

科技英语学习丛书

SCIENCE AND TECHNOLOGY LEARNING

主编 毛荣贵

克隆：福耶？祸耶？

——英汉对照50篇短文

ENGLISH OF
SCIENCE AND
TECHN
LEARN



上海交通大学出版社

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刘祖慰教授(1978~1985 年任上海交通大学科技外语系主任)

Accuracy is the answer to technical translation. Technical translators must not only be academics — they must all have day-to-day experience in engineering, research, and product development; particularly in modern hi-tech industries. In other words, they must all be able to “talk shop” in everything they translate or interpret. And that is why they are most sought after in China.

杨惠中教授(1985~1990 年任上海交通大学科技外语系主任)

**继往开来,把《科技英语学习》办得更好;
任重道远,为全国的英语爱好者辛勤耕耘。**

张彦斌教授(1990~1995 年任上海交通大学科技外语系主任)

**丰富英语学习园地,
架起通向未来桥梁。**

郑树棠教授(1995~ 年任上海交通大学外国语学院院长)

以 F·Bacon 的名言,赠《科技英语学习》广大读者:
Reading makes a full man; conference a ready man;
and writing an exact man.

前 言

光阴如驰,《科技英语学习》已经 20 岁了。

由上海交通大学外国语学院(前身为科技英语系)和上海交通大学出版社携手编辑出版的《科技英语学习》(月刊)是少数几家驰名全国的英语学习刊物之一。

《科技英语学习》发表过许多精品短文。这些文章经得起时间的考验,现在读来仍新意拂面,兴味盎然。它们仍然具有不菲的学术价值,难得的导学作用以及很强的可读性。

创刊 20 周年之际,我们决定从过去 20 年《科技英语学习》(总 212 期)所发表的文章中再作分类精选。汇编出版一套《科技英语学习》丛书。这套丛书包括:

- 1.《英语语法热点透视》
- 2.《英语词汇热点透视》
- 3.《走出翻译误区》
- 4.《翻译技巧 111 讲》
- 5.《克隆:福耶? 祸耶?》——英汉对照 50 篇短文
- 6.《每天多“活”一小时》——英汉对照 50 篇短文

80 年代的中后期,国内的英语学习刊物曾经发表了一大批研究和探讨英语语法和英语词汇的文章,《科技英语学习》也不例外。各地的作者以其敏锐的语感,广博的积累以及独特的视角对许多英语语法/词汇书籍没有或很少论及的某些特殊语言现象作了研析。可以毫不夸张地说,学习英语,不读一读此类文章是一种缺憾。

《英语语法热点透视》和《英语词汇热点透视》。两书所以在书名中使用“热点”二字,是因为在我们看来,两书中谈论到的许多问

题,过去,今天,以及将来一段相当长的时间内,都是认真的英语学习者所不应该回避也不能回避的问题。

《科技英语学习》有一个开设了 20 年的名牌专栏:“译文商榷”。这个栏目在 1996 年本刊改版前称“英译汉实例分析”。这是一个深受广大读者、作者、甚至“被商榷者”欢迎的栏目。各地的许多专家学者为本栏积极撰文,各抒己见,百家争鸣。“译文商榷”栏目为《科技英语学习》增添了勃勃的学术生机。

其实,翻译中出现这样那样的误译并不值得大惊小怪,即使误译出现在名人笔下。日本的一个翻译家曾经打过一个不俗的比方:

“翻译作品中肯定有误译存在,这如同空气中含有氧气一样。”

我们学习翻译,学习英语,假如只有正面的“吸收”,而没有反面的“提醒”,这种学习是意义不完整的学习,是一种“缺乏免疫力”的学习。

《走出翻译误区》(主要收集了发表于《科技英语学习》的文章)一书,集译界误译之大成,汇百余学者之心血!识别误译,灵性闪烁;条分缕析,鞭辟入里。读者心领神会之时,正在英语语感萌发之日。

与《走出翻译误区》“珠联璧合”的是《翻译技巧 111 讲》。

20 年来,跋涉前行在漫漫译途上的各地学人,逢山开路,遇水搭桥!冥思苦想,豁然开朗,见云开雾散;千思百虑,水到渠成,幸始有一得。他们借《科技英语学习》之一隅,切磋翻译技巧,交流翻译心得,话说翻译甘苦。他们的文章成为本刊一个不可多得的亮点。今天,我们从近 200 篇的文章中萃选了 111 篇,汇编成《翻译技巧 111 讲》。

读《翻译技巧 111 讲》(主要收集了发表于《科技英语学习》的文章),令人油然而生“前人栽树,后人乘凉”之感,“他山之石,可以攻玉”之叹。

《科技英语学习》始终未敢忘记“科技”二字。20 年来,她的“对照读物”一栏发表了 200 多篇可圈可点的美文。原文取自美英等国

数十种期刊,上至天文地理,下至生活科学;既有科技珍闻,又有自然探秘;从动物世界到医学天地。可谓美文层出,佳作叠现!

“对照读物”栏目,不仅成了及时传播西方日新月异的科学技术的一扇窗户,而且成了广大读者学习英语,研学翻译的一位良师益友。

发表在“对照读物”一栏的文章本来就属“百里挑一”的精品。这次我们又作认真筛选,从中选拔百篇,汇编成书,并取名为:《克隆:福耶?祸耶?》和《每天多“活”一小时》

《克隆:福耶?祸耶?》《每天多“活”一小时》在手,可静观科技风云之变幻,可平添日常生活之情趣,可细品英汉表达之迥异,可锤炼英语阅读能力。

《科技英语学习》20岁了,她从一个呱呱坠地的婴儿成长为一名朝气蓬勃的青年。

伟大的21世纪正在含笑向我们走来。《科技英语学习》深感肩负责任的重大,我们决心继往开来,用我们辛勤的汗水浇灌《科技英语学习》,让她绽开更加娇艳的花朵,结出更加丰硕的果实。

《科技英语学习》自1996年改版以来,做了几件广受读者欢迎的实事。我们举办了全国的英语写作有奖竞赛;征集全国大学生英语作文稿件,并编辑出版了《中国大学生英语作文评改》一书;在纪念本刊第200期问世时,随刊印发了“读者意见调查表”,并对数百封来信作了认真总结;今天,在纪念本刊创刊20周年之际,我们又编辑出版了《科技英语学习丛书》第一辑。本刊今后还要举办其他形式的竞赛,还要出版第二辑、第三辑《科技英语学习丛书》。

在纪念《科技英语学习》诞生20周年之际,我们要向全国的读者和作者表示由衷的感谢,没有你们的倾力支持,《科技英语学习》将成为无本之木,无源之水!

我们还要向上海交通大学出版社表示真诚的感谢,向上海交通大学外国语学院(前科技外语系)的各任领导,以及前任《科技英语学习》主编表示由衷的感谢,他们都为本刊倾注过大量心血。没

有他们的关心和支持,《科技英语学习》也就不会有今天的面貌。他们应邀为本刊欣然题词,寄语本刊,寄语全国各地的读者。

宗玉同学为统一全书的体例和终校做了大量细致的工作。没有她的努力,本套丛书也难以以现在的面目与广大读者见面。

毛荣贵

1998 年冬

于上海交大东川花苑

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第 I 章 动物世界

Cloning: Good Science or Bad Idea?

Just before President Clinton heads to the hospital for knee surgery, he asks another Bill Clinton to meet Russian President Boris Yeltsin at an overseas meeting. Meanwhile, a third Bill Clinton is out playing golf, while a fourth is helping daughter Chelsea with a science project.

Sound far-fetched? That day may come. Scientists in Scotland recently announced that, for the first time, they have cloned an exact copy of an adult mammal. The cloned baby lamb, named Dolly, has the exact same genes as the adult sheep from which she was cloned. In other words, the two are identical twins; only Dolly is six years younger. The goal of embryologist Ian Wilmut, the lead scientist, is to develop a way to raise identical sheep that produce medications for humans.

A week after Wilmut's announcement, scientists in Oregon disclosed that they have used a different technique to clone rhesus monkeys, primates that are close cousins of humans. Faster than you can say "Frankenstein," these accomplishments triggered a worldwide debate: Should scientists be allowed to clone animals? Will humans be next? Is cloning unethical and dangerous—or is it a valuable research tool? Read about the latest cloning techniques; then debate and decide.

Hello Dolly!

All attempts at cloning were largely unsuccessful until 1984. That's when a scientist in Denmark separated cells from a sheep's embryo. An embryo is an early stage of development in which cells are busy dividing and "transforming" into specialized cells like skin, eye, or muscle cells.

Unlike a skin cell, an embryo is on its way to becoming a complete living thing. The Danish scientist combined an embryo cell with an egg cell from another sheep. He implanted the fused cell—then a newly growing embryo—into a grown female sheep. To much surprise, the

克隆：福耶？祸耶？

就在克林顿总统去医院动膝部手术之前，他吩咐另一个比尔·克林顿去出席一次国际会晤，与俄罗斯总统叶利钦会面。与此同时，第三个克林顿正在外打高尔夫球；第四个却在辅导女儿切尔西完成一份科学报告。

这听上去是不是天方夜谭？但却真有可能成为现实。最近，苏格兰的几位科学家宣布他们首次对一只成年哺乳动物进行了克隆，克隆产物与原体一模一样，毫厘不差。被克隆的是一头名叫“多利”的小羊，它与提供克隆细胞的成年羊具有完全一致的基因。换言之，两者是一对不分彼此的双胞胎，只是“多利”要小六岁。胚胎学家伊恩·威尔姆特是该项实验的主任，他的目的是寻求一条途径来培养一批一模一样的，生产人类所需药物的羊。

在威尔姆特宣布“多利羊”的一星期后，俄勒冈州的几位科学家透露他们已采用另一种不同的技术克隆了恒河猴——灵长类动物与人的关系就近了。还没来得及等你说“弗兰肯斯坦”，这些成果就已触发了一场波及全球的大讨论：该不该允许科学家克隆动物？人是下一个克隆对象吗？克隆技术是不合伦理甚至是危险的吗——抑或是一件有研究价值的工具？先了解一下克隆技术，然后再讨论或作出决定吧。

多利，你好！

早期在克隆方面所做的全部尝试大多都以失败告终。直到1984年才有一位丹麦科学家从羊的胚胎中分离出了细胞。胚胎就是个体发育的早期阶段，这时的细胞正忙于分裂并“演变”成专化的细胞，如：皮肤、眼睛或肌肉细胞。

与皮肤细胞不同的是，胚胎将来会发育成一个完整的生命体。那位丹麦科学家将一个胚胎细胞与来自另一头羊的一个卵细胞相结合，接着又将融合的细胞（即一个新生的胚胎）植入一头成年母羊体内。想不到胚胎竟长成了一头小羊，这着实令人吃惊。此后，其他科学

embryo grew into a baby lamb. Since then, other scientists have used embryos to clone cattle, pigs, goats, rabbits—and, now, even monkeys.

So what makes Wilmut's sheep unique? Instead of using early-stage embryo cells, Wilmut used cells from the udder of an adult sheep. In theory, that's like using one of your skin cells to clone a new you!

Wilmut knew that each cell of the body contains a full set of genetic instructions—a blueprint to grow a complete individual. (The only exceptions are egg and sperm cells, each of which contains half the genes to grow a new individual.) Once cells have specialized, on their way to becoming skin or eye or udder cells, most of the genetic instructions to make a full being are turned off. Until now, scientists believed that specialized cells could not be used to form a complete organism.

Wilmut proved them wrong. He found a way to “reprogram” an udder cell and make it grow into a new cloned lamb. An amazing fact; Dolly has no biological father.

Wilmut's success didn't come easily. He has been studying reproductive science for more than two decades. Last year, he used embryos to successfully clone two sheep. Megan and Morag. Then he forged ahead to clone an adult sheep. But, of 277 udder cells he fused with egg cells, only 30 began to develop into embryos. He implanted 29 of those into female sheep. Only one adult gave birth to a lamb.

Other scientists have jumped in to repeat Wilmut's experiment with other animals, including cows. And that's what has scientists, animal-rights activists, politicians—even President Clinton — up in arms. How far, they wonder, will cloning go?

Send in the Clones

Wilmut maintains that cloning animals has tremendous potential for helping people. Cloned sheep, he says, could be used as living drug factories. Scientists could “engineer” sheep that produce drugs in the milk. And by altering the proteins on the surfaces of animal organs to make them more like human organs, scientists believe they may be able

家纷纷用胚胎进行了牛、猪、山羊、兔子的克隆——现在竟轮到猴子。

那么，威尔姆特复制出的羊又有何与众不同呢？原来，威尔姆特用的不是早期的胚胎细胞，而是成年羊的乳腺细胞。从理论上说，那就像用你的一个皮肤细胞来克隆一个新的你。

威尔姆特知道生物体内的每个细胞都包含一套完整的遗传指令，即个体完全生长的蓝图。（只有卵细胞和精子细胞是例外，它们各自只含有长成新个体的一半基因）。细胞一旦专化并开始形成皮肤、眼睛或乳腺细胞，大部分用来指导长成完全个体的遗传指令就关闭了。至今仍有科学家相信专化后的细胞无法用来形成一个完整的机体。

威尔姆特证实他们是错的。他设法将乳腺细胞的遗传指令“重新安排”并使之长成一头新的克隆羊。惊人之处在于：多利是个没爹的孩子。

威尔姆特获得成功并非轻而易举，他研究繁殖科学长达二十余年。去年，他用胚胎成功地克隆了两头羊——梅根和摩拉格。接着他又迈出了坚实的一步——克隆一头成年羊。但是与卵细胞结合的277个乳腺细胞中，只有30个开始发育成胚胎。他又将其中的29个胚胎植入母羊体内，只有一头母羊生下了小羊。

其他科学家也纷纷着手重复威尔姆特的实验，但用的是其他动物，包括奶牛。而那正是科学家、动物权益活动家与政客，甚至克林顿总统所极力反对的。他们不禁要问：克隆，究竟能走多远？

克隆登场

威尔姆特坚持认为克隆动物在为人类造福方面有巨大的潜力。他认为克隆羊能用作活的药品生产厂。科学家可以“造出”生产含药物羊奶的羊来。另外，科学家坚信通过改变动物器官表面的蛋白质，并使之接近人体器官，他们就可以开掘人类器官捐献者的丰富源泉。

to create a plentiful source of organ donors for people.

Why not clone humans as organ donors? Theoretically, Wilmut says, there is no reason his techniques couldn't someday be used to clone people. Think about the possibilities: a whole team of Michael Jordans, a scientific panel of Albert Einsteins, a movie starring and co-starring Brad Pitt.

On a more serious note, some fertility specialists argue that couples who have difficulty conceiving a baby could make copies of themselves. And parents whose child has a fatal disease like cancer might be able to clone the child, creating a twin who is an exact match for bone-marrow donation.

Do You Copy?

But even Ian Wilmut draws the line at cloning humans. "All of us would find that offensive," he says. Several countries, including Britain, Denmark, Germany, and Australia, have outlawed all scientific work on cloning humans. The U. S. has no such law, but President Clinton has set up a panel of scientists and ethicists to study the issue. In the meantime, Clinton has imposed a ban on using Federal money to clone humans.

Humans are more than the sum of their genes, argues Mark Hanson, an ethicist at the Hastings Center, an ethics research institute in Briarcliff Manor, New York. Though they look exactly the same, clones are not necessarily carbon copies. The younger twin might grow up with different influences—say, unusual friends or special teachers. A cloned Albert Einstein might flunk physics. A cloned Madonna might sing off-key.

Say you were cloned. Would your twin live a shorter life because he or she started out with teenage genes? Scientists aren't sure. And how could you prevent someone from taking a sample of your hair and making a clone of you? Again, no solutions.

Some opponents of cloning also object to the use of animals as research tools. "Next, they'll be cloning minks and foxes to make more fur coats," says Cleveland Amory, president and founder of the Furd