通俗科技英语

文选

南京大学外文系公共英语教研室编

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通俗科技英语文选

第 八 辑

南京大学外文系公共英语教研室编

Contents

Hand-held
Language Translators

You just drove into the picturesque coastal village of Marbella, Spain. Famished and thirsty, you wonder where you can find good food. Your Spanish vocabulary, however, is limited to "gracias" and "buenos días". But you brought along a hand-held device that translates English into Spanish. You press WHERE IS A GOOD RESTAURANT into the device, show the translation on the display to an obliging native, and he eagerly offers some suggestions.

Sound amazing? It is. These small translation devices look much like calculators — only you punch in words instead of numbers. Language cartridges are already available in Spanish, French, German, Italian, Portuguese, and Japanese. On the way are Swedish, Polish, Hebrew, Russian, Greek, Arabic, and Chinese.①

All you do② is press keys to spell out an English or foreign word on the alphabetically arranged keyboard; press another button and you get an instant translation (word-for-word, not grammatical) which you can show or read. If, for example, you want to say "How much is it?" in Spanish, you press HOW MUCH IS IT on the keyboard in English, and enter it into the translator. HOW MUCH IS IT = COMO MUCHO ESTA ELLO will light up across the right-to-left rolling display.

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You do have to simplify your thoughts; these translators won't do complicated translations, and their vocabularies are limited. Each stores 1500 words per language capsule.

The Craig has 49 commonly used phrases listed on its back. Press a button corresponding to the phrase you want③ and get an instant translation. Press another button and get a readout of the cartridge's complete vocabulary. Want to know what words a cartridge contains starting with a letter such as T? Press a button and find out. Want to know the words related to a particular subject area? You can press, for example, the word WATER and find out many words pertaining to it.

Craig executives say they're working on cartridges for general subject areas, such as the nutritional value of foods and a mixed-drink recipe guide. Craig's future translators may have speech synthesizers and phonetic spelling cartridges.

词　汇

picturesque [ˌpiktʃəˈresk] a. 景色如画的

Marbella 马尔贝莉亚(西班牙地名)

famish [ˈfæmiʃ] v. 使挨饿

gracias (西班牙文)谢谢

buenos días (西班牙文)早安

obliging [əˈblaidʒiŋ] a. 乐于助人的

punch [pʌntʃ] v. 用力按

cartridge [ˈkɑːtridʒ] n. 盒

available [əˈveiləbl] a. 可用的；可得到的

Hebrew [ˈhiːbruː] n. 希伯来语

alphabetically [ˌælfəˈbetikəli] ad. 依字母顺序地

button [ˈbʌtn] n. 按钮

instant [ˈinstənt] a. 立即的；直接地

enter [ˈentə] v. 把…记入

cómo (COMO) (西班牙文)怎样

mucho (MUCHO) (西班牙文)多少

está (ESTA) (西班牙文)是

ello (ELLO) (西班牙文)它

capsule [ˈkæpsjuːl] n. 容器,盒

Craig [kreig] n. 克雷格(语言翻译机的牌名)

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corresponding [ˌkɔris'pɔndiŋ] *a.* 对应的

readout ['ri:daut] *n.* [自] 读出(指把计算机存储器中的资料取出)

pertain [pə(:)'tein] *v.* 有关

executive [iɡ'zekjutiv] *n.* [美] 总经理,董事;执行者

nutritional [njuː(:)'triʃənl] *a.* 营养的

recipe ['resipi] *n.* 烹饪法

synthesizer ['sinθisaizə] *n.* 合成器

phonetic [fəu'netik] *a.* 语音的

短　语

(to) be limited to 限于
(to) bring along 随身携带
on the display 显示(展示)的
instead of 代替
on the way 在进行中

(to) spell out 全部写出(拼出)
(to) light up 闪亮,照亮
corresponding to 与…符合,按照
(to) start with 以…开始
(to) be related to 和…有关

注　释

① On the way are Swedish ... Chinese.

　　这是倒装句,正常语序是: Swedish...and Chinese are on the way.

② you do.

　　这是定语从句,修饰前面的 All. 在从句中作宾语的关系代词被省略了。

③ you want.

　　这是修饰 the phrase 的定语从句,关系代词也被省略了。

参考译文

手提式语言翻译机

　　你刚驱车来到西班牙马尔贝莉亚风景如画的海岸村庄。你又饥又渴,想知道哪里能买到佳美的食品。但是, 你的西班牙语词汇只限于"谢谢"和"早安"。可是你随身带着一架手提式机子,它可以把英语译

成西班牙语。你按按键,把"哪里有好餐馆"这句话输人机子,然后把显示出来的译文给一位乐于助人的本国人看,他便会热心地帮你出主意。

令人惊异吗?是的。这些小巧的翻译机外表象计算机,区别只在于你按键时所输入的是词句,而不是数字。西班牙语、法语、德语、意大利语、葡萄牙语和日语的语言盒已有供应。瑞典语、波兰语、希伯来语、俄语、希腊语、阿拉伯语及中文的语言盒正在制作中。

你要做的只是按按键,在依字母顺序排列的键盘上拼出英文或外文词;按另一个按钮,你即能得到其译文(单词对单词,并不按语法规则排列),你可以给人看或者自己看。譬如说,如果你想用西班牙语表示"这要多少钱?",你可用英文在键盘上按 HOW MUCH IS IT,并把这句话输入翻译机。HOW MUCH IS IT=COMO MUCHO ESTA ELLO 就会在从右向左旋转的显示器上亮起来。

你可得简化你的思想;这些翻译机不会做复杂的翻译,它们的词汇也有限。每架翻译机的每种语言盒其词汇量为1500个。

克雷格翻译机有49个常用短语,排列在背面。按一下符合你需要的按钮,即可获得译文。按另一个按钮,又可以了解语言盒的全部词汇。你想知道语言盒贮存着哪些以字母 T 开头的单词吗?按一下按钮就能查到。你想知道与某一专题有关的词汇吗?比如说,你可以按一下"水"这个词,就可发现与它有关的许多词。

克雷格的经理们说,他们正在研制适用于综合性题材的语言盒,诸如食物的营养价值和混合饮料配制指导等。 克雷格未来的翻译机可能具备语言综合器及语音拼读的语言盒。

<div align="right">(拓 笔)</div>

A Ship's Propeller

All big ships are now driven by engines of some kind, and usually by steam engines or oil engines. These turn the propeller, which is in the water at the back of the ship. It is in the

form of a screw. When it turns, it pushes the ship forwards just as a wood-screw goes forwards into a piece of wood when it is turned. Our present propellers are the results of experiments made about 1835, but the idea was not new then.

Bernouilli was a Swiss scientist who described a screw for ships in 1752, but he could not make any real tests. At that time there were no good engines for ships, and his idea remained only an idea.

Seventy years later the same idea was again in the minds of engineers. An Austrian, Ressel, built a small ship at Trieste. It had a long screw at the back which drove the ship forwards at about $7\frac{1}{2}$ knots. One knot is a speed of 6,080 feet per hour. Some modern ships travel at 30 knots, and so $7\frac{1}{2}$ knots was not very fast. But the screw did its work, and Ressel was pleased. His experiment did not fail completely; but unhappily there was an explosion in the ship's engines, and after that Ressel did not try again.

In 1836 an Englishman, Francis Pettit Smith, had a ship, the Archimedes, which had a metal screw at the back. It was too long in fact; but at that time engineers knew little about ship's propellers.

The Archimedes was tested in 1838, and everybody was pleased when it moved forwards. It had reached a speed of 4 knots when suddenly a loud noise was heard. Smith stopped the engine and went to look at the screw. A bottle had got under it and had broken half of it off; the other half remained, but Smith was not sure that he could reach land again.

He could not just stay there, and so he started the engine again to see what would happen. The ship began to move slowly. The broken screw was not useless! Smith was pleased; but soon

the ship was going so fast that he was very surprised.

Smith had made a discovery: a short screw worked well. Later he discovered that a short screw worked better than a long one. With a short one the Archimedes reached a speed of 13 knots, and it once sailed from Portsmouth to Oporto (Portugal) in 70 hours.

Today most big ships are driven by propellers. These are turned by oil engines in modern ships. Oil can be put on board through pipes. Coal has to be moved by cranes or men, so that loading it is slow and dirty.① On the whole oil is the better fuel of the two.

词　　汇

propeller [prə'pelə] *n.* 螺旋桨，推进器

screw [skru:] *n.* 螺旋，螺旋状物；螺旋桨

knot [nɔt] *n.* 海里,浬(约1,852米)

per [pə:] *prep.* 每,由

explosion [iks'pləuʒən] *n.* 爆炸

crane [krein] *n.* 起重机

短　　语

in the form of 用…的形式
on board 在船上,在船中

on the whole 总之

注　　释

① Coal has to be moved by cranes or men, so that loading it is slow and dirty.

　　so that 引导的为结果状语从句，loading it 为动名词短语,作从句的主语。

参考译文

船 的 螺 旋 桨

一切大船现在都由某种发动机带动，通常用蒸汽机或柴油机。发动机带动船尾水下的螺旋桨。螺旋桨是螺旋形。螺旋桨转动时，推动船身前进，就象螺丝钉转动时向一段木头里钻一样。我们现时的螺旋桨是1835年左右所做的实验的成果，但这一设想在当时已不新颖了。

瑞士科学家伯尔努伊尼在1752年就描述过一种船用螺旋桨，但他未能进行真正的试验。当时尚无理想的船用发动机，所以他的设想仍然只是设想而已。

七十年以后，同样的设想又在工程师们的头脑中出现。奥地利人雷塞尔在第里雅斯特制造了一艘小船。船的尾部有一个长螺旋桨，以大约7.5节的速度带动船身前进。一节就是每小时航行6,080英尺的速度。某些现代化轮船的航速为30节，所以7.5节并不算快。不过螺旋桨发挥了作用，雷塞尔感到高兴。他的实验并未完全失败；不幸轮船的发动机发生了爆炸，在那以后雷塞尔就再没有作试验。

1836年，英国人弗朗西斯·佩蒂特·史密斯有一艘名叫阿基米德斯号的船，其尾部装置了一个金属螺旋桨。其实螺旋桨太长；不过当时工程师们对船的螺旋桨懂得并不多。

阿基米德斯号于1838年试航，当船向前移动时，大家无不感到高兴。船达到4节的航速时，突然听见巨大的响声。史密斯关掉发动机，上前察看螺旋桨。原来一只瓶子卡住了螺旋桨，把螺旋桨打断了一半，剩下另一半，可是史密斯不敢肯定它能否驶回陆地。

他不能就这样停在那里，因此他再次发动了发动机，看看会发生什么。船开始缓慢地移动了。破螺旋桨并非完全无用！史密斯很高兴；过了不久，船的行驶速度快得使他感到十分惊奇。

史密斯发现短叶螺旋桨能工作得很快。继后他看出短叶螺旋桨工作得比长叶螺旋桨更好。阿基米德斯号装上短螺旋桨后，航速达到了13节。有一次它以朴茨茅斯直航到葡萄牙的波尔图，用了70小时。

今天，绝大多数的船舶都是用螺旋桨带动的。现代化船舶，螺旋桨由柴油机带动。柴油可由管道输送上船。煤必须靠起重机或人来搬运，所以装煤既慢又脏。总之柴油是这两种燃料当中比较好的一种。

<div align="right">（陈永芳）</div>

Faraday and His Generator

The electric current in our homes is produced in power stations which usually contain several generators. These are machines which generate electric current when they are turned. So there has to be some kind of engine to turn them.

What kind of engine can we use? Steam engines are suitable and so are oil engines.[①] Sometimes the water of a great river can turn the generators, and so power stationas are often built near dams.

The water which is stored behind a dam flows out with great force when it is allowed to do so. We can use this force to turn machines which are called turbines. The water is led through big pipes to the turbines, and then they turn the generators. These supply the country with useful current.

Michael Faraday (1791 — 1867) made the first generator. He was a great scientist. He studied gases and changed some of them into liquids. He made many discoveries in Chemistry and electricity. Before his time scientists got their electric current from electric cells. Several cells together form a battery. An Italian, Volta made the first battery and it produced a small current. Modern cells are boxes which contain acids and other materials such as metals or carbon rods. Faraday knew about

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Volta's work, but he wanted to produce an electric current by using magnets.

An electric current which flows through a coil of wire round an iron rod produces magnetism in it.   Faraday wanted to do the opposite; he wanted to produce a current in a wire by using magnetism.   He tried to do this for a long time, but he failed completely until he moved a wire near the magnets.   Then his instruments showed that a small current was flowing in the wire. Either the magnet or the wire had to move.   He made a small machine to turn a coil of wire near the magnets, and this generated a current.   It was the first generators in the world.

All modern generators depend on Faraday's work.   The magnets in them are usually electromagnets; even in an electromagnet a little magnetism remains in the iron after the current is switched off.   As soon as the generator turns, a small current appears.   This increases the magnetism, and so the current increases.   This again increases the magnetism, and so on.   In a few seconds there is quite a big current flowing in the wires.   If a river turns the turbines, it does all the necessary work, and no fuel is needed.   Those countries which have big and powerful rivers are lucky because they can get a lot of electric power from them.②

词　汇

generator ['dʒenəreitə] *n.* 发电机

electric current [i'lektrik 'kʌrənt] 电流

power station ['pauə 'steiʃən] 发电站

dam [dæm] *n.* 水闸,坝

turbine ['tə:bin] *n.* 轮机,涡轮

Michael Faraday ['maikəl 'færədi] 迈克尔·法拉第 (1791—1867,英国化学家、物理学家)

cell [sel] *n.* 电池(电)

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battery ['bætəri] *n.* 电池

Volta ['vɔltə] *n.* 伏特（1748—1827,意大利物理学家）

rod [rɔd] *n.* 杆,竿

magnet ['mægnit] *n.* 磁铁

coil [kɔil] *n.* 线圈

wire [waiə] *n.* 金属线,电线

magnetism ['mægnitizəm] *n.* 磁,磁力

generate ['dʒenərit] *v.* 发生(电,光,热等)

electromagnet [i'lektrəu'mægnit] *n.* 电磁体,电磁铁

lucky ['lʌki] *a.* 侥幸的, 运气好的

短　　语

(to) change ... into 把…变成

such as 例如,象…(之类的)

(to) depend on 由于,依靠

(to) switch off 关闭

注　　释

① Steam engines are suitable and so are oil engines.

...so are oil engines 是倒装句。用 so 开始,表示与前句情况相同,在这样的句子里,主语和谓语要倒装。

② Those countries which ... from them. 本句为主从复合句,which ... rivers 为定语从句,修饰 countries, because ... them 为原因状语从句。

参考译文

法拉第和他的发电机

我们家庭用的电流是由发电站发的。发电站一般有几台发电机。发电机是一种转动时能产生电流的机器,所以必须要有某种发动机来带动它们转动。

我们要使用什么样的发动机呢? 蒸汽机可以用,柴油机也可以用。有时大河里的水也能带动发电机。所以发电站常常建立在水坝附近。

积蓄在水坝里面的水,一旦准许排放,即以巨大的力量冲出。我们

可以用这种动力来带动一种叫作涡轮的机器。水从大管道注入涡轮机，涡轮机再带动发电机。发电机则把有用的电流供应给国家。

迈克尔·法拉第(1791—1867)制造了第一台发电机，他是一位伟大的科学家。他研究过气体，并把某些气体变成液体。他在化学和电学方面有过许多发现。在他之前，科学家是从电池里获取电流的。几个电池构成电池组。意大利人伏特制造了第一个电池组，产生了微弱的电流。现在的电池是金属盒子，内有酸和象金属或碳精棒一类其他的物质。法拉第知道伏特的作用，但他想用磁铁来产生电流。

电流通过缠绕在铁棒上的金属线圈，可在金属线圈里产生磁力。法拉第想做的则恰恰相反：他想利用磁力在金属线圈里产生电流。他这样地试验了很长一段时间，可是直到他把金属线圈移到磁铁附近时，才获得完全成功。这时他的仪器显出有一股微弱的电流，正在金属上流动。要么就一定在磁铁上运动，要么就一定在金属线圈上运动，有一个必须移动。他制造了一台小机器来转动磁铁附近的金属线圈，于是就发生了电流。这就是世界上第一台发电机。

一切现代的发电机都应归功于法拉第的劳动成果。发电机里的磁铁通常为电磁铁；甚至在电流关掉后，电磁铁里仍然有微弱的磁力遗留在铁棒上。发电机一转动，立刻就出现一小股电流。这样磁力增加，电流也随之增加。电流的增加又使得磁力增加，如此下去，循环不已。在几秒钟内就有一股强电流在金属线圈里流动。如用河水带动涡轮机，这是大家迫不及待要做的工作，河水发了电而又不需要燃料。拥有大河流的国家是很幸运的，因为她们可以从这些河流得到大量电力。

<div align="right">（陈　平）</div>

Why Do Farmers Like Bees?

Mixed from flower to flower,① pollen is needed for blossoms to develop their fruit and seeds. The seeds can grow into new

plants. If the bees didn't scatter the pollen, there would be prob-
ably no orchards. Apples, peaches, strawberries, oranges and
other fruit would be unknown. There would be no pretty flowers
in the garden. The honey produced by bees in the United States
alone is worth about a hundred million dollars each year. This,
however, is small compared to the value of all the fruit and flowers.

Why doesn't the pollen from a dandelion get mixed with the
flower from a rose? Simply because the honeybee visits only one
kind of flower at a time. She may fly over a whole field of dan-
delions to get to a rose garden. The next day, she may visit nothing
but clover.

An apple tree begins to unfold its flowers early one May
morning. By eight o'clock, hundreds of fragrant pink-and-white
blooms have opened. A single bee discovers them. She takes
nectar from a few blossoms. Then she stuffs her baskets with
pollen, circles around for a few seconds and is gone. In less than
half an hour the tree is buzzing with dozens of honeybees. How
did she tell them about her wonderful find of a tree full of flowers?

The answer was found by Dr. Karl von Frisch of Germany,
when he discovered the "dancing bees." When the worker
returned from the apple tree, she began to do a little dance near
the entrance to the hive. First she circled one way, then another.
In between the circles she walked a little straight line, wiggling
like an excited puppy. Soon the others followed her in her dance,
doing just the same as she was doing. The circles tell how far
away the flowers are — the more circles, the further way. The
straight lines tells the direction to travel, and the odor of the
flower still clinging to her body tells them what kind of flowers
they will find. In a few minutes they fly away, one after another
— right to the apple tree!

词　汇

pollen ['pɔlin] *n.* 花粉

strawberry ['strɔ:beri] *n.* 杨莓，草莓

honey ['hʌni] *n.* 蜂蜜

dandelion ['dændilaiən] *n.* 蒲公英

clover ['kləuvə] *n.* 三叶草

unfold [ʌn'fəuld] *v.* 开花

fragrant ['freigrənt] *a.* 香的，芬芳的

nectar ['nektə] *n.* 花蜜

bloom [blu:m] *n.* 花

stuff [stʌf] *v.* 填满

circle ['sə:kl] *v.* 环绕，旋转 *n.* 圆，圈

buzz [bʌz] *v.* 嗡嗡叫

dozens ['dʌznz] *n.* (复)几十，许多

worker ['wə:kə] *n.* 工蜂

hive [haiv] *n.* 蜂箱，蜂窝

wiggle ['wigl] *v.* 摇动

puppy ['pʌpi] *n.* 小狗

odor ['əudə] *n.* 气味，香气

cling [kliŋ] *v.* 缠住，粘附

短　语

at a time 每一次，同时

nothing but 只是，不过是

less than 不到

just the same 完全一样，正好一样

far away 远，隔着

注　释

(1)　Mixed from flower to flower.
　　这是表示原因的分词短语。

参考译文

农民为什么喜欢蜜蜂？

　　花粉在花间传播，对花朵进一步结出果实和种子都是必要的。种子能够生长出新的植物。如果没有蜜蜂传播花粉，可能就不会有果园。那么，人们就不知道什么是苹果、桃子、杨莓、桔子和其它水果。花园里面也就没有什么美丽的花卉了。美国仅蜂蜜一项每年的产值大约为一亿