圈, 然后再由该线圈将信号传给深埋在耳内的电极。这些电极依次刺激听觉神经, 听觉神经又把信息传给大脑, 在那里这些神经刺激得到了解释 (如铃声还是警报器声等)。这样的植入手术大约已经作了 150 例。

为了使盲人能看到东西, 把储存在电视摄象机里的图象通过电传给一台电子计算机, 计算机再激活植入大脑后面的视觉中心里的电极。这里, 一个栅极的 64 个电极同时发射, 这样, 盲人就可以看到光点, 有时还能辨别三角形尖顶向上还是向下, 甚至能读出盲文。这种方法虽然离实际使用还很遥远, 但似乎将来还是有希望的。

(拓 带)

## **Flying Hybrid**

It takes off like a helicopter, flies like a plane and in many respects outperforms both. It could leave from a downtown terminal, whisk passengers 200 miles away and land in the heart of another city in less than an hour. Such an aircraft is more than① the fanciful notion of a daydreaming engineer: it is flying today.

After 20 years of research, the conventional-looking convertiplane has emerged from the laboratory, able to do some very unconventional things②. For takeoff, its two propellers swivel 90 degrees upward and lift the craft off the ground in helicopter fashion. Once③ it is airborne, the propellers rotate forward and the hybrid ship acquires an airplane's efficiency, speeding off at over 300 miles per hour. This unusual system allows the convertiplane to hop easily from point to point, unconcerned with such nuisances as runways.

Currently, two prototypes exist, owned by government and developed jointly by NASA, the Army, the Navy and Bell Helicopter. Not surprisingly, much current research is focused on the craft's considerable military potential, including its use for troop deployment and medical evacuation. As a long-distance commuter craft, the plane could eliminate the need for travelers to drive to remote airports.

The planes may be in commercial use as early as the end of this decade or the beginning of the next. The first

such models will develop from the current military species and will be comparatively small, carrying no more than 40 passengers. Later, however, commercial convertiplanes, could carry as much as 100 commuters. Additionally, tilt-rotor engines are unusually quiet, thus adding little to urban noise levels.

The plane's actual production schedule depends largely on financing and the completion of research. Spokesmen remain optimistic, however, that④ convertiplanes will one day be widely used in a variety of situations.

## 词 汇

**hybrid** ['haibrid] *a.* 混合的, 杂种的 *n.* 混合机

**outperform** ['autpə'fɔ:m] *v.* 工作性能比...好, 优越

**downtown** ['daun'taun] *a.* 闹市区的

**terminal** ['tɜ:minl] *n.* 航空站

**whisk** [hwisk] *v.* 急忙带走

**fanciful** ['fænsiful] *a.* 存在于空想中的

**convertiplane** [kən'vɜ:tiplein] *n.* 平直两用飞机

**propeller** [prə'pelə] *n.* 螺旋桨

**swivel** ['swivl] *vi.* 旋转

**airborne** ['æbɔ:n] *a.* 在空中飞行的

**hop** [hɒp] *vi.* 作短途旅行(尤指

飞行)

**unconcerned with** 与...无关

**nuisance** ['nju:sn̩s] *n.* 讨厌的东西

**prototype** ['prəʊtətaip] *n.* 原型  
NASA (美)宇航局

**evacuation** [i,vækju'eɪʃən] *n.* 撤离

**deployment** [di'plɔimənt] *n.* 调动

**commuter** [kə'mju:tə] *n.* 经常来往于两地的人或班机

**financing** [fai'nænsɪŋ] *n.* 筹措资金

**optimistic** [,ɒpti'mistik] *a.* 乐观的

## 注 释

- ① more than: 不只是
- ② able ... things: 形容词短语作定语, 修饰 convertiplane
- ③ once: = as soon as 作连词用
- ④ that: 引导从句, 作 optimistic 的状况

## 参考译文

### 混合型飞机

混合型飞机起飞象直升飞机, 航行象普通飞机, 而许多方面则胜于后两者; 它可以从闹市区的航空站起飞, 运载着旅客在不到一小时内快速飞行 200 英里并在另一个城市的市中心降落。今天这种飞机已不再是工程师白日作梦的空中楼阁, 而是正在空中飞翔的实体。

经二十年的研究, 平直两用飞机已在实验工厂试制成功。这种看上去很平常的飞机却能做出一些不同凡响的事。起飞时, 它的两个螺旋桨向上转动 90 度, 使机身以直升飞机的方式飞离地面。一旦进入空中, 螺旋桨就向前转动, 这样, 混合式飞船就具备了飞机的功效, 以每小时 300 英里的速度疾飞。这种非同一般的系统使平直两用飞机易于从一地到另一地作短途飞行, 省却跑道之类的诸多麻烦。

目前已有两架样机, 属政府所有, 是由国家宇航局、陆军、海军和贝尔直升飞机公司联合研制的。毫不足怪, 当前的研究大都集中在这种飞机巨大的军事潜力方面, 包括用来部署军队和运走医疗物品。作为长途往返的班机, 它还可省去旅客驾车到遥远的机场去的麻烦。

这种飞机最早在八十年代末或九十年代初就可能在商业上投入使用。第一批这类飞机将由现在的军用飞机式样发展而成, 但体积小, 载客人数不超过 40 位。不过, 日后商业用的平直两用飞机所运载的旅客可多达 100 位。此外, 倾斜旋翼发动机异常安静, 因而不大可能会提高城市的噪声级。

这种飞机的实际生产计划主要取决于资金的筹集和研究工作完成的情况。不过,发言人仍然十分乐观,认为平直两用式飞机总有一天会广泛应用于各种场合。

(余和鸣)

## Do Animals Really “Play”?

Yes, and sometimes it's nothing more than① fun and games, as when a monkey swings from a vine and tosses a stick, or when polar bears amuse themselves with stones, which they sometimes balance on their heads. Often, though,② the seemingly frivolous antics we interpret as “play” are serious.

Play can be viewed as a pleasurable way of developing survival skills. The next time you're at a zoo, watch how the young lions play. One will crouch low against the ground, walking slowly toward its littermate and then pounce on the surprised “victim.” That usually touches off a wrestling match, with the young fighting each other harmlessly. Such fightings occur frequently among most predators such as wolves and tigers. As they play, these young develop the abilities they need to become efficient predators.

Among monkeys and apes, playing helps lay the foundation for social order — a requirement for the survival of primate communities. Through play-fighting, a young monkey learns — in a harmless way — where it stands among its equals③. The individuals that are most often

victorious in the “matches” when young are most likely to assume a dominant role when they mature. Others that are lower on the social ladder learn their places early in life. This reduces more violent fightings among the monkeys as adults.

Many hoofed mammals engage in play, too. In herds of Mongolian wild horses, the breeding stallion will play-fight with his offspring, thereby helping the youngsters develop the agility they will need when confronted by predators or other stallions.

It appears that even whales play. A calf will perform all sorts of acrobatic gyrations on and around its mother, sliding over her tail, standing on its head or slapping its tail or flipper against the water's surface. It's possible that such play helps strengthen the relation between mother and offspring.

And what of birds④ — do they play? Some ornithologists are convinced that a few of the brainier ones do. The subject needs further inquiry. At this point, it's the mammals who appear to dominate the animal playground⑤.

## 词 汇

**swing** [swɪŋ] (swung, swung) *vi.*

摇, 荡

**vine** [vaɪn] *n.* 蔓, 藤

**amuse oneself with** 以...自娱

**frivolous** ['frɪvələs] *a.* 无意义的

**antic** ['æntɪk] *n.* 滑稽的动作或

姿势

**crouch** [kraʊtʃ] *vi.* 蹲伏

**littermate** ['lɪtəmeɪt] *n.* 一胎里  
下的小动物

**victim** ['vɪktɪm] *n.* 牺牲品, 受害者

**touch off** 触发, 激发

**wrestling** ['reslɪŋ] *n.* 摔角, 角力

**primate community** ['praɪmeɪt  
kə'mju:nɪti] 灵长目动物的社

会  
**assume** [ə'sju:m] *vt.* 担任  
**dominant** ['dominənt] *a.* 支配的,  
 统治的  
**dominate** ['domineit] *vt.* 支配,  
 统治  
**violent** ['vaiələnt] *a.* 猛烈的, 凶  
 暴的  
**hoof** [hu:f] *n.* 蹄  
**engage in** 从事  
**herd** [hə:d] *n.* 兽群  
**Mongolian** [mɒn'gəʊljən] *a.* 蒙  
 古的

**breeding** ['bri:diŋ] *n.* 繁殖  
**stallion** ['stæljən] *n.* 未阉割的公  
 马  
**agility** [ə'ʤiliti] *n.* 机警  
**confronted by** 面对, 面临  
**acrobatic** [ækro'bætik] *a.* 杂技  
 的  
**gyration** [ˌʤaɪə'reɪʃən] *n.* 旋转  
**slap** [slæp] *vt.* 拍打  
**flipper** ['flipə] *n.* 鳍状肢  
**ornithologist** [ɔ:nɪ'θɒlədʒɪst] *n.*  
 鸟学家

## 注 释

- ① **nothing more than:** = only
- ② **though** = though they are often nothing more than fun
- ③ **where it stands among its equals:** 在同等级位的猴中所处的位置
- ④ **what of birds:** = what about birds
- ⑤ **it's the mammals who ... playground:** 强调句, 被强调成份为 the mammals

## 参考译文

### 动物真“做游戏”吗?

是的, 不过有时只是嬉闹而已, 例如猴子在藤上荡来荡去或将树枝抛来抛去, 又如北极熊玩石块取乐, 有时将石块放在头上做平衡动作。尽管如此, 我们解释成做“游戏”的似乎无意义的滑稽动作却常常是严肃的举动。

游戏可看成是一种愉快的培养生存能力的方式。下次到动物园,



你可观察一下幼狮是怎样嬉闹的。一头幼狮贴近地面蹲着，慢慢溜近另一头同胎出生的幼狮身边，然后向这头受了惊的幼狮猛扑过去。这个动作通常触发一场暴力搏斗，幼狮相互殴斗，但互不伤害。这样的打闹活动常常在狼、虎等多数食肉动物中发生。正是在此种游戏的过程中，这些幼狮培养了成为名符其实的食肉动物所需要本能。

做游戏还给猴猿社会秩序的安定打下基础。这是灵长目动物社会生存的需要。借助游戏式的殴斗，幼狮通过一种无害的途径懂得自己在同类种所处的地位。幼年时代“比赛”中的常胜者成年后很可能成为统治者。社会地位较低的猴子在生活的早期即懂得了自己应据的位置。这样就减少了猴子成年后较为激烈的冲突。

许多有蹄类哺乳动物也做游戏。在蒙古野马群中，种公马与其幼马游戏般地殴斗，以培养它们的敏捷，这是将来与食肉动物或其它公马对抗时所必不可少的。

似乎连鲸鱼都嬉戏。小鲸鱼在母鲸身上或其周围做出各种特技的旋转：在母鲸的尾巴上滑行，在母鲸的头上站立，挥动尾巴或阔鳍拍打水面。这样的游戏很可能有助于加强母鲸和幼鲸之间的关系。

那么鸟类怎样呢？也做游戏吗？一些鸟类学家深信，几种聪明一些的鸟也是做游戏的。究竟是否如此，还有待进一步研究。就这一点来说，占据着动物世界游戏场地的主要是哺乳动物。

(徐丽卿)

## Animal Education

Animals perform many useful and entertaining jobs. Dogs are particularly valuable in guiding the blind, protecting property, finding lost people, and hunting criminals. Horses are used in guarding herds, carrying men in lands