# 四

## 4Test1

### [4 Test 1 Passage 1](http://www.laokaoya.com/20869.html)

**第1段**

Adults and children are frequently confronted with statements about the alarming rate of loss of tropical rainforests. For example, one graphic illustration to which children might readily relate is the estimate that rainforests are being destroyed at a rate equivalent to one thousand football fields every forty minutes – about the duration of a normal classroom period. In the face of the frequent and often vivid media coverage, it is likely that children will have formed ideas about rainforests -what and where they are, why they are important, what endangers them – independent of any formal tuition. It is also possible that some of these ideas will be mistaken.

成人和儿童经常面对有关热带雨林正在以的惊人速度丧失的说法。例如，儿童很容易联想到一种图形化的解释：据估计热带雨林被破坏的速度相当于每四十分钟一千个足球场-大约是正常课堂的持续时间。面对媒体频繁而生动的报道，孩子们可能会形成关于雨林的想法：它们的种类和位置，它们为什么重要，以及什么使它们陷入威胁。这些观念独立于任何正式的教育。它们中的一些也可能是错误的。

**第2段**

Many studies have shown that children harbour misconceptions about ‘pure’, curriculum science. These misconceptions do not remain isolated but become incorporated into a multifaceted, but organised, conceptual framework, making it and the component ideas, some of which are erroneous, more robust but also accessible to modification. These ideas may be developed by children absorbing ideas through the popular media. Sometimes this information may be erroneous. It seems schools may not be providing an opportunity for children to re-express their ideas and so have them tested and refined by teachers and their peers.

许多研究表明，孩子们对“纯粹的”，课程里的科学怀有误解。这些误解并不是孤立存在的，而是被整合到一个多方面但有组织的概念框架中，使它成为完整的观点。其中一些是错误的，更加顽固，并并非不可修改。文章来自老烤鸭雅思这些想法可能是儿童通过吸收大众媒体的观点而形成的。有时，该信息可能是错误的。看来学校可能没有为孩子们提供一个重新表达他们想法的机会，并因此让老师和他们的同伴对这些想法进行测试和完善。

**第3段**

Despite the extensive coverage in the popular media of the destruction of rainforests, little formal information is available about children’s ideas in this area. The aim of the present study is to start to provide such information, to help teachers design their educational strategies to build upon correct ideas and to displace misconceptions and to plan programmes in environmental studies in their schools.

尽管大众媒体对热带雨林破坏的大规模报道，很少有关于孩子在这一领域观点的信息。当前这一研究的目的是开始提供这些信息，以帮助教师在正确的观念上设计他们的教育策略，替换错误的认知，并在学校的环境学习中计划新的项目。

**第4段**

The study surveys children’s scientific knowledge and attitudes to rainforests. Secondary school children were asked to complete a questionnaire containing five open-form questions. The most frequent responses to the first question were descriptions which are self-evident from the term ‘rainforest’. Some children described them as damp, wet or hot. The second question concerned the geographical location of rainforests. The commonest responses were continents or countries: Africa (given by 43%of children), South America (30%), Brazil (25%). Some children also gave more general locations, such as being near the Equator.

这项研究调查的孩子对热带雨林的科学知识和态度。要求中学生填写包含五个开放式问题在内的调查问卷。对第一个问题的最常见回答是“雨林” 一词的不言而喻的描述。一些孩子将它们描述为湿润、潮湿或高温。第二个问题涉及雨林的地理位置。最普遍的回答是各大洲或国家：非洲（占43％的儿童），南美（占30％），巴西（占25％）。一些孩子还提供了更一般的位置，例如靠近赤道。

**第5段**

Responses to question three concerned the importance of rainforests. The dominant idea, raised by 64% of the pupils, was that rainforests provide animals with habitats. Fewer students responded that rainforests provide plant habitats, and even fewer mentioned the indigenous populations of rainforests. More girls (70%) than boys (60%) raised the idea of rainforest as animal habitats.

对问题三的答复涉及雨林的重要性。由64％的学生提出的主要想法是，雨林为动物提供了栖息地。较少的学生回答说，雨林提供了植物栖息地，而提到雨林土著种群的则更少。提出雨林作为动物栖息地的想法的女孩（70％）比男孩（60％）多。

**第6段**

Similarly, but at a lower level, more girls (13%) than boys (5%) said that rainforests provided human habitats. These observations are generally consistent with our previous studies of pupils’ views about the use and conservation of rainforests, in which girls were shown to be more sympathetic to animals and expressed views which seem to place an intrinsic value on non-human animal life.

同样，但在较低的水平上，更多女孩（13％）比男孩（5％）认为雨林提供了人类栖息地。这些意见与我们以前的对学生关于热带雨林用途和保护的意见的研究结果是一致的，其中女孩被证明更加同情动物，并表达出对非人类动物生命内在价值的看法。

**第7段**

The fourth question concerned the causes of the destruction of rainforests. Perhaps encouragingly, more than half of the pupils (59%) identified that it is human activities which are destroying rainforests, some personalising the responsibility by the use of terms such as ‘we are’. About 18% of the pupils referred specifically to logging activity.

第四个问题涉及破坏雨林的原因。也许令人鼓舞的是，超过一半的学生（59％）认为是人类活动正在破坏热带雨林，其中一些人通过使用诸如“我们是” 这样的术语来个人化责任。约有18％的学生专门提到伐木活动。

**第8段**

One misconception, expressed by some 10% of the pupils, was that acid rain is responsible for rainforest destruction; a similar proportion said that pollution is destroying rainforests. Here, children are confusing rainforest destruction with damage to the forests of Western Europe by these factors. While two fifths of the students provided the information that the rainforests provide oxygen, in some cases this response also embraced the misconception that rainforest destruction would reduce atmospheric oxygen, making the atmosphere incompatible with human life on Earth.

约有10％的学生表达了一种误解，认为酸雨是造成雨林破坏的原因。同样比例的人说，污染正在破坏雨林。在这里，孩子们混淆了破坏热带雨林与到破坏西欧森林的因素。虽然五分之二的学生提供了雨林提供氧气的信息，但在某些情况下，这种回应还包含了这样一种误解，即雨林的破坏会减少大气中的氧气，使大气不适合地球上的人类。

**第9段**

In answer to the final question about the importance of rainforest conservation, the majority of children simply said that we need rainforests to survive. Only a few of the pupils (6%) mentioned that rainforest destruction may contribute to global warming. This is surprising considering the high level of media coverage on this issue. Some children expressed the idea that the conservation of rainforests is not important.

在最后一个关于热带雨林保护重要性的问题的回答中，大多数的孩子只是说，我们需要雨林生存。只有极少数的学生（6％）提到雨林的破坏可能导致全球变暖。考虑到媒体对这一问题的高度报道，这令人惊讶。一些孩子表示保护雨林并不重要。

**第10段**

The results of this study suggest that certain ideas predominate in the thinking of children about rainforests. Pupils’ responses indicate some misconceptions in basic scientific knowledge of rainforests’ ecosystems such as their ideas about rainforests as habitats for animals, plants and humans and the relationship between climatic change and destruction of rainforests.

这项研究的结果表明，某些想法在儿童关于雨林的思考中占主导地位。学生的反应表明对雨林生态系统一些基本知识的误解，如他们对热带雨林作为动物，植物和人类栖息地的看法，以及气候变化和雨林破坏之间的关系。

**第11段**

Pupils did not volunteer ideas that suggested that they appreciated the complexity of causes of rainforest destruction. In other words, they gave no indication of an appreciation of either the range of ways in which rainforests are important or the complex social, economic and political factors which drive the activities which are destroying the rainforests. One encouragement is that the results of similar studies about other environmental issues suggest that older children seem to acquire the ability to appreciate, value and evaluate conflicting views. Environmental education offers an arena in which these skills can be developed, which is essential for these children as future decision-makers.

学生没有主动提出他们认识到雨林破坏原因的复杂性。换句话说，他们没有意识到雨林为什么重要，以及推动雨林破坏活动背后的复杂社会、经济与政治因素。一种鼓励是，关于其他环境问题的类似研究结果表明，年龄较大的儿童似乎具有认识，重视和评估矛盾观点的能力。环境教育为这些技能的发展提供了一个舞台，这对于作为未来的决策者的孩子来说至关重要。

### [4 Test 1 Passage 2 鲸鱼感官 What do whales feel?](http://www.laokaoya.com/20919.html)

**第1自然段**

Some of the senses that we and other terrestrial mammals take for granted are either reduced or absent in cetaceans or fail to function well in water. For example, it appears from their brain structure that toothed species are unable to smell. Baleen species, on the other hand, appear to have some related brain structures but it is not known whether these are functional. It has been speculated that, as the blowholes evolved and migrated to the top of the head, the neural pathways serving sense of smell may have been nearly all sacrificed. Similarly, although at least some cetaceans have taste buds, the nerves serving these have degenerated or are rudimentary.

我们和其他陆地哺乳动物觉得理所应当的某些感觉在鲸类动物中或者减少或消失，或者在水中不能很好地发挥作用。例如，从它们的大脑结构看来，有齿物种无法闻到气味。须鲸物种，在另一方面，似乎有一些相关的大脑结构，但不清楚这些是否有用。据推测，随着气孔的进化并迁移到头顶，起到嗅觉作用的神经通路可能几乎全部被牺牲了。同样，尽管一些鲸类具有味蕾，但服务于它们的神经已经退化或十分原始。

**第2自然段**

The sense of touch has sometimes been described as weak too, but this view is probably mistaken. Trainers of captive dolphins and small whales often remark on their animals’ responsiveness to being touched or rubbed, and both captive and free-ranging cetacean individuals of all species (particularly adults and calves, or members of the same subgroup) appear to make frequent contact. This contact may help to maintain order within a group, and stroking or touching are part of the courtship ritual in most species. The area around the blowhole is also particularly sensitive and captive animals often object strongly to being touched there.

有时触感也被描述为较弱，但是这种观点可能是错误的。圈养海豚和小鲸的培训师往往提到，他们的动物会对被抚摸或者摩擦做出反应。而无论是圈养还是自由放养的所有鲸类动物个体（特别是成年鲸鱼和幼崽之间，或同一亚种的成员之间）都会频繁接触。这种文章来自老烤鸭雅思接触可能有助于维持群体内的秩序。在大多数物种中，抚摸或触碰是求偶仪式的一部分。气孔周围的区域也特别敏感，圈养动物经常强烈反对接触它们那里。

**第3自然段**

The sense of vision is developed to different degrees in different species. Baleen species studied at close quarters underwater – specifically a grey whale calf in captivity for a year, and free-ranging right whales and humpback whales studied and filmed off Argentina and Hawaii – have obviously tracked objects with vision underwater, and they can apparently see moderately well both in water and in air. However, the position of the eyes so restricts the field of vision in baleen whales that they probably do not have stereoscopic vision.

在不同的物种中，视觉得到了不同程度的发展。在水下近距离处研究的Baleen物种-具体来说包括被圈养一年的灰鲸幼崽，以及在阿根廷和夏威夷附近研究并拍摄的自由放养的右鲸和座头鲸-显然在水下用视觉跟踪物体，并且它们无论是在水中还是在空气中都能够看的很清楚。但是，眼睛的位置限制了鲸鱼的势力范围，以至于它们可能没有立体视觉。

**第4自然段**

On the other hand, the position of the eyes in most dolphins and porpoises suggests that they have stereoscopic vision forward and downward. Eye position in freshwater dolphins, which often swim on their side or upside down while feeding, suggests that what vision they have is stereoscopic forward and upward. By comparison, the bottlenose dolphin has extremely keen vision in water. Judging from the way it watches and tracks airborne flying fish, it can apparently see fairly well through the air-water interface as well. And although preliminary experimental evidence suggests that their in-air vision is poor, the accuracy with which dolphins leap high to take small fish out of a trainer’s hand provides anecdotal evidence to the contrary.

另一方面，大多数海豚和鼠海豚的眼睛位置表明它们具有向前和向下的立体视觉。淡水海豚在喂食时经常侧卧或倒立游泳，其眼睛位置表明它们所具有的视觉是向前和向上立体的。相比之下，宽吻海豚在水中的视野非常敏锐。从它观察和跟踪空中飞鱼的方式来看，它显然可以通过空气与水的界面看的相当清楚。尽管初步的实验证据表明其在空气中的视力很差，但海豚飞跃起来从训练师手中取走小鱼的精准度提供了与之相反的证据。

**第5自然段**

Such variation can no doubt be explained with reference to the habitats in which individual species have developed. For example, vision is obviously more useful to species inhabiting clear open waters than to those living in turbid rivers and flooded plains. The South American boutu and Chinese beiji, for instance, appear to have very limited vision, and the Indian susus are blind, their eyes reduced to slits that probably allow them to sense only the direction and intensity of light.

毫无疑问，可以用个体物种的栖息地来解释这种变化。例如，视觉对于居住在开阔水域的物种显然比生活在浑浊的河流和泛滥平原中的物种更有用。例如，南美boutu 和中国beiji的视力似乎非常有限，而印度的susus则是瞎的，他们的眼睛变成狭缝，这可能使他们只能感知光的方向和强度。

**第6自然段**

Although the senses of taste and smell appear to have deteriorated, and vision in water appears to be uncertain, such weaknesses are more than compensated for by cetaceans’ well-developed acoustic sense. Most species are highly vocal, although they vary in the range of sounds they produce, and many forage for food using echolocation1. Large baleen whales primarily use the lower frequencies and are often limited in their repertoire. Notable exceptions are the nearly song-like choruses of bowhead whales in summer and the complex, haunting utterances of the humpback whales. Toothed species in general employ more of the frequency spectrum, and produce a wider variety of sounds, than baleen species (though the sperm whale apparently produces a monotonous series of high-energy clicks and little else). Some of the more complicated sounds are clearly communicative, although what role they may play in the social life and ‘culture’ of cetaceans has been more the subject of wild speculation than of solid science.

虽然味觉和嗅觉会有所衰减，水中的视觉也不太确定，但这些弱点都被鲸类发达的听觉所弥补。尽管它们产生的声音范围各不相同，但大多数种类都具有很强的发声能力，并且许多动物使用回声定位法觅食。大型鲸鱼主要使用较低的频率，并且通常在其曲目方面受到限制。值得注意的例外是夏天的弓头鲸几乎像歌一样的合唱，以及座头鲸的复杂而令人难以忘怀的话语。一般而言，带齿的物种使用的频谱要多于Baleen物种（虽然，抹香鲸显然会产生一系列单调的高能滴答声，没有其他内容），因此它们会使用更多的频谱，并产生更广泛的声音。一些更复杂的声音显然具有交流目的。尽管它们在鲸类社会生活和文化中所扮演的角色更多的是推测而非实在的科学。

### [4 Test 1 Passage 3 视觉符号与盲人 visual symbols and the blind](http://www.laokaoya.com/20986.html)

**第一部分**

**第1自然段**

From a number of recent studies, it has become clear that blind people can appreciate the use of outlines and perspectives to describe the arrangement of objects and other surfaces in space. But pictures are more than literal representations. This fact was drawn to my attention dramatically when a blind woman in one of my investigations decided on her own initiative to draw a wheel as it was spinning. To show this motion, she traced a curve inside the circle (Fig. 1). l was taken aback. Lines of motion, such as the one she used, are a very recent invention in the history of illustration. Indeed, as art scholar David Kunzle notes, Wilhelm Busch, a trend-setting nineteenth-century cartoonist, used virtually no motion lines in his popular figures until about 1877.

从最近的许多项研究中可以明显看出，盲人能够理解用轮廓和透视图来描述物体的排列和空间中其他的表面。但是图片不仅仅是文字上的表述。当我的一项调查中的一位盲人女士主动决定画出一个正在旋转的车轮的时候，这一事实引起了我的极大注意。为了显示这一动作，她在圆内绘制了一条曲线。我吃了一惊。她所使用的运动的线条是图示发展史上最近才有的发明。确实，正如艺术学者David Kunzle 指出的那样，Wilhelm Busch，一位19世纪引领潮流的漫画家，直到1877年左右才开始在他广受欢迎的人物中使用动态线条。

**第2自然段**

When l asked several other blind study subjects to draw a spinning wheel, one particularly clever rendition appeared repeatedly: several subjects showed the wheel’s spokes as curved lines. When asked about these curves, they all described them as metaphorical ways of suggesting motion. Majority rule would argue that this device somehow indicated motion very well. But was it a better indicator than, say, broken or wavy lines – or any other kind of line, for that matter? The answer was not clear. So I decided to test whether various lines of motion were apt ways of showing movement or if they were merely idiosyncratic marks. Moreover, I wanted to discover whether there were differences in how the blind and the sighted interpreted lines of motion.

当我让其他几个盲人研究对象绘制旋转的轮子的时候，一种特别聪明操作反复出现：一些研究对象用曲线来表示轮子中的辐条。当被问及这些曲线时，他们都将它们描述为暗示运动的比喻方式。多数规则认为这种方法很好的指出了运动。文章来自老烤鸭雅思但这是否比断线或波浪线或其他任何类型的线更好呢？答案尚不清楚。因此，我决定测试各种运动线是否是显示运动的合适方式，或者它们仅仅是特质标记。此外，我想发现盲人和视力正常的人在解释运动线之间是否存在差异。

**第3自然段**

To search out these answers, I created raised-line drawings of five different wheels, depicting spokes with lines that curved, bent, waved, dashed and extended beyond the perimeter of the wheel. I then asked eighteen blind volunteers to feel the wheels and assign one of the following motions to each wheel: wobbling, spinning fast, spinning steadily, jerking or braking. My control group consisted of eighteen sighted undergraduates from the University of Toronto.

为了找到这些答案，我创建了五个不同车轮的凸线图，用弯曲，扭曲，波浪形，虚线和超出车轮周界的线来描绘辐条。然后，我让18位盲人志愿者感受轮子，并为每个轮子分配以下动作之一：摆动，快速旋转，平稳旋转，抽动或刹车。我的控制组由来自多伦多大学的18位视力正常的大学生组成。

**第4自然段**

All but one of the blind subjects assigned distinctive motions to each wheel. Most guessed that the curved spokes indicated that the wheel was spinning steadily; the wavy spokes, they thought, suggested that the wheel was wobbling; and the bent spokes were taken as a sign that the wheel was jerking. Subjects assumed that spokes extending beyond the wheel’s perimeter signified that the wheel had its brakes on and that dashed spokes indicated the wheel was spinning quickly.

除一个盲人外，所有盲人都为每个车轮分配了独特的动作。多数人猜测，弯曲的辐条表明车轮在稳定旋转。波浪状的辐条，他们认为，意味着车轮正在摆动; 扭曲的辐条被视为车轮在摇晃。研究对象认为超出车轮边界的辐条表示正在刹车，而虚线的辐条表示车轮正在快速旋转

**第5自然段**

In addition, the favoured description for the sighted was the favoured description for the blind in every instance. What is more, the consensus among the sighted was barely higher than that among the blind. Because motion devices are unfamiliar to the blind, the task I gave them involved some problem solving. Evidently, however, the blind not only figured out meanings for each line of motion, but as a group they generally came up with the same meaning at least as frequently as did sighted subjects.

除此之外，在每一案例中，视力正常的人跟盲人所偏爱的描述一模一样。而且，视力正常的人的共识程度只比盲人高一点。因为运动装置是盲人不熟悉的，所以我给他们的任务涉及到一些解决问题的方法。但是，显然，盲人不仅弄清楚了每种运动线条的含义，而且作为一个整体，他们至少会和视力正常的人一样频繁地得出相同的含义。

第二部分

**第1自然段**

We have found that the blind understand other kinds of visual metaphors as well. One blind woman drew a picture of a child inside a heart – choosing that symbol, she said, to show that love surrounded the child. With Chang Hong Liu, a doctoral student from China, I have begun exploring how well blind people understand the symbolism behind shapes such as hearts that do not directly represent their meaning.

我们发现盲人也可以理解其他种类的视觉比喻。一名盲人女性在心脏内画了一个孩子的照片，她说她选择那个符号来表明爱包围着孩子。我与来自中国的博士生刘昌宏一起，开始探索盲人如何理解诸如心脏之类的形状背后的象征，而这些象征并不直接代表其含义。

**第2自然段**

We gave a list of twenty pairs of words to sighted subjects and asked them to pick from each pair the term that best related to a circle and the term that best related to a square. For example, we asked: What goes with soft? A circle or a square? Which shape goes with hard?

我们为视力正常的对象提供了二十对单词的列表，并要求他们从每对单词中选择与圆最相关的术语和与方形最相关的术语。例如，我们会问：哪个词与“软”搭配？一个圆形还是方形？“硬”和哪种图形搭配？

**第3自然段**

All our subjects deemed the circle soft and the square hard. A full 94% ascribed happy to the circle, instead of sad. But other pairs revealed less agreement: 79% matched fast to slow and weak to strong, respectively. And only 51%linked deep to circle and shallow to square. (See Fig. 2.) When we tested four totally blind volunteers using the same list, we found that their choices closely resembled those made by the sighted subjects. One man, who had been blind since birth, scored extremely well. He made only one match differing from the consensus, assigning ‘far’ to square and ‘near’ to circle. In fact, only a small majority of sighted subjects- 53% – had paired far and near to the opposite partners. Thus, we concluded that the blind interpret abstract shapes as sighted people do.

我们所有的对象都认为圆是软的，而正方形是硬的。整整94％的人将快乐与圆联系起来，而不是悲伤。但是其他的配对则显示出较少的一致性：79％的人将快与慢，弱与强相连。而且只有51％的人将“深”与圆形相连，将“浅”与方形相连。当我们使用相同的列表测试四个完全失明的志愿者时，我们发现他们的选择与视力正常的受试者的选择非常相似。自出生以来一直失明的一名男子得分极高。他只有一项匹配与他人不同，将“远” 分配给正方形，将“近” 分配给了圆形。实际上，只有一小部分视力正常的人（53%）将远与进跟相反的词汇匹配。因此，我们得出的结论是，盲人像视力正常的人一样解释抽象形状。

## 4Test2

### [4 Test 2 Passage 1 消失的语言 lost for words](http://www.laokaoya.com/21110.html)

**第1自然段**

In the Native American Navajo nation, which sprawls across four states in the American south-west, the native language is dying. Most of its speakers are middle-aged or elderly. Although many students take classes in Navajo, the schools are run in English. Street signs, supermarket goods and even their own newspaper are all in English. Not surprisingly, linguists doubt that any native speakers of Navajo will remain in a hundred years’ time.

在遍及美国西南部四个州的美国原住民纳瓦霍族中，母语正在下面是具体每一段的翻译。

文末附有这篇文章要掌握的**词汇**，以及具体的**答案解析**。消亡。它的大多数使用者都是中年或老年人。尽管许多学生在纳瓦霍（Navajo）上课，但学校还是用英语运行。街道标志，超市商品，甚至自己的报纸都是用的英语。毫不奇怪，语言学家会怀疑100年后还会有任何纳瓦霍语的使用者存在。

**第2自然段**

Navajo is far from alone. Half the world’s 6,800 languages are likely to vanish within two generations – that’s one language lost every ten days. Never before has the planet’s linguistic diversity shrunk at such a pace. At the moment, we are heading for about three or four languages dominating the world,’ says Mark Pagel, an evolutionary biologist at the University of Reading. ‘It’s a mass extinction, and whether we will ever rebound from the loss is difficult to know.’

纳瓦霍人并不孤单。世界上6800种语言的一半都有可能在两代人之内彻底消失，即每十天就有一种语言消失。地球上语言消失的速度从来都没有这么快过。雷丁大学（University of Reading）的进化生物学家马克·佩奇（Mark Pagel ）说，“目前我们正在朝着只剩三四种语言主导世界的情况出发。这是一种大规模的灭绝现象，而我们是否能从中恢复还不得而知”。

**第3自然段**

Isolation breeds linguistic diversity: as a result, the world is peppered with languages spoken by only a few people. Only 250 languages have more than a million speakers, and at least 3,000have fewer than 2,500. It is not necessarily these small languages that are about to disappear. Navajo is considered endangered despite having 150,000speakers. What makes a language endangered is not just the number of speakers, but how old they are. If it is spoken by children it is relatively safe. The critically endangered languages are those that are only spoken by the elderly, according to Michael Krauss, director of the Alassk Native Language Center, in Fairbanks.

隔绝滋生了语言的多样性。结果世界上充满了只有少数人使用的语言。只有250种语言的使用者超过一百万，而至少3,000 种语言的使用者少于2,500。这些小语言并不一定会消失。纳瓦霍语（Navajo）尽管拥有15万名使用者，但仍被视为濒临灭绝。使语言受到威胁的不仅是文章来自老烤鸭雅思说话者的数量，还包括他们的年龄。根据迈克尔·克劳斯，费尔班克斯Alassk 本土语言中心主任的看法，如果是儿童在使用的话，那它相对安全。只有老年人使用的话就会极度濒危。

**第4自然段**

Why do people reject the language of their parents? It begins with a crisis of confidence, when a small community finds itself alongside a larger, wealthier society, says Nicholas Ostler, of Britain’s Foundation for Endangered Languages, in Bath. ‘People lose faith in their culture,’ he says. ‘When the next generation reaches their teens, they might not want to be induced into the old traditions.’

人们为什么拒绝父母的语言？它始于信心危机。英国濒危语言基金会的尼古拉斯·奥斯特勒说，当一个小社区发现自己旁边有一个大的、富裕的社区时，“人们就会失去对自己文化的信心，当下一代到达青少年时期的时候，他们可能不想融入到古老的传统中”。

**第5自然段**

The change is not always voluntary Quite often, governments try to kill off a minority language by banning its use in public or discouraging its use in schools, all to promote national unity The former US policy of running Indian reservation schools in English, for example, effectively put languages such as Navajo on the danger list. But Salikoko Mufwene, who chairs the Linguistics Department at the University of Chicago, argues that the deadliest weapon is not government policy but economic globalisation. ‘Native Americans have not lost pride in their language, but they have had to adapt to socio-economic pressures,’ he says. ‘They cannot refuse to speak English if most commercial activity is in English.’ But are languages worth saving? At the very least, there is a loss of data for the study of languages and their evolution, which relies on comparisons between languages, both living and dead. When an unwritten and unrecorded language disappears, it is lost to science.

这种改变并不总是自愿的。很多时候，政府试图通过禁止在公共场所使用或劝阻其在学校中使用来消除少数群体的语言。所有这些都是为了促进民族团结。例如，美国以前的以英语运营印第安保留学校的政策就将诸如Navajo之类的语言送入危险清单。但是芝加哥大学语言中心主任萨利科科·马恩认为，最致命的武器并不是政府的政策，而是经济全球化。“ 土著美国人并没有丧失对自己语言的骄傲，但他们不得不适应社会经济的压力，” 他说，“ 如果大多数商业活动用的是英语，他们也不能拒绝说英语”。但语言值得保护吗？至少对于语言及其进化的研究来说，存在数据丢失的问题。这种研究依赖于各种语言的比较，无论是“活着的”还是“死去的”。当一种没有书面形式和没有记录的语言消失时，科学研究就彻底失去了它。

**第6自然段**

Language is also intimately bound up with culture, so it may be difficult to preserve one without the other. ‘If a person shifts from Navajo to English, they lose something,’ Mufwene says. ‘Moreover, the loss of diversity may also deprive us of different ways of looking at the world,’ says Pagel. There is mounting evidence that learning a language produces physiological changes in the brain. ‘Your brain and mine are different from the brain of someone who speaks French, for instance,’ Pagel says, and this could affect our thoughts and perceptions. ‘The patterns and connections we make among various concepts may be structured by the linguistic habits of our community.’

语言也与文化息息相关，因此可能很难在没有文化的情况下保留其相应的语言。“如果一个人从使用纳瓦霍语转变成使用英语，他就回失去了一些东西，” Mufwene说。“此外，多样性的丧失可能也会剥夺我们看待世界的不同方式，” Pagel说。有越来越多的证据表明，学习一门语言可以促进大脑的胜利变化。Pagel说：“ 例如，你的大脑和我的大脑与讲法语的人的大脑就不同。” 这可能会影响我们的思想和观念。“我们在各种概念之间建立的模式和联系可能是由我们种群的语言习惯构成的。”

**第7自然段**

So despite linguists’ best efforts, many languages will disappear over the next century. But a growing interest in cultural identity may prevent the direst predictions from coming true. ‘The key to fostering diversity is for people to learn their ancestral tongue, as well as the dominant language,’ says Doug Whalen, founder and president of the Endangered Language Fund in New Haven, Connecticut. ‘Most of these languages will not survive without a large degree of bilingualism,’ he says. In New Zealand, classes for children have slowed the erosion of Maori and rekindled interest in the language. A similar approach in Hawaii has produced about 8,000new speakers of Polynesian languages in the past few years. In California, ‘apprentice’ programmes have provided life support to several indigenous languages. Volunteer ‘apprentices’ pair up with one of the last living speakers of a Native American tongue to learn a traditional skill such as basket weaving, with instruction exclusively in the endangered language. After about 300 hours of training they are generally sufficiently fluent to transmit the language to the next generation. But Mufwene says that preventing a language from dying out is not the same as giving it new life by using it every day. ‘Preserving a language is more like preserving fruits in ajar,’ he says.

所以，尽管语言学家尽了最大努力，许多语言仍然将下个世纪消失。但是人们对文化认同不断增长的兴趣可能阻止这一可怕的预测成为现实。“培育多样性的关键是人们学习他们祖先的语言和占主导地位的语言”，濒危语言基金会的创始人和主席Doug Whalen说。“没有某种程度的双语系统的话，这些语言中的大多数都是无法生存的，” 他说。在新西兰，为儿童开设的课程减缓了毛利语的流失，并重新点燃了人们对该语言的兴趣。在过去的几年中，夏威夷的一种类似方法已经产生了大约8,000名新的波利尼西亚语使用者。在加利福尼亚州，“学徒” 计划为几种土著语言提供支持。志愿者“学徒” 与美国本土语言的最后几名使用者之一配对，学习诸如篮子编织之类的传统技能，并仅使用濒危语言进行教学。经过大约300个小时的培训，他们的流利度就足以将语言传递给下一代。但是Mufwene说，防止一种语言消亡与每天使用一种语言进而赋予它新的生命是不同的。“保护语言更像是在罐子里保存水果，” 他说。

**第8自然段**

However, preservation can bring a language back from the dead. There are examples of languages that have survived in written form and then been revived by later generations. But a written form is essential for this, so the mere possibility of revival has led many speakers of endangered languages to develop systems of writing where none existed before.

但是，保护可以使语言死里逃生。有一些语言仅以书面形式存在，但被后代所复兴。但是要实现这一点必须有书面形式才行，所以仅仅是复兴的可能性已经让许多濒危语言的使用者开始开发之前并不存在的书写体系。

### [4 Test 2Passage 2 澳大利亚替代医疗 alternative medicine in Australia](http://www.laokaoya.com/21189.html)

**引文**

The first students to study alternative medicine at university level in Australia began their four-year, full-time course at the University of Technology, Sydney, in early 1994. Their course covered, among other therapies, acupuncture. The theory they learnt is based on the traditional Chinese explanation of this ancient healing art: that it can regulate the flow of ‘Qi’ or energy through pathways in the body. This course reflects how far some alternative therapies have come in their struggle for acceptance by the medical establishment.

第一批在大学层次学习替代医疗的澳大利亚学生在1994年初于悉尼科技大学开始了他们为期四年的全日制课程。他们的课程在其他疗法之外还涵盖针灸。他们学到的理论基于中国对这种古老疗法的传统解释：它可以调节“ Q i ” 或能量在身体内的流动路径。这门课程反映了替代疗法在争取医疗机构接受方面取得了多大的进展。

**第1自然段**

Australia has been unusual in the Western world in having a very conservative attitude to natural or alternative therapies, according to Dr Paul Laver, a lecturer in Public Health at the University of Sydney. ‘We’ve had a tradition of doctors being fairly powerful and I guess they are pretty loath to allow any pretenders to their position to come into it.’ In many other industrialised countries, orthodox and alternative medicine have worked ‘hand in glove’ for years. In Europe, only orthodox doctors can prescribe herbal medicine. In Germany, plant remedies account for 10% of the national turnover of pharmaceuticals. Americans made more visits to alternative therapists than to orthodox doctors in 1990, and each year they spend about $US1 2 billion on therapies that have not been scientifically tested.

在保罗·拉沃（悉尼大学公共健康学院的讲师）看来，澳大利亚对自然或者替代疗法抱有十分保守的态度，这在西方世界很不寻常。我们已有医生的传统相当强大，我想他们很不愿意让任何觊觎他们地位的东西进入其行业。在许多其他工业化国家，正统疗法和替代意料已经合作了很多年。在欧洲，只有正统医生可以开草药。在德国，植物疗法占全国药品营业额的10％。1990年，美国人对替代治疗师的访问次数比对正统医生的访问次数还多。每年，他们在未经科学检验的治疗上花费约12亿美元。

**第2自然段**

Disenchantment with orthodox medicine has seen the popularity of alternative therapies in Australia climb steadily during the past 20 years. In a 1983 national health survey, 1.9% of people said they had contacted a chiropractor, naturopath, osteopath, acupuncturist or herbalist in the two weeks prior to the survey. By 1990, this figure had risen to 2.6% of the population. The 550,000 consultations with alternative therapists reported in the 1990 survey represented about an eighth of the total number of consultations with medically qualified personnel covered by the survey, according to Dr Laver and colleagues writing in the Australian Journal of Public Health in 1993. ‘A better educated and less accepting public has become disillusioned with the experts in general, and increasingly skeptical about science and empirically based knowledge,’ they said. ‘The high standing of professionals, including doctors, has been eroded as a consequence.’

在过去的20年中，对正统药物的清醒态度使得澳大利亚替代疗法的受欢迎程度稳步上升。在1983年的国家健康调查中，有1.9％的人说在调查前的两周内，他们曾经联系过按摩师，自然疗法，整骨，针灸或中医。到1990年，这一数字已上升到人口的2.6％。拉弗博士及其同事文章来自老烤鸭雅思在1993年《澳大利亚公共卫生杂志》上写道，在1990年的调查中，与替代治疗师进行的550,000次咨询约占该调查所涵盖的拥有合格医疗资质人员的诊治总数的八分之一。受过更好教育，对替代医疗不怎么接受的公众对一般意义上的专家失去了幻想，并日益怀疑以科学和实证为基础的知识，他们说，因此，包括医生在内的专业人士的较高地位受到了侵蚀。

**第3自然段**

Rather than resisting or criticising this trend, increasing numbers of Australian doctors, particularly younger ones, are forming group practices with alternative therapists or taking courses themselves, particularly in acupuncture and herbalism. Part of the incentive was financial, Dr Laver said. ‘The bottom line is that most general practitioners are business people. If they see potential clientele going elsewhere, they might want to be able to offer a similar service.’

越来越多的澳大利亚医生，特别是年轻的医生，没有抵制或批评这种趋势，而是与替代治疗师结合或自己参加相关课程，尤其是针灸和草药方面的课程。拉弗博士说，部分动机是经济上的。“最重要的是，大多数全科医生是商人。如果他们看到潜在客户流向其他地方，他们可能希望能够提供类似的服务”。

**第4自然段**

In 1993, Dr Laver and his colleagues published a survey of 289 Sydney people who attended eight alternative therapists’ practices in Sydney. These practices offered a wide range of alternative therapies from 2 5 therapists. Those surveyed had experienced chronic illnesses, for which orthodox medicine had been able to provide little relief. They commented that they liked the holistic approach of their alternative therapists and the friendly, concerned and detailed attention they had received. The cold, impersonal manner of orthodox doctors featured in the survey. An increasing exodus from their clinics, coupled with this and a number of other relevant surveys carried out in Australia, all pointing to orthodox doctors’ inadequacies, have led mainstream doctors themselves to begin to admit they could learn from the personal style of alternative therapists. Dr Patrick Store, President of the Royal College of General Practitioners, concurs that orthodox doctors could learn a lot about bedside manner and advising patients on preventative health from alternative therapists.

1993年，拉沃博士和他的同事们发表一份对289名参加过8个替代医疗诊所项目的悉尼民众的调查。这些诊所的2 5位治疗师提供了广泛的替代疗法。接受调查的人患有慢性病，而正统医学对此几乎无济于事。他们评论说，他们喜欢替代疗法治疗师的整体方法以及其友好的态度、真挚的关心和细致的关注。调查也突显了正统医生冷淡，非人格化的态度。根据这一调查和在澳大利亚进行的其他相关调查，越来越多的人从他们的诊所流失。所有这些都指向正统的医生的不足。而这也导致主流医生自己开始承认他们可以学习替代性治疗师的个人风格。皇家全科医师学院院长Patrick Store博士同意，除了行为方式之外，正统医生也可以从替代医疗师那里学习如何建议病人采取预防性措施

**第5自然段**

According to the Australian Journal of Public Health, 18% of patients visiting alternative therapists do so because they suffer from musculo-skeletal complaints; 12%suffer from digestive problems, which is only 1% more than those suffering from emotional problems. Those suffering from respiratory complaints represent 7% of their patients, and candida sufferers represent an equal percentage. Headache sufferers and those complaining of general ill health represent 6% and 5% of patients respectively, and a further 4% see therapists for general health maintenance.

根据《澳大利亚公共卫生杂志》，有18％的寻求替代治疗师的患者之所以这样做，是因为他们患有肌肉骨骼疾病。12％的人患有消化系统疾病。这仅比那些患有情绪问题的人多1％。患有呼吸道不适的患者占病人的7％，念珠菌患者所占的比例相同。头痛患者和抱怨整体健康的患者分别占病人的6％和5％，另有4％的人寻求治疗师的全面健康呵护。

**第6自然段**

The survey suggested that complementary medicine is probably a better term than alternative medicine. Alternative medicine appears to be an adjunct, sought in times of disenchantment when conventional medicine seems not to offer the answer.

调查表明，补充医学可能比替代医学的名字更为合适。当传统疗法无法提供答案而人们不再为此痴迷的时候，替代疗法似乎是一种辅助。

### [4 Test 2Passage 3 玩耍的重要性 play is a serious business](http://www.laokaoya.com/21234.html)

**A自然段**

Playing is a serious business. Children engrossed in a make-believe world, fox cubs play-fighting or kittens teasing a ball of string aren’t just having fun. Play may look like a carefree and exuberant way to pass the time before the hard work of adulthood comes along, but there’s much more to it than that. For a start, play can even cost animals their lives. Eighty per cent of deaths among juvenile fur seals occur because playing pups fail to spot predators approaching. It is also extremely expensive in terms of energy. Playful young animals use around two or three per cent of their energy cavorting, and in children that figure can be closer to fifteen per cent. ‘Even two or three per cent is huge,’ says John Byers of Idaho University. ‘You just don’t find animals wasting energy like that,’ he adds. There must be a reason.

玩耍是项十分重要的事情。孩子沉浸在自己幻想的世界中，狐狸幼崽嬉戏打闹，小猫拨弄线球，这些行为都不是单纯的为了娱乐。玩耍看起来像是成年努力工作时期到来之前的一种无忧无虑，精力充沛的打发时间方式。但它的意义远不止如此。首先，玩耍甚至会使动物丧命。在幼年的海狗中，有80％的死亡是因为幼崽在玩耍中未能发现掠食者接近而造成的。就能量而言，它也是极其昂贵的。玩耍的幼小动物消耗的能量大约占其总能量的2%到3%。而在儿童中，这一比例可能接近15 ％。 “即使百分之二到百分之三都是巨大的”， 爱达荷大学的约翰·拜尔斯（John Byers ）说。“你找不到动物像这样子浪费能量，“ 他补充道。一定有其他原因的。

**B自然段**

But if play is not simply a developmental hiccup, as biologists once thought, why did it evolve? The latest idea suggests that play has evolved to build big brains. In other words, playing makes you intelligent. This article is from Laokaoya website. Playfulness, it seems, is common only among mammals, although a few of the larger-brained birds also indulge. Animals at play often use unique signs – tail-wagging in dogs, for example – to indicate that activity superficially resembling adult behaviour is not really in earnest. A popular explanation of play has been that it helps juveniles develop the skills they will need to hunt, mate and socialise as adults. Another has been that it allows young animals to get in shape for adult life by improving their respiratory endurance. Both these ideas have been questioned in recent years.

但是，正如生物学家曾经想过的那样，如果玩耍不只是发展上的障碍，它为什么会演变呢？最近的观点表明，玩耍的演变是为了构建发达的大脑。换句话说，玩耍使你变得聪明。嬉戏似乎只在哺乳动物中很普遍，尽管一些大脑发达的鸟类也沉迷于此。玩耍中的动物文章来自老烤鸭雅思经常使用独特的标志，例如狗的尾巴会摇动，来表明表面上与成年动物相似的行为并不是真的如此。关于玩耍的一种流行解释是，它可以帮助幼年期的动物锻炼他们成年之后所需要的捕猎、求偶以及社交技能。另一个原因是，它可以通过提升幼小动物的呼吸耐力来锻炼成年后的体型。这两种想法近年来都受到质疑。

**C自然段**

Take the exercise theory. If play evolved to build muscle or as a kind of endurance training, then you would expect to see permanent benefits. But Byers points out that the benefits of increased exercise disappear rapidly after training stops, so any improvement in endurance resulting from juvenile play would be lost by adulthood. ‘If the function of play was to get into shape,’ says Byers, ‘the optimum time for playing would depend on when it was most advantageous for the young of a particular species to do so. But it doesn’t work like that.’ Across species, play tends to peak about halfway through the suckling stage and then decline.

拿锻炼理论来说，如果玩耍时为了锻炼肌肉或作为一种耐力锻炼，那么你会看到持久的好处。但拜尔斯指出，运动增加的好处会在训练停止后迅速消失。因此，青少年玩耍所带来的耐力提升在成年前就会丧失。“如果玩耍的功能是为了体型”，拜尔斯说，“其最佳时间应该取决于什么时候动物幼崽这么做对其最为有利。但似乎不是这样的”。在所有物种中，玩耍会在哺乳期一般的时候达到顶峰，然后下降。

**D自然段**

Then there’s the skills-training hypothesis. At first glance, playing animals do appear to be practising the complex manoeuvres they will need in adulthood. But a closer inspection reveals this interpretation as too simplistic. In one study, behavioural ecologist Tim Caro, from the University of California, looked at the predatory play of kittens and their predatory behaviour when they reached adulthood. He found that the way the cats played had no significant effect on their hunting prowess in later life.

除此之外，还有技能训练假说。乍一看，玩耍的动物似乎正在练习成年后所需的复杂动作。但是仔细检查发现，这种解释过于简单。在一项研究中，加利福尼亚大学的行为生态学家蒂姆·卡罗观察小猫的捕食行为和成年之后的捕食行为。他发现，小猫玩耍的方式对他们以后的狩猎技巧没有什么重大影响。

今年早些时候，加拿大莱斯布里奇大学的塞尔吉奥·佩利斯（Sergio Pellis）报告说，一般而言，哺乳动物的大脑大小与玩耍之间存在很强的正向联系。通过比较15个哺乳动物的测量值，他和他的团队发现更大的大脑（对于给定的体型）与更多的嬉戏息息相关。相反的规律也被发现是正确的。达勒姆大学的罗伯特·巴顿（Robert Barton）认为，由于大一点的大脑比小一点的大脑对发育刺激更为敏感，因此他们需要更多的玩耍来帮助他们成长。“我的结论是它与学习有关，与发育过程中环境对大脑的重要性有关”， 他说。

**E自然段**

Earlier this year, Sergio Pellis of Lethbridge University, Canada, reported that there is a strong positive link between brain size and playfulness among mammals in general. Comparing measurements for fifteen orders of mammal, he and his team found larger brains (for a given body size) are linked to greater playfulness. The converse was also found to be true. Robert Barton of Durham University believes that, because large brains are more sensitive to developmental stimuli than smaller brains, they require more play to help mould them for adulthood. ‘I concluded it’s to do with learning, and with the importance of environmental data to the brain during development,’ he says.

据拜尔斯说，幼龄动物玩耍阶段的时机为正在发生什么提供了重要的线索。如果你绘制出幼龄动物在发育过程中每天在玩耍上花费的时间，你会发现通常与“敏感期”相关的模式-一个短暂的发育窗口。在此期间，大脑实际上通过某种在生命早期和晚期都不太可能的方式进行调整。想想幼儿（不是婴儿或成人）学习语言的轻易性。其他研究者发现，在这种“机会之窗” 达到顶峰之时，猫、老鼠和小白鼠的玩耍也最为激烈。

**F自然段**

According to Byers, the timing of the playful stage in young animals provides an important clue to what’s going on. If you plot the amount of time a juvenile devotes to play each day over the course of its development, you discover a pattern typically associated with a ‘sensitive period’ – a brief development window during which the brain can actually be modified in ways that are not possible earlier or later in life. Think of the relative ease with which young children- but not infants or adults – absorb language. Other researchers have found that play in cats, rats and mice is at its most intense just as this ‘window of opportunity’ reaches its peak.

“人们对玩耍所激发的大脑的部分没有给予足够的重视”，科罗拉多大学的马克·贝科夫说。贝科夫研究了土狼幼崽的活动，发现其所涉及的行为比成年土狼明显多变且难以预测。他认为，这些行为会激活大脑的许多不同部分。贝科夫将其比作行为万花筒，玩耍中的动物在不同活动之间迅速转换。“他们使用许多不同情景下的动作-捕食，侵略，繁殖”， 他说，“他们的大脑正在得到各种各样的刺激”。

**G自然段**

‘People have not paid enough attention to the amount of the brain activated by play,’ says Marc Bekoff from Colorado University. Bekoff studied coyote pups at play and found that the kind of behaviour involved was markedly more variable and unpredictable than that of adults. Such behaviour activates many different parts of the brain, he reasons. Bekoff likens it to a behavioural kaleidoscope, with animals at play jumping rapidly between activities. ‘They use behaviour from a lot of different contexts – predation, aggression, reproduction,’ he says. ‘Their developing brain is getting all sorts of stimulation.’

**H自然段**

Not only is more of the brain involved in play than was suspected, but it also seems to activate higher cognitive processes. ‘There’s enormous cognitive involvement in play,’ says Bekoff. He points out that play often involves complex assessments of playmates, ideas of reciprocity and the use of specialised signals and rules. He believes that play creates a brain that has greater behavioural flexibility and improved potential for learning later in life. The idea is backed up by the work of Stephen Siviy of Gettysburg College. Siviy studied how bouts of play affected the brain’s levels of a particular chemical associated with the stimulation and growth of nerve cells. He was surprised by the extent of the activation. ‘Play just lights everything up,’ he says. By allowing link-ups between brain areas that might not normally communicate with each other, play may enhance creativity.

不仅有人怀疑玩耍会涉及更多的大脑部分，而且它似乎也激发高级认知过程。“玩耍包含了大量的认知活动”，贝科夫说。他指出，玩耍通常涉及对玩伴的复杂评估，对互惠观念的认识，以及对信号和规则使用。他认为玩耍为以后的生活创造出一个拥有更大灵活性、更高学习潜力的大脑。葛底斯堡学院的斯蒂芬·西维（Stephen Siviy）的研究也支持这一说法。西维研究了玩耍如何影响大脑中与神经细胞刺激和生长有关的特定化学物质的水平。他对刺激的幅度感到经验。“玩耍点亮了一切”，他说。通过将大脑中平时不怎么可能交流的区域联系起来，游戏可能可以增强创造力。

**I自然段**

What might further experimentation suggest about the way children are raised in many societies today? We already know that rat pups denied the chance to play grow smaller brain components and fail to develop the ability to apply social rules when they interact with their peers. With schooling beginning earlier and becoming increasingly exam-orientated, play is likely to get even less of a look-in. Who knows what the result of that will be?

关于当今许多社会中儿童成长方式的进一步实验可能提出什么建议？我们已经知道，被剥夺玩耍机会的老鼠的大脑较小，并且在与同伴互动时未能发展出运用社会规则的能力。随着上学时间的提前和考试导向的加深，玩耍的机会可能会更少。谁知道这样做的结果是什么？

## 4Test3

### [4 Test 3Passage 1 为流浪儿童提供的小型企业贷款 micro-enterprise credit for street youth](http://www.laokaoya.com/21355.html)

**引入**

‘I am from a large, poor family and for many years we have done without breakfast. Ever since I joined the Street Kids International program I have been able to buy my family sugar and buns for breakfast. I have also bought myself decent second-hand clothes and shoes.’

我来自一个贫穷的大家庭，多年来我们一直没有早餐吃。自从我加入“街头儿童国际” 计划以来，我就能够为家人购买糖和面包作为早餐。我还给自己买了不错的二手衣服和鞋子。”

Doreen Soko 多琳·索科

‘We’ve had business experience. Now I’m confident to expand what we’ve been doing. I’ve learnt cash management, and the way of keeping money so we save for reinvestment. Now business is a part of our lives. As well, we didn’t know each other before – now we’ve made new friends.’

‘我们有商业经验。现在，我有信心扩大我们一直在做的事情。我已经学会了现金管理以及保留资金的方式，因此我们可以省下一部分钱来用于再投资。现在，业务已成为我们生活的一部分。我们以前也不认识彼此，但现在我们交了新朋友。

Fan Kaoma 范考玛

Participants in the Youth skills ENterprise Initiative Program, Zambia 赞比亚青年技能会企业行动项目参与者

**介绍**

Although small-scale business training and credit programs have become more common throughout the world, relatively little attention has been paid to the need to direct such opportunities to young people. Even less attention has been paid to children living on the streets or in difficult circumstances.

尽管小规模的企业培训和信贷计划在世界范围内变得越来越普遍，但对于将此类机会给予给年轻人的需求却很少受到关注。对流落街头或处境困难的儿童的关注甚至更少。

Over the past nine years, Street Kids International (S. K. I.) has been working with partner organisations in Africa, Latin America and India to support the economic lives of street children. The purpose of this paper is to share some of the lessons S. K. I. and our partners have learned.

在过去的九年中，街头儿童国际（SKI）与非洲，拉丁美洲和印度的合作伙伴组织合作，以支持街头儿童的经济生活。本文的目的是分享SKI和我们的合作伙伴在此过程中所学到的一些经验教训。

**背景**

Typically, children do not end up on the streets due to a single cause, but to a combination of factors: a dearth of adequately funded schools, the demand for income at home, family breakdown and violence. The street may be attractive to children as a place to find adventurous play and money. However, it is also a place where some children are exposed, with little or no protection, to exploitative employment, urban crime, and abuse.

通常，儿童不会因为单一原因而流落街头，而是由于多种因素：缺乏足够资金的学校，对家庭收入的需求，家庭破裂和暴力。街头作为寻找冒险游戏和金钱的地方可能文章来自老烤鸭雅思对儿童具有吸引力。但是，这里也是一些儿童在很少或没有保护的情况下遭受剥削性就业，城市犯罪和虐待的地方。

Children who work on the streets are generally involved in unskilled, labour-intensive tasks which require long hours, such as shining shoes, carrying goods, guarding or washing cars, and informal trading. Some may also earn income through begging, or through theft and other illegal activities. At the same time, there are street children who take pride in supporting themselves and their families and who often enjoy their work. Many children may choose entrepreneurship because it allows them a degree of independence, is less exploitative than many forms of paid employment, and is flexible enough to allow them to participate in other activities such as education and domestic tasks.

在街头上班的儿童通常会从事无需要技能的劳动密集型工作，这些工作需要很长时间，例如擦鞋，搬运货物，护卫或洗车，以及非正式贸易。有些人可能还通过乞讨，盗窃和其他非法活动赚取收入。同时，有一些流浪儿童以能够养活自己和家人为荣，并且经常享受他们的工作。许多孩子之所以选择创业，是因为它使他们有一定程度的独立性，比许多形式的有偿工作会少受剥削，并且具有足够的灵活性以允许他们参加其他活动，例如教育和家务劳动。

**街头商业伙伴关系**

S. K. I. has worked with partner organisations in Latin America, Africa and India to develop innovative opportunities for street children to earn income.

SKI已与拉丁美洲，非洲和印度的合作伙伴组织合作，为流浪儿童创造创收机会。

* The S. K. I. Bicycle Courier Service first started in the Sudan. Participants in this enterprise were supplied with bicycles, which they used to deliver parcels and messages, and which they were required to pay for gradually from their wages. A similar program was taken up in Bangalore, India.
* SKI自行车快递服务首先在苏丹开始。它向该项目的参与者提供自行车，让他们用来运送包裹和信件，并要求他们用工资逐步支付。一项类似的计划也在印度的班加罗尔实行。
* Another successful project, the Shoe Shine Collective, was a partnership program with the Y. W. C. A. in the Dominican Republic. In this project, participants were lent money to purchase shoe shine boxes. They were also given a safe place to store their equipment, and facilities for individual savings plans.
* 另一个成功的项目Shoe Shine Collective是与多米尼加共和国的Y.W.C.A的伙伴关系计划。在该项目中，参与者借钱购买擦鞋盒。项目还为他们提供了一个存放设备的安全场所，以及用于个人储蓄计划的设施。
* The Youth Skills Enterprise Initiative in Zambia is a joint program with the Red Cross Society and the Y. W. C. A. Street youths are supported to start their own small business through business training, life skills training and access to credit.
* 赞比亚的青年技能企业倡议是与红十字会的一项联合计划，青少年通过商业培训，生活技能培训和获取信贷，得到支持创办自己的小企业。

**得到的教训**

The following lessons have emerged from the programs that S. K. I. and partner organisations have created.

SKI和合作伙伴组织从开启的项目中吸取了以下教训。

* Being an entrepreneur is not for everyone, nor for every street child. Ideally, potential participants will have been involved in the organisation’s programs for at least six months, and trust and relationship-building will have already been established.
* 成为企业家并不适合所有人，也不适合每个流浪儿童。理想情况下，潜在参与者将参与该组织的项目至少六个月，并且已经建立了信任和关系。
* The involvement of the participants has been essential to the development of relevant programs. When children have had a major role in determining procedures, they are more likely to abide by and enforce them.
* 参与者的参与对于制定相关计划至关重要。当孩子在决定过程中起主要作用时，他们更有可能遵守并执行。
* It is critical for all loans to be linked to training programs that include the development of basic business and life skills.
* 将所有贷款与包括基本业务和生活技能开发在内的培训计划联系起来至关重要。
* There are tremendous advantages to involving parents or guardians in the program, where such relationships exist. Home visits allow staff the opportunity to know where the participants live, and to understand more about each individual’s situation.
* 在存在这种关系的情况下，让父母或监护人参与到计划中具有极大的优势。家访使员工有机会了解参与者的住所，并了解每个人的情况。
* Small loans are provided initially for purchasing fixed assets such as bicycles, shoe shine kits and basic building materials for a market stall. As the entrepreneurs gain experience, the enterprises can be gradually expanded and consideration can be given to increasing loan amounts. The loan amounts in S. K. I. programs have generally ranged from US $30-$100.
* 最初提供小额贷款来购买固定资产，例如自行车，擦鞋工具包和市场摊位的基本建材。随着企业家的经验积累，企业会逐步扩大，可以考虑增加贷款额。SKI计划的贷款额通常在30至100美元之间。
* All S. K. I. programs have charged interest on the loans, primarily to get the entrepreneurs used to the concept of paying interest on borrowed money. Generally the rates have been modest (lower than bank rates).
* 所有SKI计划都对贷款收取利息，主要是为了使企业家习惯于借贷支付利息的概念。通常，利率是适中的（低于银行利率）。

**结论**

There is a need to recognise the importance of access to credit for impoverished young people seeking to fulfil economic needs. The provision of small loans to support the entrepreneurial dreams and ambitions of youth can be an effective means to help them change their lives. However, we believe that credit must be extended in association with other types of support that help participants develop critical life skills as well as productive businesses.

有必要认识到寻求满足经济需求的贫困青年获得信贷的重要性。提供小额贷款支持青年人的创业梦想和野心可以成为帮助他们改变生活的有效手段。但是，我们认为贷款必须与其他类型的支持相结合，这些支持可以帮助参与者发展关键的生活技能以及生产性业务。

### [4 Test 3Passage 2 火山：惊天动地的消息 volcanoes – earth-shattering news](http://www.laokaoya.com/21436.html)

剑4 Test 3 Passage 2

**When Mount Pinatubo suddenly erupted on 9 June 1991, the power of volcanoes past and present again hit the headlines**

当皮纳图博火山在1991年6月9日突然爆发，火山过去和现在的力量再一次登上头条。

**A部分**

Volcanoes are the ultimate earth-moving machinery. A violent eruption can blow the top few kilometres off a mountain, scatter fine ash practically all over the globe and hurl rock fragments into the stratosphere to darken the skies a continent away.

火山是终极的土方机械。一次猛烈的喷发会将山顶的几公里吹走，将灰烬散布到几乎全球各地，并将岩石碎片扔到平流层中，使整个大陆的天空变暗。

But the classic eruption – cone-shaped mountain, big bang, mushroom cloud and surges of molten lava – is only a tiny part of a global story. Vulcanism, the name given to volcanic processes, really has shaped the world. Eruptions have rifted continents, raised mountain chains, constructed islands and shaped the topography of the earth. The entire ocean floor has a basement of volcanic basalt.

但是，经典的喷发-圆锥形的山脉，大爆炸，蘑菇云和熔岩涌动-只是全球故事的一小部分。Vulcanism，火山运动文章来自老烤鸭雅思过程的名字，确实改变了世界。火山喷发撕裂大陆，抬起山脉，建造岛屿并塑造了地球的地形。整个海底都是由火山玄武岩构成的地下室。

Volcanoes have not only made the continents, they are also thought to have made the world’s first stable atmosphere and provided all the water for the oceans, rivers and ice-caps. There are now about 600 active volcanoes. Every year they add two or three cubic kilometres of rock to the continents. Imagine a similar number of volcanoes smoking away for the last 3,500 million years. That is enough rock to explain the continental crust.

火山不仅造就了大洲，而且也被认为造就了世界上第一个稳定的大气层，并提供了海洋，河流和冰盖的全部水分。现在大约有600座活火山。他们每年都为各块大陆增加两三立方千米的岩石。想象一下，在过去35亿年中，有类似数量的火​​山在冒烟。它们产生的岩石足以解释地壳的形成。

What comes out of volcanic craters is mostly gas. More than 90% of this gas is water vapour from the deep earth: enough to explain, over 3,500 million years, the water in the oceans. The rest of the gas is nitrogen, carbon dioxide, sulphur dioxide, methane, ammonia and hydrogen. The quantity of these gases, again multiplied over 3,500 million years, is enough to explain the mass of the world’s atmosphere. We are alive because volcanoes provided the soil, air and water we need.

从火山口出来的大部分是气体。这些气体的90％以上是来自地底深处的水蒸气：在35亿年的时间里，它们足以解释海洋中的水分的来源。其余的气体是氮气，二氧化碳，二氧化硫，甲烷，氨气和氢气。这些气体的数量再乘以35亿年，足以解释世界大气的数量。我们活着是因为火山为我们提供了所需的土壤，空气和水。

**B部分**

Geologists consider the earth as having a molten core, surrounded by a semi-molten mantle and a brittle, outer skin. It helps to think of a soft-boiled egg with a runny yolk, a firm but squishy white and a hard shell. If the shell is even slightly cracked during boiling, the white material bubbles out and sets like a tiny mountain chain over the crack – like an archipelago of volcanic islands such as the Hawaiian Islands. But the earth is so much bigger and the mantle below is so much hotter.

地质学家认为地球具有熔融的核，被半熔融的地幔和脆的外皮包围。我们可以想象一个煮熟的鸡蛋，它带有流动的蛋黄，坚固但多汁的蛋白和坚硬的外壳。如果壳在沸腾过程中甚至略微破裂，白色物质就会冒出气泡，像一条细小的山链在裂缝上凝结-像夏威夷群岛等火山岛群岛。但是地球要大的多，而下面的地幔也要热的多。

Even, though the mantle rocks are kept solid by overlying pressure, they can still slowly ‘flow’ like thick treacle. The flow, thought to be in the form of convection currents, is powerful enough to fracture the ‘eggshell’ of the crust into plates, and keep them bumping and grinding against each other, or even overlapping, at the rate of a few centimetres a year. These fracture zones, where the collisions occur, are where earthquakes happen. And, very often, volcanoes.

即使地幔岩石通过施加压力保持固结，它们仍可以像稠密的糖浆一样缓慢地“流动”。这种流动被认为是某种形式的对流，其力量足以将地壳的“蛋壳”破裂成板状，并使它们以每年几厘米的速度相互碰撞和摩擦，甚至重叠。发生碰撞的这些断裂带就是地震发生的地方。还有很多时候是火山。

**C部分**

These zones are lines of weakness, or hot spots. Every eruption is different, but put at its simplest, where there are weaknesses, rocks deep in the mantle, heated to 1,350℃, will start to expand and rise. As they do so, the pressure drops, and they expand and become liquid and rise more swiftly.

这些区域是薄弱地带或热点。每种喷发都不尽相同，但最简单的说法就是在存在弱点的地方，地幔深处的岩石加热到1,350℃ 就会开始膨胀和上升。当它们这样做时，压力下降，它们膨胀并变成液体，迅速上升。

Sometimes it is slow: vast bubbles of magma – molten rock from the mantle-inch towards the surface, cooling slowly, to show through as granite extrusions (as on Skye, or the Great Whin Sill, the lava dyke squeezed out like toothpaste that carries part of Hadrian’s Wall in northern England). Sometimes – as in Northern Ireland, Wales and the Karoo in South Africa – the magma rose faster, and then flowed out horizontally on to the surface in vast thick sheets. In the Deccan plateau in western India, there are more than two million cubic kilometres of lava, some of it 2,400 metres thick, formed over 500,000 years of slurping eruption.

有时很慢：巨大的岩浆气泡-地幔中融化的岩石-一寸寸向表面移动，缓慢冷却，以花岗岩挤压的形式显现出来（例如在Skye或Great Whill Sill上，熔岩堤像牙膏一样挤出来，构成英格兰北部哈德良长城的一部分）。有时-如北爱尔兰，威尔士和南非的Karoo-岩浆上升得更快，然后像巨大厚实的被单一样水平地流到地表。在印度西部德干高原，有超过两百万立方千米的熔岩，其中一些有2,400米的厚，形成于50万年中的间断喷发。

Sometimes the magma moves very swiftly indeed. It does not have time to cool as it surges upwards. The gases trapped inside the boiling rock expand suddenly, the lava glows with heat, it begins to froth, and it explodes with tremendous force. Then the slightly cooler lava following it begins to flow over the lip of the crater. It happens on Mars, it happened on the moon, it even happens on some of the moons of Jupiter and Uranus. By studying the evidence, vulcanologists can read the force of the great blasts of the past. Is the pumice light and full of holes? The explosion was tremendous. Are the rocks heavy, with huge crystalline basalt shapes, like the Giant’s Causeway in Northern Ireland? It was a slow, gentle eruption.

有时候岩浆确实非常迅速地移动。在它向上的过程中没有时间冷却。被困在沸腾的岩石中的气体突然膨胀，熔岩因热量发光，开始起泡，并以巨大的力量爆发开来。然后，稍凉的熔岩开始在火山口的边缘流动。它发生在火星上，发生在月球上，甚至发生在木星和天王星的某些卫星上。通过研究证据，火山学家可以了解过去巨大爆炸的力量。如果浮石重量轻且布满空洞，那么爆炸是巨大的。如果岩石像北爱尔兰的巨人之路一样重，具有巨大的结晶玄武岩形状，那么那是一个缓慢而温和的喷发。

The biggest eruptions are deep on the mid-ocean floor, where new lava is forcing the continents apart and widening the Atlantic by perhaps five centimetres a year. Look at maps of volcanoes, earthquakes and island chains like the Philippines and Japan, and you can see the rough outlines of what are called tectonic plates – the plates which make up the earth’s crust and mantle. The most dramatic of these is the Pacific ‘ring of fire’ where there have been the most violent explosions – Mount Pinatubo near Manila, Mount St Helen’s in the Rockies and El Chichón in Mexico about a decade ago, not to mention world-shaking blasts like Krakatoa in the Sunda Straits in 1883.

最大的喷发发生在大洋中层深处，那里新的熔岩正迫使这些大陆分开，并使大西洋每年扩大五厘米。看一眼地图上诸如菲律宾和日本等地的火山，地震和岛屿链，你就会看到所谓的构造板块的粗略轮廓，这些板块构成了地壳和地幔。其中最引人注目的是太平洋上的“火环”，那里发生了最猛烈的爆炸-大约十年前，马尼拉附近的皮纳图博火山，落基山脉的圣海伦火山和墨西哥的埃尔奇琴，更不用说1883年Sunda海峡中Krakatoa震撼世界的喷发

**D部分**

But volcanoes are not very predictable. That is because geological time is not like human time. During quiet periods, volcanoes cap themselves with their own lava by forming a powerful cone from the molten rocks slopping over the rim of the crater; later the lava cools slowly into a huge, hard, stable plug which blocks any further eruption until the pressure below becomes irresistible. In the case of Mount Pinatubo, this took 600 years.

但是火山不是很好预测。那是因为地质时间不像人类的时间。在安静的时候，火山从倾斜的火山口边缘形成的熔融岩石构成一个强大的圆锥体，从而用自己的熔岩覆盖自己。之后，熔岩缓慢冷却成巨大，坚硬，稳定的塞子，阻止进一步的喷发，直到无法承受的压力为止。就皮纳图博火山而言，这花了600年。

Then, sometimes, with only a small warning, the mountain blows its top. It did this at Mont Pelée in Martinique at 7.49 a.m. on 8 May, 1902. Of a town of 28,000, only two people survived. In 1815, a sudden blast removed the top 1,280 metres of Mount Tambora in Indonesia. The eruption was so fierce that dust thrown into the stratosphere darkened the skies, cancelling the following summer in Europe and North America. Thousands starved as the harvests failed, after snow in June and frosts in August. Volcanoes are potentially world news, especially the quiet ones.

然后，有时候，只有很小的警告，这座山就炸开了自己的顶部。它在1902年5月8日早上7.49就在马提尼克的MontPelée这么做了。在28,000人的城镇中，只有两个人幸存。1815年印度尼西亚摩坦博拉火山一场突如其来的喷发移除了山顶1280米的高度。火山喷发是如此之猛，以至于尘埃进入平流层使天空变黑，从而消除了次年欧洲和北美的夏季。在六月的降雪和八月的霜冻之后，由于收成失败，上千人饿死。火山可能是世界新闻，尤其是安静的火山。

### [4 Test 3Passage 3 获取语言数据 obtaining linguistic data](http://www.laokaoya.com/21507.html)

**A自然段**

Many procedures are available for obtaining data about a language. They range from a carefully planned, intensive field investigation in a foreign country to a casual introspection about one’s mother tongue carried out in an armchair at home.

许多步骤可用于获取有关语言的数据。从在国外精心计划，深入的野外调查到在家里的扶手椅上对自己的母语进行随意的内省，其范围十分广泛。

**B自然段**

In all cases, someone has to act as a source of language data – an informant. Informants are (ideally) native speakers of a language, who provide utterances for analysis and other kinds of information about the language (e.g. translations, comments about correctness, or judgements on usage). Often, when studying their mother tongue, linguists act as their own informants, judging the ambiguity, acceptability, or other properties of utterances against their own intuitions. The convenience of this approach makes it widely used, and it is considered the norm in the generative approach to linguistics. But a linguist’s personal judgements are often uncertain, or disagree with the judgements of other linguists, at which point recourse is needed to more objective methods of enquiry, using non-linguists as informants. The latter procedure is unavoidable when working on foreign languages, or child speech.

在所有情况下，都必须有人充当语言数据的来源-信息提供者。信息提供者（理想地）是该语言的母语使用者，他们提供话语用于分析和其他有关该语言的信息（例如，翻译，对正确性的评论或对使用的判断）。通常，在研究母语时，语言学家会充当自己的信息提供者，克服自己直觉的影响来判断话语的模糊性，可接受性或其他性质。这种方法因其便利性被广泛使用，并且被认为是语言学生成方法中的规范。但是语言学家的个人判断通常是不确定的，或者与其他语言学家的判断不一致，这时需要使用非语言学家作为信息提供者，采用更为客观的询问方法。研究外语或者儿童语言时，后一种方式是不可避免的。

**C自然段**

Many factors must be considered when selecting informants – whether one is working with single speakers (a common situation when languages have not been described before), two people interacting, small groups or large-scale samples. Age, sex, social background and other aspects of identity are important, as these factors are known to influence the kind of language used. The topic of conversation and the characteristics of the social setting (e.g. the level of formality) are also highly relevant, as are the personal qualities of the informants (e.g. their fluency and consistency). For larger studies, scrupulous attention has been paid to the sampling theory employed, and in all cases, decisions have to be made about the best investigative techniques to use.

选择信息提供者时，必须考虑许多因素-一个人是在与单个说话者进行研究（当语言之前没有被描述过一种普遍情况），还是两个人互动，又或者是小组或大型样本。年龄，性别，社会背景和身份认同的其他方面都很重要，因为众所周知文章来自老烤鸭雅思这些因素会影响所用语言的种类。谈话的话题和社会环境的特征（例如，正式程度）也高度相关，信息提供者的个人素质（例如，他们的流利程度和连贯性）也是如此。对于较大的研究，它们所采用的抽样理论通常经过仔细的考虑，并且在所有情况下，都必须对将要使用的最佳调查技术做决定。

**D自然段**

Today, researchers often tape-record informants. This enables the linguist’s claims about the language to be checked, and provides a way of making those claims more accurate (‘difficult’ pieces of speech can be listened to repeatedly). But obtaining naturalistic, good-quality data is never easy. People talk abnormally when they know they are being recorded, and sound quality can be poor. A variety of tape-recording procedures have thus been devised to minimise the ‘observer’s paradox’ (how to observe the way people behave when they are not being observed). Some recordings are made without the speakers being aware of the fact – a procedure that obtains very natural data, though ethical objections must be anticipated. Alternatively, attempts can be made to make the speaker forget about the recording, such as keeping the tape recorder out of sight, or using radio microphones. A useful technique is to introduce a topic that quickly involves the speaker, and stimulates a natural language style (e.g. asking older informants about how times have changed in their locality).

现在研究人员经常使用录音带记录信息提供者。这使得语言学家对语言的主张得以检查，并提供了一种使这些主张更加准确的方法（可以反复听“难”的语音）。但是获取自然，高质量的数据绝非易事。人们在知道自己正在被录音时说话会比较反常，而且音质可能很差。因此，已经设计出各种磁带记录步骤以最小化“观察者悖论”的存在（如何观察人们在不被观察时的行为方式）。某些录音是在发言者没有意识到这一事实的情况下进行的，该过程获得非常自然的数据，尽管必须考虑到道德上的反对。或者，可以尝试让说话者忘掉录音的事情，例如将录音机放在视线以外，或使用无线麦克风。一种有用的方法是引入一个说话者能够迅速参与进来的主题，并激发一种自然的语言风格（例如，向年长的信息提供者询问当地时间如何变化）。

**E自然段**

An audio tape recording does not solve all the linguist’s problems, however. Speech is often unclear and ambiguous. Where possible, therefore, the recording has to be supplemented by the observer’s written comments on the non-verbal behaviour of the participants, and about the context in general. A facial expression, for example, can dramatically alter the meaning of what is said. Video recordings avoid these problems to a large extent, but even they have limitations (the camera cannot be everywhere), and transcriptions always benefit from any additional commentary provided by an observer.

但是  ，录音带并不能解决所有语言学家的问题。言语常常不清晰，模棱两可。因此，在可能的情况下，录音必须由观察者对参与者的非语言行为以及一般情况加以书面评论进行补充。例如，面部表情可以大大改变所说内容的含义。录像在很大程度上避免了这些问题，但是即使它们也有局限性（摄像机不能无处不在），并且转录总是可以从观察者所提供的任何附加评论中受益。

**F自然段**

Linguists also make great use of structured sessions, in which they systematically ask their informants for utterances that describe certain actions, objects or behaviour. With a bilingual informant, or through use of an interpreter, it is possible to use translation techniques (‘How do you say table in your language?’). A large number of points can be covered in a short time, using interview worksheets and questionnaires. Often, the researcher wishes to obtain information about just a single variable, in which case a restricted set of questions may be used: a particular feature of pronunciation, for example, can be elicited by asking the informant to say a restricted set of words. There are also several direct methods of elicitation, such as asking informants to fill in the blanks in a substitution frame (e.g. /\_\_ see a car), or feeding them the wrong stimulus for correction (‘Is it possible to say I no can see?’).

语言学家还充分利用结构化的会话。在这种会话中，他们系统地要求信息提供者用语言描述某些动作，对象或行为。双语信息提供者的存在或者口译员的使用，使得翻译方法称为可能（“你在你的语言中如何表达“stable”）。使用访谈工作表和问卷调查，可以在短时间内涵盖大量要点。研究人员经常希望获取有关单个变量的信息。在这种情况下，可以使用一组受限的问题：例如，可以通过要求信息提供者说出一组受限的单词来得出发音的特定特征。也有几种直接的启发方法，例如要求信息提供者补完句子（例如我 \_\_看到汽车），或向他们提供错误的刺激以求纠正（“是否可以说I no can see ？）。

**G自然段**

A representative sample of language, compiled for the purpose of linguistic analysis, is known as a corpus. A corpus enables the linguist to make unbiased statements about frequency of usage, and it provides accessible data for the use of different researchers. Its range and size are variable. Some corpora attempt to cover the language as a whole, taking extracts from many kinds of text; others are extremely selective, providing a collection of material that deals only with a particular linguistic feature. The size of the corpus depends on practical factors, such as the time available to collect, process and store the data: it can take up to several hours to provide an accurate transcription of a few minutes of speech. Sometimes a small sample of data will be enough to decide a linguistic hypothesis; by contrast, corpora in major research projects can total millions of words. An important principle is that all corpora, what-ever their size, are inevitably limited in their coverage, and always need to be supplemented by data derived from the intuitions of native speakers of the language, through either introspection or experimentation.

为语言分析目的而编纂的，某种语言具有代表性的样本被称为语料库。语料库使语言学家能够对使用频率做出公正的论述，并提供可访问的数据供不同研究人员使用。其范围和大小是可变的。一些语料库尝试从多种文本中摘录，以涵盖整个语言。其他的则是非常有选择性的，提供了仅涉及特定语言特点的材料的集合。语料库的大小取决于实际因素，例如可用于收集，处理和存储数据的时间：可能需要花费几个小时才能准确记录几分钟的语音。有时，少量的数据样本就足以决定语言假设。相比之下，大型研究项目中的语料库可以涵盖数百万个单词。一个重要的原则是，无论大小如何，所有语料库的覆盖范围都不可避免地受到限制，并且总是需要通过内省或实验，从母语人士的直觉中获得的数据进行补充。

## 4Test4

### [4 Test 4Passage 1 运动员成绩提升 How much higher? How much faster?](http://www.laokaoya.com/21583.html)

**剑4 Test 4 Passage 1**

**第1自然段**

Since the early years of the twentieth century, when the International Athletic Federation began keeping records, there has been a steady improvement in how fast athletes run, how high they jump and how far they are able to hurl massive objects, them-selves included, through space. For the so-called power events – that require a relatively brief, explosive release of energy, like the 100-metre sprint and the long jump – times and distances have improved ten to twenty per cent. In the endurance events the results have been more dramatic. At the 1908 Olympics, John Hayes of the U.S. team ran a marathon in a time of 2:55:18. In 1999, Morocco’s Khalid Khannouchi set a new world record of 2:05:42, almost thirty per cent faster.

从20世纪初期开始，根据国际田径联合会（International Athletic Federation）的记录，运动员的跑动速度，跳的高度，以及穿过空间扔大物体（包括他们自己）的距离一直在稳步提高。对于所谓的力量项目（需要相对短暂的爆炸性能量释放，例如100米的短跑和跳远），时间和距离增加了10％至20％。在耐力赛中，结果更加引人注目。在1908年奥运会上，美国队的约翰·海斯（John Hayes）用2:55:18的时间完成了马拉松比赛。 1999年，摩洛哥的Khalid Khannouchi 创造了2:05:42 的新世界纪录，快了近30％。

**第2自然段**

No one theory can explain improvements in performance, but the most important factor has been genetics. ‘The athlete must choose his parents carefully,’ says Jesus Dapena, a sports scientist at Indiana University, invoking an oftcited adage. Over the past century, the composition of the human gene pool has not changed appreciably, but with increasing global participation in athletics – and greater rewards to tempt athletes – it is more likely that individuals possessing the unique complement of genes for athletic performance can be identified early. ‘Was there someone like [sprinter] Michael Johnson in the 1920s?’ Dapena asks. ‘I’m sure there was, but his talent was probably never realised.’

没有任何一种理论可以解释表现的提升，但是最重要的因素是遗传学。印第安纳大学体育科学家耶稣· 达佩纳（Jesus Dapena）引用了这句常说的话，说：“运动员必须谨慎选择父母。” 在过去的一个世纪中，人类基因库的组成文章来自老烤鸭雅思并没有发生明显变化，但是随着全球对体育运动的参与不断增加，以及对运动员的奖励越来越多，人们更有可能在早期识别出拥有独特运动表现基因的个体。“在1920年代有没有像[短跑运动员]迈克尔·约翰逊这样的人？” Dapena 问。“我敢肯定有，但他的才华可能从未实现。”

**第3自然段**

Identifying genetically talented individuals is only the first step. Michael Yessis, an emeritus professor of Sports Science at California State University at Fullerton, maintains that ‘genetics only determines about one third of what an athlete can do. But with the right training we can go much further with that one third than we’ve been going.’ Yessis believes that U.S. runners, despite their impressive achievements, are ‘running on their genetics’. By applying more scientific methods, ‘they’re going to go much faster’. These methods include strength training that duplicates what they are doing in their running events as well as plyometrics, a technique pioneered in the former Soviet Union.

识别具有遗传天赋的人只是第一步。富勒顿加利福尼亚州州立大学体育科学系名誉教授Michael Yessis 认为“遗传学只能决定一个人表现的三分之一”。但是，通过正确的训练，我们可以比现在更加充分的利用这三分之一。Yessis 认为，尽管美国运动员取得了令人瞩目的成就，但他们仍在“依靠自己的基因”。通过采用更科学的方法，“他们将变得更快”。这些方法包括力量训练（可复制他们在跑步中所做的事情）以及测距法，这是前苏联开创的技术。

**第4自然段**

Whereas most exercises are designed to build up strength or endurance, plyometrics focuses on increasing power – the rate at which an athlete can expend energy. When a sprinter runs, Yessis explains, her foot stays in contact with the ground for just under a tenth of a second, half of which is devoted to landing and the other half to pushing off. Plyometric exercises help athletes make the best use of this brief interval.

尽管大多数练习都是为了增强力量或耐力而设计的，但平面测距法则着重于提高功率-运动员消耗能量的速度。Yessis 解释说，当短跑运动员奔跑时，她的脚与地面保持接触的时间不到十分之一秒，其中一半用于着陆，另一半用于推开。体能锻炼可以帮助运动员充分利用这一短暂的时间。

**第5自然段**

Nutrition is another area that sports trainers have failed to address adequately. ‘Many athletes are not getting the best nutrition, even through supplements,’ Yessis insists. Each activity has its own nutritional needs. Few coaches, for instance, understand how deficiencies in trace minerals can lead to injuries.

营养是运动教练未能充分注意的另一个领域。Yessis 坚持说：“ 即使通过补品，许多运动员也无法获得最好的营养。” 每种活动都有其自身的营养需求。例如，很少有教练了解微量矿物质的缺乏如何导致伤害。

**第6自然段**

Focused training will also play a role in enabling records to be broken. ‘If we applied the Russian training model to some of the outstanding runners we have in this country,’ Yessis asserts, ‘they would be breaking records left and right.’ He will not predict by how much, however: ‘Exactly what the limits are it’s hard to say, but there will be increases even if only by hundredths of a second, as long as our training continues to improve.’

重点训练在帮助打破记录上也发挥作用。Yessis 断言：“如果我们将俄罗斯的训练模式应用于该国一些杰出的跑步者，他们将随意打破纪录。” 但是，他不会预测能提升多少：“很难说到底有什么限制，但是只要我们的训练持续改进，即使只有百分之一秒，成绩也会有所增加。”

**第7自然段**

One of the most important new methodologies is biomechanics, the study of the body in motion. A biomechanic films an athlete in action and then digitizes her performance, recording the motion of every joint and limb in three dimensions. By applying Newton’s laws to these motions, ‘we can say that this athlete’s run is not fast enough; that this one is not using his arms strongly enough during take-off,’ says Dapena, who uses these methods to help high jumpers. To date, however, biomechanics has made only a small difference to athletic performance.

生物力学是最重要的新方法之一，它对运动中的人体进行研究。生物力学家拍摄运动员的动作，然后将她的表现的数字化，在三维空间中记录每一个关节和肢体的运动。通过将牛顿定律应用于这些运动，Dapena 说，“我们可以说这位运动员跑地还不够快。他在起跳时没有充分使用双臂。” 他使用这些方法帮助跳高运动员。然而，迄今为止，生物力学对运动成绩的影响很小。

**第8自然段**

Revolutionary ideas still come from the athletes themselves. For example, during the 1968 Olympics in Mexico City, a relatively unknown high jumper named Dick Fosbury won the gold by going over the bar backwards, in complete contradiction of all the received high-jumping wisdom, a move instantly dubbed the Fosbury flop. Fosbury himself did not know what he was doing. That understanding took the later analysis of biomechanics specialists, who put their minds to comprehending something that was too complex and unorthodox ever to have been invented through their own mathematical simulations. Fosbury also required another element that lies behind many improvements in athletic performance: an innovation in athletic equipment. In Fosbury’s case, it was the cushions that jumpers land on. Traditionally, high jumpers would land in pits filled with sawdust. But by Fosbury’s time, sawdust pits had been replaced by soft foam cushions, ideal for flopping.

革命性的想法仍然来自运动员本身。例如，在1968年墨西哥城奥运会期间，一个相对不为人所知的跳高运动员Dick Fosbury通过向后翻越标杆赢得了金牌，这与当时所有的跳高经验相反。这种动作立即被命名为Fosbury翻越。福斯伯里本人不知道自己在做什么。后来生物力学专家进行了分析才得以理解。他们利用自己的头脑去分析一些太过复杂和离经叛道，以至于无法通过数字模拟来发明的东西。Fosbury也需要另外一个导致许多运动员成绩提升的因素：运动器材的创新。就Fosbury而言，它是跳高运动员落下的垫子。传统上，跳高运动员会落在充满木屑的坑中。但是到了Fosbury时代，木屑坑被柔软的泡沫垫所取代，非常适合摔在上面。

**第9自然段**

In the end, most people who examine human performance are humbled by the resourceful-ness of athletes and the powers of the human body. ‘Once you study athletics, you learn that it’s a vexingly complex issue,’ says John S. Raglin, a sports psychologist at Indiana University. ‘Core performance is not a simple or mundane thing of higher, faster, longer. So many variables enter into the equation, and our understanding in many cases is fundamental. We’ve got a long way to go.’ For the foreseeable future, records will be made to be broken.

最后，大多数观察人类表现的人面对运动员的机智和人体的力量都会感到谦卑。印第安纳大学的运动心理学家约翰· 拉格林说：“一旦学习了体育，就会发现这是一个非常复杂的问题。” “核心表现不是更高，更快，更远这种简单而平凡的事情。这么多变量进入方程式，在许多情况下我们的理解十分基础。我们还有很长的路要走。在可预见的将来，记录将被打破。

### [4 Test 4Passage 2 考古学的本质与目的 The Nature and Aims of Archaeology](http://www.laokaoya.com/21651.html)

剑4 Test 4 Passage 2

**第1自然段**

Archaeology is partly the discovery of the treasures of the past, partly the careful work of the scientific analyst, partly the exercise of the creative imagination. It is toiling in the sun on an excavation in the Middle East, it is working with living Inuit in the snows of Alaska, and it is investigating the sewers of Roman Britain. But it is also the painstaking task of interpretation, so that we come to understand what these things mean for the human story. And it is the conservation of the world’s cultural heritage against looting and careless harm.

考古学部分是对过去珍宝的发现，部分是科学分析师的精心工作，部分是对创造性想象力的锻炼。它在阳光下的中东发掘场中辛勤工作，在阿拉斯加的雪中与因纽特人生活在一起，并且正在研究罗马时期英国的下水道。但这也是一项艰巨的解释任务。它让我们开始了解这些东西对人类故事的意义，保护世界文化遗产免遭掠夺和粗心大意的伤害。

**第2自然段**

Archaeology, then, is both a physical activity out in the field, and an intellectual pursuit in the study or laboratory. That is part of its great attraction. The rich mixture of danger and detective work has also made it the perfect vehicle for fiction writers and film-makers, from Agatha Christie with Murder in Mesopotamia to Stephen Spielberg with Indiana Jones. However far from reality such portrayals are, they capture the essential truth that archaeology is an exciting quest- the quest for knowledge about ourselves and our past.

因此，考古学既是野外的体力活动，又是研究或实验室中的智力追求。这是其巨大吸引力的一部分。从阿加莎·克里斯蒂（Agatha Christie）的美索不达米亚的谋杀案到斯蒂芬·斯皮尔伯格（Stephen Spielberg）的印第安纳·琼斯（Indiana Jones），作为文章来自老烤鸭雅思危险和侦探工作的丰富混合体，它已经成为小说作家和电影制片人的理想工具。无论这些描述与现实相距多么远，它们都抓住了这一本质，即考古学是令人激动的探索，是对自己和我们过去的追求。

**第3自然段**

But how does archaeology relate to disciplines such as anthropology and history, that are also concerned with the human story? Is archaeology itself a science? And what are the responsibilities of the archaeologist in today’s world?

但是考古学如何与同样跟人类历史相关的人类学和历史学等学科联系起来？考古本身就是一门科学吗？考古学家在当今世界的职责是什么？

**第4自然段**

Anthropology, at its broadest, is the study of humanity – our physical characteristics as animals and our unique non-biological characteristics that we call culture. Culture in this sense includes what the anthropologist, Edward Tylor, summarised in 1871 as ‘knowledge, belief, art, morals, custom and any other capabilities and habits acquired by man as a member of society’. Anthropologists also use the term ‘culture’ in a more restricted sense when they refer to the ‘culture’ of a particular society, meaning the non-biological characteristics unique to that society, which distinguish it from other societies. Anthropology is thus a broad discipline – so broad that it is generally broken down into three smaller disciplines: physical anthropology, cultural anthropology and archaeology.

最广泛的人类学是对人类的研究-我们作为动物的身体特征以及我们称为文化的独特非生物学特征。从这个意义上讲，文化包括人类学家爱德华·泰勒（Edward Tylor）在1871年所概括的“知识，信仰，艺术，道德，风俗以及人类作为社会成员获得的任何其他能力和习惯”。人类学家在提及特定社会的“文化”时，也使用了更为狭义的术语“文化”，这意味着该社会所独有的非生物特征，将其与其他社会区分开来。因此，人类学是一门广泛的学科-如此广泛，以至于通常将其细分为三个较小的学科：自然人类学，文化人类学和考古学。

**第5自然段**

Physical anthropology, or biological anthropology as it is also called, concerns the study of human biological or physical characteristics and how they evolved. Cultural anthropology – or social anthropology – analyses human culture and society. Two of its branches are ethnography (the study at first hand of individual living cultures) and ethnology (which sets out to compare cultures using ethnographic evidence to derive general principles about human society).

物理人类学或生物学人类学也涉及对人类生物学或身体特征及其演变方式的研究。文化人类学或社会人类学分析人类文化和社会。它的两个分支是人种志（个人生活文化的第一手研究）和人种学（使用民族志证据比较文化以得出有关人类社会的一般原理）。

**第6自然段**

Archaeology is the ‘past tense of cultural anthropology’. Whereas cultural anthropologists will often base their conclusions on the experience of living within contemporary communities, archaeologists study past societies primarily through their material remains – the buildings, tools, and other artefacts that constitute what is known as the material culture left over from former societies.

考古学是“文化人类学的过去式”。文化人类学家通常会基于在现代社区中的生活经验得出结论，而考古学家则主要通过物质遗骸研究过去的社会-建筑，工具和其他文物构成了先前社会遗留下来的物质文化。

**第7自然段**

Nevertheless, one of the most important tasks for the archaeologist today is to know how to interpret material culture in human terms. How were those pots used? Why are some dwellings round and others square? Here the methods of archaeology and ethnography overlap. Archaeologists in recent decades have developed ‘ethnoarchaeology’, where, like ethnographers, they live among contemporary communities, but with the specific purpose of learning how such societies use material culture – how they make their tools and weapons, why they build their settlements where they do, and so on. Moreover, archaeology has an active role to play in the field of conservation. Heritage studies constitutes a developing field, where it is realised that the world’s cultural heritage is a diminishing resource which holds different meanings for different people.

尽管如此，今天对于考古学家来说最重要的任务之一就是要知道如何以人类的方式来解释物质文化。这些锅是如何使用的？为什么有些房屋是圆形的而其他房屋是方形的？在这里，考古学和人种学的方法重叠。近几十年来，考古学家发展了“民族考古学”，就像民族志学家一样，他们生活在当代社区中，但其特定目的是学习此类社会如何利用物质文化-他们如何制造工具和武器，为什么在他们居住的地方建立定居点等等。此外，考古学在保护领域发挥着积极作用。遗产研究构成了一个发展中的领域，人们意识到世界文化遗产是一种日益减少的资源，对不同的人具有不同的含义。

**第8自然段**

If, then, archaeology deals with the past, in what way does it differ from history? In the broadest sense, just as archaeology is an aspect of anthropology, so too is it a part of history – where we mean the whole history of humankind from its beginnings over three million years ago. Indeed, for more than ninety-nine per cent of that huge span of time, archaeology- the study of past material culture – is the only significant source of information. Conventional historical sources begin only with the introduction of written records around 3000 BC in western Asia, and much later in most other parts of the world.

如果说考古学处理的是过去，与历史有何不同？从最广泛的意义上说，就像考古学是人类学的一个方面一样，它也是历史的一部分-在这里，我们指的是人类从开始到现在300多万年的整体历史。确实，在那巨大的时间跨度中，超过百分之九十九的考古学是对过去物质文化的研究，是唯一重要的信息来源。传统的历史资料仅始于公元前3000年左右在西亚引入书面记录，而世界上其他地区还要更晚一些。

**第9自然段**

A commonly drawn distinction is between pre-history, i.e. the period before written records -and history in the narrow sense, meaning the study of the past using written evidence. To archaeology, which studies all cultures and periods, whether with or without writing, the distinction between history and pre-history is a convenient dividing line that recognises the importance of the written word, but in no way lessens the importance of the useful information contained in oral histories.

通常会在史前（即书面记录之前的时期）与狭义的历史之间做出区分，这意味着使用书面证据对过去进行研究。对于研究所有文化和时期，无论有无书面形式的考古学来说，历史与史前史之间的区别都是一个方便的分界线，它可以认识到书面文字的重要性，但绝不能减少口述历史中所包含的有用信息的重要性。

**第10自然段**

Since the aim of archaeology is the understanding of humankind, it is a humanistic study, and since it deals with the human past, it is a historical discipline. But it differs from the study of written history in a fundamental way. The material the archaeologist finds does not tell us directly what to think. Historical records make statements, offer opinions and pass judgements. The objects the archaeologists discover, on the other hand, tell us nothing directly in themselves. In this respect, the practice of the archaeologist is rather like that of the scientist, who collects data, conducts experiments, formulates a hypothesis, tests the hypothesis against more data, and then, in conclusion, devises a model that seems best to summarise the pattern observed in the data. The archaeologist has to develop a picture of the past, just as the scientist has to develop a coherent view of the natural world.

由于考古学的目的是对人类的了解，因此它是一门人文主义的研究，并且由于它涉及人类的过去，因此它是一门历史学科。但这在根本上不同于对书面历史的研究。考古学家发现的材料并不能直接告诉我们该怎么想。历史记录作出陈述，提出意见并作出判断。另一方面，考古学家发现的物体本身并没有直接告诉我们。在这方面，考古学家的做法与科学家的做法很像，后者收集数据，进行实验，提出假设，针对更多数据测试假设，然后得出结论，设计出一种似乎最能概括数据中观测到的规律的模型。就像科学家必须对自然世界形成连贯一致的看法一样，考古学家必须对过去进行描绘。

### [4 Test 4Passage 3 医疗资源稀缺的问题 the problem of scare resource](http://www.laokaoya.com/21722.html)

**A部分**

The problem of how health-care resources should be allocated or apportioned, so that they are distributed in both the most just and most efficient way, is not a new one. Every health system in an economically developed society is faced with the need to decide (either formally or informally) what proportion of the community’s total resources should be spent on health-care; how resources are to be apportioned; what diseases and disabilities and which forms of treatment are to be given priority; which members of the community are to be given special consideration in respect of their health needs; and which forms of treatment are the most cost-effective.

应该如何分配医疗资源，以便它们能够以最公正和最有效的方式分配，这不是一个新问题。经济发达社会中的每个卫生系统都必须决定（正式或非正式地）将社区总资源的多少用于医疗保健；如何分配资源；应优先考虑哪些疾病和残疾以及哪种治疗形式；社区哪些成员的健康需求应给予特别考虑；以及哪种治疗方式最具成本效益。

**B部分**

What is new is that, from the 195 Os onwards, there have been certain general changes in outlook about the finitude of resources as a whole and of health-care resources in particular, as well as more specific changes regarding the clientele of health-care resources and the cost to the community of those resources. Thus, in the 1950s and 1960s, there emerged an awareness in Western societies that resources for the provision of fossil fuel energy were finite and exhaustible and that the capacity of nature or the environment to sustain economic development and population was also finite. In other words, we became aware of the obvious fact that there were ‘limits to growth’. The new consciousness that there were also severe limits to health-care resources was part of this general revelation of the obvious. Looking back, it now seems quite incredible that in the national health systems that emerged in many countries in the years immediately after the 1939-45 World War, it was assumed without question that all the basic health needs of any community could be satisfied, at least in principle; the ‘invisible hand’ of economic progress would provide.

全新的是，从20世纪50年代起关于整体资源的有限性，尤其是医疗资源的局限性，前景发生了某些整体变化，同时在医疗资源用户和这些资源的社区成本上也有了具体的变化。因此，在20世纪50年代和20世纪60年代，西方社会文章来自老烤鸭雅思开始意识到提供化石燃料能源的资源是有限的和可耗尽的，自然或环境维持经济发展和人口的能力也是有限的。换句话说，我们意识到了一个明显的事实，即“增长存在限制”。医疗资源也存在严重限制，这种新的认识是这一普遍启示的一部分。现在回想起来，令人难以置信的是，在1939-45年世界大战之后的许多年里不少国家出现的全国卫生系统至少原则上毫无疑问地假定，任何社区的所有基本医疗需求都可以得到满足。 经济进步的“看不见的手”将提供这些资源。

**C部分**

However, at exactly the same time as this new realisation of the finite character of health-care resources was sinking in, an awareness of a contrary kind was developing in Western societies: that people have a basic right to health-care as a necessary condition of a proper human life. Like education, political and legal processes and institutions, public order, communication, transport and money supply, health-care came to be seen as one of the fundamental social facilities necessary for people to exercise their other rights as autonomous human beings. People are not in a position to exercise personal liberty and to be self-determining if they are poverty-stricken, or deprived of basic education, or do not live within a context of law and order. In the same way, basic health-care is a condition of the exercise of autonomy.

但是，正在人们逐渐意识到医疗资源有限这一特点的时候，西方社会正在形成一种相反的认识：人们拥有基本的医疗权利是进行正常人类生活的基本条件。 就像教育，政治和法律程序机构，公共秩序，通讯，运输和货币供应一样，医疗保健已被视为人们作为独立人行使其他权利所必需的基本社会设施之一。如果人们陷入贫困，被剥夺了基础教育或没有生活在法律和秩序的环境中，他们将无权行使人身自由和自决权。同样，基本医疗保健是行使自主权的条件。

**D部分**

Although the language of ‘rights’ sometimes leads to confusion, by the late 1970s it was recognised in most societies that people have a right to health-care (though there has been considerable resistance in the United States to the idea that there is a formal right to health-care). It is also accepted that this right generates an obligation or duty for the state to ensure that adequate health-care resources are provided out of the public purse. The state has no obligation to provide a health-care system itself, but to ensure that such a system is provided. Put another way, basic health-care is now recognised as a ‘public good’, rather than a ‘private good’ that one is expected to buy for oneself. As the 1976 declaration of the World Health Organisation put it: ‘The enjoyment of the highest attainable standard of health is one of the fundamental rights of every human being without distinction of race, religion, political belief, economic or social condition.’ As has just been remarked, in a liberal society basic health is seen as one of the indispensable conditions for the exercise of personal autonomy.

尽管“权利”一词有时会引起混淆，但到20世纪70年代后期，大多数社会已经认识到人们享有医疗保健的权利（尽管在美国，人们对拥有医疗服务正式权利的观念持相当抵制的态度）。人们也接受这项权利对国家产生了义务，以确保从公共财政中提供足够的医疗资源。国家没有义务自行提供医疗保健系统，但有义务确保这种系统的存在。换句话说，基本医疗保健现在被认为是一种“公共物品”，而不是人们期望自己购买的“私人物品”。正如世界卫生组织1976年的宣言所指出的那样：“享受可获得的最高健康标准是每个人的基本权利之一，不分种族，宗教，政治信仰，经济或社会条件。” 如前所述，在自由社会中，基本健康被视为行使个人自主权不可或缺的条件之一。

**E部分**

Just at the time when it became obvious that health-care resources could not possibly meet the demands being made upon them, people were demanding that their fundamental right to health-care be satisfied by the state. The second set of more specific changes that have led to the present concern about the distribution of health-care resources stems from the dramatic rise in health costs in most OECD1 countries, accompanied by large-scale demographic and social changes which have meant, to take one example, that elderly people are now major (and relatively very expensive)consumers of health-care resources. Thus in OECD countries as a whole, health costs increased from 3.8% of GDP2 in 1960 to 7% of GDP in 1980, and it has been predicted that the proportion of health costs to GDP will continue to increase. (In the US the current figure is about 12% of GDP, and in Australia about 7.8% of GDP.)

就在医疗保健资源可能无法满足对人们对其要求这一现象变得非常明显的时候，人们要求国家满足其基本的医疗保健权。第二组更具体的变化引起了当前对医疗资源分配的担忧，这是由于大多数经合组织国家（OECD）的医疗成本急剧上升，同时伴随着大规模的人口和社会变化。举例来说，这意味着老年人现在是医疗资源的主要（且相对非常​​昂贵）的消费者。这样，经合组织国家作为一个整体，医疗费用从1960年占国内生产总值的3.8％上升到1980年占国内生产总值的7％。已经有预测指出，医疗成本占GDP的比重将继续增加。（在美国，当前数字为大约GDP的12％，在澳大利亚，约占GDP的7.8％。）

As a consequence, during the 1980s a kind of doomsday scenario (analogous to similar doomsday extrapolations about energy needs and fossil fuels or about population increases) was projected by health administrators, economists and politicians. In this scenario, ever-rising health costs were matched against static or declining resources.

结果，在20世纪80年代末，卫生行政人员，经济学家和政治家预测了一种世界末日情景（类似于关于能源需求和化石燃料或人口增长的世界末日推断）。在这种情况下，不断增长的医疗费用与静态或下降的资源相对。

# 五

## 5Test1

### [5 Test 1Passage 1 约翰逊的字典 Johnson’s Dictionary](http://www.laokaoya.com/21815.html)

**第一自然段**

For the century before Johnson’s Dictionary was published in 1775, there had been concern about the state of the English language. There was no standard way of speaking or writing and no agreement as to the best way of bringing some order to the chaos of English spelling. Dr Johnson provided the solution.

在1775年《约翰逊词典》出版之前的一个世纪，人们一直对英语的状态感到担忧。没有标准的口语或写作方式，在整合混乱英语拼写的最好方法方面也没有共识。约翰逊博士提供了解决方案。

**第二自然段**

There had, of course, been dictionaries in the past, the first of these being a little book of some 120 pages, compiled by a certain Robert Cawdray, published in 1604 under the title A Table Alphabeticall ‘of hard usual English words’. Like the various dictionaries that came after it during the seventeenth century, Cawdray’s tended to concentrate on ‘scholarly’ words; one function of the dictionary was to enable its student to convey an impression of fine learning.

当然，过去也有字典，其中第一本是约120页的小书，由某位罗伯特·考德瑞（Robert Cawdray）汇编而成，于1604年出版，标题为“ A table Alphabeticall of hard usual English words”。就像十七世纪在它之后出现的各种字典一样，考德瑞的字典倾向于集中在“学者”的单词上。词典的一个功能是使它的学生传达良好学习的印象。

**第三自然段**

Beyond the practical need to make order out of chaos, the rise of dictionaries is associated with the rise of the English middle class, who were anxious to define and circumscribe the various worlds to conquer- lexical as well as social and commercial. It is highly appropriate that Dr Samuel Johnson, the very model of an eighteenth-century literary man, as famous in his own time as in ours, should have published his Dictionary at the very beginning of the heyday of the middle class.

除了摆脱混乱的实际需要外，词典的兴起与英国中产阶级的兴起有关，他们渴望定义和限制各种领域以方便征服，如词汇，社会和商业。塞缪尔·约翰逊博士（Samuel Johnson）是一位18世纪文学家的楷模，在他自己的时代和我们这个时代一样著名。因此，由他在中产阶级鼎盛时期刚刚开始的时候出版自己的字典十分合适。

**第四自然段**

Johnson was a poet and critic who raised common sense to the heights of genius. His approach to the problems that had worried writers throughout the late seventeenth and early eighteenth centuries was intensely practical. Up until his time, the task of producing a dictionary on such a large scale had seemed impossible without the establishment of an academy to make decisions about right and wrong usage. Johnson decided he did not need an academy to settle arguments about language; he would write a dictionary himself; and he would do it single-handed. Johnson signed the contract for the Dictionary with the bookseller Robert Dosley at a breakfast held at the Golden Anchor Inn near Holborn Bar on 18 June 1764. He was to be paid ￡1,575 in instalments, and from this he took money to rent 17 Gough Square, in which he set up his ‘dictionary workshop’.

约翰逊是一位诗人和评论家，他将常识提升到天才般的高度。在整个17世纪末和18世纪初期，他处理一直困扰着作家的问题的方法非常实用。直到他的时代，如果不建立一个学术机构文章来自老烤鸭雅思来决定正确与错误的用法，那么大规模制作词典的任务似乎是不可能的。约翰逊认为他不需要一所学院来解决有关语言的争论。他会自己写出字典，而且十分轻松随意。约翰逊于1764 年6 月18日在Holborn Bar附近Golden Anchor Inn举行的早餐会上与书商Robert Dosley签署了字典的合同。他将获得1575 英镑的分期付款。他用这笔钱租了Gough Square 17号，在那里他建立了自己的“词典作坊” 。

**第五自然段**

James Boswell, his biographer, described the garret where Johnson worked as ‘fitted up like a counting house’ with a long desk running down the middle at which the copying clerks would work standing up. Johnson himself was stationed on a rickety chair at an ‘old crazy deal table’ surrounded by a chaos of borrowed books. He was also helped by six assistants, two of whom died whilst the Dictionary was still in preparation.

他的传记作者詹姆斯·博斯韦尔（James Boswell）表示，约翰逊工作的阁楼装修的像会计室一样，中间放着一张长桌子，抄写的人员站在旁边工作。约翰逊本人坐在一张“旧交易桌”旁边摇摇欲坠的椅子上，周围是一堆胡乱堆放的借来的书。他还得到了六名助手的帮助，其中两名在《字典》仍在准备中时丧生。

**第六自然段**

The work was immense; filling about eighty large notebooks (and without a library to hand), Johnson wrote the definitions of over 40,000 words, and illustrated their many meanings with some 114,000 quotations drawn from English writing on every subject, from the Elizabethans to his own time. He did not expect to achieve complete originality. Working to a deadline, he had to draw on the best of all previous dictionaries, and to make his work one of heroic synthesis. In fact, it was very much more. Unlike his predecessors, Johnson treated English very practically, as a living language, with many different shades of meaning. He adopted his definitions on the principle of English common law-according to precedent. After its publication, his Dictionary was not seriously rivalled for over a century.

这项工作是巨大的。约翰逊填满了大约80个大笔记本（没有可用的图书馆），写下了40,000多个单词的定义，并从伊丽莎白女王时代到他自己时代关于各个主题的英文写作中引述了114,000句话，说明了它们的许多含义。他没想过完全原创。由于最后期限的存在，他不得不借鉴以前所有字典中的精华，并使他的作品成为集大成者。实际上，还远远不止这些。与他的前任不同，约翰逊非常实用地将英语视为一种活着的语言，具有多种不同的含义。他在英国普通法依据先例的原则之上，提出自己的定义。出版后，他的字典在一个多世纪中都没有受到严重的竞争。

**第七自然段**

After many vicissitudes the Dictionary was finally published on 15 April 1775. It was instantly recognised as a landmark throughout Europe. ‘This very noble work,’ wrote the leading Italian lexicographer, ‘will be a perpetual monument of Fame to the Author, an Honour to his own Country in particular, and a general Benefit to the republic of Letters throughout Europe.’ The fact that Johnson had taken on the Academies of Europe and matched them (everyone knew that forty French academics had taken forty years to produce the first French national dictionary) was cause for much English celebration.

经过多次变动后，该词典终于在1775年4月15日出版。它一开始就被整个欧洲当成一座里程碑。一位著名的意大利字典作者写道：“这项非常高贵的作品将成为作者声誉的永恒丰碑，成为他自己国家的容易，并为整个欧洲的文字带来普遍的好处。“ 约翰逊完全比得上欧洲的学者（每个人都知道四十名法国学者用了四十年时间才完成第一本法语字典），这一事实值得英国庆祝。

**第八自然段**

Johnson had worked for nine years, ‘with little assistance of the learned, and without any patronage of the great; not in the soft obscurities of retirement, or under the shelter of academic bowers, but amidst inconvenience and distraction, in sickness and in sorrow’. For all its faults and eccentricities his two-volume work is a masterpiece and a landmark in his own words, ‘setting the orthography, displaying the analogy, regulating the structures, and ascertaining the significations of English words’. It is the cornerstone of Standard English, an achievement which, in James Boswell’s words, ‘conferred stability on the language of his country’.

约翰逊工作了九年，在这期间“很少有学识渊博的人帮助，也没有大人物的支持。不像退休后悠闲的生活，也不是在学术阴凉的庇护下，而是生活在不便与烦扰，疾病与悲伤中。尽管有着各种缺点和怪异，但他的两卷作品称得上是杰作和里程碑。用他自己的话说“它确立了拼写体系，展示出类比规则，调节结构，并确定英语单词的含义” 。这是标准英语的基石，用詹姆士·博斯韦尔（James Boswell）的话来说，这一成就“为其国家的语言赋予了稳定” 。

**第九自然段**

The Dictionary, together with his other writing, made Johnson famous and so well esteemed that his friends were able to prevail upon King George Ⅲ to offer him a pension. From then on, he was to become the Johnson of folklore.

《词典》和他的其他著作使约翰逊出名，并受到如此尊敬，以至于他的朋友们能够说服乔治三世国王向他提供退休金。从那时起，他成为Johnson of folklore.

### [5 Test 1Passage 2 Nature or Nurture 服从实验](http://www.laokaoya.com/21911.html)

**自然段A**

A few years ago, in one of the most fascinating and disturbing experiments in behavioural psychology, Stanley Milgram of Yale University tested 40 subjects from all walks of life for their willingness to obey instructions given by a ‘leader’ in a situation in which the subjects might feel a personal distaste for the actions they were called upon to perform. Specifically, Milgram told each volunteer ‘teacher-subject’ that the experiment was in the noble cause of education, and was designed to test whether or not punishing pupils for their mistakes would have a positive effect on the pupils’ ability to learn.

几年前，耶鲁大学的斯坦利·米尔格拉姆（Stanley Milgram）在行为心理学最令人着迷和烦恼的实验之一中，对40名来自各行各业的受试者进行了测试，以了解他们在特定情景下是否愿意服从“领导者”的指示。该情境中，他们可能对自己被要求所做的事情感到厌恶。米尔格拉姆特意告诉每个志愿者“老师-受试者”，该实验是出于崇高的教育目的，旨在测试惩罚学生的错误是否会对学生的学习能力产生积极影响。

**自然段B**

Milgram’s experimental set-up involved placing the teacher-subject before a panel of thirty switches with labels ranging from ‘15 volts of electricity (slight shock)’ to ‘450 volts (danger – severe shock)’ in steps of 15 volts each. The teacher-subject was told that whenever the pupil gave the wrong answer to a question, a shock was to be administered, beginning at the lowest level and increasing in severity with each successive wrong answer. The supposed ‘pupil’ was in reality an actor hired by Milgram to simulate receiving the shocks by emitting a spectrum of groans, screams and writhings together with an assortment of statements and expletives denouncing both the experiment and the experimenter. Milgram told the teacher-subject to ignore the reactions of the pupil, and to administer whatever level of shock was called for, as per the rule governing the experimental situation of the moment.

米尔格拉姆（Milgram）的实验设置如下：将充当教师的志愿者放置在由30个开关组成的面板之前，每个开关的标签从“ 15伏特（轻微电击）到450伏特（危险-严重电击）”，每步15伏。老师被告知，每当学生对一个问题给出错误的答案时，他们要对其实行电击。电击文章来自老烤鸭雅思从最低水平开始，随着连续回答错误而加大电量。“学生”其实是现实中的一名演员，米尔格拉姆雇他来模拟受到电击后的反应。他会呻吟，尖叫，扭曲身体，并用各种各样的词汇咒骂该实验和实验者。米尔格拉姆告诉老师忽略学生的反应，严格按照实验对当下情景的规定实行电击，而不管其当量如何。

**自然段C**

As the experiment unfolded, the pupil would deliberately give the wrong answers to questions posed by the teacher, thereby bringing on various electrical punishments, even up to the danger level of 300 volts and beyond. Many of the teacher-subjects balked at administering the higher levels of punishment, and turned to Milgram with questioning looks and/or complaints about continuing the experiment. In these situations, Milgram calmly explained that the teacher-subject was to ignore the pupil’s cries for mercy and carry on with the experiment. If the subject was still reluctant to proceed, Milgram said that it was important for the sake of the experiment that the procedure be followed through to the end. His final argument was, ‘You have no other choice. You must go on.’ What Milgram was trying to discover was the number of teacher-subjects who would be willing to administer the highest levels of shock, even in the face of strong personal and moral revulsion against the rules and conditions of the experiment.

随着实验的进行，学生会故意对老师提出的问题给出错误的答案，从而带来各种电击，甚至达到危险的300伏以及更高的水平。许多充当老师的实验对象执行更高级别的惩罚犹豫不决，带着疑问的表情看向米尔格拉姆，或者抱怨继续执行实验。在这种情况下，米尔格拉姆平静地解释说，老师应该忽略学生的求情，并继续进行实验。如果受试者仍然不愿继续，米尔格拉姆会说，为了实验能够成功，从头到尾遵守程序非常重要。他的最后会说：“你别无选择。你必须继续”。米尔格拉姆试图发现的是，即使面对个人和道德上对实验规则的强烈反感，有多少充当老师的实验对象愿意释放最高级别的电击。

**自然段D**

Prior to carrying out the experiment, Milgram explained his idea to a group of 39 psychiatrists and asked them to predict the average percentage of people in an ordinary population who would be willing to administer the highest shock level of 450 volts. The overwhelming consensus was that virtually all the teacher-subjects would refuse to obey the experimenter. The psychiatrists felt that ‘most subjects would not go beyond 150 volts’ and they further anticipated that only four per cent would go up to 300 volts. Furthermore, they thought that only a lunatic fringe of about one in 1,000 would give the highest shock of 450 volts.

在进行实验之前，米尔格拉姆向一组39位精神科医生解释了他的想法，并要求他们预测愿意释放450伏最高电击水平的人在普通人群所占的平均比例。压倒性的共识是，几乎所有充当老师的实验对象都会拒绝服从实验者。精神科医生认为“大多数受试者的电压不会超过150伏”，他们进一步预计只有4％的人会愿意将电压会升至300伏。此外，他们认为1000个人中才会有一个疯子愿意释放450伏的最高电击。

**自然段E**

What were the actual results? Well, over 60 per cent of the teacher-subjects continued to obey Milgram up to the 450-volt limit! In repetitions of the experiment in other countries, the percentage of obedient teacher-subjects was even higher, reaching 85 per cent in one country. How can we possibly account for this vast discrepancy between what calm, rational, knowledgeable people predict in the comfort of their study and what pressured, flustered, but cooperative ‘teachers’ actually do in the laboratory of real life?

实际结果是什么？好吧，超过60％的受试者继续服从米尔格拉姆（Milgram）将电压升至450伏的极限！在其他国家的重复实验中，遵从指令的受试者的比例甚至更高，在一个国家中达到了85％。我们该如何解释这种冷静，理性，有知识的人们在他们舒适的书房中所做出的预测，与在现实的实验室中受到压迫，慌张但合作的“老师们”实际行为之间的巨大差异？

**自然段F**

One’s first inclination might be to argue that there must be some sort of built-in animal aggression instinct that was activated by the experiment, and that Milgram’s teacher-subjects were just following a genetic need to discharge this pent-up primal urge onto the pupil by administering the electrical shock. A modern hard-core sociobiologist might even go so far as to claim that this aggressive instinct evolved as an advantageous trait, having been of survival value to our ancestors in their struggle against the hardships of life on the plains and in the caves, ultimately finding its way into our genetic make-up as a remnant of our ancient animal ways.

一个人可能一开始倾向于争辩，实验一定激活了某种内在的动物侵略本能。而米尔格拉姆的实验对象只是遵循基因的需要，将这种压抑的原始冲动通过实行电击传递给学生。现代核心社会生物学家甚至可能声称这种侵略性的本能是作为一种有利特质进化出来的。在我们的祖先在平原上和山洞里与艰难生活斗争时，它具有生存价值，并最终作为我们古代动物生活方式的残余而进入我们的基因结构中。

**自然段G**

An alternative to this notion of genetic programming is to see the teacher-subjects’ actions as a result of the social environment under which the experiment was carried out. As Milgram himself pointed out, ‘Most subjects in the experiment see their behaviour in a larger context that is benevolent and useful to society – the pursuit of scientific truth. The psychological laboratory has a strong claim to legitimacy and evokes trust and confidence in those who perform there. An action such as shocking a victim, which in isolation appears evil, acquires a completely different meaning when placed in this setting.’

遗传编码概念的另一种解释是，将充当教师的实验对象的行为视为进行实验的社会环境的结果。正如米尔格拉姆本人指出的那样：“实验中的大多数受试者将他们的行为放在一个对社会有益和有用的更大环境中看待-追求科学真理。心理实验室本身具有强烈的合法性，并激发在其中行动的人们的信任和信心。单独看起来很邪恶的行为，例如电击受害者，置于此环境中时则会获得完全不同的含义。”

**自然段H**

Thus, in this explanation the subject merges his unique personality and personal and moral code with that of larger institutional structures, surrendering individual properties like loyalty, self-sacrifice and discipline to the service of malevolent systems of authority.

因此，在这种解释中，实验对象将其独特的人格，以及个人和道德准则与更大的制度结构相结合，从而将忠诚，自我牺牲和纪律等个人特质屈服于恶意的权威系统。

**自然段I**

Here we have two radically different explanations for why so many teacher-subjects were willing to forgo their sense of personal responsibility for the sake of an institutional authority figure. The problem for biologists, psychologists and anthropologists is to sort out which of these two polar explanations is more plausible. This, in essence, is the problem of modern sociobiology – to discover the degree to which hard-wired genetic programming dictates, or at least strongly biases, the interaction of animals and humans with their environment, that is, their behaviour. Put another way, sociobiology is concerned with elucidating the biological basis of all behaviour.

这样一来，我们就有了两种截然不同的解释，说明为什么这么多的实验对象为了机构权威而愿意放弃他们的个人责任感。对于生物学家，心理学家和人类学家来说，问题是要找出这两种极端解释中哪一个更合理。这在本质上是现代社会生物学的问题-发现基因编码的支配程度，或至少是强烈的偏见，动物和人类与环境的相互作用，也就是他们的行为。换句话说，社会生物学与阐明所有行为的生物基础有关。

### [5 Test 1Passage 3 环境问题的真相 The truth about the environment](http://www.laokaoya.com/22097.html)

**第1段**

For many environmentalists, the world seems to be getting worse. They have developed a hit-list of our main fears: that natural resources are running out; that the population is ever growing, leaving less and less to eat; that species are becoming extinct in vast numbers, and that the planet’s air and water are becoming ever more polluted.

对于许多环保主义者来说，世界似乎正在​​恶化。他们已经列出了我们主要担心的清单：自然资源正在枯竭；人口在不断增长，吃得越来越少；物种正在大量灭绝，并且地球的空气和水被污染的越来越多。

**第2段**

But a quick look at the facts shows a different picture. First, energy and other natural resources have become more abundant, not less so, since the book ‘The Limits to Growth’ was published in 1972 by a group of scientists. Second, more food is now produced per head of the world’s population than at any time in history. Fewer people are starving. Third, although species are indeed becoming extinct, only about 0.7% of them are expected to disappear in the next 50 years, not 25-50%, as has so often been predicted. And finally, most forms of environmental pollution either appear to have been exaggerated, or are transient – associated with the early phases of industrialisation and therefore best cured not by restricting economic growth, but by accelerating it. One form of pollution – the release of greenhouse gases that causes global warming – does appear to be a phenomenon that is going to extend well into our future, but its total impact is unlikely to pose a devastating problem. A bigger problem may well turn out to be an inappropriate response to it.

但是大概看一眼事实会显示出不同的景象。首先，自从一群科学家于1972年出版了《增长的极限》一书以来，能源和其他自然资源就变得越来越丰富，而不是更少。第二，现在世界上人均生产的粮食比历史上任何时候都要多。有更少的人挨饿。第三，尽管物种确实正在灭绝，但它们之中只有0.7％将在未来50年内消失，而不是像通常所预测的那样消失25-50％。最后，大多数形式的环境污染文章来自老烤鸭雅思要么似乎被夸大，要么只是短期现象-与工业化的早期阶段有关。因此，最好的解决办法不是限制经济增长，而是加速增长。一种形式的污染-导致全球变暖的温室气体的释放-确实是一种将一直延伸到我们未来的现象，但其影响不太可能造成破坏性问题。更大的问题很可能是对它不恰当的回应。

**第3段**

Yet opinion polls suggest that many people nurture the belief that environmental standards are declining and four factors seem to cause this disjunction between perception and reality.

然而民意测验表明，许多人培养出这样的信念，即环境标准正在下降。有四个因素似乎导致了这种感知与现实之间脱节。

**第4段**

One is the lopsidedness built into scientific research. Scientific funding goes mainly to areas with many problems. That may be wise policy, but it will also create an impression that many more potential problems exist than is the case.

一是科学研究中的不平衡。科研资金主要用于存在许多问题的领域。这可能是明智的政策，但也会给人一种印象，那就是存在的潜在问题比实际情况要多得多。

**第5段**

Secondly, environmental groups need to be noticed by the mass media. They also need to keep the money rolling in. Understandably, perhaps, they sometimes overstate their arguments. In 1997, for example, the World Wide Fund for Nature issued a press release entitled: ‘Two thirds of the world’s forests lost forever’. The truth turns out to be nearer 20%.

其次，环保组织需要大众媒体的关注。他们还需要保持资金的流入。可以理解的是，也许他们有时夸大了自己的论点。例如，1997年，世界自然基金会发布了一份新闻稿，标题为：“世界三分之二的森林永远消失了” 。其实才不到20％。

**第6段**

Though these groups are run overwhelmingly by selfless folk, they nevertheless share many of the characteristics of other lobby groups. That would matter less if people applied the same degree of scepticism to environmental lobbying as they do to lobby groups in other fields. A trade organisation arguing for, say, weaker pollution controls is instantly seen as self-interested. Yet a green organisation opposing such a weakening is seen as altruistic, even if an impartial view of the controls in question might suggest they are doing more harm than good.

尽管这些团体绝大多数由无私的人管理，但它们仍具有其他游说团体的许多特征。如果人们对环境游说的怀疑程度与对其他领域的游说团体的怀疑程度相同，那么问题就没那么严重。例如，一个贸易组织主张减弱污染控制会立刻被看作是自私自利的行为。然而，反对这种削弱的绿色组织却被认为是无私的，即使对有关控制的公正看法可能表明它们的行为弊大于利。

**第7段**

A third source of confusion is the attitude of the media. People are clearly more curious about bad news than good. Newspapers and broadcasters are there to provide what the public wants. That, however, can lead to significant distortions of perception. An example was America’s encounter with El Niño in 1997 and 1998. This climatic phenomenon was accused of wrecking tourism, causing allergies, melting the ski-slopes and causing 22 deaths. However, according to an article in the Bulletin of the American Meteorological Society, the damage it did was estimated at US $4 billion but the benefits amounted to some US $19 billion. These came from higher winter temperatures (which saved an estimated 850 lives, reduced heating costs and diminished spring floods caused by meltwaters).

造成混乱的第三个原因是媒体的态度。人们显然对坏消息比对好消息更加好奇。报纸和广播公司提供公众想要的东西。但是，这可能会导致认知的严重失真。一个例子是美国在1997年和1998年遭遇厄尔尼诺的事情。这种气候现象被指控破坏了旅游业，造成了过敏，融化了滑雪坡并造成22人死亡。但是，根据《美国气象学会公报》上的一篇文章，它造成的损失估计为40亿美元，但收益却高达190亿美元。它们来自冬季较高的温度（预计挽救了850条生命，降低了取暖成本，并减少了由融水引发的春季洪水）。

**第8段**

The fourth factor is poor individual perception. People worry that the endless rise in the amount of stuff everyone throws away will cause the world to run out of places to dispose of waste. Yet, even if America’s trash output continues to rise as it has done in the past, and even if the American population doubles by 2100, all the rubbish America produces through the entire 21st century will still take up only one-12,000th of the area of the entire United States.

第四个因素是个人认知能力较差。人们担心，每个人扔掉的东西数量不断增加将导致世界耗尽处置垃圾的地方。但是，即使美国的垃圾产量像过去一样继续增加，即使美国人口到2100年翻了一番，整个21世纪美国生产的所有垃圾仍将只占整个美国面积的12000分之一。

**第9段**

So what of global warming? As we know, carbon dioxide emissions are causing the planet to warm. The best estimates are that the temperatures will rise by 2-3℃ in this century, causing considerable problems, at a total cost of US $5,000 billion.

那么全球变暖又如何呢？众所周知，二氧化碳的排放正在使地球变暖。最好的估计是，本世纪温度将上升2 -3℃ ，造成相当大的问题，损失总计5万亿美元。

**第10段**

Despite the intuition that something drastic needs to be done about such a costly problem, economic analyses clearly show it will be far more expensive to cut carbon dioxide emissions radically than to pay the costs of adaptation to the increased temperatures. A model by one of the main authors of the United Nations Climate Change Panel shows how an expected temperature increase of 2.1 degrees in 2100 would only be diminished to an increase of 1.9 degrees. Or to put it another way, the temperature increase that the planet would have experienced in 2094 would be postponed to 2100.

尽管直觉上需要对这样一个代价高昂的问题采取一些大动作，但经济分析清楚地表明，从根本上减少二氧化碳的排放要比为适应升高的温度付出更为昂贵的代价。联合国气候变化小组主要作者之一的模型显示，预计在2100年升高的2.1度只会被削减到升高1.9度。换句话说，地球在2094年经历的温度增长将被推迟到2100年。

**第11段**

So this does not prevent global warming, but merely buys the world six years. Yet the cost of reducing carbon dioxide emissions, for the United States alone, will be higher than the cost of solving the world’s single, most pressing health problem: providing universal access to clean drinking water and sanitation. Such measures would avoid 2 million deaths every year, and prevent half a billion people from becoming seriously ill.

因此，这并不能阻止全球变暖，而仅仅是为世界争取6年的时间。然而，单单就美国自身而言，减少二氧化碳排放的成本将比解决世界上最紧迫的健康问题的成本还要高：为全世界提供清洁饮用水和卫生设施。这样的措施每年可以避免200万人死亡，并防止5亿人染上重病。

**第12段**

It is crucial that we look at the facts if we want to make the best possible decisions for the future. It may be costly to be overly optimistic – but more costly still to be too pessimistic.

如果我们想为未来做出最好的决定，那么对事实的考虑至关重要。过于乐观可能会付出代价，但过于悲观则代价更高。

## 5Test2

### [5 Test 2Passage 1 Bakelite-the birth of modern plastics 现代塑料的诞生](http://www.laokaoya.com/22161.html)

**第1自然段**

In 1907, Leo Hendrick Baekeland, a Belgian scientist working in New York, discovered and patented a revolutionary new synthetic material. His invention, which he named ‘Bakelite’, was of enormous technological importance, and effectively launched the modern plastics industry.

1907年，在纽约工作的比利时科学家Leo Hendrick Baekeland 发现了一种革命性的新型合成材料并申请了专利。他的发明被称为“Bakelite”，具有巨大的技术重要性，并有效地推动了现代塑料工业的发展。

**第2自然段**

The term ‘plastic’ comes from the Greek plassein, meaning ‘to mould’. Some plastics are derived from natural sources, some are semi-synthetic (the result of chemical action on a natural substance), and some are entirely synthetic, that is, chemically engineered from the constituents of coal or oil. Some are ‘thermoplastic’, which means that, like candlewax, they melt when heated and can then be reshaped. Others are ‘thermosetting’: like eggs, they cannot revert to their original viscous state, and their shape is thus fixed for ever. Bakelite had the distinction of being the first totally synthetic thermosetting plastic.

“塑料”一词来自希腊语“plassein”，意思是“塑造” 。有些塑料是从自然资源中提取的，有些是半合成的（对天然物质进行化学作用的结果），有些是完全合成的，即是用煤或石油的成分进行化学工程处理。有些是“热塑性的”，这意味着像烛蜡一样，它们文章来自老烤鸭在加热时会融化，然后可以重塑。其他的则是“热固性”的：像鸡蛋一样，它们无法回复到其原始的粘性状态，因此其形状永远固定。Bakelite是第一种完全合成的热固性塑料。

**第3自然段**

The history of today’s plastics begins with the discovery of a series of semi-synthetic thermoplastic materials in the mid-nineteenth century. The impetus behind the development of these early plastics was generated by a number of factors – immense technological progress in the domain of chemistry, coupled with wider cultural changes, and the pragmatic need to find acceptable substitutes for dwindling supplies of ‘luxury’ materials such as tortoiseshell and ivory.

当今塑料的历史始于19世纪中叶发现的一系列半合成热塑性材料。这些早期塑料发展的动力来自多种因素-化学领域的巨大技术进步，再加上广泛的文化变革，以及迫切需要寻找可接受的替代品来减少“豪华”材料的供应，例如龟壳和象牙。

**第4自然段**

Baekeland’s interest in plastics began in 1885 when, as a young chemistry student in Belgium, he embarked on research into phenolic resins, the group of sticky substances produced when phenol (carbolic acid) combines with an aldehyde (a volatile fluid similar to alcohol). He soon abandoned the subject, however, only returning to it some years later. By 1905 he was a wealthy New Yorker, having recently made his fortune with the invention of a new photographic paper. While Baekeland had been busily amassing dollars, some advances had been made in the development of plastics. The years 1899 and 1900 had seen the patenting of the first semi-synthetic thermosetting material that could be manufactured on an industrial scale. In purely scientific terms, Baekeland’s major contribution to the field is not so much the actual discovery of the material to which he gave his name, but rather the method by which a reaction between phenol and formaldehyde could be controlled, thus making possible its preparation on a commercial basis. On 13 July 1907, Baekeland took out his famous patent describing this preparation, the essential features of which are still in use today.

贝克兰（Baekeland）对塑料的兴趣始于1885年，当时，作为一名年轻的比利时化学专业学生，他着手研究酚醛树脂，即酚（碳酸）与醛（类似于酒精的挥发性流体）结合后产生的一组粘性物质。但是，他很快放弃了这个课题，直到几年后才重新回归。到1905年，他已经是一名富有的纽约人，刚刚通过发明一种新的相纸而发了大财。当贝克兰（Baekeland）忙于积累美元时，在塑料的开发方面取得了一些进步。1899年和1900年见证了第一批可以在工业规模上生产的半合成热固性材料的专利的出现。用纯粹的科学术语来说，Baekeland在该领域的主要贡献并不仅仅是发现了用他名字命名的材料，而是发现了可以控制苯酚和甲醛之间反应的方法，从而使它在商业基础上的制备成为可能。1907年7月13日，贝克兰（Baekeland）取得了描述之一制备过程的专利，其基本功能至今仍在使用。

**第5自然段**

The original patent outlined a three-stage process, in which phenol and formaldehyde (from wood or coal) were initially combined under vacuum inside a large egg-shaped kettle. The result was a resin known as Novalak, which became soluble and malleable when heated. The resin was allowed to cool in shallow trays until it hardened, and then broken up and ground into powder. Other substances were then introduced: including fillers, such as woodflour, asbestos or cotton, which increase strength and moisture resistance, catalysts (substances to speed up the reaction between two chemicals without joining to either) and hexa, a compound of ammonia and formaldehyde which supplied the additional formaldehyde necessary to form a thermosetting resin. This resin was then left to cool and harden, and ground up a second time. The resulting granular powder was raw Bakelite, ready to be made into a vast range of manufactured objects. In the last stage, the heated Bakelite was poured into a hollow mould of the required shape and subjected to extreme heat and pressure, thereby ‘setting’ its form for life.

原始专利概述了一个三阶段的过程，其中苯酚和甲醛（来自木材或煤炭）最初在真空下在一个蛋形大锅中混合，产生一种名为Novalak的树脂。它加热后可溶解并具有延展性。树脂在浅盘中冷却直至硬化，再将其敲碎并磨成粉末。然后引入了其他物质：包括填充剂，例如木粉，石棉或棉花。它们可提高强度和防潮性；催化剂（可加速两种化学物质之间的反应而又不与其中任何一种反应的物质）；氨和甲醛的化合物，提供了形成热固性树脂所需的额外甲醛。然后让该树脂冷却、硬化，并再次研磨。所得的颗粒状粉末就是未加工的Bakelite，可以制成各种制品。在最后阶段，将加热的Bakelite倒入所需形状的中空模具中，使其承受极高的热量和压力，从而固定其终生的形状。

**第6自然段**

The design of Bakelite objects, everything from earrings to television sets, was governed to a large extent by the technical requirements of the moulding process. The object could not be designed so that it was locked into the mould and therefore difficult to extract. A common general rule was that objects should taper towards the deepest part of the mould, and if necessary the product was moulded in separate pieces. Moulds had to be carefully designed so that the molten Bakelite would flow evenly and completely into the mould. Sharp corners proved impractical and were thus avoided, giving rise to the smooth, ‘streamlined’ style popular in the 1930s. The thickness of the walls of the mould was also crucial: thick walls took longer to cool and harden, a factor which had to be considered by the designer in order to make the most efficient use of machines.

从耳环到电视机，所有Bakelite物件的设计在很大程度上受制于成型工艺的技术要求。设计要避免物品在塑形过程中卡在模具里取不出来。一个普遍的通用规则是，物体应该随着模具的加深而逐渐变细。如有必要，产品应该被塑造成独立的零件。模具必须经过精心设计，以使融化的Bakelite可以均匀、完全地流入模具中。尖角被证明是不切实际的，因此应该避免。这也造成20世纪30年代光滑、流线型风格的流行。模具壁的厚度也很关键：厚壁需要更长的时间冷却和硬化，这是设计师为了充分利用机器而必须考虑的一个因素。

**第7自然段**

Baekeland’s invention, although treated with disdain in its early years, went on to enjoy an unparalleled popularity which lasted throughout the first half of the twentieth century. It became the wonder product of the new world of industrial expansion – ‘the material of a thousand uses’. Being both non-porous and heat-resistant, Bakelite kitchen goods were promoted as being germ-free and sterilisable. Electrical manufacturers seized on its insulating properties, and consumers everywhere relished its dazzling array of shades, delighted that they were now, at last, no longer restricted to the wood tones and drab browns of the pre-plastic era. It then fell from favour again during the 1950s, and was despised and destroyed in vast quantities. Recently, however, it has been experiencing something of a renaissance, with renewed demand for original Bakelite objects in the collectors’ marketplace, and museums, societies and dedicated individuals once again appreciating the style and originality of this innovative material.

贝克兰（Baekeland）的发明虽然在初期被轻视，但在后来却享受到无与伦比的欢迎。它在整个20世纪上半叶一直如此，成为工业扩张时期的奇迹产品-“千种用途的材料” 。Bakelite厨具既无孔又耐热，因此被认为是无菌且可灭菌的。电气制造商抓住了它的绝缘性能，世界各处的消费者都喜欢它令人炫目的颜色。他们高兴的是，现在终于不再局限于“前塑料时代”的木色调和棕褐色。然后，它在20世纪50年代再次失宠，被鄙视和大量销毁。然而，最近它正在经历复兴，收藏市场对原始Bakelite物件的需求不断增长。博物馆，社会和热衷于此的个人又开始重新欣赏这种创新材料的风格和独创性。

### [5 Test 2Passage 2 what’s so funny 关于幽默的最新研究](http://www.laokaoya.com/22269.html)

**第1自然段**

The joke comes over the headphones: ‘Which side of a dog has the most hair? The left.’ No, not funny. Try again. ‘Which side of a dog has the most hair? The outside.’ Hah! The punchline is silly yet fitting, tempting a smile, even a laugh. Laughter has always struck people as deeply mysterious, perhaps pointless. The writer Arthur Koestler dubbed it the luxury reflex: ‘unique in that it serves no apparent biological purpose’.

电话对面的人讲了个笑话：“狗的哪一边头发最多？左边。” 不，不好笑。再试一次。“狗的哪一边的头发最多？外边。”哈！笑话既愚蠢又贴切，让人微笑，甚至是大笑。笑声一直使人们感到十分神秘，甚至毫无意义。作家亚瑟·科斯特勒（Arthur Koestler）称其为奢侈的反射：“独特之处在于它没有明显的生物学目的” 。

**第2自然段**

Theories about humour have an ancient pedigree. Plato expressed the idea that humour is simply a delighted feeling of superiority over others. Kant and Freud felt that joke-telling relies on building up a psychic tension which is safely punctured by the ludicrousness of the punchline. But most modern humour theorists have settled on some version of Aristotle’s belief that jokes are based on a reaction to or resolution of incongruity, when the punchline is either a nonsense or, though appearing silly, has a clever second meaning.

关于幽默的理论可以追溯到很久之前。柏拉图文章来自老烤鸭雅思表达了这样的观点：幽默只是一种与众不同的优越感。康德和弗洛伊德认为，讲笑话是建立在一种心理张力上，这种紧张情绪可以被趣味横生的笑话所打破。但是，大多数现代幽默理论家都比较认同亚里士多德的某种观点，即笑话是基于对不一致的反应或解决。逗人发笑的地方虽然毫无意义或者显得很傻，但其具有巧妙的第二含义。

**第3自然段**

Graeme Ritchie, a computational linguist in Edinburgh, studies the linguistic structure of jokes in order to understand not only humour but language understanding and reasoning in machines. He says that while there is no single format for jokes, many revolve around a sudden and surprising conceptual shift. A comedian will present a situation followed by an unexpected interpretation that is also apt.

爱丁堡的计算机语言学家格雷姆·里奇（Graeme Ritchie）研究笑话的语言结构，从而理解幽默，以及机器中的语言领悟和推理。他说，虽然没有单一的笑话形式，但许多笑话都围绕着突然而令人惊讶的观念转变进行。喜剧演员将呈现一种情况，然后进行意外却适当的解释。

**第4自然段**

So even if a punchline sounds silly, the listener can see there is a clever semantic fit and that sudden mental ‘Aha!’ is the buzz that makes us laugh. Viewed from this angle, humour is just a form of creative insight, a sudden leap to a new perspective.

因此，即使笑话听起来很愚蠢，听众也可以看到有巧妙的语义匹配，而正是这种心理上突然的“啊哈！” 让我们笑出声来。从这个角度来看，幽默只是一种创造性洞察力的形式，是突然跃入新视野的一种方式。

**第5自然段**

However, there is another type of laughter, the laughter of social appeasement and it is important to understand this too. Play is a crucial part of development in most young mammals. Rats produce ultrasonic squeaks to prevent their scuffles turning nasty. Chimpanzees have a ‘play-face’ – a gaping expression accompanied by a panting ‘ah, ah’ noise. In humans, these signals have mutated into smiles and laughs. Researchers believe social situations, rather than cognitive events such as jokes, trigger these instinctual markers of play or appeasement. People laugh on fairground rides or when tickled to flag a play situation, whether they feel amused or not.

但是，还有另一种笑，即社交情景下的笑声。了解这一点也很重要。玩耍是大多数年轻哺乳动物发育中至关重要的部分。老鼠发出吱吱声，以防止它们的扭打变得严重起来。黑猩猩有一张“玩笑脸”-表情张扬，伴随着喘息的“啊，啊”的声音。在人类中，这些信号变成了微笑和大笑。研究人员认为，社交环境而不是诸如玩笑之类的认知事件触发了这种玩耍中的本能标志。人们在游乐场或者被挑逗的时候笑出声来，而不论他们是否觉得很有意思。

**第6自然段**

Both social and cognitive types of laughter tap into the same expressive machinery in our brains, the emotion and motor circuits that produce smiles and excited vocalisations. However, if cognitive laughter is the product of more general thought processes, it should result from more expansive brain activity.

社交和认知类型的笑都进入我们大脑中相同的表达机制，情感和运动回路产生笑容和激动的声音。但是，如果认知笑声是更普遍的思维过程的产物，它应该来自更广泛的大脑活动。

**第7自然段**

Psychologist Vinod Goel investigated humour using the new technique of ‘single event’ functional magnetic resonance imaging (fMRI). An MRI scanner uses magnetic fields and radio waves to track the changes in oxygenated blood that accompany mental activity. Until recently, MRI scanners needed several minutes of activity and so could not be used to track rapid thought processes such as comprehending a joke. New developments now allow half-second ‘snapshots’ of all sorts of reasoning and problem-solving activities.

心理学家Vinod Goel使用“单一事件” 功能性磁共振成像（fMRI）的新技术研究了幽默。MRI扫描仪使用磁场和无线电波来跟踪伴随精神活动的血液含氧量的变化。直到最近为止，MRI扫描仪都需要活动几分钟才行，因此无法用于跟踪快速的思维过程，例如理解笑话。现在，技术进步让所有类型的推理和问题解决活动的半秒钟快照成为可能。

**第8自然段**

Although Goel felt being inside a brain scanner was hardly the ideal place for appreciating a joke, he found evidence that understanding a joke involves a widespread mental shift. His scans showed that at the beginning of a joke the listener’s prefrontal cortex lit up, particularly the right prefrontal believed to be critical for problem solving. But there was also activity in the temporal lobes at the side of the head (consistent with attempts to rouse stored knowledge) and in many other brain areas. Then when the punchline arrived, a new area sprang to life – the orbital prefrontal cortex. This patch of brain tucked behind the orbits of the eyes is associated with evaluating information.

尽管Goel觉得脑部扫描仪并不是一个欣赏笑话的理想场所，但他发现有证据表明，理解笑话涉及广泛的心理转变。他的扫描显示，在笑话刚开始时，听众的前额叶皮层会亮起来，它被认为对解决问题至关重要。但是在头部侧面的颞叶（与试图激发储存的知识相一致）以及其他许多大脑区域也有活动。然后，当笑点到来时，一个崭新的区域出现了-眶前额叶皮层。这一藏在眼眶后面的大脑区域与评估信息有关。

**第9自然段**

Making a rapid emotional assessment of the events of the moment is an extremely demanding job for the brain, animal or human. Energy and arousal levels may need to be retuned in the blink of an eye. These abrupt changes will produce either positive or negative feelings. The orbital cortex, the region that becomes active in Goel’s experiment, seems the best candidate for the site that feeds such feelings into higher-level thought processes, with its close connections to the brain’s sub-cortical arousal apparatus and centres of metabolic control.

对当下事件进行快速的情感评估对于动物或人类的大脑来说都是一项极为艰巨的工作。眨眼间可能需要重新调整精力和兴奋水平。这些突然的变化将产生积极或消极的感觉。轨道皮层，Goel实验中活跃的区域，似乎是将这种感觉馈入高级思维过程的最佳人选，它与大脑皮层下的兴奋装置和代谢控制中心紧密相连。

**第10自然段**

All warm-blooded animals make constant tiny adjustments in arousal in response to external events, but humans, who have developed a much more complicated internal life as a result of language, respond emotionally not only to their surroundings, but to their own thoughts. Whenever a sought-for answer snaps into place, there is a shudder of pleased recognition. Creative discovery being pleasurable, humans have learned to find ways of milking this natural response. The fact that jokes tap into our general evaluative machinery explains why the line between funny and disgusting, or funny and frightening, can be so fine. Whether a joke gives pleasure or pain depends on a person’s outlook.

所有温血动物都会对外界事件做出不断的微小调整，但是由于语言的发展，大脑内部活动变得更加复杂的人类对周围环境和自己的思想都会产生情感上的反应。每当找到一直以来所寻求的答案时，人们就会感到欣喜若狂。创造性的发现是令人愉悦的，人类已经学会产生这种自然反应的方法。笑话进入了我们的普遍评估机制，这一事实解释了为什么可笑与令人厌恶或令人恐惧之间存在完好的分界线。开玩笑给人带来快乐还是痛苦取决于一个人的观念。

**第11自然段**

Humour may be a luxury, but the mechanism behind it is no evolutionary accident. As Peter Derks, a psychologist at William and Mary College in Virginia, says: ‘I like to think of humour as the distorted mirror of the mind. It’s creative, perceptual, analytical and lingual. If we can figure out how the mind processes humour, then we’ll have a pretty good handle on how it works in general.’

幽默也许是一种奢侈品，但其背后的机制绝非偶然。正如弗吉尼亚州玛丽学院的心理学家Peter Derks所说的那样，“我喜欢把幽默当作心灵扭曲的镜子。它具有创造力，感知力，分析能力和语言能力。如果我们能弄清大脑如何处理幽默，那么我们将对它的总体运作方式有一个很好的把握。”

### [5 Test 2Passage 3 The Birth of Scientific English 科学英语的诞生](http://www.laokaoya.com/22371.html)

**第1自然段**

World science is dominated today by a small number of languages, including Japanese, German and French, but it is English which is probably the most popular global language of science. This is not just because of the importance of English-speaking countries such as the USA in scientific research; the scientists of many non-English-speaking countries find that they need to write their research papers in English to reach a wide international audience. Given the prominence of scientific English today, it may seem surprising that no one really knew how to write science in English before the 17th century. Before that, Latin was regarded as the lingua franca 1 for European intellectuals.

当今世界科学被少数语言所控制，包括日语，德语和法语，但英语可能是全球最受欢迎的科学语言。这不仅是因为诸如美国这样的英语国家在科学研究中的重要性。许多非英语国家的科学家发现，他们需要用英语撰写研究论文才能吸引广泛的国际受众。鉴于当今科学英语的突出地位，在17世纪之前还没有人真正知道如何用英语进行科学写作似乎令人惊讶。在此之前，拉丁语被认为是欧洲知识分子的通用语 。

**第2自然段**

The European Renaissance (c. 14th-16th century) is sometimes called the ‘revival of learning’, a time of renewed interest in the ‘lost knowledge’ of classical times. At the same time, however, scholars also began to test and extend this knowledge. The emergent nation states of Europe developed competitive interests in world exploration and the development of trade. Such expansion, which was to take the English language west to America and east to India, was supported by scientific developments such as the discovery of magnetism (and hence the invention of the compass), improvements in cartography and – perhaps the most important scientific revolution of them all – the new theories of astronomy and the movement of the Earth in relation to the planets and stars, developed by Copernicus (1473-1543).

欧洲文艺复兴时期（14至16世纪）有时也被称为“学习的复兴” 。在这期间，人们文章来自老烤鸭雅思对遗失的古典知识重新产生兴趣。但是，与此同时，学者们也开始测试和扩充这些知识。欧洲新兴国家在探索世界和发展贸易中产生了竞争利益。 这种扩张将英语向西带到美国，向东带到了印度。它得到科学发展的支持，例如磁性的发现（以及指南针的发明），制图学的改进，以及哥白尼（1473-1543）提出的新天文学理论和地球相对于行星和恒星运动的理论。这可能是它们之中最为重要的科学革命。

**第3自然段**

England was one of the first countries where scientists adopted and publicised Copernican ideas with enthusiasm. Some of these scholars, including two with interests in language -John Wallis and John Wilkins – helped found the Royal Society in 1660 in order to promote empirical scientific research.

英格兰是科学家热情接受并宣传哥白尼思想的最早国家之一。这些学者中的一些人，包括两位对语言感兴趣的学者-约翰·沃利斯（John Wallis）和约翰·威尔金斯（John Wilkins）-于1660 年帮助成立了皇家学会，以促进实证科学研究。

**第4自然段**

Across Europe similar academies and societies arose, creating new national traditions of science. In the initial stages of the scientific revolution, most publications in the national languages were popular works, encyclopedias, educational textbooks and translations. Original science was not done in English until the second half of the 17th century. For example, Newton published his mathematical treatise, known as the Principia, in Latin, but published his later work on the properties of light – Opticks – in English.

在整个欧洲，类似的学院和社团应运而生，创造出新的科学国家传统。在科学革命的初期，大多数使用本国语言出版的读物都是流行著作，百科全书，教育教科书和翻译。直到17世纪下半叶，原创科学才用英语完成。例如，牛顿用拉丁语发表了他被称为“原理”的数学论文，但随后关于关的特性的作品则是用英语完成的。

**第5自然段**

There were several reasons why original science continued to be written in Latin. The first was simply a matter of audience. Latin was suitable for an international audience of scholars, whereas English reached a socially wider, but more local, audience. Hence, popular science was written in English.

原创科学继续用拉丁文写作的原因有很多。首先是读者的问题。拉丁文适合国际学者群体，而英语虽然在社会上受众更多，却以本地人为主。因此，科普读物是用英语写作的。

**第6自然段**

A second reason for writing in Latin may, perversely, have been a concern for secrecy. Open publication had dangers in putting into the public domain preliminary ideas which had not yet been fully exploited by their ‘author’. This growing concern about intellectual property rights was a feature of the period – it reflected both the humanist notion of the individual, rational scientist who invents and discovers through private intellectual labour, and the growing connection between original science and commercial exploitation. There was something of a social distinction between ‘scholars and gentlemen’ who understood Latin, and men of trade who lacked a classical education. And in the mid-17th century it was common practice for mathematicians to keep their discoveries and proofs secret, by writing them in cipher, in obscure languages, or in private messages deposited in a sealed box with the Royal Society. Some scientists might have felt more comfortable with Latin precisely because its audience, though international, was socially restricted. Doctors clung the most keenly to Latin as an ‘insider language’.

用拉丁语写作的第二个原因可能与保密有关。公开出版存在将作者尚未完全开发的初步理论投入公共领域的风险。对知识产权日益增长的关注是这一时期的一个特征-它既反映了个人与通过智力劳动进行发明和探索的理性科学家的人道主义观念，又反映了原创科学与商业利用之间的日益紧密的联系。懂拉丁语的“学者和绅士”与缺乏古典教育的商人之间存在某种社会差别。在17世纪中叶，数学家通常通过以密码，晦涩的语言或私下写在皇家学会的密闭信箱中的信息来掩盖他们的发现和证明。某些科学家可能对拉丁语感到更自在，这是因为拉丁语的读者尽管是国际化的，但处于有限的社会阶层。医生最热衷于使用拉丁语作为“内部语言” 。

**第7自然段**

A third reason why the writing of original science in English was delayed may have been to do with the linguistic inadequacy of English in the early modern period. English was not well equipped to deal with scientific arguments. First, it lacked the necessary technical vocabulary. Second, it lacked the grammatical resources required to represent the world in an objective and impersonal way, and to discuss the relations, such as cause and effect, that might hold between complex and hypothetical entities.

用英语进行原创科学写作的第三个原因可能与近代早期英语的语言不足有关。英语不能很好地处理科学论据。首先，它缺乏必要的技术词汇。其次，它缺乏以客观和非人格化的方式展现世界，以及讨论可能与复杂的实体和假设的实体之间关系（例如因果关系）所需要的语法资源。

**第8自然段**

Fortunately, several members of the Royal Society possessed an interest in language and became engaged in various linguistic projects. Although a proposal in 1664 to establish a committee for improving the English language came to little, the society’s members did a great deal to foster the publication of science in English and to encourage the development of a suitable writing style. Many members of the Royal Society also published monographs in English. One of the first was by Robert Hooke, the society’s first curator of experiments, who described his experiments with microscopes in Micrographia (1665). This work is largely narrative in style, based on a transcript of oral demonstrations and lectures.

幸运的是，皇家学会的几位成员对语言很感兴趣，并参与了各种语言项目。尽管在1664年建立一个委员会来提高英语水平的提议几乎没有结果，但是该学会的成员为促进用英语进行科学发现的出版和鼓励发展一种合适的写作风格做出了很多努力。皇家学会的许多成员还出版了英文专著。最早的作者之一是该学会的首任实验负责人罗伯特·胡克（Robert Hooke），他于1665年在Micrographia上描述了使用显微镜所进行的实验。该作品主要基于口语展示和讲座的文本，带有浓重的叙述风格。

**第9自然段**

In 1665 a new scientific journal, Philosophical Transactions, was inaugurated. Perhaps the first international English-language scientific journal, it encouraged a new genre of scientific writing, that of short, focused accounts of particular experiments.

1665年新的科学期刊，Philosophical Transaction，正式成立。也许是第一本国际英语科学杂志。它鼓励了一种新的科学写作形式，即简短而集中地描述特定的实验。

**第10自然段**

The 17th century was thus a formative period in the establishment of scientific English. In the following century much of this momentum was lost as German established itself as the leading European language of science. It is estimated that by the end of the 18th century 401 German scientific journals had been established as opposed to 96 in France and 50 in England. However, in the 19th century scientific English again enjoyed substantial lexical growth as the industrial revolution created the need for new technical vocabulary, and new, specialised, professional societies were instituted to promote and publish in the new disciplines.

因此17世纪是科学英语地位的形成时期。在接下来的一个世纪里，随着德语成为欧洲主要的科学语言，这种动力大部分消失了。据估计，到18世纪末，有401本德语科学期刊，而法国只有96本，英国只有50本。但是，在19世纪，随着工业革命对新技术词汇的需求，科学英语又再次获得了可观的词汇增长，并且建立了新的、专业的学会来促进和出版新的学科。

## 5Test3

### [5 Test 3Passage 1 Early Childhood Education 早期儿童教育](http://www.laokaoya.com/22491.html)

**A部分**

‘Education To Be More’ was published last August. It was the report of the New Zealand Government’s Early Childhood Care and Education Working Group. The report argued for enhanced equity of access and better funding for childcare and early childhood education institutions. Unquestionably, that’s a real need; but since parents don’t normally send children to pre-schools until the age of three, are we missing out on the most important years of all?

去年八月出版了《Education to be more》。这是新西兰政府儿童早期照顾与教育工作组的报告。该报告主张加强机会公平，为托儿和幼儿教育机构提供更好的资金。毫无疑问，这是真正的需求。但由于父母通常要到三岁才会送孩子上学前班，我们错过了最重要的几年吗？

**B部分**

A 13-year study of early childhood development at Harvard University has shown that, by the age of three, most children have the potential to understand about 1000 words – most of the language they will use in ordinary conversation for the rest of their lives.

一项持续13年的哈佛大学对儿童早期发育的研究表明，到三岁的时候，大多数孩子都拥有认识1000个字左右的潜力-这些构成了他们在此后生活的日常交流中所使用的大部分语言。

Furthermore, research has shown that while every child is born with a natural curiosity, it can be suppressed dramatically during the second and third years of life. Researchers claim that the human personality is formed during the first two years of life, and during the first three years children learn the basic skills they will use in all their later learning both at home and at school. Once over the age of three, children continue to expand on existing knowledge of the world.

此外，研究表明，虽然每个孩子天生就有好奇心，但它在第二年文章来自老烤鸭雅思和第三年却可能被强烈的抑制。研究人员声称，人的性格是在生命的前两年中形成的。在前三年中，孩子们将学习以后在家和学校里学习所使用的基本技能。一旦超过三岁，孩子将在现有的关于世界知识的基础上进行扩展。

**C部分**

It is generally acknowledged that young people from poorer socio-economic backgrounds tend to do less well in our education system. That’s observed not just in New Zealand, but also in Australia, Britain and America. In an attempt to overcome that educational under-achievement, a nationwide programme called ‘Headstart’ was launched in the United States in 1965. A lot of money was poured into it. It took children into pre-school institutions at the age of three and was supposed to help the children of poorer families succeed in school.

人们普遍认识到，社会经济背景较差的年轻人在我们的教育体系中表现不好。不仅在新西兰，而且在澳大利亚，英国和美国都有这种现象。为了克服教育上的不足，1965年在美国启动了一项名为“ Headstart ” 的全国性计划。大量的钱被投入其中。它在孩子三岁时将其送入学前教育机构。这本来是为了帮​​助贫穷家庭的孩子在学校取得成功。

Despite substantial funding, results have been disappointing. It is thought that there are two explanations for this. First, the programme began too late. Many children who entered it at the age of three were already behind their peers in language and measurable intelligence. Second, the parents were not involved. At the end of each day, ‘Headstart’ children returned to the same disadvantaged home environment.

尽管有大量的资金，但结果却令人失望。对此有两种解释。首先，该项目开始太晚了。许多在三岁时入学的孩子在语言和智力方面已经落后于同龄人。其次，父母没有参与。每天结束时，“ Headstart ”项目的儿童回到了同样处境不利的家庭环境中。

**D部分**

As a result of the growing research evidence of the importance of the first three years of a child’s life and the disappointing results from ‘Headstart’, a pilot programme was launched in Missouri in the US that focused on parents as the child’s first teachers. The ‘Missouri’ programme was predicated on research showing that working with the family, rather than bypassing the parents, is the most effective way of helping children get off to the best possible start in life. The four-year pilot study included 380 families who were about to have their first child and who represented a cross-section of socio-economic status, age and family configurations. They included single-parent and two-parent families, families in which both parents worked, and families with either the mother or father at home.

由于越来越多的研究证据表明了孩子生命头三年的重要性，再加上“ Headstart ” 令人失望的结果，美国密苏里州启动了一项试点计划。该计划将重点放在作为孩子第一任老师的家长身上。密苏里计划建立在这样的研究预测之上，即与家庭合作，而不是绕过父母，是帮助孩子开启人生最佳可能的最有效方式。这项为期四年的试点研究包括380个即将生育第一个孩子的家庭。这些家庭代表了不同的社会经济地位，年龄和家庭结构。他们包括单亲家庭和双亲家庭，双职工家庭和单职工家庭等。

The programme involved trained parent-educators visiting the parents’ home and working with the parent, or parents, and the child. Information on child development, and guidance on things to look for and expect as the child grows were provided, plus guidance in fostering the child’s intellectual, language, social and motor-skill development. Periodic check-ups of the child’s educational and sensory development (hearing and vision) were made to detect possible handicaps that interfere with growth and development. Medical problems were referred to professionals.

该计划中受过训练的父母教育者会拜访父母的家，并与父母和孩子一起学习。他们提供有关儿童发展的信息，有关儿童成长过程中寻找和所期望的事物的指南，以及有关促进儿童智力，语言，社交和运动技能发展的导引。定期检查孩子的教育和感官发展（听力和视力），以发现可能妨碍成长和发展的障碍。医疗问题被转诊给专业人士。

Parent-educators made personal visits to homes and monthly group meetings were held with other new parents to share experience and discuss topics of interest. Parent resource centres, located in school buildings, offered learning materials for families and facilitators for child care.

家长教育者亲自拜访，并与其他新父母每月举行小组会议，以交流经验并讨论感兴趣的话题。位于教学楼的家长资源中心会提供为家庭和教育者提供照顾孩子所需要的学习材料。

**E部分**

At the age of three, the children who had been involved in the ‘Missouri’ programme were evaluated alongside a cross-section of children selected from the same range of socio-economic backgrounds and family situations, and also a random sample of children that age. The results were phenomenal. By the age of three, the children in the programme were significantly more advanced in language development than their peers, had made greater strides in problem solving and other intellectual skills, and were further along in social development. In fact, the average child on the programme was performing at the level of the top 15 to 20 per cent of their peers in such things as auditory comprehension, verbal ability and language ability.

三岁时，参与“ 密苏里” 计划的孩子接受了评估。一起接受评估的还有其他来自各种各样社会经济背景和家庭情况的孩子，以及一些随机选取的相同年龄的孩子。结果是惊人的。到三岁时，项目中的孩子在语言发展方面比他们的同龄人明显更加优秀，在解决问题和其他智力技能上迈出更大的步伐，在社交能力发展上同样领先。实际上，该项目的孩子在听觉理解， 文字能力和语言能力等方面的平均表现相当于同龄人中排名前15％至20％的表现。

Most important of all, the traditional measures of ‘risk’, such as parents’ age and education, or whether they were a single parent, bore little or no relationship to the measures of achievement and language development. Children in the programme performed equally well regardless of socio-economic disadvantages. Child abuse was virtually eliminated. The one factor that was found to affect the child s development was family stress leading to a poor quality of parent-child interaction. That interaction was not necessarily bad in poorer families.

最重要的是，传统的“风险”衡量指标，例如父母的年龄和受教育程度，或者他们是否是单亲父母，与所取得成就和语言发展的衡量标准几乎没有关系。不论社会经济状况如何，参加该计划的儿童都表现良好。虐待儿童的行为几乎完全消除。另一个被发现的影响儿童发展的因素是家庭压力所导致的亲子互动质量低下。在较贫穷的家庭中这种互动不一定很糟糕。

**F部分**

These research findings are exciting. There is growing evidence in New Zealand that children from poorer socio-economic backgrounds are arriving at school less well developed and that our school system tends to perpetuate that disadvantage. The initiative outlined above could break that cycle of disadvantage. The concept of working with parents in their homes, or at their place of work, contrasts quite markedly with the report of the Early Childhood Care and Education Working Group. Their focus is on getting children and mothers access to childcare and institutionalised early childhood education. Education from the age of three to five is undoubtedly vital, but without a similar focus on parent education and on the vital importance of the first three years, some evidence indicates that it will not be enough to overcome educational inequity.

这些研究发现令人兴奋。在新西兰，越来越多的证据表明，社会经济背景较差的儿童到学校学习时基础不好，而我们的学校系统往往会使这种劣势永久化。上面描述的提议可以打破这种不利的循环。与父母在家中或工作地点一起工作的概念与儿童早期照顾与教育工作组的报告形成了鲜明的对比。他们的重点是使儿童和母亲获得育儿和制度化的儿童早期教育。毫无疑问，三至五岁的教育至关重要。但一些证据表明，如果没有将重点放在父母的教育和头三年的重要性上的话，这并不足以克服教育不平等现象。

### [5 Test 3Passage 2 Disappearing Delta 消失的三角洲](http://www.laokaoya.com/22537.html)

**A部分**

The fertile land of the Nile delta is being eroded along Egypt’s Mediterranean coast at an astounding rate, in some parts estimated at 100 metres per year. In the past, land scoured away from the coastline by the currents of the Mediterranean Sea used to be replaced by sediment brought down to the delta by the River Nile, but this is no longer happening.

埃及地中海沿岸尼罗河三角洲的肥沃土地正以惊人的速度被侵蚀。在某些地方，估计达到100米/每年。过去，被地中海水洋流冲刷掉的海岸线的土地会被尼罗河（River Nile）带到三角洲的沉积物所代替，但是这种情况已经不再发生。

**B部分**

Up to now, people have blamed this loss of delta land on the two large dams at Aswan in the south of Egypt, which hold back virtually all of the sediment that used to flow down the river. Before the dams were built, the Nile flowed freely, carrying huge quantities of sediment north from Africa’s interior to be deposited on the Nile delta. This continued for 7,000 years, eventually covering a region of over 22,000 square kilometres with layers of fertile silt. Annual flooding brought in new, nutrient-rich soil to the delta region, replacing what had been washed away by the sea, and dispensing with the need for fertilizers in Egypt’s richest food-growing area. But when the Aswan dams were constructed in the 20th century to provide electricity and irrigation, and to protect the huge population centre of Cairo and its surrounding areas from annual flooding and drought, most of the sediment with its natural fertilizer accumulated up above the dam in the southern, upstream half of Lake Nasser, instead of passing down to the delta.

迄今为止，人们将三角洲土壤流失的责任归咎于埃及南部阿斯旺的两座大水坝。这些水坝文章来自老烤鸭雅思实际上拦截了过去顺流而下的所有沉积物。在修建大坝之前，尼罗河自由流动，将非洲内陆大量的沉积物向北带到尼罗河三角洲。这种情况持续了7,000年，最终形成22,000平方公里的肥沃土壤。每年的洪水给三角洲地区带来了营养丰富的新土壤，代替被海水冲走的那些，并满足埃及最富有的粮食种植区对肥料的需求。 但是，当阿斯旺大坝在20世纪被建造起来以提供电力和灌溉，并保护开罗及其周边地区的巨大人口中心免受年度洪水和干旱的侵袭时，大部分的沉积物及其天然肥料都堆积在大坝南部上方，纳赛尔湖上游的一半，而不是向下到三角洲。

**C部分**

Now, however, there turns out to be more to the story. It appears that the sediment-free water emerging from the Aswan dams picks up silt and sand as it erodes the river bed and banks on the 800-kilometre trip to Cairo. Daniel Jean Stanley of the Smithsonian Institute noticed that water samples taken in Cairo, just before the river enters the delta, indicated that the river sometimes carries more than 850 grams of sediment per cubic metre of water – almost half of what it carried before the dams were built. ‘I’m ashamed to say that the significance of this didn’t strike me until after I had read 50 or 60 studies,’ says Stanley in Marine Geology. ‘There is still a lot of sediment coming into the delta, but virtually no sediment comes out into the Mediterranean to replenish the coastline. So this sediment must be trapped on the delta itself.’

但是，现在，事实证明故事还不止于此。从阿斯旺水坝涌出的不含沉积物水在前往开罗的800公里的行程中，冲走了淤泥和沙子，侵蚀了河床和河岸。史密森尼学会（Smithsonian Institute）的丹尼尔·让·斯坦利（Daniel Jean Stanley）注意到，在河流进入三角洲之前，在开罗采集的水样表明，河流每立方米水中有时携带850克以上的沉积物-几乎是大坝修建之前沉积量的一半。“我羞于承认，直到读了50或60篇研究之后才意识到这一发现的重要性”，斯坦利在Marin Geology上说，“仍有大量沉积物进入三角洲，但实际上没有沉积物进入地中海以补充海岸线。因此，这些沉积物一定被困在了三角洲自己身上”。

**D部分**

Once north of Cairo, most of the Nile water is diverted into more than 10,000 kilometres of irrigation canals and only a small proportion reaches the sea directly through the rivers in the delta. The water in the irrigation canals is still or very slow-moving and thus cannot carry sediment, Stanley explains. The sediment sinks to the bottom of the canals and then is added to fields by farmers or pumped with the water into the four large freshwater lagoons that are located near the outer edges of the delta. So very little of it actually reaches the coastline to replace what is being washed away by the Mediterranean currents.

开罗以北，尼罗河的大部分水被引到10,000多公里的灌溉渠中，只有一小部分直接通过三角洲的河流到达大海。斯坦利解释说，灌溉渠中的水要么静止要么流动非常缓慢，因此无法携带沉积物。沉积物沉入运河底部，然后由农民加到田间，或与水一起泵入位于三角洲外缘的四个大型淡水泻湖中。因此实际上只有很少部分到达海岸线来代替被地中海洋流冲走的东西。

**E部分**

The farms on the delta plains and fishing and aquaculture in the lagoons account for much of Egypt’s food supply. But by the time the sediment has come to rest in the fields and lagoons it is laden with municipal, industrial and agricultural waste from the Cairo region, which is home to more than 40 million people. ‘Pollutants are building up faster and faster,’ says Stanley.

三角洲平原上的农场以及泻湖中的渔业和水产养殖业占埃及粮食供应的大部分。但是，当沉积物在田野和泻湖中沉淀下来时，它已经充满了来自开罗地区市政，工业和农业的废物。该地区居住着4000万人。斯坦利说：“污染物的积累越来越快。”

Based on his investigations of sediment from the delta lagoons, Frederic Siegel of George Washington University concurs. ‘In Manzalah Lagoon, for example, the increase in mercury, lead, copper and zinc coincided with the building of the High Dam at Aswan, the availability of cheap electricity, and the development of major power-based industries,’ he says. Since that time the concentration of mercury has increased significantly. Lead from engines that use leaded fuels and from other industrial sources has also increased dramatically. These poisons can easily enter the food chain, affecting the productivity of fishing and farming. Another problem is that agricultural wastes include fertilizers which stimulate increases in plant growth in the lagoons and upset the ecology of the area, with serious effects on the fishing industry.

根据他对三角洲泻湖沉积物的调查，乔治华盛顿大学的弗雷德里克·西格尔（Frederic Siegel）赞同上述观点。“例如，Manzalah泻湖中水银，铅，铜和锌增长的时间恰好与阿斯旺大坝的建造，廉价电力的提供，以及主要电力基础产业发展建设的时间相同，” 他说。自那时以来，水印的浓度已大大增加。来自使用含铅燃料的发动机和其他工业来源的铅也急剧增加。这些有毒物质很容易进入食物链，影响渔业和农业的生产力。另一个问题是，农业废物中包含的肥料会刺激泻湖中植物的生长并破坏该地区的生态，对渔业产生严重影响。

**F部分**

According to Siegel, international environmental organisations are beginning to pay closer attention to the region, partly because of the problems of erosion and pollution of the Nile delta, but principally because they fear the impact this situation could have on the whole Mediterranean coastal ecosystem. But there are no easy solutions. In the immediate future, Stanley believes that one solution would be to make artificial floods to flush out the delta waterways, in the same way, that natural floods did before the construction of the dams. He says, however, that in the long term an alternative process such as desalination may have to be used to increase the amount of water available. ‘In my view, Egypt must devise a way to have more water running through the river and the delta,’ says Stanley. Easier said than done in a desert region with a rapidly growing population.

根据西格尔（Siegel）的说法，国际环境组织开始更加关注该地区。部分原因是尼罗河三角洲的侵蚀和污染问题，但主要是因为他们担心这种情况可能会对整个地中海沿岸生态系统产生影响。但是没有简单的解决方案。斯坦利认为，短期来看，一种解决方案将是制造人工洪水以冲刷三角洲水道，就像自然洪水在修建大坝之前做的一样。但他说，长远来看，可能必须使用诸如海水淡化等替代工艺来增加可用水量。斯坦利说：“我认为，埃及必须设计一种方法，使更多的水流经河道和三角洲。” 这说起来比在人口迅速增长的沙漠地区做起来要容易。

### [5 Test 3Passage 3 The return of Artificial Intelligence 人工智能的回归](http://www.laokaoya.com/22626.html)

**自然段A**

After years in the wilderness, the term ‘artificial intelligence’ (AI) seems poised to make a comeback. AI was big in the 1980s but vanished in the 1990s. It re-entered public consciousness with the release of AI, a movie about a robot boy. This has ignited public debate about AI, but the term is also being used once more within the computer industry. Researchers, executives and marketing people are now using the expression without irony or inverted commas. And it is not always hype. The term is being applied, with some justification, to products that depend on technology that was originally developed by AI researchers. Admittedly, the rehabilitation of the term has a long way to go, and some firms still prefer to avoid using it. But the fact that others are starting to use it again suggests that AI has moved on from being seen as an over-ambitious and under-achieving field of research.

在荒废多年之后，“人工智能”（AI ）一词似乎势必卷土重来。AI在20世纪80年代十分流行，但在20世纪90年代消失了。一部关于机器人男孩的电影《AI》的发布重新唤起了公众的意识。这点燃了关于AI的公开辩论，但该术语也再次被计算机行业使用。研究人员，管理人员和市场营销人员现在正在使用该表述，而不会产生讽刺或带有引号。而且它并不总是炒作。该术语被合理地用于描述一些产品。它们建立在最初由AI研究者所开发的技术之上。诚然，该术语的恢复还有很长的路要走，并且一些公司仍然希望避免使用它。但是，其他人再次开始使用它的事实表明，AI 已从被视为过于雄心勃勃且成绩欠佳的研究领域大步向前发展。

**自然段B**

The field was launched, and the term ‘artificial intelligence’ coined, at a conference in 1956 by a group of researchers that included Marvin Minsky, John McCarthy, Herbert Simon and Alan Newell, all of whom went on to become leading figures in the field. The expression provided an attractive but informative name for a research programme that encompassed such previously disparate fields as operations research, cybernetics, logic and computer science. The goal they shared was an attempt to capture or mimic human abilities using machines. That said, different groups of researchers attacked different problems, from speech recognition to chess playing, in different ways; AI unified the field in name only. But it was a term that captured the public imagination.

在1956年的一次会议上，由马文·明斯基，约翰·麦卡锡，赫伯特·西蒙和艾伦·纽厄尔等人组成的研究小组提出了这一研究领域，并创造了“人工智能”一词。他们后来文章来自老烤鸭雅思全都成为该领域的佼佼者。该表达为研究计划提供了一个引人入胜但具有参考价值的名称。该研究计划涵盖了诸如运筹学，控制论，逻辑学和计算机科学等先前分散的领域。他们的共同目标是尝试使用机器捕捉或模仿人类的能力。也就是说，不同的研究人员群体以不同的方式攻克不同的问题，从语音识别到下棋。AI只是在名字上将这一领域整合起来。但这个词激发了公众的想象。

**自然段C**

Most researchers agree that AI peaked around 1985. A public reared on science-fiction movies and excited by the growing power of computers had high expectations. For years, AI researchers had implied that a breakthrough was just around the corner. Marvin Minsky said in 1967 that within a generation the problem of creating ‘artificial intelligence’ would be substantially solved. Prototypes of medical-diagnosis programs and speech recognition software appeared to be making progress. It proved to be a false dawn. Thinking computers and household robots failed to materialise, and a backlash ensued. ‘There was undue optimism in the early 1980s,’ says David Leake, a researcher at Indiana University. ‘Then when people realised these were hard problems, there was retrenchment. By the late 1980s, the term AI was being avoided by many researchers, who opted instead to align themselves with specific sub-disciplines such as neural networks, agent technology, case-based reasoning, and so on.’

大多数研究人员都同意A I 在1985年左右达到顶峰。对科幻电影感兴趣，并对计算机日益强大的功能感到兴奋的公众对此寄予厚望。多年来，AI 研究人员一直暗示突破指日可待。马文·明斯基（Marvin Minsky）在1967年表示，创造“人工智能”的问题将在一代人以内得到实质性解决。医学诊断程序和语音识别软件的原型似乎正在取得进展。事实证明那是虚假的曙光。会思考的计算机和家用机器人未能实现，反弹随之而来。印第安纳大学的研究人员戴维· 莱克（David Leake ）说：“在20世纪80年代初，人们过分乐观。然后，当人们意识到这些是十分困难的问题时，紧缩就发生了。到20世纪80年代后期，许多研究人员都不再使用‘AI ’一词。他们选择将自己与特定的子学科联系在一起，例如神经网络，代理技术，基于案例的推理等等。”

**自然段D**

Ironically, in some ways AI was a victim of its own success. Whenever an apparently mundane problem was solved, such as building a system that could land an aircraft unattended, the problem was deemed not to have been AI in the first place. ‘If it works, it can’t be AI,’ as Dr Leake characterises it. The effect of repeatedly moving the goal-posts in this way was that AI came to refer to ‘blue-sky’ research that was still years away from commercialisation. Researchers joked that AI stood for ‘almost implemented’. Meanwhile, the technologies that made it onto the market, such as speech recognition, language translation and decision-support software, were no longer regarded as AI. Yet all three once fell well within the umbrella of AI research.

具有讽刺意味的是，从某种方式上说，AI是自己成功的受害者。每当一个平凡的问题得到解决，如构建无人操作的飞机降落系统，该问题就会立刻被视为不是AI。正如Leake博士概括的那样，“如果它行的通，它就不是AI。”。这种反复移动目标方式造成了如下影响：AI 指的是距商业化还差几年的“blue-sky”研究。研究人员开玩笑说AI 代表“几乎已实现” 。同时，已经进入市场的技术，如语音识别，语言翻译和决策辅助软件等，不再被当作AI来看待。然而，这三者曾一度处于AI 研究的范围之内。

**自然段E**

But the tide may now be turning, according to Dr Leake. HNC Software of San Diego, backed by a government agency, reckon that their new approach to artificial intelligence is the most powerful and promising approach ever discovered. HNC claim that their system, based on a cluster of 30 processors, could be used to spot camouflaged vehicles on a battlefield or extract a voice signal from a noisy background – tasks humans can do well, but computers cannot. ‘Whether or not their technology lives up to the claims made for it, the fact that HNC are emphasising the use of AI is itself an interesting development,’ says Dr Leake.

但是据Leake博士说，现在这一潮流可能正在扭转。由政府机构支持的圣地亚哥HNC软件公司认为，他们研究人工智能的新方法是迄今为止最强大，最有前途的方法。HNC声称，他们的系统基于30个处理器的集群，可用于在战场上发现伪装的车辆或从嘈杂的背景中提取语音信号-这些都是人类可以做的很好，但计算机无法完成的任务。Leake 博士说：“无论他们的技术是否达到自己宣称的标准，HNC对使用AI的强调本身就是一个有趣的发展。”

**自然段F**

Another factor that may boost the prospects for AI in the near future is that investors are now looking for firms using clever technology, rather than just a clever business model, to differentiate themselves. In particular, the problem of information overload, exacerbated by the growth of e-mail and the explosion in the number of web pages, means there are plenty of opportunities for new technologies to help filter and categorise information – classic AI problems. That may mean that more artificial intelligence companies will start to emerge to meet this challenge.

不久的将来可能提振AI前景的另一个因素是，投资者现在正在寻找使用聪明的技术而不是聪明的商业模式来使自己与众不同的公司。尤其是，电子邮件的增长和网页数量的激增加剧了信息过载的问题，这意味着有很多机会可以利用新技术来帮助对信息进行过滤和分类-经典的AI 问题。这可能意味着将出现更多的人工智能公司以应对这一挑战。

**自然段G**

The 1969 film, 2001: A Space Odyssey, featured an intelligent computer called HAL 9000. As well as understanding and speaking English, HAL could play chess and even learned to lipread. HAL thus encapsulated the optimism of the 1960s that intelligent computers would be widespread by 2001. But 2001 has been and gone, and there is still no sign of a HAL-like computer. Individual systems can play chess or transcribe speech, but a general theory of machine intelligence still remains elusive. It may be, however, that the comparison with HAL no longer seems quite so important, and AI can now be judged by what it can do, rather than by how well it matches up to a 30-year-old science-fiction film. ‘People are beginning to realise that there are impressive things that these systems can do,’ says Dr Leake hopefully.

1969年的电影《 2001：太空漫游指南》以一部名为HAL 9000的智能计算机为特色。除了能理解和说英语外，HAL还能下象棋，甚至学会读唇语。HAL由此代表了20世纪60年代的乐观看法，即智能计算机将在2001年得到广泛应用。但是2001年已经过去了，现在仍然没有类似HAL的计算机的迹象。存在独立的系统可以下棋或转录语音，但是机器智能的一般理论仍然难以捉摸。但是，与HAL的比较似乎不再那么重要了，现在可以通过它能做什么来判断AI ，而不是根据它与一部拥有30年历史的科幻电影的匹配程度来判断。Leake博士满怀希望地说：“人们开始意识到这些系统可以做些令人印象深刻的事情。”

## 5Test4

### [5 Test 4Passage 1 The Impact of wilderness tourism 荒野旅游的影响](http://www.laokaoya.com/22841.html)

**A部分第1段**

The market for tourism in remote areas is booming as never before. Countries all across the world are actively promoting their ‘wilderness’ regions – such as mountains, Arctic lands, deserts, small islands and wetlands – to high-spending tourists. The attraction of these areas is obvious: by definition, wilderness tourism requires little or no initial investment. But that does not mean that there is no cost. As the 1992 United Nations Conference on Environment and Development recognized, these regions are fragile (i.e. highly vulnerable to abnormal pressures)not just in terms of their ecology, but also in terms of the culture of their inhabitants. The three most significant types of fragile environment in these respects, and also in terms of the proportion of the Earth’s surface they cover, are deserts, mountains and Arctic areas. An important characteristic is their marked seasonality, with harsh conditions prevailing for many months each year. Consequently, most human activities, including tourism, are limited to quite clearly defined parts of the year.

偏远地区的旅游市场正变的空前繁荣。世界各地的国家都在积极向高消费游客推广其“荒野”地区，例如山脉，北极地区，沙漠，小岛和湿地。这些地区的吸引力是显而易见的：按照定义，荒野旅游几乎或完全不需要初期投资。但这并不意味着没有成本。正如1992年联合国环境与发展会议意识到的，这些地区在他们的生态环境和居民文化方面都十分脆弱（非常容易受到外界压力的影响） 。在这些方面以及就它们所覆盖的地球表面的比例而言，三种最重要的脆弱环境类型是沙漠，山脉和北极地区。一个重要的特征是其明显的季节性，每年都有数月处在极其恶劣的条件下。因此，大多数人类活动，包括旅游业，都局限于一年中特定的部分。

**A部分第2段**

Tourists are drawn to these regions by their natural landscape beauty and the unique cultures of their indigenous people. And poor governments in these isolated areas have welcomed the new breed of ‘adventure tourist’, grateful for the hard currency they bring. This article is from Laokaoya website. For several years now, tourism has been the prime source of foreign exchange in Nepal and Bhutan. Tourism is also a key element in the economies of Arctic zones such as Lapland and Alaska and in desert areas such as Ayers Rock in Australia and Arizona’s Monument Valley.

游客因其自然景观的优美和土著人民独特的文化而被这些地区吸引。这些文章来自老烤鸭雅思偏远地区的贫穷政府欢迎新型的“冒险旅行者”，为他们带来的硬通货而充满感激。几年来，旅游业一直是尼泊尔和不丹外汇的主要来源。旅游业在拉普兰和阿拉斯加等北极地区以及澳大利亚艾尔斯岩和亚利桑那州的纪念碑谷等沙漠地区的经济中也很重要。

**B部分第1段**

Once a location is established as a main tourist destination, the effects on the local community are profound. When hill-farmers, for example, can make more money in a few weeks working as porters for foreign trekkers than they can in a year working in their fields, it is not surprising that many of them give up their farm-work, which is thus left to other members of the family. In some hill-regions, this has led to a serious decline in farm output and a change in the local diet, because there is insufficient labour to maintain terraces and irrigation systems and tend to crops. The result has been that many people in these regions have turned to outside supplies of rice and other foods.

一旦一个地点被确立为主要的旅游目的地，它对当地社区的影响将是深远的。例如，当山区农民在担任外国徒步旅行者的搬运工几个星期就能赚到比在田间工作一年更多的钱时，他们中的许多人放弃农业劳动，将其留给其他家庭成员就不足为奇了。在一些丘陵地区，由于没有足够的劳动力维持梯田和灌溉系统并照顾农作物，农业产量严重下降，并导致当地饮食的变化。结果是这些地区的许多人需要外部供应大米和其他食物。

**B部分第2段**

In Arctic and desert societies, year-round survival has traditionally depended on hunting animals and fish and collecting fruit over a relatively short season. However, as some inhabitants become involved in tourism, they no longer have time to collect wild food; this has led to increasing dependence on bought food and stores. Tourism is not always the culprit behind such changes. All kinds of wage labour, or government handouts, tend to undermine traditional survival systems. Whatever the cause, the dilemma is always the same: what happens if these new, external sources of income dry up?

在北极和沙漠地区，一整年的生存传统上依赖于在相对较短的季节里猎杀动物和鱼类并收集果实。但是，随着一些居民开始涉足旅游业，他们不再有时间收集野生食物。这导致他们对购买食品和商店的依赖性越来越大。旅游业并不总是这种变化背后的罪魁祸首。各种各样的工资劳动或政府补助，往往会破坏传统的生存制度。无论原因是什么，困境始终是相同的：如果这些新的外部收入来源枯竭，会发生什么？

**B部分第3段**

The physical impact of visitors is another serious problem associated with the growth in adventure tourism. Much attention has focused on erosion along major trails, but perhaps more important are the deforestation and impacts on water supplies arising from the need to provide tourists with cooked food and hot showers. In both mountains and deserts, slow-growing trees are often the main sources of fuel and water supplies may be limited or vulnerable to degradation through heavy use.

游客自身的影响是另一个与冒险旅游的发展相关的严重问题。大多数注意力都集中在主要步道的侵蚀上，但也许更重要的是由于需要为游客提供熟食和热水淋浴而造成的森林砍伐和对水供应的影响。在山区和沙漠中，生长缓慢的树木通常是燃料的主要来源，并且供水可能受到限制，或者容易因大量使用而退化。

**C部分第1段**

Stories about the problems of tourism have become legion in the last few years. Yet it does not have to be a problem. Although tourism inevitably affects the region in which it takes place, the costs to these fragile environments and their local cultures can be minimized. Indeed, it can even be a vehicle for reinvigorating local cultures, as has happened with the Sherpas of Nepal’s Khumbu Valley and in some Alpine villages. And a growing number of adventure tourism operators are trying to ensure that their activities benefit the local population and environment over the long term.

最近几年里，有关旅游业问题的故事层出不穷。但这并不一定是问题。尽管旅游业不可避免地会影响其发生的地区，但可以将对这些脆弱环境及其当地文化的影响降到最低。确实，文章来自老烤鸭雅思它甚至可以成为振兴当地文化的工具，就像尼泊尔昆布山谷的Sherpas和某些Alpine村庄那样。越来越多的冒险旅游经营者试图确保他们的活动从长远来看会使当地人口和环境受益。

**C部分第2段**

In the Swiss Alps, communities have decided that their future depends on integrating tourism more effectively with the local economy. Local concern about the rising number of second home developments in the Swiss Pays d’Enhaut resulted in limits being imposed on their growth. There has also been a renaissance in communal cheese production in the area, providing the locals with a reliable source of income that does not depend on outside visitors.

在瑞士阿尔卑斯山，社区认为他们的未来取决于更有效地将旅游业与当地经济相结合。当地人对瑞士Pays d’Enhaut第二套住房开发数量的增加感到担忧，导致其发展受到限制。该地区的集体奶酪生产也正在复兴，这为当地人提供了可靠的收入来源，而这些收入不依赖外部访客。

**C部分第3段**

Many of the Arctic tourist destinations have been exploited by outside companies, who employ transient workers and repatriate most of the profits to their home base. But some Arctic communities are now operating tour businesses themselves, thereby ensuring that the benefits accrue locally. For instance, a native corporation in Alaska, employing local people, is running an air tour from Anchorage to Kotzebue, where tourists eat Arctic food, walk on the tundra and watch local musicians and dancers.

许多北极旅游胜地已被外部公司开发，这些公司雇用临时工并将大部分利润汇回本国。但是，一些北极社区现在自己经营旅游业务，从而确保了收益在当地积累。例如，阿拉斯加的一家本地公司雇用当地人，正在运营一条从安克雷奇（Anchorage）到科泽布（Kotzebue）的空中旅行线路，游客在这里吃北极食物，在冻原上行走并观看当地音乐家和舞者的表演。

**C部分第4段**

Native people in the desert regions of the American Southwest have followed similar strategies, encouraging tourists to visit their pueblos and reservations to purchase high-quality handicrafts and artwork. The Acoma and San Ildefonso pueblos have established highly profitable pottery businesses, while the Navajo and Hopi groups have been similarly successful with jewelry.

美国西南部沙漠地区的原住民也采取了类似的策略，鼓励游客参观他们的普韦布洛村落和保留区，并购买高品质的手工艺品和艺术品。Acoma和San Ildefonso村庄建立了利润很高的陶器企业，而纳瓦霍和霍皮基团已经在珠宝方面取得类似的成功。

**C部分第5段**

Too many people living in fragile environments have lost control over their economies, their culture and their environment when tourism has penetrated their homelands. Merely restricting tourism cannot be the solution to the imbalance, because people’s desire to see new places will not just disappear. Instead, communities in fragile environments must achieve greater control over tourism ventures in their regions, in order to balance their needs and aspirations with the demands of tourism. A growing number of communities are demonstrating that, with firm communal decision-making, this is possible. The critical question now is whether this can become the norm, rather than the exception.

当旅游业渗透到他们的家园时，太多生活在脆弱环境中的人失去了其对经济，文化和环境的控制。仅仅限制旅游业并不能解决不平衡的问题，因为人们对新地方的渴望并不会消失。取而代之的是，处于脆弱环境中的社区必须更好地控制其所在地的旅游企业，以平衡他们与旅游业的需求。越来越多的社区表明，通过坚定的社区决策，这是可能的。现在的关键问题是，这是否可以成为常态，而不是例外。

### [5 Test 4Passage 2 Flawed Beauty: the problem with toughened glass 钢化玻璃的问题](http://www.laokaoya.com/22906.html)

**第1自然段**

On 2nd August 1999, a particularly hot day in the town of Cirencester in the UK, a large pane of toughened glass in the roof of a shopping centre at Bishops Walk shattered without warning and fell from its frame. When fragments were analysed by experts at the giant glass manufacturer Pilkington, which had made the pane, they found that minute crystals of nickel sulphide trapped inside the glass had almost certainly caused the failure.

1999年8月2日，英国Cirencester镇正经历极其炎热的一天。在没有任何警示的情况下，一大块钢化玻璃突然破裂，并从位于主教大道的购物中心屋顶脱落。制作该窗户的大型玻璃制造商Pilkington的专家对碎片进行了分析后，发现几乎可以肯定的是，玻璃中截留的硫化镍微小晶体导致了这一故障。

**第2自然段**

‘The glass industry is aware of the issue,’ says Brian Waldron, chairman of the standards committee at the Glass and Glazing Federation, a British trade association, and standards development officer at Pilkington. But he insists that cases are few and far between. ‘It’s a very rare phenomenon,’ he says.

英国贸易协会玻璃联合会标准委员会主席，同时也是Pikington标准制定官员的Brian Waldron说，玻璃行业已经意识到了这个问题。但是他坚持认为案件很少而且相差不大。他说，这是一种非常罕见的现象。

**第3自然段**

Others disagree. ‘On average I see about one or two buildings a month suffering from nickel sulphide related failures,’ says Barrie Josie, a consultant engineer involved in the Bishops Walk investigation. Other experts tell of similar experiences. Tony Wilmott of London-based consulting engineers Sandberg, and Simon Armstrong at CladTech Associates in Hampshire both say they know of hundreds of cases. ‘What you hear is only the tip of the iceberg,’ says Trevor Ford, a glass expert at Resolve Engineering in Brisbane, Queensland. He believes the reason is simple: ‘No-one wants bad press.’

其他人不同意。参与主教大道文章来自老烤鸭雅思调查的顾问工程师巴里·乔西（Barrie Josie）表示：“平均而言，我每个月都能看到大约一两个建筑物遭受与硫化镍有关的故障。” 其他专家讲述了类似的经历。伦敦咨询工程师Sandberg的Tony Wilmott 和汉普郡的CladTech Associates的Simon Armstrong 都说他们知道数百起案件。“你听到的仅仅是冰山一角，”特雷弗·福特说。他是昆士兰州布里斯班Resolve Engineering公司的玻璃专家。他认为原因很简单：“没有人想要坏新闻。”

**第4自然段**

Toughened glass is found everywhere, from cars and bus shelters to the windows, walls and roofs of thousands of buildings around the world. It’s easy to see why. This glass has five times the strength of standard glass, and when it does break it shatters into tiny cubes rather than large, razor-sharp shards. Architects love it because large panels can be bolted together to make transparent walls, and turning it into ceilings and floors is almost as easy.

钢化玻璃随处可见，从轿车和公交车站到世界各地成千上万的建筑物的窗户，墙壁与屋顶。很容易明白为什么。这种玻璃的强度是标准玻璃的五倍。一旦破裂，它会碎成微小的立方体，而不是大而锋利的碎片。建筑师之所以喜欢它，是因为可以将大块的玻璃固定在一起以形成透明的墙，而将其变成天花板和地板几乎同样容易。

**第5自然段**

It is made by heating a sheet of ordinary glass to about 620℃ to soften it slightly, allowing its structure to expand, and then cooling it rapidly with jets of cold air. This causes the outer layer of the pane to contract and solidify before the interior. When the interior finally solidifies and shrinks, it exerts a pull on the outer layer that leaves it in permanent compression and produces a tensile force inside the glass. As cracks propagate best in materials under tension, the compressive force on the surface must be overcome before the pane will break, making it more resistant to cracking.

它是通过将一片普通玻璃加热到620 ℃ 使其略微软化，结构膨胀，然后用冷空气迅速冷却而制成的。这导致窗格玻璃的外层在内部之前收缩和固化。当内部最终固化并收缩时，它会在外层上施加拉力，使它处于永久压缩状态，并在玻璃内部产生张力。由于裂纹在张力下在材料中传播最好，因此必须在玻璃破裂之前克服表面上的压缩力，以使其更抗破裂。、

**第6自然段**

The problem starts when glass contains nickel sulphide impurities. Trace amounts of nickel and sulphur are usually present in the raw materials used to make glass, and nickel can also be introduced by fragments of nickel alloys falling into the molten glass. As the glass is heated, these atoms react to form tiny crystals of nickel sulphide. Just a tenth of a gram of nickel in the furnace can create up to 50,000 crystals.

当玻璃中含有硫化镍杂质时，问题就开始了。微量的镍和硫通常存在于制造玻璃的原材料中，而且镍也可以通过落入熔融玻璃中的镍合金碎片进入其中。随着玻璃的加热，这些原子反应形成硫化镍的微小晶体。熔炉中仅十分之一克的镍就能产生多达50,000个晶体。

**第7自然段**

These crystals can exist in two forms: a dense form called the alpha phase, which is stable at high temperatures, and a less dense form called the beta phase, which is stable at room temperatures. The high temperatures used in the toughening process convert all the crystals to the dense, compact alpha form. But the subsequent cooling is so rapid that the crystals don’t have time to change back to the beta phase. This leaves unstable alpha crystals in the glass, primed like a coiled spring, ready to revert to the beta phase without warning.

这些晶体可以以两种形式存在：一种称为α相的致密形式，在高温下稳定；一种称为β相的致密性较低的形式，在室温下稳定。硬化过程中使用的高温将所有晶体转化为紧缩、致密的α形式。但是随后的冷却如此之快，以至于晶体没有时间变回β相。这会在玻璃中留下不稳定的α晶体，就像盘绕的弹簧一样随时会恢复到β相，而不会发出警告。

**第8自然段**

When this happens, the crystals expand by up to 4%. And if they are within the central, tensile region of the pane, the stresses this unleashes can shatter the whole sheet. The time that elapses before failure occurs is unpredictable. It could happen just months after manufacture, or decades later, although if the glass is heated – by sunlight, for example – the process is speeded up. Ironically, says Graham Dodd, of consulting engineers Arup in London, the oldest pane of toughened glass known to have failed due to nickel sulphide inclusions was in Pilkington’s glass research building in Lathom, Lancashire. The pane was 27 years old.

发生这种情况时，晶体最多会膨胀4％。如果它们在玻璃板的中央张力区域内，释放出来的应力会破坏整块玻璃板。故障发生之前的时间长短是无法预测的。它可能在制造后的几个月内发生，也可能在几十年后发生，尽管玻璃被加热的话，过程会加快（比如在阳光照射下升温）。具有讽刺意味的是，伦敦咨询公司Arup的格雷厄姆·多德（Graham Dodd）表示，最古老的因硫化镍夹杂而失效的钢化玻璃窗格，位于Lancashire，Lathom，Pikington的玻璃研究中心。当时它已经有27年的历史

**第9自然段**

Data showing the scale of the nickel sulphide problem is almost impossible to find. The picture is made more complicated by the fact that these crystals occur in batches. So even if, on average, there is only one inclusion in 7 tonnes of glass, if you experience one nickel sulphide failure in your building, that probably means you’ve got a problem in more than one pane. Josie says that in the last decade he has worked on over 15 buildings with the number of failures into double figures.

几乎不可能找到硫化镍问题规模的相关数据。这些晶体成批出现，使情况变得更加复杂。因此，即使平均而言，在7 吨玻璃中只有一块包含一杂质，如果你在建筑物中遇到一次硫化镍失效的情况，那可能意味着在不止一块玻璃存在问题。乔西说，在过去的十年中，他对超过15座建筑进行研究，失败的数量达到了两位数。

**第10自然段**

One of the worst examples of this is Waterfront Place, which was completed in 1990. Over the following decade the 40-storey Brisbane block suffered a rash of failures. Eighty panes of its toughened glass shattered due to inclusions before experts were finally called in. John Barry, an expert in nickel sulphide contamination at the University of Queensland, analysed every glass pane in the building. Using a studio camera, a photographer went up in a cradle to take photos of every pane. These were scanned under a modified microfiche reader for signs of nickel sulphide crystals. ‘We discovered at least another 120 panes with potentially dangerous inclusions which were then replaced,’ says Barry. ‘It was a very expensive and time-consuming process that took around six months to complete.’ Though the project cost A$1.6 million (nearly ￡700,000), the alternative – re-cladding the entire building – would have cost ten times as much.

最糟糕的例子之一是1990年建成的海滨广场（Waterfront Place）。在随后的十年中，布里斯班40层高的大楼遭受了多次事故。在专家最终被召集过来之前，其八十块玻璃钢化玻璃都因为杂质而破裂了。约翰·巴里，昆士兰硫化物污染专家，分析了建筑的每个玻璃面板。摄影师在围栏里用摄影棚的照相机为每块窗格拍照。这些在改进的微缩胶片器上进行扫描以寻找硫化镍晶体迹象。巴里说：“我们至少发现了120块带有潜在危险杂质的玻璃，然后将其更换。这是一个非常昂贵而且耗时的过程，大约需要六个月才能完成。” 虽然工程高达 160万澳元（约合700,000 英镑），其替代方案-重新覆盖整个建筑物-成本将是这的十倍。

### [5 Test 4Passage 3 the effects of light on plant and animal species 光对动植物的影响](http://www.laokaoya.com/22968.html)

**第1自然段**

Light is important to organisms for two different reasons. Firstly it is used as a cue for the timing of daily and seasonal rhythms in both plants and animals, and secondly it is used to assist growth in plants.

光线对生物很重要的原因有两个。首先，它被用于动植物每天和季节性活动时间节点的提示，其次，它被用于辅助植物的生长。

**第2自然段**

Breeding in most organisms occurs during a part of the year only, and so a reliable cue is needed to trigger breeding behaviour. Day length is an excellent cue, because it provides a perfectly predictable pattern of change within the year. In the temperate zone in spring, temperatures fluctuate greatly from day to day, but day length increases steadily by a predictable amount. The seasonal impact of day length on physiological responses is called photoperiodism, and the amount of experimental evidence for this phenomenon is considerable. For example, some species of birds’ breeding can be induced even in midwinter simply by increasing day length artificially (Wolfson 1964). Other examples of photoperiodism occur in plants. A short-day plant flowers when the day is less than a certain critical length. A long-day plant flowers after a certain critical day length is exceeded. In both cases the critical day length differs from species to species. Plants which flower after a period of vegetative growth, regardless of photoperiod, are known as day-neutral plants.

大多数生物的繁殖仅在一年的部分时间内发生，因此需要可靠的线索来触发繁殖行为。日长是一个很好的提示，因为它提供了一年中变化的可预测规律。在春季的温带地区，每天的温度波动很大，但日长每天稳定增加特定的数量。日长对生理反应的季节性影响称为光周期，这种现象的实验证据数量可观。例如，即使是在冬季，也可以通过人工增加日长来诱导某些鸟类的繁殖（Wolfson 1964）。 光周期的其他例子存在于植物中。当白天短于特定的关键长度时，短日照植物就会开花。超过了某个关键的白天长度时，长日照植物就会开花。在这两种情况下，关键的日照长度因物种而异。在不考虑光周期的情况下，经过一段时间生长后开花的植物被称为日中性植物。

**第3自然段**

Breeding seasons in animals such as birds have evolved to occupy the part of the year in which offspring have the greatest chances of survival. Before the breeding season begins, food reserves must be built up to support the energy cost of reproduction, and to provide for young birds both when they are in the nest and after fiedging. Thus many temperate-zone birds use the increasing day lengths in spring as a cue to begin the nesting cycle, because this is a point when adequate food resources will be assured.

动物（如鸟类）的繁殖季节往往占据一年中后代生存概率最大的一部分时间。在繁殖季节开始之前，必须建立食物储备文章来自老烤鸭雅思以支持繁殖所需的能量消耗，并为幼鸟在巢中和飞翔后提供营养。因此，许多温带地区的鸟类利用春季不断增加的日长作为开始筑巢周期的提示，因为这时候可以确保有充足的食物来源。

**第4自然段**

The adaptive significance of photoperiodism in plants is also clear. Short-day plants that flower in spring in the temperate zone are adapted to maximising seedling growth during the growing season. Long-day plants are adapted for situations that require fertilization by insects, or a long period of seed ripening. Short-day plants that flower in the autumn in the temperate zone are able to build up food reserves over the growing season and over winter as seeds. Day-neutral plants have an evolutionary advantage when the connection between the favourable period for reproduction and day length is much less certain. For example, desert annuals germinate, flower and seed whenever suitable rainfall occurs, regardless of the day length.

光周期性在植物中的适应性意义也很明显。在温带地区春季开花的短日照植株在生长季节会最大化幼苗的生长。长日照植物适合需要昆虫施肥或种子成熟期长的情况。在温带地区秋季开花的短日照植物能够在生长季节和冬季以种子的形式积累食物储备。当繁殖的有利时期和日长之间的联系不太确定时，日中性植物具有进化优势。例如，无论白天多长，只要有合适的降雨，沙漠的一年生植物就会发芽，开花和播种。

**第5自然段**

The breeding season of some plants can be delayed to extraordinary lengths. Bamboos are perennial grasses that remain in a vegetative state for many years and then suddenly flower, fruit and die (Evans 1976). Every bamboo of the species Chusquea abietifolia on the island of Jamaica flowered, set seed and died during 1884. The next generation of bamboo flowered and died between 1916 and 1918, which suggests a vegetative cycle of about 31 years. The climatic trigger for this flowering cycle is not yet known, but the adaptive significance is clear. The simultaneous production of masses of bamboo seeds (in some cases lying 12 to 15 centimetres deep on the ground) is more than all the seed-eating animals can cope with at the time, so that some seeds escape being eaten and grow up to form the next generation (Evans 1976).

有些植物的繁殖期可能会延迟很长的时间。竹子是多年生草本植物，会处于生长状态许多年，然后突然开花，结实和枯死（Evans 1976）。1884年，牙买加岛上的每一种Chusquea abietifolia竹子都开花，结实并死亡。下一代竹子在1916年至1918年之间开花并死亡，这表明其营养循环约为31年。尚不清楚该开花周期的气候触发因素，但适应性意义很明显。大量同时存在的竹子种子（在某些情况下位于地面12至15 厘米深处）超出了吃种子动物的处理能力，因此一些种子逃脱了被食用的命运并成长为下一代（Evans 1976）。

**第6自然段**

The second reason light is important to organisms is that it is essential for photosynthesis. This is the process by which plants use energy from the sun to convert carbon from soil or water into organic material for growth. The rate of photosynthesis in a plant can be measured by calculating the rate of its uptake of carbon. There is a wide range of photosynthetic responses of plants to variations in light intensity. Some plants reach maximal photosynthesis at one-quarter full sunlight, and others, like sugarcane, never reach a maximum, but continue to increase photosynthesis rate as light intensity rises.

光对生物很重要的第二个原因是它对光合作用至关重要。这是植物利用太阳的能量将土壤或水中的碳转化成有机物质进行生长的过程。植物中的光合作用速率可以通过计算其碳吸收速率来测量。植物对光强度变化的光合作用响应范围很广。一些植物在四分之一的日光下达到最大的光合作用，而其他植物（如甘蔗）从未达到过最大值，而是随着光强度的提高，不断提升光合作用速率。

**第7自然段**

Plants in general can be divided into two groups: shade-tolerant species and shade-intolerant species. This classification is commonly used in forestry and horticulture. Shade-tolerant plants have lower photosynthetic rates and hence have lower growth rates than those of shade-intolerant species. Plant species become adapted to living in .a certain kind of habitat, and in the process evolve a series of characteristics that prevent them from occupying other habitats. Grime (1966) suggests that light may be one of the major components directing these adaptations. For example, eastern hemlock seedlings are shade-tolerant. They can survive in the forest understorey under very low light levels because they have a low photosynthetic rate.

一般而言，植物可分为两类：耐阴种和不耐阴种。这种分类通常用于林业和园艺业。耐阴植物的光合速率较低，因此其生长速度低于不耐阴植物的生长速率。植物物种适应了生活在某一特定的栖息地中，并在这个过程中进化出一系列防止其占用其他栖息地特征。Grime（1966）提出，光可能是指导这些适应过程的主要原因之一。例如，东部铁杉幼苗具有耐阴性。因为其光合作用速率较低，它们可以在非常低的光照水平下在森林伞盖之下生存。

# 六

## 6Test1

### [6 Test 1Passage 1 Australia’s Sporting Success 澳大利亚的体育成就](http://www.laokaoya.com/23076.html)

**自然段A**

They play hard, they play often, and they play to win. Australian sports teams win more than their fair share of titles, demolishing rivals with seeming ease. How do they do it? A big part of the secret is an extensive and expensive network of sporting academies underpinned by science and medicine. At the Australian Institute of Sport (AIS), hundreds of youngsters and pros live and train under the eyes of coaches. Another body, the Australian Sports Commission (ASC), finances programmes of excellence in a total of 96 sports for thousands of sportsmen and women. Both provide intensive coaching, training facilities and nutritional advice.

他们努力工作，经常运动，并且努力赢得胜利。澳大利亚运动队赢得的冠军数量远远超过他们应得的份额，似乎轻松地摧毁了对手。他们是怎么做到的呢？秘密的很大一部分是以科学和医学为基础的广泛而昂贵的体育学术网络。在澳大利亚体育学院（AIS），数百名年轻人和职业选手在教练的指导下生活和训练。另一个机构，澳大利亚体育委员会（ASC），为数千名男女运动员提供了96项体育项目的资助。两者都提供高强度的指导，培训设施和营养建议。

**自然段B**

Inside the academies, science takes centre stage. The AIS employs more than 100 sports scientists and doctors, and collaborates with scores of others in universities and research centres. AIS scientists work across a number of sports, applying skills learned in one – such as building muscle strength in golfers – to others, such as swimming and squash. They are backed up by technicians who design instruments to collect data from athletes. They all focus on one aim: winning. ‘We can’t waste our time looking at ethereal scientific questions that don’t help the coach work with an athlete and improve performance,’ says Peter Fricker, chief of science at AIS.

在学院内部，科学占据舞台的中心。AIS聘用了100多名体育科学家和医生，并与大学和研究中心的其他数十名人员进行了合作。AIS科学家的工作文章来自老烤鸭雅思涵盖多种体育活动，将在一项运动中学到的技能（例如提高高尔夫球手的肌肉力量）应用到其他运动中，例如游泳和壁球。它们得到技术人员的支持。这些技术人员设计仪器以收集运动员数据。他们都专注于一个目标：获胜。AIS科学主任彼得·弗里克（Peter Fricker）表示：“我们不能浪费时间在飘渺的科学问题上，这些问题不能帮助教练与运动员合作并提高成绩。”

**自然段C**

A lot of their work comes down to measurement – everything from the exact angle of a swimmer’s dive to the second-by-second power output of a cyclist. This data is used to wring improvements out of athletes. The focus is on individuals, tweaking performances to squeeze an extra hundredth of a second here, an extra millimetre there. No gain is too slight to bother with. It’s the tiny, gradual improvements that add up to world-beating results. To demonstrate how the system works, Bruce Mason at AIS shows off the prototype of a 3D analysis tool for studying swimmers. A wire-frame model of a champion swimmer slices through the water, her arms moving in slow motion. Looking side-on, Mason measures the distance between strokes. From above, he analyses how her spine swivels. When fully developed, this system will enable him to build a biomechanical profile for coaches to use to help budding swimmers. Mason’s contribution to sport also includes the development of the SWAN (SWimming ANalysis)system now used in Australian national competitions. It collects images from digital cameras running at 50 frames a second and breaks down each part of a swimmer’s performance into factors that can be analysed individually – stroke length, stroke frequency, average duration of each stroke, velocity, start, lap and finish times, and so on. At the end of each race, SWAN spits out data on each swimmer

他们的许多工作都归结为测量-从游泳者入水的确切角度到骑行者的每秒功率输出，无所不包。这些数据用于促进运动员的进步。重点放在个人身上，通过在这里提升百分之一秒，在那里提升一毫米来调整运动员的表现。没有任何提升是微不足道的。正是这种微小的、逐步的改进积累成世界瞩目的成果。为了演示该系统的工作原理，AIS的Bruce Mason展示了用于研究游泳者的3D分析工具的原型。冠军游泳者的线框模型划过水面，手臂以慢动作运动。从侧面看，梅森测量每次划水之间的距离。从上面，他分析了她的脊椎如何旋转。完全开发后，该系统将使他能够建立生物力学特征，供教练使用，以帮助崭露头角的游泳者。梅森（Mason）对体育的贡献还包括开发了SWAN（SWimming ANalysis）系统，该系统现已在澳大利亚全国比赛中使用。它从以每秒50帧的速度运行的数码相机中收集图像，并将游泳者表现的每个部分分解为可以单独分析的因素-划水长度，划水频率，每次划水的平均持续时间，速度，开始，圈速和结束时间，等等。在每场比赛结束时，SWAN会向每位游泳者反馈数据。

**自然段D**

‘Take a look,’ says Mason, pulling out a sheet of data. He points out the data on the swimmers in second and third place, which shows that the one who finished third actually swam faster. So why did he finish 35 hundredths of a second down? ‘His turn times were 44 hundredths of a second behind the other guy,’ says Mason. ‘If he can improve on his turns, he can do much better’ This is the kind of accuracy that AIS scientists’ research is bringing to a range of sports. With the Cooperative Research Centre for Micro Technology in Melbourne, they are developing unobtrusive sensors that will be embedded in an athlete’s clothes or running shoes to monitor heart rate, sweating, heat production or any other factor that might have an impact on an athlete’s ability to run. There’s more to it than simply measuring performance. Fricker gives the example of athletes who may be down with coughs and colds 11 or 12 times a year. After years of experimentation, AlS and the University of Newcastle in New South Wales developed a test that measures how much of the immune-system protein immunoglobulin A is present in athletes’ saliva. If IgA levels suddenly fall below a certain level, training is eased or dropped altogether. Soon, IgA levels start rising again, and the danger passes. Since the tests were introduced, AIS athletes in all sports have been remarkably successful at staying healthy.

“看看吧”梅森拿出一张数据单，他指出了第二名和第三名游泳者的数据。它显示第三名的游泳者实际上游泳得更快。那么，为什么他慢了0.35秒呢？梅森说：“他的转身时间比另一个人慢了0.44秒。” “如果他能在转弯中有所进步，就可以做得更好”。这是AIS科学家的研究为一系列运动带来的准确性。通过与墨尔本微技术合作研究中心的合作，他们正在开发不显眼的传感器。该传感器将嵌入运动员的衣服或跑鞋中，以监测心率，出汗，产热量或任何其他可能影响运动员跑步能力的因素。除了简单地衡量表现之外，它还有更多的功能。弗里克（Fricker）举了每年可能因咳嗽和感冒而倒下11次或12次的运动员的例子。经过多年的实验，ALS和纽卡斯尔的新南威尔士大学开发出一种测试，可以测量运动员唾液中免疫球蛋白A的数量。如果IgA水平突然下降到一定水平以下，则训练就会更加轻松或完全放弃。很快，IgA水平又开始上升，危险过去了。自从引入测试以来，AIS所有项目的运动员在保持健康方面都非常成功。

**自然段E**

Using data is a complex business. Well before a championship, sports scientists and coaches start to prepare the athlete by developing a ‘competition model’, based on what they expect will be the winning times. ‘You design the model to make that time,’ says Mason. ‘A start of this much, each free-swimming period has to be this fast, with a certain stroke frequency and stroke length, with turns done in these times.’ All the training is then geared towards making the athlete hit those targets, both overall and for each segment of the race. Techniques like these have transformed Australia into arguably the world’s most successful sporting nation.

使用数据是一项复杂的业务。在获得冠军之前，体育科学家和教练开始根据他们期望的获胜节点开发“竞争模型”，为运动员做准备。梅森说：“您可以设计模型以节省时间。提前这么久开始，每次游泳周期必须这么快，并具有一定的划水频率和划水长度，并在这些时间点进行转弯”。然后，所有的训练都旨在使运动员在整个比赛过程和各个阶段达到这些目标。诸如此类的技术使澳大利亚成为了世界上最成功的体育国家。

**自然段F**

Of course, there’s nothing to stop other countries copying-and many have tried. Some years ago, the AIS unveiled coolant-lined jackets for endurance athletes. At the Atlanta Olympic Games in 1996, these sliced as much as two per cent off cyclists’ and rowers’ times. Now everyone uses them. The same has happened to the ‘altitude tent’, developed by AIS to replicate the effect of altitude training at sea level. But Australia’s success story is about more than easily copied technological fixes, and up to now no nation has replicated its all-encompassing system.

当然，没有什么可以阻止其他国家模仿，而且许多国家已经尝试过。几年前，AIS为耐力运动员推出了内衬冷却剂的夹克。在1996年的亚特兰大奥运会上，这些设备最多可将自行车运动员和赛艇运动员的时间减少2％。现在每个人都在使用它们。AIS开发的用于复制海平面海拔训练效果的“海拔帐篷”也出现同样的情况。但是，澳大利亚的成功故事不仅仅在于简单地复制技术补丁。迄今为止，还没有哪个国家能够复制其整体的系统。

### [6 Test1Passage2 Delivering the Goods 货物运输](http://www.laokaoya.com/23165.html)

**自然段A**

International trade is growing at a startling pace. While the global economy has been expanding at a bit over 3% a year, the volume of trade has been rising at a compound annual rate of about twice that. Foreign products, from meat to machinery, play a more important role in almost every economy in the world, and foreign markets now tempt businesses that never much worried about sales beyond their nation’s borders.

国际贸易正以惊人的速度增长。尽管全球经济以每年3％的速度扩张，但贸易量却以每年约两倍的复合年增长率增长。从肉类到机械，外国产品在世界上几乎每个经济体中都扮演着更重要的角色。现在的外国市场吸引着哪些从不担心境外销售的企业。

**自然段B**

What lies behind this explosion in international commerce? The general worldwide decline in trade barriers, such as customs duties and import quotas, is surely one explanation. The economic opening of countries that have traditionally been minor players is another. But one force behind the import-export boom has passed all but unnoticed: the rapidly falling cost of getting goods to market. Theoretically, in the world of trade, shipping costs do not matter. Goods, once they have been made, are assumed to move instantly and at no cost from place to place. The real world, however, is full of frictions. Cheap labour may make Chinese clothing competitive in America, but if delays in shipment tie up working capital and cause winter coats to arrive in spring, trade may lose its advantages.

国际贸易爆炸性增长背后的原因是什么？全世界范围内诸如关税和进口配额等贸易壁垒的普遍下降无疑是一种解释。传统上，一直是次要角色的国家的经济开放是另一种解释。但是，进出口热潮背后的一种力量被忽文章来自老烤鸭雅思略了，即将商品推向市场的成本的迅速下降。从理论上讲，在贸易世界中，运输成本并不重要。货物一旦制成，就被认为可以立刻并且毫无成本地在不同地方之间移动。但是，现实世界充满摩擦。廉价劳动力可能会使中国服装在美国具有竞争力。但是，如果运输延误占用了营运资金并导致冬季大衣在春季到达，贸易可能会失去其优势。

**自然段C**

At the turn of the 20th century, agriculture and manufacturing were the two most important sectors almost everywhere, accounting for about 70% of total output in Germany, Italy and France, and 40-50% in America, Britain and Japan. International commerce was therefore dominated by raw materials, such as wheat, wood and iron ore, or processed commodities, such as meat and steel. But these sorts of products are heavy and bulky and the cost of transporting them relatively high.

20世纪初，农业和制造业几乎是世界上最重要的两个部门，占到德国、意大利和法国总产量的70％，美国、英国和日本的40-50％。因此，国际贸易以诸如小麦，木材和铁矿石之类的原材料，或诸如肉类和钢铁之类的加工商品为主。但是这些产品十分笨重，而且运输成本较高。

**自然段D**

Countries still trade disproportionately with their geographic neighbours. Over time, however, world output has shifted into goods whose worth is unrelated to their size and weight. Today, it is finished manufactured products that dominate the flow of trade, and, thanks to technological advances such as lightweight components, manufactured goods themselves have tended to become lighter and less bulky. As a result, less transportation is required for every dollar’s worth of imports or exports.

各国仍然与其地理上的邻国进行不成比例的贸易。但是，随着时间的流逝，世界产出已经转移到其价值与大小和重量无关的商品上。如今，制成品主导着贸易的流动。由于诸如轻量化组件之类的技术进步，制成品本身变得更轻，体积更小。结果，每进口或出口一美元产品所需的运输量就变少了。

**自然段E**

To see how this influences trade, consider the business of making disk drives for computers. Most of the world’s disk-drive manufacturing is concentrated in South-east Asia. This is possible only because disk drives, while valuable, are small and light and so cost little to ship. Computer manufacturers in Japan or Texas will not face hugely bigger freight bills if they import drives from Singapore rather than purchasing them on the domestic market. Distance therefore poses no obstacle to the globalisation of the disk-drive industry.

要了解这如何影响贸易，可以考虑下为计算机制造磁盘驱动器的业务。世界上大多数磁盘驱动器的制造都集中在东南亚。这之所以成为可能是因为磁盘驱动器虽然价值很高，但又小又轻，因此运输成本很小。如果日本或德州的计算机制造商从新加坡进口驱动器而不是在国内市场上购买驱动器，他们并不会面临高的太多的运费。因此，距离对磁盘驱动器行业的全球化没有任何障碍。

**自然段Ｆ**

This is even more true of the fast-growing information industries. Films and compact discs cost little to transport, even by aeroplane. Computer software can be ‘exported’ without ever loading it onto a ship, simply by transmitting it over telephone lines from one country to another, so freight rates and cargo-handling schedules become insignificant factors in deciding where to make the product. Businesses can locate based on other considerations, such as the availability of labour, while worrying less about the cost of delivering their output.

在迅速发展的信息产业中，情况更是如此。胶卷和光盘即使用飞机运输成本也很低。计算机软件可以通过电话线从一个国家传输到另一个国家实现出口，而无需将其装载到船上。因此运费和货物装卸安排对于决定在哪里生产该产品并不重要。企业可以基于其他考虑（例如劳动力）来定位，而不必担心交付产品的成本。

**自然段G**

In many countries deregulation has helped to drive the process along. But, behind the scenes, a series of technological innovations known broadly as containerisation and intermodal transportation has led to swift productivity improvements in cargo-handling. Forty years ago, the process of exporting or importing involved a great many stages of handling, which risked portions of the shipment being damaged or stolen along the way. The invention of the container crane made it possible to load and unload containers without capsizing the ship and the adoption of standard container sizes allowed almost any box to be transported on any ship. By 1967, dual-purpose ships, carrying loose cargo in the hold\* and containers on the deck, were giving way to all-container vessels that moved thousands of boxes at a time.

在许多国家，放松管制有助于推动这一进程。但是，在幕后，一系列被称为集装箱化和多式联运的技术创新导致了货物装卸效率的迅速提高。四十年前，进出口过程涉及很多处理阶段，这可能会导致运输途中部分货物被损坏或被盗。集装箱起重机的发明使得装卸集装箱而不颠覆船舶成为可能。采用标准集装箱尺寸使得可以在几乎任何船舶上运输任何箱子。到1967年，把零散货物放在船舱内和在甲板上堆放集装箱的两用船，已被让一次移动数千箱的全集装箱船所取代。

**自然段H**

The shipping container transformed ocean shipping into a highly efficient, intensely competitive business. But getting the cargo to and from the dock was a different story. National governments, by and large, kept a much firmer hand on truck and railroad tariffs than on charges for ocean freight. This started changing, however, in the mid-1970s, when America began to deregulate its transportation industry. First airlines, then road hauliers and railways, were freed from restrictions on what they could carry, where they could haul it and what price they could charge. Big productivity gains resulted. Between 1985 and 1996, for example, America’s freight railways dramatically reduced their employment, trackage, and their fleets of locomotives – while increasing the amount of cargo they hauled. Europe’s railways have also shown marked, albeit smaller, productivity improvements.

集装箱运输将海运转变为高效，竞争激烈的业务。但是，往返码头运输货物却是另外一回事。总体而言，各国政府对卡车和铁路关税的态度要比对海运更为坚定。但是，这种情况在20世纪70年代中期开始改变，当时美国开始放宽对运输业的管制。首先是航空公司，然后是公路运输公司和铁路。它们的运输物品，运输地点和运输价格不再受到限制。从而大大提高了生产率。例如，在1985年至1996年之间，美国的货运铁路大大减少了他们的员工数量，轨道长度和火车头数量-同时增加了运输的货物量。尽管规模较小，欧洲的铁路也展现出明显的生产率提升。

**自然段I**

In America the period of huge productivity gains in transportation may be almost over, but in most countries the process still has far to go. State ownership of railways and airlines, regulation of freight rates and toleration of anti-competitive practices, such as cargo-handling monopolies, all keep the cost of shipping unnecessarily high and deter international trade. Bringing these barriers down would help the world’s economies grow even closer.

在美国，运输业大幅提高生产率的时期可能快要结束了，但是在大多数国家，这一过程还有很长的路要走。国家对铁路和航空的所有权，对运费的管理以及对反竞争行为的容忍，例如货物处理的垄断，都使运输成本过高，并阻碍了国际贸易。消除这些障碍将有助于世界经济进一步发展。

### [6 Test1Passage3 Climate Change and the Inuit 气候变化与因纽特人](http://www.laokaoya.com/23251.html)

**A部分**

Unusual incidents are being reported across the Arctic. Inuit families going off on snowmobiles to prepare their summer hunting camps have found themselves cut off from home by a sea of mud, following early thaws. There are reports of igloos losing their insulating properties as the snow drips and refreezes, of lakes draining into the sea as permafrost melts, and sea ice breaking up earlier than usual, carrying seals beyond the reach of hunters. Climate change may still be a rather abstract idea to most of us, but in the Arctic it is already having dramatic effects – if summertime ice continues to shrink at its present rate, the Arctic Ocean could soon become virtually ice-free in summer. The knock-on effects are likely to include more warming, cloudier skies, increased precipitation and higher sea levels. Scientists are increasingly keen to find out what’s going on because they consider the Arctic the ‘canary in the mine’ for global warming – a warning of what’s in store for the rest of the world.

北极各地都有不寻常事件的报道。因提前解冻，乘坐雪地摩托去准备夏季狩猎营地的因纽特人发现自己被泥泞的海水隔绝了。有报道说，因为积雪滴落并重新冻结，冰屋失去了其隔热性；随着永久冻土融化，湖水被排入海中；海冰比平时更早破裂，使海豹无法被猎人触及。对于我们大多数人来说，气候变化可能仍然是一个相当抽象的概念。但是在北极，它已经产生了巨大的影响-如果夏季冰面继续以当前的速度缩小，则北冰洋可能很快在夏天变得彻底无冰。连锁效应可能包括气候更加温暖，天空更加多云，降水量增加和海平面升高。科学家们越来越渴望弄清楚正在发生什么，因为他们认为北极是全球变暖中“矿井里的金丝雀”，是对世界其他地区接下来发生事情的警告。

**B部分**

For the Inuit the problem is urgent. They live in precarious balance with one of the toughest environments on earth. Climate change, whatever its causes, is a direct threat to their way of life. Nobody knows the Arctic as well as the locals, which is why they are not content simply to stand back and let outside experts tell them what’s happening. In Canada, where the Inuit people are jealously guarding their hard-won autonomy in the country’s newest territory, Nunavut, they believe their best hope of survival in this changing environment lies in combining their ancestral knowledge with the best of modern science. This is a challenge in itself.

对于因纽特人来说，这个问题很紧急。他们与地球上最艰难的环境之一共同存在于不稳定的平衡中。不论其成文章来自老烤鸭雅思因如何，气候变化都直接威胁着他们的生活方式。没有人像当地人那样了解北极，这也是为什么他们不满足于简单地退缩并让外部专家告诉他们所发生的事情的原因。在加拿大，因纽特人在该国最新领土努纳武特（Nunavut）捍卫来之不易的自治，他们相信在这一正在变化的环境中生存的最大希望在于将其祖先知识与现代科学的精华相结合。这本身就是一个挑战。

**C部分**

The Canadian Arctic is a vast, treeless polar desert that’s covered with snow for most of the year. Venture into this terrain and you get some idea of the hardships facing anyone who calls this home. Farming is out of the question and nature offers meagre pickings. Humans first settled in the Arctic a mere 4,500 years ago, surviving by exploiting sea mammals and fish. The environment tested them to the limits: sometimes the colonists were successful, sometimes they failed and vanished. But around a thousand years ago, one group emerged that was uniquely well adapted to cope with the Arctic environment. These Thule people moved in from Alaska, bringing kayaks, sleds, dogs, pottery and iron tools. They are the ancestors of today’s Inuit people.

加拿大北极地区是一片广阔而寸草不生的极地荒漠，一年中大部分时间都覆盖着白雪。冒险进入这片土地，你就会对那些将其称之为家的人所面临的困境有所了解。农业是不可能的，自然采集也很少。距今4,500年前，人类才开始在北极定居，并通过利用海洋哺乳动物和鱼类生存。环境将他们逼到极限：有时殖民者成功，有时他们失败并且消失。但是在大约一千年前，出现了一个非常适应北极环境的群体。这些图勒人从阿拉斯加迁移过来，带来了皮划艇，雪橇，狗，陶器和铁制工具。他们是当今因纽特人的祖先。

**D部分**

Life for the descendants of the Thule people is still harsh. Nunavut is 1.9 million square kilometers of rock and ice, and a handful of islands around the North Pole. It’s currently home to 2,500 people, all but a handful of them indigenous Inuit. Over the past 40 years, most have abandoned their nomadic ways and settled in the territory’s 28 isolated communities, but they still rely heavily on nature to provide food and clothing.

图勒人后代的生活仍然严峻。努纳武特（Nunavut）是一块1900万平方公里土地。它布满岩石和冰山，还包括北极周围的一些岛屿。目前有2500人居住在这里。除了少数人之外，其他全都是土著因纽特人。在过去40年中，大多数人放弃了游牧方式，定居在该地区28个孤立的社区之中，但他们仍然严重依赖自然来提供食物和衣物。

Provisions available in local shops have to be flown into Nunavut on one of the most costly air networks in the world, or brought by supply ship during the few ice-free weeks of summer. It would cost a family around f7,000 a year to replace meat they obtained themselves through hunting with imported meat. Economic opportunities are scarce, and for many people state benefits are their only income.

当地商店中的物品必须经过世界上最昂贵的空中网络之一运到努纳武特，或者在夏季少数几个无冰周里通过补给船运送。如果一个家庭用进口肉类代替他们自己打猎所获得的肉，他们每年将花费7000英镑。经济机会稀缺，对许多人来说，国家福利是他们唯一的收入。

**E部分**

While the Inuit may not actually starve if hunting and trapping are curtailed by climate change, there has certainly been an impact on people’s health. Obesity, heart disease and diabetes are beginning to appear in a people for whom these have never before been problems. There has been a crisis of identity as the traditional skills of hunting, trapping and preparing skins have begun to disappear. In Nunavut’s ‘igloo and email’ society, where adults who were born in igloos have children who may never have been out on the land, there’s a high incidence of depression.

尽管气候变化限制了狩猎和诱捕，因纽特人实际上并不太可能会饿死。但这无疑对人们的健康产生了影响。肥胖，心脏病和糖尿病开始在一个之前从来没有出现过这些问题的人群中出现。随着传统的狩猎，诱捕和制皮技能开始消失，身份认同出现危机。在努纳武特（Nunavut ）的“冰屋与电子邮件”社会中，在冰屋中出生的成年人所生的孩子可能从来没有在外地生活过，这造成抑郁症的发生率很高。

**F部分**

With so much at stake, the Inuit are determined to play a key role in teasing out the mysteries of climate change in the Arctic. Having survived there for centuries, they believe their wealth of traditional knowledge is vital to the task. And Western scientists are starting to draw on this wisdom, increasingly referred to as ‘Inuit Qaujimajatuqangit’, or IQ. ‘In the early days, scientists ignored us when they came up here to study anything. They just figured these people don’t know very much so we won’t ask them,’ says John Amagoalik, an Inuit leader and politician. ‘But in recent years IQ has had much more credibility and weight.’ In fact it is now a requirement for anyone hoping to get permission to do research that they consult the communities, who are helping to set the research agenda to reflect their most important concerns. They can turn down applications from scientists they believe will work against their interests, or research projects that will impinge too much on their daily lives and traditional activities.

有如此多的事情处于危险之中，因纽特人决心在探索北极气候变化的秘密方面发挥关键作用。在那里生存了几个世纪，他们相信自己丰富的传统知识对这项任务至关重要。西方科学家也开始利用这种智慧，越来越多地将其称为“Inuit Qaujimajatuqangit”或IQ。“早些时候，科学家来我们这里研究东西时都无视我们。他们只是认为这些人了解不多，所以我们不会问他们。”因纽特人领导人和政治家约翰·阿马戈阿利克（John Amagoalik）说，“但是近年来，IQ有了更多的信誉和重要性”。事实上，咨询当地社区现在已经是任何想要获得许可进行研究的人的基本要求。他们能够帮助设立研究日程，以反映其最主要的关切。他们可以拒绝他们认为会损害其利益的科学家的申请，或者拒绝可能对他们的日常生活和传统活动造成太大影响的研究项目。

**G部分**

Some scientists doubt the value of traditional knowledge because the occupation of the Arctic doesn’t go back far enough. Others, however, point out that the first weather stations in the far north date back just 50 years. There are still huge gaps in our environmental knowledge, and despite the scientific onslaught, many predictions are no more than best guesses. IQ could help to bridge the gap and resolve the tremendous uncertainty about how much of what we’re seeing is natural capriciousness and how much is the consequence of human activity.

一些科学家怀疑传统知识的价值，因为对北极的占领并不够久远。然而，其他人指出，最北端第一个气象站的历史才可以追溯到50年前。我们的环境知识仍然存在巨大差距。尽管科学家们努力探索，但许多预测不过是最好的猜测而已。IQ可以帮助缩小差距，解决巨大的不确定性，即我们看到的情况中有多少是自然的反复无常，有多少是人类活动的结果。

## 6Test2

### [6Test2Passage1 Advantages of public transport 公共交通的优点](http://www.laokaoya.com/23331.html)

**第1自然段**

A new study conducted for the World Bank by Murdoch University’s Institute for Science and Technology Policy (ISTP) has demonstrated that public transport is more efficient than cars. The study compared the proportion of wealth poured into transport by thirty-seven cities around the world. This included both the public and private costs of building, maintaining and using a transport system.

默多克大学科学技术政策研究所（ISTP）为世界银行进行的一项新研究表明，公共交通比汽车更高效。这项研究比较了全球37个城市投入运输的资金比例。其中包括建设，维护和使用运输系统的公共和私人成本。

**第2自然段**

The study found that the Western Australian city of Perth is a good example of a city with minimal public transport. As a result, 17% of its wealth went into transport costs. Some European and Asian cities, on the other hand, spent as little as 5%. Professor Peter Newman, ISTP Director, pointed out that these more efficient cities were able to put the difference into attracting industry and jobs or creating a better place to live.

研究发现，澳大利亚西部的珀斯市是公共交通稀缺城市的一个很好例子。结果，其财文章来自老烤鸭雅思富的17％被用在交通运输的花费上。另一方面，一些欧洲和亚洲城市的花费则仅为5％。ISTP主任彼得·纽曼（Peter Newman）教授指出，这些效率更高的城市能够在吸引产业和就业机会，或创造更好的居住环境方面带来差异。

**第3自然段**

According to Professor Newman, the larger Australian city of Melbourne is a rather unusual city in this sort of comparison. He describes it as two cities: ‘A European city surrounded by a car-dependent one’. Melbourne’s large tram network has made car use in the inner city much lower, but the outer suburbs have the same car-based structure as most other Australian cities. The explosion in demand for accommodation in the inner suburbs of Melbourne suggests a recent change in many people’s preferences as to where they live.

根据纽曼教授的说法，在这种比较中，墨尔本这一澳大利亚较大的城市表现的很不寻常。他将其描述为两个城市：“一个被高度依赖汽车的城市所环绕的欧洲城市” 。墨尔本的大型有轨电车网络使内城区的汽车使用率大大降低，但外部郊区与大多数澳大利亚其他城市一样，以汽车交通为主。墨尔本郊区内部对住房需求的激增表明，最近许多人对居住地的偏好发生了变化。

**第4自然段**

Newman says this is a new, broader way of considering public transport issues. In the past, the case for public transport has been made on the basis of environmental and social justice considerations rather than economics. Newman, however, believes the study demonstrates that ‘the auto-dependent city model is inefficient and grossly inadequate in economic as well as environmental terms’.

纽曼说，这是一种新的，更广泛的考虑公共交通问题的方式。过去，公共交通的理由往往是基于环境和社会正义考虑，而不是出于经济考虑。然而，纽曼（Newman）认为，该研究表明“依赖汽车的城市模式在经济和环境方面效率低下，严重不足” 。

**第5自然段**

Bicycle use was not included in the study but Newman noted that the two most ‘bicycle friendly’ cities considered – Amsterdam and Copenhagen – were very efficient, even though their public transport systems were ‘reasonable but not special’.

该研究不包括自行车的使用，但纽曼指出，被认为是“对自行车最为友好”的两个城市-阿姆斯特丹和哥本哈根-效率很高，尽管它们的公共交通系统“合理但不特殊” 。

**第6自然段**

It is common for supporters of road networks to reject the models of cities with good public transport by arguing that such systems would not work in their particular city. One objection is climate. Some people say their city could not make more use of public transport because it is either too hot or too cold. Newman rejects this, pointing out that public transport has been successful in both Toronto and Singapore and, in fact, he has checked the use of cars against climate and found ‘zero correlation’.

道路网络的支持者通常会争辩说这样的系统在特定城市中不起作用，从而拒绝具有良好公共交通的城市模式。一种反对意见是气候。有人说他们的城市太热或太冷，无法充分利用公共交通。纽曼对此表示反对，他指出，多伦多和新加坡的公共交通都取得了成功，事实上，他已经检验了汽车使用与气候之间的关系，但发现相关性为零。

**第7自然段**

When it comes to other physical features, road lobbies are on stronger ground. For example, Newman accepts it would be hard for a city as hilly as Auckland to develop a really good rail network. However, he points out that both Hong Kong and Zürich have managed to make a success of their rail systems, heavy and light respectively, though there are few cities in the world as hilly.

当涉及其他地理特征时，道路游说集团的理由会更加充分一些。例如，纽曼（Newman）承认，像奥克兰这样的丘陵城市很难发展一个真正良好的铁路网络。但是，他指出，尽管世界上很少有丘陵城市，但香港和苏黎世都实现了重型和轻型铁路系统的成功。

**第8自然段/段落A**

In fact, Newman believes the main reason for adopting one sort of transport over another is politics: ‘The more democratic the process, the more public transport is favored.’ He considers Portland, Oregon, a perfect example of this. Some years ago, federal money was granted to build a new road. However, local pressure groups forced a referendum over whether to spend the money on light rail instead. The rail proposal won and the railway worked spectacularly well. In the years that have followed, more and more rail systems have been put in, dramatically changing the nature of the city. Newman notes that Portland has about the same population as Perth and had a similar population density at the time.

事实上，纽曼认为，采用一种交通方式而不采用另一种的主要原因是政治：“选择的过程越民主，公共交通方式就越受亲赖。“他认为，波特兰，俄勒冈州，都是这方面的很好例子。几年前，联邦拨款用于修建一条新道路。但是，当地的压力团体迫使人们就是否将钱花在轻轨上进行了全民公决。铁路提案获胜，并且运行异常出色。在随后的几年中，越来越多的铁路系统被投入使用，从而极大地改变了城市的性质。纽曼指出，当时波特兰与珀斯人口大致相同，人口密度相似。

**第9自然段/段落B**

In the UK, travel times to work had been stable for at least six centuries, with people avoiding situations that required them to spend more than half an hour travelling to work. Trains and cars initially allowed people to live at greater distances without taking longer to reach their destination. However, public infrastructure did not keep pace with urban sprawl, causing massive congestion problems which now make commuting times far higher.

在英国，上班时间至少已经稳定了六个世纪。人们会回避需要他们花半个多小时上班的情况。最初，火车和汽车使人们能够住得更远，而无需花费更长的时间到达目的地。但是，公共基础设施无法跟上城市扩张的步伐，导致大规模的交通拥堵问题。现在通勤时间大大增加。

**第10自然段/段落C**

There is a widespread belief that increasing wealth encourages people to live farther out where cars are the only viable transport. The example of European cities refutes that. They are often wealthier than their American counterparts but have not generated the same level of car use. In Stockholm, car use has actually fallen in recent years as the city has become larger and wealthier. A new study makes this point even more starkly. Developing cities in Asia, such as Jakarta and Bangkok, make more use of the car than wealthy Asian cities such as Tokyo and Singapore. In cities that developed later, the World Bank and Asian Development Bank discouraged the building of public transport and people have been forced to rely on cars -creating the massive traffic jams that characterize those cities.

人们普遍认为，财富的增长会鼓励人们住的更远，造成汽车是唯一可用的交通工具。欧洲城市的例子反驳了这一点。他们通常比美国城市更加富裕，但汽车使用水平却不高。在斯德哥尔摩，随着城市越来越大，越来越富裕，近年来汽车的使用量实际上有所下降。一项新的研究使这一点更加明显。与亚洲富裕的城市（如东京和新加坡）相比，亚洲的发展中城市（如雅加达和曼谷）对汽车的使用更多。在后来发展的城市中，世界银行和亚洲开发银行不鼓励建设公共交通。人们被迫依赖汽车，造成了这些城市的交通拥堵。

**第11自然段/段落D**

Newman believes one of the best studies on how cities built for cars might be converted to rail use is The Urban Village report, which used Melbourne as an example. It found that pushing everyone into the city centre was not the best approach. Instead, the proposal advocated the creation of urban villages at hundreds of sites, mostly around railway stations.

纽曼认为，关于以汽车为主城市如何转换为以铁路为主的最佳研究之一是《城市乡村》报告。该报告以墨尔本为例。研究发现，让每个人都进入市中心并不是最好的办法。相反，该提案主张在数百个地点（主要是火车站附近）建立城市村庄。

**第12自然段/段落E**

It was once assumed that improvements in telecommunications would lead to more dispersal in the population as people were no longer forced into cities. However, the ISTP team’s research demonstrates that the population and job density of cities rose or remained constant in the 1980s after decades of decline. The explanation for this seems to be that it is valuable to place people working in related fields together. ‘The new world will largely depend on human creativity, and creativity flourishes where people come together face-to-face.’

人们曾经认为，电信的发展将导致人口分散，因为人们不再被迫进入城市。但是，ISTP团队的研究表明，在经历了数十年的下降之后，20世纪80年代城市的人口和工作密度有所上升或保持不变。对此的解释似乎是，将在相关领域工作的人们聚集在一起很有价值。“新世界将在很大程度上取决于人类的创造力，而创造力在人们面对面聚集的地方蓬勃发展”。

### [6Test2Passage2 Greying Population Stays in the Pink 老年人依旧健康](http://www.laokaoya.com/23433.html)

**第1自然段**

Elderly people are growing healthier, happier and more independent, say American scientists. The results of a 14-year study to be announced later this month reveal that the diseases associated with old age are afflicting fewer and fewer people and when they do strike, it is much later in life.

美国科学家说，老年人正在变得更健康，更快乐，更独立。一项将在本月晚些时候宣布的为期14年的研究结果表明，受老年疾病困扰的人越来越少，而且哪怕疾病确实出现了，也在人生更为靠后的阶段。

**第2自然段**

In the last 14 years, the National Long-term Health Care Survey has gathered data on the health and lifestyles of more than 20,000 men and women over 65. Researchers, now analysing the results of data gathered in 1994, say arthritis, high blood pressure and circulation problems – the major medical complaints in this age group – are troubling a smaller proportion every year. And the data confirms that the rate at which these diseases are declining continues to accelerate. Other diseases of old age – dementia, stroke, arteriosclerosis and emphysema – are also troubling fewer and fewer people.

在过去的14年里，国家长文章来自老烤鸭雅思期健康护理调查收集了有关20,000多名65岁以上男性和女性健康与生活方式的数据。现在，研究人员在分析1994年所收集的数据的结果时说，关节炎，高血压和血液循环问题-该年龄段的主要医疗疾病-每年影响的人群比例都在减小。数据证实这些疾病的下降速度继续加快。受老年痴呆，中风，动脉硬化和肺气肿等其他疾病困扰的人也越来越少。

**第3自然段**

‘It really raises the question of what should be considered normal ageing,’ says Kenneth Manton, a demographer from Duke University in North Carolina. He says the problems doctors accepted as normal in a 65-year-old in 1982 are often not appearing until people are 70 or 75.

北卡罗来纳州杜克大学人口统计学家，肯尼斯·曼顿说：“这真的提出了什么应该被认为是正常老化的问题”。他说，1982年医生认为在65岁的老年人身上很正常的问题现在到70或者75岁才会出现。

**第4自然段**

Clearly, certain diseases are beating a retreat in the face of medical advances. But there may be other contributing factors. Improvements in childhood nutrition in the first quarter of the twentieth century, for example, gave today’s elderly people a better start in life than their predecessors.

显然，面对医学进步，某些疾病正在消退。但是可能还有其他促成因素。例如，在二十世纪前二十五年中，儿童营养的改善为当今的老年人提供了比其前辈更好的生活起点。

**第5自然段**

On the downside, the data also reveals failures in public health that have caused surges in some illnesses. An increase in some cancers and bronchitis may reflect changing smoking habits and poorer air quality, say the researchers. ‘These may be subtle influences,’ says Manton, ‘but our subjects have been exposed to worse and worse pollution for over 60 years. It’s not surprising we see some effect.’

不利的一面是，该数据还揭示了公共健康的失败导致某些疾病激增。研究人员说，某些癌症和支气管炎的增加可能反映了吸烟习惯的改变和空气质量的下降。曼顿说：“这些可能是微妙的影响。但60多年来，我们的受试者一直忍受越来越严重的污染。我们看到一些影响不足为奇”。

**第6自然段**

One interesting correlation Manton uncovered is that better-educated people are likely to live longer. For example, 65-year-old women with fewer than eight years of schooling are expected, on average, to live to 82. Those who continued their education live an extra seven years. Although some of this can be attributed to a higher income, Manton believes it is mainly because educated people seek more medical attention.

曼顿发现的一个有趣的联系是，受过良好教育的人寿命可能更长。例如，受教育少于八年的65岁女性平均预期寿命为82岁。那些继续接受教育的人则会多活七年。尽管其部分原因可以归于较高的收入，但曼顿认为，这主要是因为受过教育的人们会寻求更多的医疗关注。

**第7自然段**

The survey also assessed how independent people over 65 were, and again found a striking trend. Almost 80% of those in the 1994 survey could complete everyday activities ranging from eating and dressing unaided to complex tasks such as cooking and managing their finances. That represents a significant drop in the number of disabled old people in the population. If the trends apparent in the United States 14 years ago had continued, researchers calculate there would be an additional one million disabled elderly people in today’s population. According to Manton, slowing the trend has saved the United States government’s Medicare system more than $200 billion, suggesting that the greying of America’s population may prove less of a financial burden than expected.

调查还评估了65岁以上人士的独立状况，并再次发现了惊人的趋势。在1994年的调查中，几乎80％的人可以完成日常活动，从不需帮助就可以吃饭穿衣到诸如烹饪和财务管理等复杂任务。这表示人口中残疾老年人的数量大大减少。如果14年前美国这一明显趋势继续下去，研究人员计算得出，现在的人口将再增加100万残疾人。曼顿认为，趋势放缓已为美国政府的医疗保险体系节省了超过2000亿美元。这表明美国人口老龄化的财务负担可能比预期的要少。

**第8自然段**

The increasing self-reliance of many elderly people is probably linked to a massive increase in the use of simple home medical aids. For instance, the use of raised toilet seats has more than doubled since the start of the study, and the use of bath seats has grown by more than 50%. These developments also bring some health benefits, according to a report from the MacArthur Foundation’s research group on successful ageing. The group found that those elderly people who were able to retain a sense of independence were more likely to stay healthy in old age.

许多老年人的自力更生可能与简单家庭医疗辅助设备使用的大量增加有关。例如，自研究开始以来，加高马桶座圈的使用量增加了一倍以上，而浴室座圈的使用量已增长了50％以上。麦克阿瑟基金会研究小组关于成功衰老的报告指出，这些进展也带来了一些健康上的好处。该小组发现，那些能够保持独立感的老年人在老年时更可能保持健康。

**第9自然段**

Maintaining a level of daily physical activity may help mental functioning, says Carl Cotman, a neuroscientist at the University of California at Irvine. He found that rats that exercise on a treadmill have raised levels of brain-derived neurotrophic factor coursing through their brains. Cotman believes this hormone, which keeps neurons functioning, may prevent the brains of active humans from deteriorating.

加利福尼亚大学尔湾校区神经学家Cotman说，维持日常的体力活动水平可能有助于心理机能。他发现，在跑步机上运动的老鼠的大脑中神经源性神经营养因子水平升高。Cotman认为，这种使神经元保持运转的激素可以防止活跃的人的大脑退化。

**第10自然段**

As part of the same study, Teresa Seeman, a social epidemiologist at the University of Southern California in Los Angeles, found a connection between self-esteem and stress in people over 70. In laboratory simulations of challenging activities such as driving, those who felt in control of their lives pumped out lower levels of stress hormones such as cortisol. Chronically high levels of these hormones have been linked to heart disease.

作为同样研究的一部分，洛杉矶南加利福尼亚大学社会流行病学家Teresa Seeman发现，在70岁以上的人群中自尊与压力存在联系。在实验室模拟的诸如驾车等具有挑战性的活动中，那些觉得能够控制自己生活的人释放较低水平的压力荷尔蒙，例如皮质醇。如果这些激素长期处于较高水平可能会导致心脏病。

**第11自然段**

But independence can have drawbacks. Seeman found that elderly people who felt emotionally isolated maintained higher levels of stress hormones even when asleep. The research suggests that older people fare best when they feel independent but know they can get help when they need it.

但是独立性也有弊端。西曼（Seeman）发现，感觉情感孤立的老年人即使在睡觉时也保持较高的压力激素水平。研究表明，老年人在感到独立，但知道他们可以在需要时获得帮助的时候表现最好。

**第12自然段**

‘Like much research into ageing, these results support common sense,’ says Seeman. They also show that we may be underestimating the impact of these simple factors. ‘The sort of thing that your grandmother always told you turns out to be right on target,’ she says.

西曼说：“就像对衰老的许多研究一样，这些结果与常识相符”。它们还表明，我们可能低估了这些简单因素的影响。她说：“奶奶总是告诉你的那些事情证明确实是正确的”。

### [6Test2Passage3 Numeration 计数的历史](http://www.laokaoya.com/23490.html)

**第1自然段**

One of the first great intellectual feats of a young child is learning how to talk, closely followed by learning how to count. From earliest childhood we are so bound up with our system of numeration that it is a feat of imagination to consider the problems faced by early humans who had not yet developed this facility. Careful consideration of our system of numeration leads to the conviction that, rather than being a facility that comes naturally to a person, it is one of the great and remarkable achievements of the human race.

幼儿首先展现出来的伟大的智力特长之一是学习如何说话，紧接着是学习如何计数。从童年早期开始，我们就与我们的计数体系紧密相连，以至于思考尚未开发出这种工具的早期人类所面临的问题需要极大的想象力。认真考虑我们的计数体系会导致这样一种信念，那就是它不是人类固有的便利，而是人类伟大而卓越的成就之一。

**第2自然段**

It is impossible to learn the sequence of events that led to our developing the concept of number. Even the earliest of tribes had a system of numeration that, if not advanced, was sufficient for the tasks that they had to perform. Our ancestors had little use for actual numbers; instead their considerations would have been more of the kind Is this enough? rather than How many? when they were engaged in food gathering, for example. However, when early humans first began to reflect on the nature of things around them, they discovered that they needed an idea of number simply to keep their thoughts in order. As they began to settle, grow plants and herd animals, the need for a sophisticated number system became paramount. It will never be known how and when this numeration ability developed, but it is certain that numeration was well developed by the time humans had formed even semi-permanent settlements.

要了解引发我们发展数字概念的事件的顺序是不可能的。即使是最文章来自老烤鸭雅思早的部落，也都有其计数系统，即使不先进，也足以完成他们必须执行的任务。我们的祖先很少使用实际数字。例如，当他们进行食物收集时，他们会更多的考虑这是否足够，而不是多少。但是，当早期人类开始反思周围事物的本质时，他们发现他们需要数字的概念以保持思想的井然有序。随着他们开始定居，种植植物和放养牲畜，对复杂数字系统的需求变得至关重要。这种计数能力的发展方式和时间都是未知的。但是可以肯定的是，甚至在人类形成半永久性定居点的之前，计数就已经很好地发展了。

**第3自然段**

Evidence of early stages of arithmetic and numeration can be readily found. The indigenous peoples of Tasmania were only able to count one, two, many; those of South Africa counted one, two, two and one, two twos, two twos and one, and so on. But in real situations the number and words are often accompanied by gestures to help resolve any confusion. For example, when using the one, two, many type of system, the word many would mean, Look at my hands and see how many fingers I am showing you. This basic approach is limited in the range of numbers that it can express, but this range will generally suffice when dealing with the simpler aspects of human existence.

很容易找到算术和计数早期阶段的证据。塔斯马尼亚州的土著人民只会数一，二，多；而南非的土著人民则可以数一，二，二和一，两个二，两个二和一，依此类推。但是在实际情况下，数字和词汇经常伴随着手势，以帮助解决困惑。例如，当使用“一，二，多”系统时，“多”这个词汇意味着，看我的手，看看我给你看了多少根手指。这种基本方法可以表达的数字范围有限。但是在处理人类存在的简单问题时，它通常就够用了。

**第4自然段**

The lack of ability of some cultures to deal with large numbers is not really surprising. European languages, when traced back to their earlier version, are very poor in number words and expressions. The ancient Gothic word for ten, tachund, is used to express the number 100 as tachund tachund. By the seventh century, the word teon had become interchangeable with the tachund or hund of the Anglo-Saxon language, and so 100 was denoted as hund teontig, or ten times ten. The average person in the seventh century in Europe was not as familiar with numbers as we are today. In fact, to qualify as a witness in a court of law a man had to be able to count to nine!

某些文化缺乏处理大数字的能力并不令人感到意外。当将欧洲语言追溯到早期版本时，其数字方面的单词和表达就很差。古代的哥特语中用来表达十的单词是tachund，而数字100则被表达为tachund tachund。到了七世纪，teon一词已与盎格鲁-撒克逊语言中的tachund或hund互换使用，因此100被表示为hund teontig，或十乘十。欧洲七世纪的普通人对数字的熟悉程度不如今天。实际上，要想在法庭上取得证人资格，一个人必须能够数到九才行！

**第5自然段**

Perhaps the most fundamental step in developing a sense of number is not the ability to count, but rather to see that a number is really an abstract idea instead of a simple attachment to a group of particular objects. It must have been within the grasp of the earliest humans to conceive that four birds are distinct from two birds; however, it is not an elementary step to associate the number 4, as connected with four birds, to the number 4, as connected with four rocks. Associating a number as one of the qualities of a specific object is a great hindrance to the development of a true number sense. When the number 4 can be registered in the mind as a specific word, independent of the object being referenced, the individual is ready to take the first step toward the development of a notational system for numbers and, from there, to arithmetic.

数字意识形成的最基本步骤也许不是计数能力，而是要意识到数字实际上是一种抽象概念，而不是一组特定物品的附属物。最早的人类应该知道四只鸟与两只鸟有区别。但是，将与四个鸟相连的数字4和与四个岩石相连的数字4关联起来并不是一个简单的步骤。将数字作为特定物品的一种特质极大地阻碍了真正数字观念的发展。当数字4可以在大脑中被记忆为一个特定的单词，而与被引用的物品无关时，那么这个人就可以朝着数字符号系统的发展迈出第一步，并从那里走向算术。

**第6自然段**

Traces of the very first stages in the development of numeration can be seen in several living languages today. The numeration system of the Tsimshian language in British Columbia contains seven distinct sets of words for numbers according to the class of the item being counted: for counting flat objects and animals, for round objects and time, for people, for long objects and trees, for canoes, for measures, and for counting when no particular object is being numerated. It seems that the last is a later development while the first six groups show the relics of an older system. This diversity of number names can also be found in some widely used languages such as Japanese.今天，在几种活着的语言中可以看到计算发展初期的痕迹。不列颠哥伦比亚省的Tsimshian语言计数系统包含七组不同的数字单词，这些数字根据要计数的物品的类别不同而不同：扁平物体和动物，圆形物体和时间，人，长物体和树木，独木舟，度量以及在没有对特定对象进行编号时进行计数。最后一种似乎是后来的发展，而前六个组则展现了古老体统的残留。数字名称的这种多样性还可以在某些广泛使用的语言（例如日语）中找到。

**第7自然段**

Intermixed with the development of a number sense is the development of an ability to count. Counting is not directly related to the formation of a number concept because it is possible to count by matching the items being counted against a group of pebbles, grains of corn, or the counter’s fingers. These aids would have been indispensable to very early people who would have found the process impossible without some form of mechanical aid. Such aids, while different, are still used even by the most educated in today’s society due to their convenience. All counting ultimately involves reference to something other than the things being counted. At first it may have been grains or pebbles but now it is a memorised sequence of words that happen to be the names of the numbers.

计数能力的发展与数字概念的发展混杂在一起。计数与数字概念的形成没有直接关系，因为可以通过将要计数的物品与一组小卵石，玉米粒或数数人的手指相匹配来进行计数。这些辅助工具对于非常早期的人们来说是必不可少的，他们会发现，如果没有某种形式的机械辅助，该过程是不可能的。尽管这些辅助工具有所不同，但由于它们的方便性，即使是当今社会上受过良好教育的人也仍然在使用。所有的计数最终都涉及到对被计数物品以外的事物的引用。起初它可能是谷物或小卵石，但是现在它是一个对应数字名称的，可供记忆的单词序列。

## 6Test3

### [6Test3Passage1 电影的诞生与发展](http://www.laokaoya.com/23571.html)

**自然段A**

The Lumière Brothers opened their Cinematographe, at 14 Boulevard des Capucines in Paris, to 100 paying customers over 100 years ago, on December 8, 1895. Before the eyes of the stunned, thrilled audience, photographs came to life and moved across a flat screen.

1895年12月8日，卢米埃尔兄弟（LumièreBrothers）在100年多前的巴黎Boulevard des Capucines 14号向100位付费客户播放了他们的电影。在震惊而激动的观众眼前，照片活了过来，在屏幕上移动。

**自然段B**

So ordinary and routine has this become to us that it takes a determined leap of the imagination to grasp the impact of those first moving images. But it is worth trying, for to understand the initial shock of those images is to understand the extraordinary power and magic of cinema, the unique, hypnotic quality that has made film the most dynamic, effective art form of the 20th century.

这对我们来说是如此的普通和平凡，以致于需要想象力的飞跃，才能掌文章来自老烤鸭雅思握这些首次出现的动图的影响。但是这值得一试，因为了解这些图像最初的震撼就是了解电影的非凡力量和魔力。这一独特、催眠般的特点使电影成为20世纪最具活力，最有效的艺术形式。

**自然段C**

One of the Lumière Brothers’ earliest films was a 30-second piece which showed a section of a railway platform flooded with sunshine. A train appears and heads straight for the camera. And that is all that happens. Yet the Russian director Andrei Tarkovsky, one of the greatest of all film artists, described the film as a ‘work of genius’. ‘As the train approached,’ wrote Tarkovsky, ‘panic started in the theatre: people jumped and ran away. That was the moment when cinema was born. The frightened audience could not accept that they were watching a mere picture. Pictures were still, only reality moved; this must, therefore, be reality. In their confusion, they feared that a real train was about to crush them.’

卢米埃尔兄弟（LumièreBrothers）最早的一部电影是一部30秒的片段，它展示了阳光照射下铁路站台的一部分。一列火车出现，直奔摄像机而去。这就是所有发生的事情。然而，俄罗斯导演安德烈·塔尔科夫斯基（Andrei Tarkovsky），最伟大的电影艺术家之一，将这部电影描述为“天才之作” 。塔尔科夫斯基写道：“火车驶近时，剧院开始慌乱：人们跳了起来，然后逃跑。” 那正是电影诞生的时刻。惊恐的观众无法接受他们只是在看图片。图片是静止的，只有现实世界才会动。因此，这必须是现实。在他们的困惑中，他们担心一辆真正的火车要碾压他们。”

**自然段D**

Early cinema audiences often experienced the same confusion. In time, the idea of film became familiar, the magic was accepted -but it never stopped being magic. Film has never lost its unique power to embrace its audiences and transport them to a different world. For Tarkovsky, the key to that magic was the way in which cinema created a dynamic image of the real flow of events. A still picture could only imply the existence of time, while time in a novel passed at the whim of the reader. But in cinema, the real, objective flow of time was captured.

早期的电影观众经常经历同样的困惑。随着时间的流逝，电影的概念变得熟悉起来，魔法被接受了-但是它永远不会停止自己的魔力。电影从未失去过吸引观众并将他们带到另一个世界的独特能力。对于塔科夫斯基来说，魔术的关键在于电影院如何创建真实事件发生的动态图像。静止的画面只能暗示时间的存在，小说中的时间在读者心中流逝。但是在电影院中，人们却捕获了真实，客观的时间流动。

**自然段E**

One effect of this realism was to educate the world about itself. For cinema makes the world smaller. Long before people travelled to America or anywhere else, they knew what other places looked like; they knew how other people worked and lived.

这种现实主义的作用之一是让世界认识自己。电影使世界变得更小。人们远赴美国或其他任何地方之前，他们就知道其他地方的样子。他们知道其他人的工作和生活的方式。

Overwhelmingly, the lives recorded – at least in film fiction – have been American. From the earliest days of the industry, Hollywood has dominated the world film market.

至少在电影中，被记录的生活绝大多数都是美国式的。从电影产业的诞生开始，好莱坞就一直统治着世界电影市场。

American imagery – the cars, the cities, the cowboys – became the primary imagery of film. Film carried American life and values around the globe.

美国的影像-汽车，城市，牛仔-成为电影的主要内容。电影在全世界传播着美国的生活和价值观。

**自然段F**

And, thanks to film, future generations will know the 20th century more intimately than any other period. We can only imagine what life was like in the 14th century or in classical Greece. But the life of the modern world has been recorded on film in massive, encyclopedic detail. We shall be known better than any preceding generations.

由于有了电影，子孙后代将比其他任何时期都更加了解20世纪。我们只能想象14世纪或古典希腊时代的生活。但是，现代世界的生活已经被巨细无遗地记录在电影之中。相比于前辈而言，我们更容易被了解。

**自然段G**

The ‘star’ was another natural consequence of cinema. The cinema star was effectively born in 1910. Film personalities have such an immediate presence that, inevitably, they become super-real. Because we watch them so closely and because everybody in the world seems to know who they are, they appear more real to us than we do ourselves. The star as magnified human self is one of cinema’s most strange and enduring legacies.

“明星”是电影院的另一自然产物。电影明星实际上是1910年诞生的。电影人物具有如此直接的存在，以至于他们不可避免地变得超级真实。因为我们密切关注它们，因为世界上每个人似乎都知道他们是谁，所以对我们来说，他们比我们自己更加真实。明星作为人类自身的放大，是电影最奇怪，最持久的遗产之一。

**自然段H**

Cinema has also given a new lease of life to the idea of the story. When the Lumière Brothers and other pioneers began showing off this new invention, it was by no means obvious how it would be used. All that mattered at first was the wonder of movement. Indeed, some said that, once this novelty had worn off, cinema would fade away. It was no more than a passing gimmick, a fairground attraction.

电影也使故事的构思焕然一新。当卢米埃兄弟（LumièreBrothers）和其他先驱者开始炫耀这项新发明时，它的使用方式绝不是显而易见的。一开始，最重要的是活动带来的惊奇。确实，有人说，一旦这种新颖消失了，电影就会消失。它不过是种把戏，就像游乐场一样。

**自然段I**

Cinema might, for example, have become primarily a documentary form. Or it might have developed like television – as a strange, noisy transfer of music, information and narrative. But what happened was that it became, overwhelmingly, a medium for telling stories. Originally these were conceived as short stories – early producers doubted the ability of audiences to concentrate for more than the length of a reel. Then, in 1912, an Italian 2-hour film was hugely successful, and Hollywood settled upon the novel-length narrative that remains the dominant cinematic convention of today.

例如，电影可能会变成一种记录形式。或者它可能像电视一样发展，成为音乐、信息和叙事的一种奇怪而又嘈杂的传播。但是事实是，它成为压倒一切的讲故事的媒介。最初，它们被认为是短篇故事-早期的制片人怀疑观众集中注意力的能力不会超过一卷胶片的长度。然后，在1912年，一部两小时的意大利电影取得了巨大的成功。好莱坞决定采用新颖的叙事形式。它至今仍是当今电影界的主流。

**自然段J**

And it has all happened so quickly. Almost unbelievably, it is a mere 100 years since that train arrived and the audience screamed and fled, convinced by the dangerous reality of what they saw, and, perhaps, suddenly aware that the world could never be the same again – that, maybe, it could be better, brighter, more astonishing, more real than reality.

一切都发生得如此之快。几乎令人难以置信的是，距火车到达、观众尖叫和逃跑才仅仅仅100年的时间。他们当时对自己看到的危险事实深信不疑，或许突然之间意识到世界再也不会一样了-也许，它可能比现实更好，更光明，更令人惊讶，更真实。

### [6Test3Passage2 Motivating Employees under Adverse Conditions 在逆境中激励员工](http://www.laokaoya.com/23683.html)

**挑战**

It is a great deal easier to motivate employees in a growing organisation than a declining one. When organisations are expanding and adding personnel, promotional opportunities, pay rises, and the excitement of being associated with a dynamic organisation create feelings of optimism. Management is able to use the growth to entice and encourage employees. When an organisation is shrinking, the best and most mobile workers are prone to leave voluntarily. Unfortunately, they are the ones the organisation can least afford to lose – those with the highest skills and experience. The minor employees remain because their job options are limited.

在成长中的组织中激励员工要比在衰落中的组织这么做容易得多。当组织不断壮大并增加人员时，晋升机会，加薪以及与充满活力的组织相关联的兴奋会产生乐观的感觉。管理层能够利用这一增长来吸引和鼓励员工。当组织机构萎缩时，最优秀，流动性最好的员工往往会自愿离开。不幸的是，他们是组织最无法承受的损失-具有最好技能和经验的人。次要的雇员留下是因为他们的工作选择有限。

Morale also suffers during decline. People fear they may be the next to be made redundant. Productivity often suffers, as employees spend their time sharing rumours and providing one another with moral support rather than focusing on their jobs. For those whose jobs are secure, pay increases are rarely possible. Pay cuts, unheard of during times of growth, may even be imposed. The challenge to management is how to motivate employees under such retrenchment conditions. The ways of meeting this challenge can be broadly divided into six Key Points, which are outlined below.

士气在衰落期间也遭受苦难。人们担心他们可能会成为下一个多余的人。由于员文章来自老烤鸭雅思工将大部分时间用于传播谣言并相互提供道德支持，而不是专注于工作，因此生产力通常会受到影响。对于那些工作稳定的人来说，加薪几乎不可能。甚至还可能实行降薪，这在增长时期闻所未闻。管理人员面临的挑战是如何在这种紧缩的条件下激励员工。应对挑战的方法大致可分为六个关键点，概述如下。

**要点一**

There is an abundance of evidence to support the motivational benefits that result from carefully matching people to jobs. For example, if the job is running a small business or an autonomous unit within a larger business, high achievers should be sought. However, if the job to be filled is a managerial post in a large bureaucratic organisation, a candidate who has a high need for power and a low need for affiliation should be selected. Accordingly, high achievers should not be put into jobs that are inconsistent with their needs. High achievers will do best when the job provides moderately challenging goals and where there is independence and feedback. However, it should be remembered that not everybody is motivated by jobs that are high in independence, variety and responsibility.

有充分的证据支持将人们精心匹配工作所产生的动机收益。例如，如果工作是经营小型企业或大型企业中的自主部门，则应寻求高成就者。但是，如果要担任的职务是大型官僚组织中的管理职位，则应选择对权力有较高要求而对隶属关系需求不大的候选人。因此，高成就者不应从事与其需求不一致的工作。当工作提供中等难度的目标且有独立性和反馈时，高成就者将会做到最好。但是，应该记住，并不是每个人都会受到独立性，多样性和责任感高的工作的激励。

**要点二**

The literature on goal-setting theory suggests that managers should ensure that all employees have specific goals and receive comments on how well they are doing in those goals. For those with high achievement needs, typically a minority in any organisation, the existence of external goals is less important because high achievers are already internally motivated. The next factor to be determined is whether the goals should be assigned by a manager or collectively set in conjunction with the employees. The answer to that depends on perceptions of goal acceptance and the organisation’s culture. If resistance to goals is expected, the use of participation in goal-setting should increase acceptance. If participation is inconsistent with the culture, however, goals should be assigned. If participation and the culture are incongruous, employees are likely to perceive the participation process as manipulative and be negatively affected by it.

关于目标设定理论的文献表明，管理者应确保所有员工都有特定的目标，并接受有关他们在这些目标中 表现的评价。对于那些具有较高成就要求的人（任何组织中的少数派），外部目标的存在不那么重要，因为高成就者往往已经具有内部动机。下一个要确定的因素是目标应该由经理分配还是与员工共同设定。答案取决于目标接受度和组织文化。如果对目标可能存在抵触，那么参与目标制定会增加接受度。但是，如果参与与公司文化不一致，则应指定目标。因为如果参与和公司文化不匹配，则员工可能会认为参与过程受到操控，并因此受到负面影响。

**要点三**

Regardless of whether goals are achievable or well within management’s perceptions of the employee’s ability, if employees see them as unachievable they will reduce their effort. Managers must be sure, therefore, that employees feel confident that their efforts can lead to performance goals. For managers, this means that employees must have the capability of doing the job and must regard the appraisal process as valid.

无论目标是否可以实现，或者是否在管理层对员工能力的认知之内，如果员工认为目标无法实现，他们将减少工作量。因此，管理人员必须确保员工对自己通过努力能够实现绩效目标充满信心。对于管理人员来说，这意味着员工必须具有完成工作的能力，并且必须认为评估过程是有效的。

**要点四**

Since employees have different needs, what acts as a reinforcement for one may not for another. Managers could use their knowledge of each employee to personalise the rewards over which they have control. Some of the more obvious rewards that managers allocate include pay, promotions, autonomy, job scope and depth, and the opportunity to participate in goal-setting and decision-making.

由于员工有不同的需求，因此对一个人的激励可能不适合另外一个人。管理人员可以利用他们对每个员工的了解来个性化他们所控制的奖励。管理人员分配的一些显而易见的奖励包括薪资，晋升，自主权，工作范围和深度，以及参与目标设定和决策的机会。

**要点五**

Managers need to make rewards contingent on performance. To reward factors other than performance will only reinforce those other factors. Key rewards such as pay increases and promotions or advancements should be allocated for the attainment of the employee’s specific goals. Consistent with maximising the impact of rewards, managers should look for ways to increase their visibility. Eliminating the secrecy surrounding pay by openly communicating everyone’s remuneration, publicising performance bonuses and allocating annual salary increases in a lump sum rather than spreading them out over an entire year are examples of actions that will make rewards more visible and potentially more motivating.

管理人员需要根据绩效来给予奖励。奖励绩效以外的其他因素只会增强这些因素。应根据员工是否实现特定目标来给予关键性奖励，如加薪和晋升。与最大程度地发挥奖励的作用相一致，管理人员应寻求提高可见度的方法。通过公开地交流每个人的薪酬，公布绩效奖金并一次性分配年薪增长而不是将其分摊到整个年度中，消除围绕工资的保密性。这些举动将使奖励更加显眼并且可能更具激励作用。

**要点六**

The way rewards are distributed should be transparent so that employees perceive that rewards or outcomes are equitable and equal to the inputs given. On a simplistic level, experience, abilities, effort and other obvious inputs should explain differences in pay, responsibility and other obvious outcomes. The problem, however, is complicated by the existence of dozens of inputs and outcomes and by the fact that employee groups place different degrees of importance on them. For instance, a study comparing clerical and production workers identified nearly twenty inputs and outcomes. The clerical workers considered factors such as quality of work performed and job knowledge near the top of their list, but these were at the bottom of the production workers’ list. Similarly, production workers thought that the most important inputs were intelligence and personal involvement with task accomplishment, two factors that were quite low in the importance ratings of the clerks. There were also important, though less dramatic, differences on the outcome side. For example, production workers rated advancement very highly, whereas clerical workers rated advancement in the lower third of their list. Such findings suggest that one person’s equity is another’s inequity, so an ideal should probably weigh different inputs and outcomes according to employee group.

奖励的分配方式应该保持透明，以便员工认为奖励或成果是公正的，与投入相当。简单来说，经验、能力、努力和其他明显的投入应该足以解释薪酬、责任和其他明显成果的差异。但是，由于存在数十种投入和成果以及员工群体对它们的重视程度不同，这一问题其实非常复杂。例如，一项比较办公职员和生产工人的研究确定了近二十种投入和成果。办公职员将诸如工作质量和工作知识之类的因素放在他们的列表的顶部，但是这些因素却在生产工人列表的底部。同样，生产工人认为最重要的投入是智力和完成任务的个人参与度，这两个因素在文员的重要等级中都很低。结果方面也存在着重要的差异，尽管没有那么戏剧性。例如，生产工人将晋升列地很高，而文职人员则将晋升放在他们列表的后三分之一处。这些发现表明，一个人的公平意味着另一个人的不公平，因此理想情况下，应该根据员工群体权衡不同的投入和结果。

### [6Test3Passage3 The Search for the Anti-aging Pill 抗衰老药物的寻找](http://www.laokaoya.com/23757.html)

**第1自然段**

As researchers on aging noted recently, no treatment on the market today has been proved to slow human aging – the build-up of molecular and cellular damage that increases vulnerability to infirmity as we grow older. But one intervention, consumption of a low-calorie\* yet nutritionally balanced diet, works incredibly well in a broad range of animals, increasing longevity and prolonging good health. Those findings suggest that caloric restriction could delay aging and increase longevity in humans, too.

正如衰老研究人员最近指出的那样，当今市场上尚无任何疗法能减缓人类衰老-随着年龄的增长，分子和细胞损伤的累积会让人变得体弱多病。但是，一项干预措施-食用低热量且营养均衡的饮食-在多种动物中都表现得非常好，延长了寿命并改善了健康状况。这些发现表明热量限制可能也可以延缓衰老并延长人类的寿命。

**第2自然段**

Unfortunately, for maximum benefit, people would probably have to reduce their caloric intake by roughly thirty per cent, equivalent to dropping from 2,500 calories a day to 1,750. Few mortals could stick to that harsh a regimen, especially for years on end. But what if someone could create a pill that mimicked the physiological effects of eating less without actually forcing people to eat less? Could such a ‘caloric-restriction mimetic’, as we call it, enable people to stay healthy longer, postponing age-related disorders (such as diabetes, arteriosclerosis, heart disease and cancer) until very late in life? Scientists first posed this question in the mid-1990s, after researchers came upon a chemical agent that in rodents seemed to reproduce many of caloric restriction’s benefits. No compound that would safely achieve the same feat in people has been found yet, but the search has been informative and has fanned hope that caloric-restriction (CR)mimetics can indeed be developed eventually.

不幸的是，为了获得最大的收益，人们可能不得不将其热量摄入减少约30％，相当于从每文章来自老烤鸭雅思天2500卡路里减少到1,750卡路里。很少有凡人可以坚持这种苛刻的治疗方法，尤其是连续数年。但是，如果有人可以制造出一种药。这种药可以模仿减少饮食的生理效果，但又不用迫使人们真的少吃东西又如何呢？这种我们称之为“热量限制模拟物”东西能否使人们保持更长的健康，将与年龄有关的疾病（例如糖尿病，动脉硬化，心脏病和癌症）推迟到很晚才出现呢？研究人员在啮齿动物中发现了一种化学物质，它似乎能够产生限制热量的众多好处。随后，科学家在20世纪90年代中期首次提出了这个问题。虽然尚未找到可以安全地在人类中实现相同作用的化合物，但是这种搜寻提供了有用信息，并激发了人们最终开发出热量限制（CR）模拟物的希望。

**热量限制的好处**

**第3自然段**

The hunt for CR mimetics grew out of a desire to better understand caloric restriction’s many effects on the body. Scientists first recognized the value of the practice more than 60 years ago, when they found that rats fed a low-calorie diet lived longer on average than free-feeding rats and also had a reduced incidence of conditions that become increasingly common in old age. What is more, some of the treated animals survived longer than the oldest-living animals in the control group, which means that the maximum lifespan (the oldest attainable age), not merely the normal lifespan, increased. Various interventions, such as infection-fighting drugs, can increase a population’s average survival time, but only approaches that slow the body’s rate of aging will increase the maximum lifespan.

寻找CR模拟物的原因是希望更好地了解热量限制对身体的多种影响。六十多年前，当科学家发现喂养低热量饮食的老鼠的平均寿命要比自由喂养的老鼠更长，并且它们老年阶段出现的健康状况明显减少时，科学家第一次意识到了这种做法的价值。而且，某些动物的存活时间比对照组中最老的动物更长，这意味着最大寿命（可达到的最大年龄）而不仅仅是正常寿命增加了。诸如抗感染药物之类的各种干预措施可以增加人口的平均生存时间，但是只有减慢人体衰老速度的方法才会增加最大寿命。

**第4自然段**

The rat findings have been replicated many times and extended to creatures ranging from yeast to fruit flies, worms, fish, spiders, mice and hamsters. Until fairly recently, the studies were limited to short-lived creatures genetically distant from humans. But caloric-restriction projects underway in two species more closely related to humans – rhesus and squirrel monkeys – have made scientists optimistic that CR mimetics could help people.

老鼠身上的发现已被重复了很多次，并扩展到从酵母菌到果蝇，蠕虫，鱼，蜘蛛，小老鼠和仓鼠之类的生物。直到最近，研究还局限于与人类遗传基因距离较远的短寿命生物。但是，在与人类关系更加紧密的两个物种（恒河猴和松鼠猴）身上正在进行热量限制项目使科学家们对CR模拟物可以帮助人们感到乐观。

**第5自然段**

The monkey projects demonstrate that, compared with control animals that eat normally, caloric-restricted monkeys have lower body temperatures and levels of the pancreatic hormone insulin, and they retain more youthful levels of certain hormones that tend to fall with age.

猴子项目表明，与正常饮食的对照动物相比，受热量限制的猴子的体温和胰岛素水平较低，并且它们更多地保留了某些会随着年龄增长而下降的荷尔蒙水平。

**第6自然段**

The caloric-restricted animals also look better on indicators of risk for age-related diseases. For example, they have lower blood pressure and triglyceride levels (signifying a decreased likelihood of heart disease), and they have more normal blood glucose levels (pointing to a reduced risk for diabetes, which is marked by unusually high blood glucose levels). Further, it has recently been shown that rhesus monkeys kept on caloric-restricted diets for an extended time (nearly 15 years) have less chronic disease. They and the other monkeys must be followed still longer, however, to know whether low-calorie intake can increase both average and maximum lifespans in monkeys. Unlike the multitude of elixirs being touted as the latest anti-aging cure, CR mimetics would alter fundamental processes that underlie aging. We aim to develop compounds that fool cells into activating maintenance and repair.

受热量限制的动物在与年龄有关的疾病风险指标上也表现更好。例如，它们具有较低的血压和甘油三酸酯水平（表明心脏病的可能性降低），并且它们的血糖水平更加正常（表明患糖尿病的风险降低，其特征在于异常高的血糖水平）。此外，最近已显示，长期限制热量摄入（近15年）的恒河猴的慢性病较少。他们和其他猴子必须被研究更长的时间，才能知道低热量摄入是否可以增加猴子的平均寿命和最大寿命。与众多被誉为最新抗衰老疗法的灵丹妙药不同，CR模拟剂将改变形成衰老的本质过程。我们的目标是开发出可以哄骗细胞，并激活其维护和修复作用的化合物。

**热量限制模拟物原型如何起作用**

**第7自然段**

The best-studied candidate for a caloric-restriction mimetic, 2DG (2-deoxy-D-glucose), works by interfering with the way cells process glucose. It has proved toxic at some doses in animals and so cannot be used in humans. But it has demonstrated that chemicals can replicate the effects of caloric restriction; the trick is finding the right one.

研究中最好的热量限制模拟物2DG（2-deoxy-D-glucose）通过干扰细胞处理葡萄糖的方式起作用。它已被证明对动物有一定的毒性，因此不能用于人类。但它证明，化学物质可以复制热量限制的作用。诀窍是找到合适的那一种。

**第8自然段**

Cells use the glucose from food to generate ATP (adenosine triphosphate), the molecule that powers many activities in the body. By limiting food intake, caloric restriction minimizes the amount of glucose entering cells and decreases ATP generation. When 2DG is administered to animals that eat normally, glucose reaches cells in abundance but the drug prevents most of it from being processed and thus reduces ATP synthesis. Researchers have proposed several explanations for why interruption of glucose processing and ATP production might retard aging. One possibility relates to the ATP-making machinery’s emission of free radicals, which are thought to contribute to aging and to such age-related diseases as cancer by damaging cells. Reduced operation of the machinery should limit their production and thereby constrain the damage. Another hypothesis suggests that decreased processing of glucose could indicate to cells that food is scarce (even if it isn’t) and induce them to shift into an anti-aging mode that emphasizes preservation of the organism over such ‘luxuries’ as growth and reproduction.

细胞利用食物中的葡萄糖产生ATP（三磷酸腺苷），该分子为体内的许多活动提供动力。通过限制食物的摄入，热量限制可最大程度地减少进入细胞的葡萄糖量并减少ATP的产生。当将2DG用于正常饮食的动物时，大量的葡萄糖仍然会到达细胞，但是该药物阻止了其中大部分被加工，从而降低了ATP的合成。研究人员针对为何中断葡萄糖加工和ATP产生会延缓衰老提出了几种解释。一种可能性与ATP产生机制释放的自由基有关。自由基被认为会通过破坏细胞而导致衰老，并导致诸如癌症等与年龄有关的疾病。减少这一机制的运转应该可以限制自由基的产生，从而控制损坏。另一种假设认为，葡萄糖加工的减少可能会向细胞表明食物缺乏（即使不是），并导致它们转变为抗衰老模式。该模式强调生长和繁殖等“奢侈品”器官的保存。

## 6Test4

### [6Test4Passage1 Dotoring Sales 医药营销](http://www.laokaoya.com/23837.html)

**前言**

Pharmaceuticals is one of the most profitable industries in North America. But do the drugs industry’s sales and marketing strategies go too far?

制药业是北美最赚钱的产业之一。但是，制药行业的销售和营销策略是否太过分了？

**自然段A**

A few months ago Kim Schaefer, sales representative of a major global pharmaceutical company, walked into a medical center in New York to bring information and free samples of her company’s latest products. That day she was lucky – a doctor was available to see her. ‘The last rep offered me a trip to Florida. What do you have?’ the physician asked. He was only half joking.

几个月前金·舍费尔，一名全球主要制药公司的销售代表，走进纽约一个医疗中心带来其公司最新产品的信息和免费样本。那天她很幸运-有一个医生有空见她。医生问：“上一位医药代表为我提供了去佛罗里达的旅行。你有什么？’ 。他不仅仅是开玩笑。

**自然段B**

What was on offer that day was a pair of tickets for a New York musical. But on any given day, what Schaefer can offer is typical for today’s drugs rep – a car trunk full of promotional gifts and gadgets, a budget that could buy lunches and dinners for a small country, hundreds of free drug samples and the freedom to give a physician $200 to prescribe her new product to the next six patients who fit the drug’s profile. And she also has a few $1,000 honoraria to offer in exchange for doctors’ attendance at her company’s next educational lecture.

那天提供的物品是纽约音乐剧的两张门票 。但是在任何一天，舍费尔所能提文章来自老烤鸭雅思供的都是当今药品代表的典型举动-装满促销礼品和小配件的汽车后备箱，可以为一个小国购买午餐和晚餐的预算，数百个免费药品样品以及给予一名医生200美元的自由，只要他愿意将她的新产品开给接下来六名符合该药物资料的患者。她还提供几千美元的酬金，以换取医生参加她公司下一次的教育讲座。

**自然段C**

Selling pharmaceuticals is a daily exercise in ethical judgment. Salespeople like Schaefer walk the line between the common practice of buying a prospect’s time with a free meal, and bribing doctors to prescribe their drugs. They work in an industry highly criticized for its sales and marketing practices, but find themselves in the middle of the age-old chicken-or-egg question – businesses won’t use strategies that don’t work, so are doctors to blame for the escalating extravagance of pharmaceutical marketing? Or is it the industry’s responsibility to decide the boundaries?

销售药品的工作每天都处于道德审判之下。像舍费尔这样的推销员的行为从用免费午餐购买潜在客户的时间，到贿赂医生让他来开自己的药。他们在一个因销售和市场营销行为而备受批评的行业中工作，但发现自己陷入了古老的“先有鸡还是先有蛋”的问题。企业不会使用无效的策略，因此，难道说医生也应为药品销售日益猖獗的行为负责？还是说决定行为边界完全是该行业自己的责任？

**自然段D**

The explosion in the sheer number of salespeople in the field – and the amount of funding used to promote their causes – forces close examination of the pressures, influences and relationships between drug reps and doctors. Salespeople provide much-needed information and education to physicians. In many cases the glossy brochures, article reprints and prescriptions they deliver are primary sources of drug education for healthcare givers. With the huge investment the industry has placed in face-to-face selling, salespeople have essentially become specialists in one drug or group of drugs – a tremendous advantage in getting the attention of busy doctors in need of quick information.

行业中销售人员数量和用于推动他们行为的资金的爆炸性增长，迫使我们仔细审查其压力，影响，以及医生和药品代表之间的关系。销售人员向医生提供他们急需的信息和教育。许多情况下，它们送出的有光泽的小册子，再版的文章和处方是医疗保健人员有关药物教育的主要来源。由于该行业在面对面销售方面的巨额投资，销售人员本质上已经成为一种药物或一组药物的专家-这在吸引需要快速信息的繁忙医生的注意力方面具有巨大优势。

**自然段E**

But the sales push rarely stops in the office. The flashy brochures and pamphlets left by the sales reps are often followed up with meals at expensive restaurants, meetings in warm and sunny places, and an inundation of promotional gadgets. Rarely do patients watch a doctor write with a pen that isn’t emblazoned with a drug’s name, or see a nurse use a tablet not bearing a pharmaceutical company’s logo. Millions of dollars are spent by pharmaceutical companies on promotional products like coffee mugs, shirts, umbrellas, and golf balls. Money well spent? It’s hard to tell. ‘I’ve been the recipient of golf balls from one company and I use them, but it doesn’t make me prescribe their medicine,’ says one doctor. ‘I tend to think I’m not influenced by what they give me.’

但是，销售很少止于办公室内。销售代表留下的浮华的小册子通常伴随着在昂贵的餐厅用餐，在温暖和阳光充足的地方开会，以及大量小物品。很少有患者看到医生用不带药物名称的笔写字，或者看到护士使用不带有制药公司标志的平板电脑。制药公司在诸如咖啡杯，衬衫，雨伞和高尔夫球等促销产品上花费数百万美元。钱花得好吗？很难说。一位医生说：“我收到一家医药公司的高尔夫球，我使用它们，但这并不能使我开出它们的药。我倾向于认为我不受他们给我的东西的影响。”

**自然段F**

Free samples of new and expensive drugs might be the single most effective way of getting doctors and patients to become loyal to a product. Salespeople hand out hundreds of dollars’ worth of samples each week- $7.2 billion worth of them in one year. Though few comprehensive studies have been conducted, one by the University of Washington investigated how drug sample availability affected what physicians prescribe. A total of 131 doctors self-reported their prescribing patterns – the conclusion was that the availability of samples led them to dispense and prescribe drugs that differed from their preferred drug choice.

免费获得昂贵新药的样本可能是使医生和患者忠于某种产品的最有效方法。销售人员每周派发价值数百美元的样品-一年就是72亿美元。尽管很少有全面的研究，但华盛顿大学的一项研究调查了药物样本的可获得性如何影响医生的处方。共有131位医生主动报告了他们开处方的方式-结论是样品的可获得性导致他们开出与自己偏爱的药物不同的处方。

**自然段G**

The bottom line is that pharmaceutical companies as a whole invest more in marketing than they do in research and development. And patients are the ones who pay – in the form of sky-rocketing prescription prices – for every pen that’s handed out, every free theatre ticket, and every steak dinner eaten. In the end the fact remains that pharmaceutical companies have every right to make a profit and will continue to find new ways to increase sales. But as the medical world continues to grapple with what’s acceptable and what’s not, it is clear that companies must continue to be heavily scrutinized for their sales and marketing strategies.

底线是，制药公司作为一个整体在市场营销方面的投资超过了研发方面的投资。而且，患者以支付高昂的处方价格的形式为每支钢笔，每张免费剧院票和每顿牛排晚餐付费。最终，事实仍然是制药公司完全有权利获得利润，并将继续寻找增加销售额的新方法。但是，随着医学界继续努力确定哪些行为可接受，哪些行为不可接受，公司显然必须继续对其销售和营销策略进行严格审查。

### [6Test4Passage2 Do literate women make better mothers 受过教育的妇女会成为更好的母亲吗](http://www.laokaoya.com/23891.html)

**第1自然段**

Children in developing countries are healthier and more likely to survive past the age of five when their mothers can read and write. Experts in public health accepted this idea decades ago, but until now no one has been able to show that a woman’s ability to read in itself improves her children’s chances of survival.

当其母亲能够和写作时，发展中国家的儿童会更加健康，有更大可能活过5岁。几十年前，公共卫生领域的专家就已经接受这个想法。但是直到现在，还没有人能够证明一名女性的能力可以提高孩子的生存机会。

**第2自然段**

Most literate women learnt to read in primary school, and the fact that a woman has had an education may simply indicate her family’s wealth or that it values its children more highly. Now a long-term study carried out in Nicaragua has eliminated these factors by showing that teaching reading to poor adult women, who would otherwise have remained illiterate, has a direct effect on their children’s health and survival.

大多数有识字能力的妇女在小学阶段就学会了，而妇女受过教文章来自老烤鸭雅思育的事实可能只是表明她的家庭比较富裕，或者表明它更加重视子女。现在，在尼加拉瓜开展的一项长期研究排除了这些因素。它表明教授贫穷的成年女性（否则的话她们会仍然处于文盲状态）对其孩子的健康和成活率有直接影响。

**第3自然段**

In 1979, the government of Nicaragua established a number of social programmes, including a National Literacy Crusade. By 1985, about 300,000 illiterate adults from all over the country, many of whom had never attended primary school, had learnt how to read, write and use numbers.

1979年，尼加拉瓜政府开启了许多社会计划，其中就有“全国扫盲运动” 。到1985年，约30万来自全国各地的文盲成年人（其中许多人从未上过小学）已经学会了如何，书写和使用数字。

**第4自然段**

During this period, researchers from the Liverpool School of Tropical Medicine, the Central American Institute of Health in Nicaragua, the National Autonomous University of Nicaragua and the Costa Rican Institute of Health interviewed nearly 3,000 women, some of whom had learnt to read as children, some during the literacy crusade and some who had never learnt at all. The women were asked how many children they had given birth to and how many of them had died in infancy. The research teams also examined the surviving children to find out how well-nourished they were.

在此期间，利物浦热带医学院，尼加拉瓜中美洲卫生研究院，尼加拉瓜国立自治大学和哥斯达黎加卫生研究院的研究人员采访了近3,000名妇女。其中一些人在还是孩子的时候就学会了，有些在扫盲运动中学会了，而有些根本没学过。这些妇女被问到他们生育了多少个孩子，以及其中有多少个在婴儿阶段就已经死亡。研究小组还检查了幸存的孩子，以了解他们的营养状况

**第5自然段**

The investigators’ findings were striking. In the late 1970s, the infant mortality rate for the children of illiterate mothers was around 110 deaths per thousand live births. At this point in their lives, those mothers who later went on to learn to read had a similar level of child mortality (105/1000). For women educated in primary school, however, the infant mortality rate was significantly lower, at 80 per thousand.

研究人员的发现令人震惊。20世纪70年代后期，文盲母亲的孩子在婴儿阶段的死亡率约为千分之110。在这一时间点上，后来学习的母亲拥有相似的儿童死亡率（105/1000）。但是，对于在小学阶段受过教育的妇女来说，婴儿死亡率要低得多，为每千人80 。

**第6自然段**

In 1985, after the National Literacy Crusade had ended, the infant mortality figures for those who remained illiterate and for those educated in primary school remained more or less unchanged. For those women who learnt to read through the campaign, the infant mortality rate was 84 per thousand, an impressive 21 points lower than for those women who were still illiterate. The children of the newly-literate mothers were also better nourished than those of women who could not read.

1985年，全国扫盲运动结束后，文盲女性和在小学阶段接受过教育的女性的婴儿死亡率基本保持不变。对于那些在运动中学会的妇女而言，婴儿死亡率为每千人84例，比那些仍然不识字的妇女低21个点。与那些不识字的妇女相比，新识字的母亲的孩子也得到更好的营养。

**第7自然段**

Why are the children of literate mothers better off? According to Peter Sandiford of the Liverpool School of Tropical Medicine, no one knows for certain. Child health was not on the curriculum during the women’s lessons, so he and his colleagues are looking at other factors. They are working with the same group of 3,000 women, to try to find out whether reading mothers make better use of hospitals and clinics, opt for smaller families, exert more control at home, learn modern childcare techniques more quickly, or whether they merely have more respect for themselves and their children.

为什么识字母亲的孩子会过得更好？利物浦热带医学院的彼得·桑迪福德说，没人知道确切的原因。儿童健康并未列入妇女课程的课程表，因此他和他的同事正在研究其他因素。他们继续跟踪同一组的3000名妇女，试图找出读书母亲是否更好地利用医院和诊所，选择较小的家庭，在家中拥有更大的发言权，更快地学习现代育儿技术，或者是否仅仅是更尊重自己和孩子。

**第8自然段**

The Nicaraguan study may have important implications for governments and aid agencies that need to know where to direct their resources. Sandiford says that there is increasing evidence that female education, at any age, is ‘an important health intervention in its own right’. The results of the study lend support to the World Bank’s recommendation that education budgets in developing countries should be increased, not just to help their economies, but also to improve child health.

尼加拉瓜的研究可能对那些需要知道应该将资源分配到何处的政府和援助机构产生重要影响。桑迪福德说，越来越多的证据表明，任何年龄的女性教育都是“一项重要的健康干预措施” 。研究结果为世界银行关于增加发展中国家教育预算的建议提供了支持。这不仅是为了帮助其经济发展，而且是为了改善儿童健康。

**第9自然段**

‘We’ve known for a long time that maternal education is important,’ says John Cleland of the London School of Hygiene and Tropical Medicine. ‘But we thought that even if we started educating girls today, we’d have to wait a generation for the pay-off. The Nicaraguan study suggests we may be able to bypass that.’

伦敦卫生与热带医学院的约翰·克莱兰德说：“很久以来，我们就知道产妇教育很重要。但是我们认为，即使我们现在开始对女孩进行教育，我们也必须等待一代人才能获得回报。尼加拉瓜的研究表明，我们也许可以绕开它。”

**第10自然段**

Cleland warns that the Nicaraguan crusade was special in many ways, and similar campaigns elsewhere might not work as well. It is notoriously difficult to teach adults skills that do not have an immediate impact on their everyday lives, and many literacy campaigns in other countries have been much less successful. ‘The crusade was part of a larger effort to bring a better life to the people,’ says Cleland. Replicating these conditions in other countries will be a major challenge for development workers.

克莱兰德警告说，尼加拉瓜的扫盲运动在许多方面都很特殊，在其他地方进行类似的活动可能行不通。众所周知，向成年人传授对他们的日常生活没有直接影响的技能非常困难。而在其他国家，许多扫盲运动并没有那么成功。克莱兰德说：“扫盲运动是为给人民带来更好生活的更大努力的一部分。” 在其他国家复制这些条件将是发展工作者面临的主要挑战。

### [6Test4Passage3 persistent bullying 校园欺凌/霸凌](http://www.laokaoya.com/23956.html)

**前言**

Persistent bullying is one of the worst experiences a child can face. How can it be prevented? Peter Smith, Professor of Psychology at the University of Sheffield, directed the Sheffield Anti-Bullying Intervention Project, funded by the Department for Education. Here he reports on his findings.

持续的欺凌是孩子可能面对的最糟糕的经历之一。如何预防？谢菲尔德大学心理学教授，彼得·史密斯，开展了一项由教育部资助的谢菲尔德反欺凌干预项目。以下是他的发现。

**A部分**

Bullying can take a variety of forms, from the verbal – being taunted or called hurtful names – to the physical – being kicked or shoved – as well as indirect forms, such as being excluded from social groups. A survey I conducted with Irene Whitney found that in British primary schools up to a quarter of pupils reported experience of bullying, which in about one in ten cases was persistent. There was less bullying in secondary schools, with about one in twenty-five suffering persistent bullying, but these cases may be particularly recalcitrant.

欺凌可采取多种形式，从口头上（被嘲笑或冠以侮辱性的名字）到身体上（被踢或推），还有各种各样的间接形式，如被排文章来自老烤鸭雅思除在社会群体之外。我与艾琳·惠特尼（Irene Whitney）进行的一项调查发现，在英国小学，有四分之一的学生报告遭受欺凌的经历，其中十分之一的案例是持续了很久。中学中的欺凌现象较少，约有二十五分之一的学生遭受持续性欺凌，但这些案例可能尤其令人难以接受。

**B部分**

Bullying is clearly unpleasant, and can make the child experiencing it feel unworthy and depressed. In extreme cases it can even lead to suicide, though this is thankfully rare. Victimised pupils are more likely to experience difficulties with interpersonal relationships as adults, while children who persistently bully are more likely to grow up to be physically violent, and convicted of anti-social offences.

欺凌显然是令人不快的，并且会使经历它的孩子感到格格不入和沮丧。极端情况下，它甚至可能导致自杀。尽管幸运的是这种情况很少见。受害的学长大之后更容易遭遇人际关系困难，而持续被欺负的孩子长大后则更有可能变得十分暴力，并被判犯有反社会罪。

**C部分**

Until recently, not much was known about the topic, and little help was available to teachers to deal with bullying. Perhaps as a consequence, schools would often deny the problem. ‘There is no bullying at this school’ has been a common refrain, almost certainly untrue. Fortunately more schools are now saying: ‘There is not much bullying here, but when it occurs we have a clear policy for dealing with it.’

直到最近，人们对这个话题都知之甚少，而且教师在应对欺凌方面几乎得不到帮助。或许正是因为如此，学校经常会否认这个问题的存在。“这所学校没有欺凌行为”是一种普遍的说法。但这几乎可以肯定是假的。幸运的是，现在有更多的学校在说：“这里没有太多欺凌行为，但是一旦发生，我们就有明确的政策予以处理。‘

**D部分**

Three factors are involved in this change. First is an awareness of the severity of the problem. Second, a number of resources to help tackle bullying have become available in Britain. For example, the Scottish Council for Research in Education produced a package of materials, Action Against Bullying, circulated to all schools in England and Wales as well as in Scotland in summer 1992, with a second pack, Supporting Schools Against Bullying, produced the following year. In Ireland, Guidelines on Countering Bullying Behaviour in Post-Primary Schools was published in 1993. Third, there is evidence that these materials work, and that schools can achieve something. This comes from carefully conducted ‘before and after’ evaluations of interventions in schools, monitored by a research team. In Norway, after an intervention campaign was introduced nationally, an evaluation of forty-two schools suggested that, over a two-year period, bullying was halved. The Sheffield investigation, which involved sixteen primary schools and seven secondary schools, found that most schools succeeded in reducing bullying.

这种变化涉及到三个因素。第一是意识到问题的严重性。第二是英国已经有许多资源可以帮助解决欺凌行为。例如，苏格兰教育研究理事会制作了一揽子的材料-《反欺凌行动》，并于1992年夏季分发给英格兰和威尔士以及苏格兰的所有学校，第二项资料-《支持反欺凌学校》在随后一年发行。1993年，爱尔兰发布了《打击小学后欺凌行为的指南》。第三，有证据表明这些材料行之有效，并且学校可以实现某种改变。这来自于在研究团队监督下对学校干预措施进行前后的评估。在挪威全国范围内开展了干预运动之后，对四十二所学校的评估表明，在两年的时间内，欺凌现象减半了。谢菲尔德的调查涉及16所小学，7所中学，发现大部分学校都成功地减少了欺凌现象。

**E部分**

**第1段**

Evidence suggests that a key step is to develop a policy on bullying, saying clearly what is meant by bullying, and giving explicit guidelines on what will be done if it occurs, what records will be kept, who will be informed, what sanctions will be employed. The policy should be developed through consultation, over a period of time – not just imposed from the head teacher’s office！ Pupils, parents and staff should feel they have been involved in the policy, which needs to be disseminated and implemented effectively.

证据表明，关键步骤是制定有关欺凌的政策，清晰说出欺凌的含义，并给出明确的指导方针，说明发生欺凌行为时将如何处理，保留哪些记录，将通知谁，将采取何种制裁措施。该政策应在一段时间内通过协商制定，而不仅仅是由校方单独施加！学生，父母和工作人员应感到自己已经参与到政策之中，需要对其进行有效的传播和实施。

**第2段**

Other actions can be taken to back up the policy. There are ways of dealing with the topic through the curriculum, using video, drama and literature. These are useful for raising awareness, and can best be tied in to early phases of development, while the school is starting to discuss the issue of bullying. They are also useful in renewing the policy for new pupils, or revising it in the light of experience. But curriculum work alone may only have short-term effects; it should be an addition to policy work, not a substitute.

可以采取其他措施来支持该政策。可以通过视频，戏剧和文学等方式通过课程处理这一问题。这些在学校开始讨论欺凌问题时对于提高认识很有用，并且最好与事态发展的早期阶段联系在一起。它们对于更新新生政策或根据经验进行修订也很有用。但是仅仅课程自身可能只会产生短期效果。它应该是政策工作的补充，而不是替代品。

**第3段**

There are also ways of working with individual pupils, or in small groups. Assertiveness training for pupils who are liable to be victims is worthwhile, and certain approaches to group bullying such as ‘no blame’, can be useful in changing the behaviour of bullying pupils without confronting them directly, although other sanctions may be needed for those who continue with persistent bullying.

也可以与个别学生或者小组一起努力。对容易成为受害者的学生进行自信训练十分重要，并且诸如“不责怪”之类的方法对于在不直接对抗的情况下改变欺凌者的行为十分有用，尽管对于那些继续进行欺凌行为的人应该采取相应制裁。

**第4段**

Work in the playground is important, too. One helpful step is to train lunchtime supervisors to distinguish bullying from playful fighting and help them break up conflicts. Another possibility is to improve the playground environment, so that pupils are less likely to be led into bullying from boredom or frustration.

操场上的工作也很重要。一项有用的措施是培训午餐时间管理员，以区分欺凌和玩耍性质的打闹，并帮助他们解决冲突。另一种可行性措施是改善操场的环境，以使学生不太可能因无聊或沮丧而欺负他人。

**F部分**

With these developments, schools can expect that at least the most serious kinds of bullying can largely be prevented. The more effort put in and the wider the whole school involvement, the more substantial the results are likely to be. The reduction in bullying – and the consequent improvement in pupil happiness – is surely a worthwhile objective.

随着这些发展，学校至少可以期望在很大程度上防止最严重的欺凌行为。投入的精力越多，整个学校的参与范围越广，结果可能会越有意义。欺凌行为的减少以及随之而来的学生幸福感的提高无疑是一个值得追求的目标。

# 七

## 7Test1

### [7Test1Passage1 Let’s go bats 走进蝙蝠](http://www.laokaoya.com/24028.html)

**自然段A**

Bats have a problem: how to find their way around in the dark. They hunt at night, and cannot use light to help them find prey and avoid obstacles. You might say that this is a problem of their own making, one that they could avoid simply by changing their habits and hunting by day. But the daytime economy is already heavily exploited by other creatures such as birds. Given that there is a living to be made at night, and given that alternative daytime trades are thoroughly occupied, natural selection has favoured bats that make a go of the night-hunting trade. It is probable that the nocturnal trades go way back in the ancestry of all mammals. In the time when the dinosaurs dominated the daytime economy, our mammalian ancestors probably only managed to survive at all because they found ways of scraping a living at night. Only after the mysterious mass extinction of the dinosaurs about 65 million years ago were our ancestors able to emerge into the daylight in any substantial numbers.

蝙蝠有一个问题：如何在黑暗中找到自己的出路。他们在夜间狩猎，无法利用光来帮助他们寻找猎物并避开障碍物。你可能会说这是他们自己造成的问题，他们可以简单地通过改变习惯和白天捕猎来避免。但是白天的资源已经被鸟类等其他生物大量利用。鉴于夜间仍有生计，而白天的替代性食物资源已被完全占领，因此自然选择偏爱那些从事夜间狩猎的蝙蝠。夜行性活动很可能可以追溯到所有哺乳动物的祖先。在恐龙主导白天经济的时候，我们哺乳动物的祖先可能就是因为找到了在夜间谋生的方法，才勉强存活下来。仅在大约6500万年前恐龙神秘灭绝之后，我们的祖先才能够在白天大量出现。

**自然段B**

Bats have an engineering problem: how to find their way and find their prey in the absence of light. Bats are not the only creatures to face this difficulty today. Obviously the night-flying insects that they prey on must find their way about somehow. Deep-sea fish and whales have little or no light by day or by night. Fish and dolphins that live in extremely muddy water cannot see because, although there is light, it is obstructed and scattered by the dirt in the water. Plenty of other modern animals make their living in conditions where seeing is difficult or impossible.

蝙蝠有一个实践上的问题：如何在没有光照的情况下找到自己的路径并找到猎物。蝙蝠并不是今天面临这一困难的唯一生物。显然，它们捕文章来自老烤鸭雅思食的在夜间飞行的昆虫也必须找到某种方式。无论白天还是晚上，深海鱼类和鲸鱼几乎都没有光照。生活在极其泥泞的水中的鱼和海豚也看不见。因为尽管光线充足，但它被水中的污物阻挡和分散。还有许多其他现代动物生活在视线受阻或完全看不见的环境中。

**自然段C**

Given the questions of how to manoeuvre in the dark, what solutions might an engineer consider? The first one that might occur to him is to manufacture light, to use a lantern or a searchlight. Fireflies and some fish (usually with the help of bacteria) have the power to manufacture their own light, but the process seems to consume a large amount of energy. Fireflies use their light for attracting mates. This doesn’t require a prohibitive amount of energy: a male’s tiny pinprick of light can be seen by a female from some distance on a dark night, since her eyes are exposed directly to the light source itself. However, using light to find one’s own way around requires vastly more energy, since the eyes have to detect the tiny fraction of the light that bounces off each part of the scene. The light source must therefore be immensely brighter if it is to be used as a headlight to illuminate the path, than if it is to be used as a signal to others. In any event, whether or not the reason is the energy expense, it seems to be the case that, with the possible exception of some weird deep-sea fish, no animal apart from man uses manufactured light to find its way about.

面对如何在黑暗中进行机动的问题，工程师会考虑哪些解决方案？他想到的第一个方法可能是使用灯笼或者探照灯来制造光。萤火虫和一些鱼（通常在细菌的帮助下）具有制造自己的光的能力，但该过程似乎消耗大量能量。萤火虫用它们的灯光吸引伴侣。这不需要消耗过多的能量：在漆黑的夜晚，雌性可以相隔一定距离看到雄性微弱的光亮，因为她的眼睛直接暴露在光源本身下。但是，使用光来寻找自己的路径需要更多的能量，因为眼睛必须检测从场景各个部分反射回来的微弱的光线。因此，如果将光源用作前照灯来照亮路径，则它必须比用作信号时更亮才行。无论如何，无论原因是不是能源消耗，似乎除了一些奇怪的深海鱼，人类以外的任何动物都不会利用人造光来寻找路径。

**自然段D**

What else might the engineer think of? well, blind humans sometimes seem to have an uncanny sense of obstacles in their path. It has been given the name ‘facial vision’, because blind people have reported that it feels a bit like the sense of touch, on the face. One report tells of a totally blind boy who could ride his tricycle at good speed round the block near his home, using facial vision. Experiments showed that, in fact, facial vision is nothing to do with touch or the front of the face, although the sensation may be referred to the front of the face, like the referred pain in a phantom limb. The sensation of facial vision, it turns out, really goes in through the ears. Blind people, without even being aware of the fact, are actually using echoes of their own footsteps and of other sounds, to sense the presence of obstacles. Before this was discovered, engineers had already built instruments to exploit the principle, for example to measure the depth of the sea under a ship. After this technique had been invented, it was only a matter of time before weapons designers adapted it for the detection of submarines. Both sides in the Second world war relied heavily on these devices, under such codenames as Asdic (British) and Sonar (American), as well as Radar (American) or RDF (British), which uses radio echoes rather than sound echoes.

工程师还会想到什么？好吧，盲人有时似乎在前进的道路上有种不可思议的障碍感。它之所以被称为“面部视觉”，是因为盲人报告说它有点像脸部的触摸感。一份报告讲述了一个完全失明的男孩，他可以利用面部视觉骑三轮车告诉绕过他家附近的街区。实验表明，实际上，面部视觉与触摸或脸前无关，尽管感觉可能来自脸的前面，就像幻肢中提到的疼痛一样。事实证明，面部视觉其实是通过耳朵感受到的。盲人甚至没有意识到这一事实。他们实际上是在利用自己脚步声和其他声音的回声来感知障碍物的存在。在发现这一点之前，工程师已经制造了利用该原理的仪器，例如，测量船下海的深度。在发明了这项技术之后，武器设计者将其改装用于探测潜艇只是一个时间问题。第二次世界大战中双方都严重依赖这些设备，其代号为Asdic（英国）和Sonar（美国），以及Radar（美国）或RDF（英国）。它们使用无线电回声而不是声音回声。

**自然段E**

The Sonar and Radar pioneers didn’t know it then, but all the world now knows that bats, or rather natural selection working on bats, had perfected the system tens of millions of years earlier, and their ‘radar’ achieves feats of detection and navigation that would strike an engineer dumb with admiration. It is technically incorrect to talk about bat ‘radar’, since they do not use radio waves. It is sonar. But the underlying mathematical theories of radar and sonar are very similar, and much of our scientific understanding of the details of what bats are doing has come from applying radar theory to them. The American zoologist Donald Griffin, who was largely responsible for the discovery of sonar in bats, coined the term ‘echolocation’ to cover both sonar and radar, whether used by animals or by human instruments.

声纳和雷达的先驱者当时还不知道，但是现在全世界都知道蝙蝠，或者说是自然选择的蝙蝠，已经在几千万年前完善了该系统。他们的“雷达”所实现的探测壮举和导航工作令工程师钦佩。谈论蝙蝠“雷达”在技术上是不正确的，因为它们不使用无线电波，而使用声波。但是雷达和声纳的基础数学理论非常相似，我们对蝙蝠行为细节的科学理解主要来自将雷达理论应用于它们。发现蝙蝠声纳的美国动物学家唐纳德·格里芬（Donald Griffin）创造了“回声定位”一词，以涵盖动物或人类使用的声纳和雷达。

### [7Test1Passage2 making every drop count 高效利用水资源](http://www.laokaoya.com/24103.html)

**段落A**

The history of human civilisation is entwined with the history of the ways we have learned to manipulate water resources. As towns gradually expanded, water was brought from increasingly remote sources, leading to sophisticated engineering efforts such as dams and aqueducts. At the height of the Roman Empire, nine major systems, with an innovative layout of pipes and well-built sewers, supplied the occupants of Rome with as much water per person as is provided in many parts of the industrial world today.

人类的历史与我们学习利用水资源的历史交织在一起。随着城镇的逐渐扩展，水源越来越远，带来了诸如水坝和水渠之类的复杂工程。在罗马帝国的鼎盛时期，创新的管道布局和精心设计的下水道构成的九大系统，为罗马的居民提供了与当今工业世界许多地方一样多的人均水量。

**段落B**

During the industrial revolution and population explosion of the 19th and 20th centuries, the demand for water rose dramatically. Unprecedented construction of tens of thousands of monumental engineering projects designed to control floods, protect clean water supplies, and provide water for irrigation and hydropower brought great benefits to hundreds of millions of people. Food production has kept pace with soaring populations mainly because of the expansion of artificial irrigation systems that make possible the growth of 40 % of the world’s food. Nearly one fifth of all the electricity generated worldwide is produced by turbines spun by the power of falling water.

19世纪和20世纪工业革命和人口爆炸期间，水的需求量急剧上升。为了控文章来自老烤鸭雅思制洪水，保护清洁水源以及为灌溉和水力发电供水，数以万计的史无前例的大型工程项目被建设起来，为数亿人民带来了巨大的利益。粮食生产与人口增长保持同步，这主要是因为人工灌溉系统的扩大使世界上40％的粮食增长成为可能。全世界发电量中有将近五分之一是水力推动的涡轮产生的。

**段落C**

Yet there is a dark side to this picture: despite our progress, half of the world’s population still suffers, with water services inferior to those available to the ancient Greeks and Romans. As the United Nations report on access to water reiterated in November 2001, more than one billion people lack access to clean drinking water some two and a half billion do not have adequate sanitation services. Preventable water-related diseases kill an estimated 10,000 to 20,000 children every day, and the latest evidence suggests that we are falling behind in efforts to solve these problems.

然而，事实也有阴暗的一面：尽管我们取得了进步，但世界上一半的人口仍在遭受苦难，其供水服务不及古希腊人和罗马人。正如2001年11月联合国用水报告所重申的那样，超过10亿人无法获得清洁的饮用水，约有25亿人没有适当的卫生服务。可预防的与水有关的疾病估计每天导致10,000至20,000名儿童丧生。而最新证据表明，我们在解决这些问题所做的努力方面远远不够。

**段落D**

The consequences of our water policies extend beyond jeopardising human health. Tens of millions of people have been forced to move from their homes – often with little warning or compensation – to make way for the reservoirs behind dams. More than 20 % of all freshwater fish species are now threatened or endangered because dams and water withdrawals have destroyed the free-flowing river ecosystems where they thrive. Certain irrigation practices degrade soil quality and reduce agricultural productivity. Groundwater aquifers\* are being pumped down faster than they are naturally replenished in parts of India, China, the USA and elsewhere. And disputes over shared water resources have led to violence and continue to raise local, national and even international tensions.

我们水资源政策的后果不仅仅危害人类健康。数以千万计的人被迫离开家园-往往没有任何警告或补偿-为水坝后面的水库腾出地方。由于水坝和取水破坏了自由流动的河流生态系统，超过20%的淡水鱼受到威胁或濒临灭绝。某些灌溉操作会降低土壤质量并降低农业生产力。在印度，中国，美国和其他地区，地下水的下降速度比自然补给的速度快。关于共享水资源的争端导致冲突，并继续加剧当地，国家乃至国际的紧张局势。

**段落E**

At the outset of the new millennium, however, the way resource planners think about water is beginning to change. The focus is slowly shifting back to the provision of basic human and environmental needs as top priority – ensuring ‘some for all,’ instead of ‘more for some’. Some water experts are now demanding that existing infrastructure be used in smarter ways rather than building new facilities, which is increasingly considered the option of last, not first, resort. This shift in philosophy has not been universally accepted, and it comes with strong opposition from some established water organisations. Nevertheless, it may be the only way to address successfully the pressing problems of providing everyone with clean water to drink, adequate water to grow food and a life free from preventable water-related illness.

然而，在新千年开始之际，资源规划者关于水的想法正在发生改变。重点逐渐转移到将满足基本的人类和环境需求作为头等大事-确保“全民所有”，而不是“一些人更多” 。现在，一些水务专家要求以更智能的方式使用现有基础设施，而不是建造新设施。新设施越来越被认为是最后的选择，而不是第一选择。这种哲学上的转变尚未得到普遍接受，并且受到一些知名水务组织的强烈反对。然而，这可能是成功解决紧迫问题的唯一方法，以便为每个人提供清洁的饮用水，充足的水来种植食物以及远离可预防的水资源相关疾病的生活。

**段落F**

Fortunately – and unexpectedly – the demand for water is not rising as rapidly as some predicted. As a result, the pressure to build new water infrastructures has diminished over the past two decades. Although population, industrial output and economic productivity have continued to soar in developed nations, the rate at which people withdraw water from aquifers, rivers and lakes has slowed. And in a few parts of the world, demand has actually fallen.

幸运并且出乎意料的是，对水的需求并未像某些人预测的那样迅速增长。结果在过去的二十年中，对建设新的水力基础设施的压力有所消失。尽管发达国家的人口，工业产出和经济生产效率继续飞速增长，但人们从蓄水层，河流和湖泊中取水的速度却有所放缓。在世界某系地区，需求实际上已经下降了。

**段落G**

What explains this remarkable turn of events? Two factors: people have figured out how to use water more efficiently, and communities are rethinking their priorities for water use. Throughout the first three-quarters of the 20th century, the quantity of freshwater consumed per person doubled on average; in the USA, water withdrawals increased tenfold while the population quadrupled. But since 1980, the amount of water consumed per person has actually decreased, thanks to a range of new technologies that help to conserve water in homes and industry. In 1965, for instance, Japan used approximately 13 million gallons\* of water to produce $1 million of commercial output; by 1989 this had dropped to 3.5 million gallons (even accounting for inflation) – almost a quadrupling of water productivity. In the USA, water withdrawals have fallen by more than 20 % from their peak in 1980.

两个因素可以解释这种非同寻常的事件变化：人们已经弄清楚如何更有效率地利用水，而社区也在重新考虑其用水的优先级。在20世纪的前四分之三，人均淡水消耗量平均增加了一倍。在美国，取水量增加了十倍，而人口增加了四倍。但是自1980年以来，由于一系列有助于节省家庭和工业用水的新技术，人均用水量实际上有所减少。例如，在1965年，日本使用大约1300万加仑的水来换取100万美元的商业产出。到了1989年，该数字下降到350万加仑（甚至计入通货膨胀）- 水的生产效率几乎提升了四倍。在美国，取水量比1980年的峰值下降了20％以上。

**段落H**

On the other hand, dams, aqueducts and other kinds of infrastructure will still have to be built, particularly in developing countries where basic human needs have not been met. But such projects must be built to higher specifications and with more accountability to local people and their environment than in the past. And even in regions where new projects seem warranted, we must find ways to meet demands with fewer resources, respecting ecological criteria and to a smaller budget.

另一方面，仍然必须建造水坝，水渠和其他各类基础设施，特别是在发展中国家。那里人们的基本需求还没有得到满足。但是，与过去相比，此类项目必须按照更高的规格进行建设，并对当地人民及其环境承担更多责任。即使在似乎有必要进行新项目的地区，我们也必须找到相应的方法，以更少的资源满足需求，尊重生态标准，并降低预算。

### [7Test1Passage3 educating psyche 暗示教学法](http://www.laokaoya.com/24168.html)

**第1自然段**

Educating Psyche by Bernie Neville is a book which looks at radical new approaches to learning, describing the effects of emotion, imagination and the unconscious on learning. One theory discussed in the book is that proposed by George Lozanov, which focuses on the power of suggestion.

伯尼·内维尔（Bernie Neville）撰写的《教育心理》一书探讨了全新的学习方法，描述了情感，想象力和无意识对学习的影响。本书中讨论的一种理论是乔治·洛扎诺夫（George Lozanov）提出的，它着眼于建议的力量。

**第2自然段**

Lozanov’s instructional technique is based on the evidence that the connections made in the brain through unconscious processing (which he calls non-specific mental reactivity) are more durable than those made through conscious processing. Besides the laboratory evidence for this, we know from our experience that we often remember what we have perceived peripherally, long after we have forgotten what we set out to learn. If we think of a book we studied months or years ago, we will find it easier to recall peripheral details – the colour, the binding, the typeface, the table at the library where we sat while studying it – than the content on which we were concentrating. If we think of a lecture we listened to with great concentration, we will recall the lecturer’s appearance and mannerisms, our place in the auditorium, the failure of the air-conditioning, much more easily than the ideas we went to learn. Even if these peripheral details are a bit elusive, they come back readily in hypnosis or when we relive the event imaginatively, as in psychodrama. The details of the content of the lecture, on the other hand, seem to have gone forever.

洛扎诺夫（Lozanov）的教学方法基于以下证据：通过无意文章来自老烤鸭雅思识加工在大脑中建立的联系（他称之为非特定的心理反应）比通过有意识加工建立的联系更持久。除了支持这一观点的实验室证据外，我们从自己的经验中也能得知，在我们忘记所学习的东西很久之后，我们经常会记住周围的事项。如果我们想想几个月或几年前学习过的书，我们会发现回忆周围的细节（颜色，装订，字体，我们在图书馆时所坐的桌子）比回忆我们当时正在专心的内容要简单。如果我们想想曾经专心听过的讲座，回忆讲师的外貌和举止，我们在观众席中的位置，空调的故障，要比回忆我们学到的观念容易得多。即使这些外围细节有些难以捉摸，它们也很容易在催眠状态下或当我们重温事件时出现。另一方面，讲课内容的细节似乎永远消失了。

**第3自然段**

This phenomenon can be partly attributed to the common counterproductive approach to study (making extreme efforts to memorise, tensing muscles, inducing fatigue), but it also simply reflects the way the brain functions. Lozanov therefore made indirect instruction (suggestion) central to his teaching system. In suggestopedia, as he called his method, consciousness is shifted away from the curriculum to focus on something peripheral. The curriculum then becomes peripheral and is dealt with by the reserve capacity of the brain.

这种现象可以部分归因于常见的适得其反的学习方法（尽力去记忆，拉紧肌肉，诱发疲劳），但它也反映了大脑运转的方式。因此，洛扎诺夫将间接指导（建议）作为其教学体系的核心。正如他所说的那样，在暗示教学法中，意识从课程转移到专注于某些外围事物。然后课程成为外围事项，由大脑的储备能力处理。

**第4自然段**

The suggestopedic approach to foreign language learning provides a good illustration. In its most recent variant (1980), it consists of the reading of vocabulary and text while the class is listening to music. The first session is in two parts. In the first part, the music is classical (Mozart, Beethoven, Brahms) and the teacher reads the text slowly and solemnly, with attention to the dynamics of the music. The students follow the text in their books. This is followed by several minutes of silence. In the second part, they listen to baroque music (Bach, Corelli, Handel) while the teacher reads the text in a normal speaking voice. During this time they have their books closed. During the whole of this session, their attention is passive; they listen to the music but make no attempt to learn the material.

用暗示教学法学习外语提供了很好的例证。在其最新版本（1980）中，该课程包括在课堂上听音乐的同时词汇和文本。第一节分为两部分。在第一部分中，音乐是古典乐（莫扎特，贝多芬，勃拉姆斯），老师会缓慢而庄重地文本，将注意力放在音乐上。学生们根据书本上的文章学习。接下来是几分钟的沉默。在第二部分中，他们听巴洛克音乐（巴赫，科雷利，汉德尔），而老师则以普通语音朗读文本。在此期间他们合上书本。在整个过程中，他们的注意力是不集中的。他们听音乐，但没有尝试学习这些资料。

**第5自然段**

Beforehand, the students have been carefully prepared for the language learning experience. Through meeting with the staff and satisfied students they develop the expectation that learning will be easy and pleasant and that they will successfully learn several hundred words of the foreign language during the class. In a preliminary talk, the teacher introduces them to the material to be covered, but does not ‘teach’ it. Likewise, the students are instructed not to try to learn it during this introduction.

事先，学生已经为语言学习经历作了精心准备。通过与员工和满意的学生的见面，他们产生了学习会简单轻松并且将在课堂上成功地学习数百个外语单词的想法。在初步讲解中，老师向他们介绍了要学习的材料，但没有“教”它。同样，在介绍过程中，学生要要求不要尝试学习它。

**第6自然段**

Some hours after the two-part session, there is a follow-up class at which the students are stimulated to recall the material presented. Once again the approach is indirect. The students do not focus their attention on trying to remember the vocabulary, but focus on using the language to communicate (e.g. through games or improvised dramatisations). Such methods are not unusual in language teaching. What is distinctive in the suggestopedic method is that they are devoted entirely to assisting recall. The ‘learning’ of the material is assumed to be automatic and effortless, accomplished while listening to music. The teacher’s task is to assist the students to apply what they have learned paraconsciously, and in doing so to make it easily accessible to consciousness. Another difference from conventional teaching is the evidence that students can regularly learn 1000 new words of a foreign language during a suggestopedic session, as well as grammar and idiom.

在分为两部分的课程结束之后的几个小时内，会有一个后续课程。该课程会激发学生回忆所介绍的材料。同样，该方法是间接的。学生们不会将注意力集中在试图记住的词汇上，而是着重使用语言进行交流（例如，通过游戏或即兴表演） 。这种方法在语言教学中并不罕见。暗示教学法的独特之处是它们完全致力于协助回忆。材料的“学习”被认为是自动且轻松的，在听音乐的同时完成。教师的任务是协助学生将他们所学的知识通过潜意识应用出来，并使其易于被意识所接受。与常规教学的另一个不同之处在于，证据表明学生可以在暗示教学期间学会1000个新外语单词，以及语法和习语。

**第7自然段**

Lozanov experimented with teaching by direct suggestion during sleep, hypnosis and trance states, but found such procedures unnecessary. Hypnosis, yoga, Silva mind-control, religious ceremonies and faith healing are all associated with successful suggestion, but none of their techniques seem to be essential to it. Such rituals may be seen as placebos. Lozanov acknowledges that the ritual surrounding suggestion in his own system is also a placebo, but maintains that without such a placebo people are unable or afraid to tap the reserve capacity of their brains. Like any placebo, it must be dispensed with authority to be effective. Just as a doctor calls on the full power of autocratic suggestion by insisting that the patient take precisely this white capsule precisely three times a day before meals, Lozanov is categoric in insisting that the suggestopedic session be conducted exactly in the manner designated, by trained and accredited suggestopedic teachers.

洛扎诺夫在睡觉，催眠和发呆状态下通过直接暗示进行了教学实验，但发现这样的程序并不必要。催眠，瑜伽，席尔瓦（Silva）心理控制，宗教仪式和信仰康复都与成功的暗示有关，但是这些方法似乎都不是必不可少的。这种仪式可以被视为安慰剂。洛扎诺夫（Lozanov）承认在他自己的体系中仪式性的周边暗示也是安慰剂，但他坚持认为，没有这样的安慰剂，人们将无法或害怕挖掘大脑的储备能力。像任何安慰剂一样，必须富有权威才能有效。正如医生通过坚持要求患者每天饭前精确地服用三粒白色胶囊来充分发挥权威暗示的全部力量一样，洛扎诺夫（Lozanov）坚决主张严格按照设计的方式，由受过训练、经过认可的暗示教学法的老师进行暗示教学。

**第8自然段**

While suggestopedia has gained some notoriety through success in the teaching of modern languages, few teachers are able to emulate the spectacular results of Lozanov and his associates. We can, perhaps, attribute mediocre results to an inadequate placebo effect. The students have not developed the appropriate mind set. They are often not motivated to learn through this method. They do not have enough ‘faith’. They do not see it as ‘real teaching’, especially as it does not seem to involve the ‘work’ they have learned to believe is essential to learning.

尽管暗示教学法通过现代语言教学上的成功声名鹊起，但很少有老师能够模仿洛扎诺夫及其同事的惊人成果。我们也许可以将平庸的结果归因于安慰剂作用不足。学生们尚未建立适当的思维定势。他们通常没有动力通过这种方法学习。他们没有足够的“信仰” 。他们不认为这是“真正的教学”，尤其是当它似乎不涉及他们所认为的对学习至关重要的“努力” 。

## 7Test2

### [7Test2Passage1 Why pagodas don’t fall down 日本高塔为何不倒](http://www.laokaoya.com/24291.html)

**第1自然段**

In a land swept by typhoons and shaken by earthquakes, how have Japan’s tallest and seemingly flimsiest old buildings – 500 or so wooden pagodas – remained standing for centuries? Records show that only two have collapsed during the past 1400 years. Those that have disappeared were destroyed by fire as a result of lightning or civil war. The disastrous Hanshin earthquake in 1995 killed 6,400 people, toppled elevated highways, flattened office blocks and devastated the port area of Kobe. Yet it left the magnificent five-storey pagoda at the Toji temple in nearby Kyoto unscathed, though it levelled a number of buildings in the neighbourhood.

在台风席卷，地震频繁的土地上，日本最高、看似最脆弱的老建筑-500座左右的木制宝塔-如何屹立了几个世纪？记录显示在过去的1400年中只有两座倒塌。大多数都是被闪电或内战导致的大火摧毁。在1995年灾难性的阪神地震中遇难6400人，高架公路倒塌，办公块被夷为平地和神户港区被破坏。尽管它摧毁了附近的许多建筑物，但却毫发无损地保留了京都东寺附近的五层宝塔。

**第2自然段**

Japanese scholars have been mystified for ages about why these tall, slender buildings are so stable. It was only thirty years ago that the building industry felt confident enough to erect office blocks of steel and reinforced concrete that had more than a dozen floors. With its special shock absorbers to dampen the effect of sudden sideways movements from an earthquake, the thirty-six-storey Kasumigaseki building in central Tokyo – Japan’s first skyscraper – was considered a masterpiece of modern engineering when it was built in 1968.

对于这些高大而纤细的建筑物为何如此稳定，古往今来日本学者一直感到困惑。仅仅在30年前，建筑行业才感到足够自信，可以竖立有十多个楼层的钢筋文章来自老烤鸭雅思混凝土办公楼。凭借其特殊的减震器来减轻地震中突然侧向运动的影响，位于东京市中心的这栋三十六层的霞关大厦-日本的第一座摩天大楼-于1968年建成时被认为是现代工程学的杰作。

**第3自然段**

Yet in 826, with only pegs and wedges to keep his wooden structure upright, the master builder Kobodaishi had no hesitation in sending his majestic Toji pagoda soaring fifty-five metres into the sky – nearly half as high as the Kasumigaseki skyscraper built some eleven centuries later. Clearly, Japanese carpenters of the day knew a few tricks about allowing a building to sway and settle itself rather than fight nature’s forces. But what sort of tricks?

然而，在826年，仅用钉子和楔子将木结构保持直立，建筑工匠大师Kobodaishi毫不犹豫地将雄伟的Toji塔修建成高耸入云的55米-几乎是十一世纪后霞关大厦高度的一半。显然，那时的日本木匠知道一些技巧，可以使建筑物摇摆并自行安顿下来，而不是与自然力量作斗争。但是究竟是什么样的技巧呢？

**第4自然段**

The multi-storey pagoda came to Japan from China in the sixth century. As in China, they were first introduced with Buddhism and were attached to important temples. The Chinese built their pagodas in brick or stone, with inner staircases, and used them in later centuries mainly as watchtowers. When the pagoda reached Japan, however, its architecture was freely adapted to local conditions – they were built less high, typically five rather than nine storeys, made mainly of wood and the staircase was dispensed with because the Japanese pagoda did not have any practical use but became more of an art object. Because of the typhoons that batter Japan in the summer, Japanese builders learned to extend the eaves of buildings further beyond the walls. This prevents rainwater gushing down the walls. Pagodas in China and Korea have nothing like the overhang that is found on pagodas in Japan.

多层宝塔于六世纪从中国传入日本。像在中国一样，它们最初是由佛教引入的，并作为重要寺庙的附属物。中国人用砖或石头建造宝塔，内部带有楼梯，并在以后的几个世纪中主要将其用作瞭望塔。但是，当宝塔到达日本后，其结构适应当地条件-它们的建造高度较低，通常只有五层而不是九层，主要由木头制成，并且由于日本宝塔没有任何实际用途并且更多的被当作艺术品，因此取消了楼梯。由于夏季遭受台风袭击，日本建筑工人将建筑物的屋檐延伸到墙外。这样可以防止雨水冲击墙壁。中国和韩国的宝塔没有日本宝塔上的这种突出物。

**第5自然段**

The roof of a Japanese temple building can be made to overhang the sides of the structure by fifty per cent or more of the building’s overall width. For the same reason, the builders of Japanese pagodas seem to have further increased their weight by choosing to cover these extended eaves not with the porcelain tiles of many Chinese pagodas but with much heavier earthenware tiles.

日本寺庙建筑的屋顶可以超出建筑物整体宽度的50％或更多。出于同样的原因，日本宝塔的建造者似乎通过选择重的多的陶器砖而非像中国那样的瓷砖来覆盖延伸的屋檐，以进一步增加宝塔的重量。

**第6自然段**

But this does not totally explain the great resilience of Japanese pagodas. Is the answer that, like a tall pine tree, the Japanese pagoda – with its massive trunk-like central pillar known as shinbashira – simply flexes and sways during a typhoon or earthquake? For centuries, many thought so. But the answer is not so simple because the startling thing is that the shinbashira actually carries no load at all. In fact, in some pagoda designs, it does not even rest on the ground, but is suspended from the top of the pagoda – hanging loosely down through the middle of the building. The weight of the building is supported entirely by twelve outer and four inner columns.

但这并不能完全解释日本宝塔的强大韧性。答案是像下面这样吗？就像一棵高大的松树一样，日本宝塔（其巨大的树干状中央支柱被称为shinbashira）在台风或地震中只是弯曲和摇摆？几个世纪以来，许多人都这样认为。但是答案并非如此简单，因为令人吃惊的是shinbashira实际上根本没有承重。实际上，在某些宝塔设计中，它甚至没有置于地面，而是从宝塔的顶部悬挂下来-松散地挂在建筑物中间。建筑物的重量完全由十二个外柱和四个内柱支撑。

**第7自然段**

And what is the role of the shinbashira, the central pillar? The best way to understand the shinbashira’s role is to watch a video made by Shuzo Ishida, a structural engineer at Kyoto Institute of Technology. Mr Ishida, known to his students as ‘Professor Pagoda’ because of his passion to understand the pagoda, has built a series of models and tested them on a ‘shake- table’ in his laboratory. In short, the shinbashira was acting like an enormous stationary pendulum. The ancient craftsmen, apparently without the assistance of very advanced mathematics, seemed to grasp the principles that were, more than a thousand years later, applied in the construction of Japan’s first skyscraper. What those early craftsmen had found by trial and error was that under pressure a pagoda’s loose stack of floors could be made to slither to and fro independent of one another. Viewed from the side, the pagoda seemed to be doing a snake dance – with each consecutive floor moving in the opposite direction to its neighbours above and below. The shinbashira, running up through a hole in the centre of the building, constrained individual storeys from moving too far because, after moving a certain distance, they banged into it, transmitting energy away along the column.

那么，核心支柱shinbashira的作用是什么？了解shinbashira作用的最好方法是观看京都工业大学结构工程师石田修三制作的视频。石田先生因热衷于研究宝塔而被学生称为“宝塔教授”，他已经建立了一系列模型并在实验室的“振动台”上对其进行了测试。简而言之，shinbashira像一个巨大的静止钟摆。古代工匠显然没有先进数学方法的辅助，但似乎掌握了一千多年后在日本建造第一座摩天大楼时所应用的原理。这些早期的工匠通过反复试验发现，宝塔松散楼层在压力下可以相互独立地来回滑动。从侧面看，宝塔似乎在做蛇舞-相邻的楼层按照与上下楼层相反的方向移动。穿过建筑物中心孔洞的shinbashira限制了各个楼层的移动幅度，因为在其移动一定距离后，就会撞到柱子上，沿着圆柱将能量传递出去。

**第8自然段**

Another strange feature of the Japanese pagoda is that, because the building tapers, with each successive floor plan being smaller than the one below, none of the vertical pillars that carry the weight of the building is connected to its corresponding pillar above. In other words, a five- storey pagoda contains not even one pillar that travels right up through the building to carry the structural loads from the top to the bottom. More surprising is the fact that the individual storeys of a Japanese pagoda, unlike their counterparts elsewhere, are not actually connected to each other. They are simply stacked one on top of another like a pile of hats. Interestingly, such a design would not be permitted under current Japanese building regulations.

日本宝塔的另一个奇怪特征是，由于建筑物逐渐变细，每个连续的楼层的面积都小于下面的楼层，因此没有任何承载建筑物重量的垂直支柱与上方的相应支柱相连。换句话说，一座五层楼的宝塔甚至不包含一根贯穿整个建筑物的柱子，以将结构荷载从顶部传递到底部。更令人惊讶的是，与其他地方的宝塔不同，日本塔的各个楼层实际上并未相互连接。它们就像一堆帽子一样，一个接一个地堆叠在一起。有趣的是，根据当前的日本建筑法规，这种设计是不允许的。

**第9自然段**

And the extra-wide eaves? Think of them as a tightrope walker’s balancing pole. The bigger the mass at each end of the pole, the easier it is for the tightrope walker to maintain his or her balance. The same holds true for a pagoda. ‘With the eaves extending out on all sides like balancing poles,’ says Mr Ishida, ‘the building responds to even the most powerful jolt of an earthquake with a graceful swaying, never an abrupt shaking.’ Here again, Japanese master builders of a thousand years ago anticipated concepts of modern structural engineering.

超宽屋檐呢？将它们想象成走钢丝的人的平衡杆。杆子两端的质量越大，走钢丝的人就越容易保持平衡。宝塔也是如此。石田先生说：“屋檐像平衡杆一样向四面八方延伸，即使是地震中最强烈的颠簸，建筑物也可以平稳地摇摆，而不会突然晃动”。又一次的，一千年前的日本建筑大师们预测到了现代结构工程的概念。

### [7Test2Passage2 The True Cost of Food 食物的真正成本](http://www.laokaoya.com/24358.html)

**段落A**

For more than forty years the cost of food has been rising. It has now reached a point where a growing number of people believe that it is far too high, and that bringing it down will be one of the great challenges of the twenty-first century. That cost, however, is not in immediate cash. In the west at least, most food is now far cheaper to buy in relative terms than it was in 1960. The cost is in the collateral damage of the very methods of food production that have made the food cheaper: in the pollution of water, the enervation of soil, the destruction of wildlife, the harm to animal welfare and the threat to human health caused by modern industrial agriculture.

四十多年来，食品的成本一直在上升。现在已经到了一个越​​来越多的人认为它太高的地步。降低它将是二十一世纪的巨大挑战之一。但是，这笔费用不是立即用现金支付的。至少在西方，相对而言，现在大多数食品要比1960年便宜。代价在于使粮食更加便宜的生产方法所带来的附带损害：现代农业造成水污染，土壤退化，破坏野生动植物，危害动物安全，威胁人类健康。

**段落B**

First mechanisation, then mass use of chemical fertilisers and pesticides, then monocultures, then battery rearing of livestock, and now genetic engineering – the onward march of intensive farming has seemed unstoppable in the last half-century, as the yields of produce have soared. But the damage it has caused has been colossal. In Britain, for example, many of our best-loved farmland birds, such as the skylark, the grey partridge, the lapwing and the corn bunting, have vanished from huge stretches of countryside, as have even more wild flowers and insects. This is a direct result of the way we have produced our food in the last four decades. Thousands of miles of hedgerows, thousands of ponds, have disappeared from the landscape. The faecal filth of salmon farming has driven wild salmon from many of the sea lochs and rivers of Scotland. Natural soil fertility is dropping in many areas because of continuous industrial fertiliser and pesticide use, while the growth of algae is increasing in lakes because of the fertiliser run-off.

先是机械化，然后大量使用化肥和杀虫剂，再然后是单一种植，畜牧业的笼内饲养，再到现在的基因工程-在过去的半个世纪中，随着农产品产量猛增，集约文章来自老烤鸭雅思农业的前进步伐似乎不可阻挡。但是它造成的破坏是巨大的。例如，在英国，许多我们喜爱农田鸟类，如云雀，灰山鹑，凤头麦鸡和黍鹀，从广阔的乡村消失。随之消失的还有更多的野花和昆虫。这是我们在过去的四十年里食物生产的直接结果。 数千英里的树篱，数千个池塘从地面上消失。鲑鱼养殖的粪便污染已将野生鲑鱼从苏格兰的许多海湾和河流中驱除出去。由于持续使用工业肥料和杀虫剂，许多地区的自然土壤肥力正在下降，而由于肥料流失，湖泊中藻类的生长正在增加。

**段落C**

Put it all together and it looks like a battlefield, but consumers rarely make the connection at the dinner table. That is mainly because the costs of all this damage are what economists refer to as externalities: they are outside the main transaction, which is for example producing and selling a field of wheat, and are borne directly by neither producers nor consumers. To many, the costs may not even appear to be financial at all, but merely aesthetic – a terrible shame, but nothing to do with money. And anyway they, as consumers of food, certainly aren’t paying for it, are they?

将它们放在一起看起来就像是战场，但消费者在餐桌旁很少将它们联系起来。这主要是因为所有这些损失被经济学家称为外部性：它们不在主要交易（例如生产和出售一块麦田）的范围之内，既不由生产者也不由消费者直接承担。对许多人来说，代价似乎仅仅是美学上的，而根本不算是经济上的-虽然是可怕的耻辱，但与金钱无关。无论如何，他们作为食品的消费者肯定不会为此付费，是吗？

**段落D**

But the costs to society can actually be quantified and, when added up, can amount to staggering sums. A remarkable exercise in doing this has been carried out by one of the world’s leading thinkers on the future of agriculture, Professor Jules Pretty, Director of the Centre for Environment and Society at the University of Essex. Professor Pretty and his colleagues calculated the externalities of British agriculture for one particular year. They added up the costs of repairing the damage it caused, and came up with a total figure of ￡2,343m. This is equivalent to ￡208 for every hectare of arable land and permanent pasture, almost as much again as the total government and EU spend on British farming in that year. And according to Professor Pretty, it was a conservative estimate.

但是，社会的成本实际上是可以量化的，加起来可以达到惊人的数目。埃塞克斯大学环境与社会研究中心主任朱尔斯·普里斯（Jules Pretty）教授是全球领先的农业未来思想家之一。他在这方面进行了卓著的实践。Pretty教授和他的同事计算了特定年份英国农业的外部性。他们汇总了修复农业造成的破坏所需要的成本，共计23.43 亿英镑。平均下来每公顷耕地和永久牧场208 英镑，几乎是该年政府和欧盟在英国农业上的总支出的两倍。根据Pretty教授的说法，这还只是保守的估计。

**段落E**

The costs included: ￡120m for removal of pesticides; ￡16m for removal of nitrates; ￡55m for removal of phosphates and soil; ￡23m for the removal of the bug cryptosporidium from drinking water by water companies; ￡125m for damage to wildlife habitats, hedgerows and dry stone walls; ￡1,113m from emissions of gases likely to contribute to climate change; ￡106m from soil erosion and organic carbon losses; ￡169m from food poisoning; and ￡607m from cattle disease. Professor Pretty draws a simple but memorable conclusion from all this: our food bills are actually threefold. We are paying for our supposedly cheaper food in three separate ways: once over the counter, secondly through our taxes, which provide the enormous subsidies propping up modern intensive farming, and thirdly to clean up the mess that modern farming leaves behind.

费用包括：1亿2千万英镑用于去除杀虫剂；1600万去除硝酸盐；5500万英镑用于去除磷酸盐和土壤；2300万用于自来水公司清除饮用水中的隐孢子虫；1亿2千500万英镑用于野生动物栖息地，树篱和干石墙的破坏；11.13 亿英镑用于可能造成气候变化的气体排放；1亿600万英镑用于土壤侵蚀和有机碳的损失；1亿6千700万用于食物中毒；以及6亿700万用于牲畜疾病。Pretty教授从这一切得出一个简单但令人难忘的结论：我们的食品账单实际上包含三重内容。我们正在以三种不同的方式为我们本应便宜的食品买单：一次是柜台交易。其次是通过我们的税收。它提供了支持现代集约农业的巨额补贴。最后是清理现代农业留下的烂摊子。

**段落F**

So can the true cost of food be brought down? Breaking away from industrial agriculture as the solution to hunger may be very hard for some countries, but in Britain, where the immediate need to supply food is less urgent, and the costs and the damage of intensive farming have been clearly seen, it may be more feasible. The government needs to create sustainable, competitive and diverse farming and food sectors, which will contribute to a thriving and sustainable rural economy, and advance environmental, economic, health, and animal welfare goals.

那么，食品的真实成本可以降低吗？对于某些国家而言，摆脱作为饥饿解决方案的工业化农业可能非常困难，但是在英国，眼前的粮食供应需求并不那么紧迫，而且集约化耕作的代价和损害已得到明显体现，摆脱工业化农业更加可行。政府需要创建可持续、充满竞争和多样化的农业与粮食部门，这将为蓬勃发展和可持续的农村经济做出贡献，并促进环境、经济、健康和动物安全目标的实现。

**段落G**

But if industrial agriculture is to be replaced, what is a viable alternative? Professor Pretty feels that organic farming would be too big a jump in thinking and in practices for many farmers. Furthermore, the price premium would put the produce out of reach of many poorer consumers. He is recommending the immediate introduction of a ‘Greener Food Standard’, which would push the market towards more sustainable environmental practices than the current norm, while not requiring the full commitment to organic production. Such a standard would comprise agreed practices for different kinds of farming, covering agrochemical use, soil health, land management, water and energy use, food safety and animal health. It could go a long way, he says, to shifting consumers as well as farmers towards a more sustainable system of agriculture.

但是，如果要取代工业农业，可行的选择是什么呢？Pretty教授认为有机农业对许多农民的思想和实践来说步子太大。此外，价格溢价将使产品无法满足许多较贫穷的消费者的需求。他建议立即引入“绿色食品标准”，这将推动市场朝着比当前规范更具可持续性的环境实践发展，同时不需要对有机生产做出全面承诺。该标准将包括针对各种农业的统一实践，涵盖农用化学品的使用，土壤健康，土地管理，水和能源的使用，食品安全和动物健康。他说，要使消费者和农民转向更可持续的农业体系，还有很长的路要走。

### [7Test2Passage3 Makete Integrated Rural Transport Project 马克特乡村综合交通运输项目](http://www.laokaoya.com/24407.html)

**A部分**

**第1段**

The disappointing results of many conventional road transport projects in Africa led some experts to rethink the strategy by which rural transport problems were to be tackled at the beginning of the 1980s. A request for help in improving the availability of transport within the remote Makete District of south- western Tanzania presented the opportunity to try a new approach.

非洲许多常规道路运输项目令人失望的结果使一些专家重新考虑在20世纪80年代初解决农村运输问题的战略。寻求帮助以改善坦桑尼亚西南部偏远的马克特地区的交通便利性为尝试新方法提供了机会。

**第2段**

The concept of ‘integrated rural transport’ was adopted in the task of examining the transport needs of the rural households in the district. The objective was to reduce the time and effort needed to obtain access to essential goods and services through an improved rural transport system. The underlying assumption was that the time saved would be used instead for activities that would improve the social and economic development of the communities. The Makete Integrated Rural Transport Project (MIRTP) started in 1985 with financial support from the Swiss Development Corporation and was co-ordinated with the help of the Tanzanian government.

在考察该地区农村家庭的运输需求时，采用了“农村综合运输”的概念。目的是通过改进的农村文章来自老烤鸭雅思运输系统减少获得基本商品和服务所需的时间和精力。背后假设是节省的时间将被用于从事能够改善社区社会和经济发展的活动。马克特农村综合运输项目（MIRTP）在瑞士开发公司的经济支持下于1985年开始，并由坦桑尼亚政府帮助协调。

**B部分**

**第1段**

When the project began, Makete District was virtually totally isolated during the rainy season. The regional road was in such bad shape that access to the main towns was impossible for about three months of the year. Road traffic was extremely rare within the district, and alternative means of transport were restricted to donkeys in the north of the district. People relied primarily on the paths, which were slippery and dangerous during the rains.

项目开始时，马克特地区在雨季几乎完全与世隔绝。该地区的道路状况如此恶劣，以至于一年中有三个月都无法进入主要城镇。在该地区，道路交通极为罕见。在北部，替代运输工具仅限于驴。人们主要依靠小径进出。在下雨时这条路很滑而且很危险。

**第2段**

Before solutions could be proposed, the problems had to be understood. Little was known about the transport demands of the rural households, so Phase Ⅰ, between December 1985 and December 1987, focused on research. The socio-economic survey of more than 400 households in the district indicated that a household in Makete spent, on average, seven hours a day on transporting themselves and their goods, a figure which seemed extreme but which has also been obtained in surveys in other rural areas in Africa. Interesting facts regarding transport were found: 95% was on foot; 80% was within the locality; and 70% was related to the collection of water and firewood and travelling to grinding mills.

在提出解决方案之前，必须先了解问题。对农村家庭的运输需求知之甚少。因此，从1985年12月至1987年12月的第一阶段将重点放在研究上。对该地区400多个家庭进行的社会经济调查表明，马克特一个家庭平均每天花费7个小时来运输他们自己和货物，这个数字看似极端，但在非洲其他地区进行的调查也得出了相同的结论。有关交通运输的有趣事实如下：95％靠步行；80％在当地；70％与收集水和柴火，并前往磨坊有关。

**C部分**

**第1段**

Having determined the main transport needs, possible solutions were identified which might reduce the time and burden. During Phase Ⅱ, from January to February 1991, a number of approaches were implemented in an effort to improve mobility and access to transport.

确定主要交通运输需求之后，提出了可能的解决方案。它们可以减少时间和负担。在第二阶段，即1991年1月至2月，实施了许多方法以努力改善流动性和交通便利性。

**第2段**

An improvement of the road network was considered necessary to ensure the import and export of goods to the district. These improvements were carried out using methods that were heavily dependent on labour. In addition to the improvement of roads, these methods provided training in the operation of a mechanical workshop and bus and truck services. However, the difference from the conventional approach was that this time consideration was given to local transport needs outside the road network.

人们认为有必要改善道路网络，以确保该地区的货物进出。这些提升使用严重依赖人工的方法。除了改善道路外，这些方案还提供机械车间以及公共汽车和卡车服务的操作培训。但是，与传统方法的区别在于，这次考虑的是路网之外的本地运输需求。

**第3段**

Most goods were transported along the paths that provide short-cuts up and down the hillsides, but the paths were a real safety risk and made the journey on foot even more arduous. It made sense to improve the paths by building steps, handrails and footbridges.

大多数货物都通过上下山的捷径进行运输。但是这些路径存在安全隐患，使徒步过程更加艰巨。通过建造台阶，扶手和人行桥梁来改善道路是有意义的。

**第4段**

It was uncommon to find means of transport that were more efficient than walking but less technologically advanced than motor vehicles. The use of bicycles was constrained by their high cost and the lack of available spare parts. Oxen were not used at all but donkeys were used by a few households in the northern part of the district. MIRTP focused on what would be most appropriate for the inhabitants of Makete in terms of what was available, how much they could afford and what they were willing to accept. After careful consideration, the project chose the promotion of donkeys – a donkey costs less than a bicycle- and the introduction of a locally manufacturable wheelbarrow.

找到一种比步行更高效但技术先进程度低于机动车的运输方式并不寻常。自行车的使用受制于其高昂的成本和缺乏可用的备件。该地区北部的几户居民根本不用牛，但却用驴子。MIRTP努力寻找最适合马克特地区居民的交通方式，专注于有哪些方式可供选择，他们可以承担多少开支，以及他们愿意接受什么。经过仔细考虑，该项目选择推广驴-驴的成本低于自行车-并引入在本地就可以制造的独轮车。

**D部分**

**第1段**

At the end of Phase Ⅱ, it was clear that the selected approaches to Makete’s transport problems had had different degrees of success. Phase Ⅲ, from March 1991 to March 1993, focused on the refinement and institutionalisation of these activities.

在第二阶段结束时，针对马克特地区交通运输问题所选择的方法很明显获得了不同程度的成功。1991年3月至1993年3月的第三阶段着重于这些活动的完善和制度化。

**第2段**

The road improvements and accompanying maintenance system had helped make the district centre accessible throughout the year. Essential goods from outside the district had become more readily available at the market, and prices did not fluctuate as much as they had done before.

道路的改善和配套的养护系统使得整个区域中心全年都能通行。来自地区之外的必要商品在市场上变得越来越容易获得，价格的波动也没有以前那样大。

**第3段**

Paths and secondary roads were improved only at the request of communities who were willing to participate in construction and maintenance. However, the improved paths impressed the inhabitants, and requests for assistance greatly increased soon after only a few improvements had been completed.

只有在愿意参与建设和维护的社区的要求下，才会对道路和次要道路进行改善。但是，改善之后的道路给居民留下了深刻的印象。在完成了一些改进之后不就，对援助的请求大大增加。

**第4段**

The efforts to improve the efficiency of the existing transport services were not very successful because most of the motorised vehicles in the district broke down and there were no resources to repair them. Even the introduction of low-cost means of transport was difficult because of the general poverty of the district. The locally manufactured wheelbarrows were still too expensive for all but a few of the households. Modifications to the original design by local carpenters cut production time and costs. Other local carpenters have been trained in the new design so that they can respond to requests. Nevertheless, a locally produced wooden wheelbarrow which costs around 5000Tanzanian shillings (less than US$20) in Makete, and is about one quarter the cost of a metal wheelbarrow, is still too expensive for most people.

改善现有运输服务效率的努力不是很成功，因为该地区的大多数机动车辆出现故障，并且没有资源对其进行维修。由于该地区普遍贫困，即使采用低成本的交通工具也很困难。对于大多数家庭来说，当地制造的独轮车仍然太贵了。当地木匠对原始设计进行修改，减少了生产时间和成本。其他本地木匠已经接受新设计的培训，以便他们可以响应要求。然而，马克特本地生产的价值约5000坦桑尼亚先令（不到20美元）的独轮车（只有金属独轮车价格的四分之一）对大多数人来说仍然过于昂贵。

**第5段**

Donkeys, which were imported to the district, have become more common and contribute, in particular, to the transportation of crops and goods to market. Those who have bought donkeys are mainly from richer households but, with an increased supply through local breeding, donkeys should become more affordable. Meanwhile, local initiatives are promoting the renting out of the existing donkeys.

引入到该地区的驴子变得更加普遍，并且尤其有助于将农作物和商品运输到市场。驴的购买者主要来自较富裕的家庭，但随着本地养殖的增加，驴的价格应会降低。同时，地方政府正在推进出租现有的驴子。

**第6段**

It should be noted, however, that a donkey, which at 20,000Tanzanian shillings costs less than a bicycle, is still an investment equal to an average household’s income over half a year. This clearly illustrates the need for supplementary measures if one wants to assist the rural poor.

但是，应该指出的是，价值20000坦桑尼亚先令的驴虽然比自行车要便宜，但仍然是相当于普通家庭半年多收入的一项投资。这清楚的表明，如果要帮助农村贫困人口，就需要采取补充措施。

**E部分**

It would have been easy to criticise the MIRTP for using in the early phases a‘top-down’ approach, in which decisions were made by experts and officials before being handed down to communities, but it was necessary to start the process from the level of the governmental authorities of the district. It would have been difficult to respond to the requests of villagers and other rural inhabitants without the support and understanding of district authorities.

批评MIRTP在早期阶段使用“自上而下”的推动方法很容易，因为这是由专家和官员做出的决定，然后才下达给社区。但是从地区政府层面开始推进这一过程很有必要。没有地区当局的支持和理解，很难回应村民和其他农村居民的要求。

**F部分**

**第1段**

Today, nobody in the district argues about the importance of improved paths and inexpensive means of transport. But this is the result of dedicated work over a long period, particularly from the officers in charge  of community development. They played an essential role in raising awareness and interest among the rural communities.

今天，该地区没有人怀疑道路改善和廉价运输工具的重要性。但这是长期以来的不懈努力的结果，特别是来自负责社区发展的官员的努力。他们在提升农村社区的认识和兴趣方面发挥了关键性作用。

**第2段**

The concept of integrated rural transport is now well established in Tanzania, where a major program of rural transport is just about to start. The experiences from Makete will help in this initiative, and Makete District will act as a reference for future work.

现在，坦桑尼亚已经很好地确立了农村综合运输的概念。在那里即将开始一项重要的农村交通计划。马克特的经验将有助于此计划，同时马克特地区也将作为未来工作的参考。

## 7Test3

### [7Test3Passage1 Ant Intelligence 蚂蚁智能](http://www.laokaoya.com/24440.html)

**第1段**

When we think of intelligent members of the animal kingdom, the creatures that spring immediately to mind are apes and monkeys. But in fact the social lives of some members of the insect kingdom are sufficiently complex to suggest more than a hint of intelligence. Among these, the world of the ant has come in for considerable scrutiny lately, and the idea that ants demonstrate sparks of cognition has certainly not been rejected by those involved in these investigations.

当我们思考动物界的聪明成员时，立即想到的动物往往是猿和猴子。但事实上，昆虫王国一些成员的社会生活足够复杂，暗示着智力存在的证据。其中，蚂蚁世界最近接受了严格的检验。参与这些调查的人完全没有抵触蚂蚁表现出认知火花的想法。

**第2段**

Ants store food, repel attackers and use chemical signals to contact one another in case of attack. Such chemical communication can be compared to the human use of visual and auditory channels (as in religious chants, advertising images and jingles, political slogans and martial music) to arouse and propagate moods and attitudes. The biologist Lewis Thomas wrote, ‘Ants are so much like human beings as to be an embarrassment. They farm fungi, raise aphids\* as livestock, launch armies to war, use chemical sprays to alarm and confuse enemies, capture slaves, engage in child labour, exchange information ceaselessly. They do everything but watch television.

‘蚂蚁储存食物，击退袭击者，并在发起攻击时使用化学信号相互联系。这种化学交流可以与人类使用视觉和听觉通道（例如宗教圣歌，广告图像和叮当声，政治口号和军事音乐）进文章来自老烤鸭雅思行比较，以唤起并传播情绪和态度。生物学家路易斯·托马斯（Lewis Thomas）写道：“蚂蚁与人类的相似程度甚至有些尴尬。他们耕种真菌，饲养蚜虫作为牲畜，发动军队进行战争，使用化学喷雾警告和迷惑敌人，俘虏奴隶，使用童工，不断交流信息。他们除了看电视外什么都做。

**第3段**

However, in ants there is no cultural transmission everything must be encoded in the genes – whereas in humans the opposite is true. Only basic instincts are carried in the genes of a newborn baby, other skills being learned from others in the community as the child grows up. It may seem that this cultural continuity gives us a huge advantage over ants. They have never mastered fire nor progressed. Their fungus farming and aphid herding crafts are sophisticated when compared to the agricultural skills of humans five thousand years ago but have been totally overtaken by modern human agribusiness.

“ 然而，蚂蚁不存在文化的传播-所有的一切都被编写在基因之中-而人类则相反。新生婴儿的基因只带有基本的本能，随着孩子的成长，他们会从社区中其他人那里学习其他技能。这种文化上的连续性似乎给了我们比蚂蚁更大的优势。它们从来没有掌握过火,也没有进步。与五千年前人类的农业技能相比，它们的真菌和蚜虫养殖操作十分复杂，但这已经被现代人类农业完全超越。

**第4段**

Or have they? The farming methods of ants are at least sustainable. They do not ruin environments or use enormous amounts of energy. Moreover, recent evidence suggests that the crop farming of ants may be more sophisticated and adaptable than was thought.

他们确实超过了吗？蚂蚁的耕种方法至少是可持续的。他们不会破坏环境或使用大量能源。此外，最近的证据表明，蚂蚁的农作物种植可能比人们想象的更复杂，更具有适应性。

**第5段**

Ants were farmers fifty million years before humans were. Ants can’t digest the cellulose in leaves – but some fungi can. The ants therefore cultivate these fungi in their nests, bringing them leaves to feed on, and then use them as a source of food. Farmer ants secrete antibiotics to control other fungi that might act as ‘weeds’, and spread waste to fertilise the crop.

蚂蚁在人类诞生五千万年前就是农民。蚂蚁不能消化树叶中的纤维素，但是一些真菌可以。因此，蚂蚁在它们的巢穴中培育这些真菌，使它们以叶子为食，然后将其用作食物来源。农民蚂蚁分泌抗生素来控制其他可能跟杂草一样的真菌，并散布垃圾作为作物的肥料。

**第6段**

It was once thought that the fungus that ants cultivate was a single type that they had propagated, essentially unchanged from the distant past. Not so. Ulrich Mueller of Maryland and his colleagues genetically screened 862 different types of fungi taken from ants’ nests. These turned out to be highly diverse: it seems that ants are continually domesticating new species. Even more impressively, DNA analysis of the fungi suggests that the ants improve or modify the fungi by regularly swapping and sharing strains with neighbouring ant colonies.

曾经有人认为，蚂蚁培育的真菌只有一种类型，与遥远的过去相比基本上没有变化。并非如此。马里兰州的乌尔里希·穆勒（Ulrich Mueller）和他的同事们对蚂蚁巢中取出的862种不同类型的真菌进行了基因检测。结果证明它们是高度多样化的：蚂蚁似乎正在不断驯化新物种。甚至更令人印象深刻的是，真菌的DNA分析表明，蚂蚁通过与相邻蚁群定期交换和共享菌株来改善和修正真菌。

**第7段**

Whereas prehistoric man had no exposure to urban lifestyles – the forcing house of intelligence – the evidence suggests that ants have lived in urban settings for close on a hundred million years, developing and maintaining underground cities of specialised chambers and tunnels.

史前人类没有接触过城市生活方式-，而这是智力出现的重要推动因素，但证据表明，蚂蚁在城市环境中生活了近一亿年，发展并维护着拥有固定用途的房间和隧道的地下城市。

**第8段**

When we survey Mexico City, Tokyo, Los Angeles, we are amazed at what has been accomplished by humans. Yet Hoelldobler and Wilson’s magnificent work for ant lovers, The Ants, describes a supercolony of the ant Formica yessensis on the Ishikari Coast of Hokkaido. This ‘megalopolis’ was reported to be composed of 360 million workers and a million queens living in 4,500interconnected nests across a territory of 2.7 square kilometres.

当我们调查墨西哥城，东京，洛杉矶时，我们对人类所取得的成就感到惊讶。然而对蚂蚁爱好者来说，Hoelldobler 和Wilson宏伟的作品，The Ants，介绍了Hokkaido Ishikari海岸Formica yessensis蚂蚁的超级巢穴。据报道，这个“大都市” 由3.6亿名工人和100万名女王组成，它们居住在4500个相连的巢穴中，占地2.7平方公里。

**第9段**

Such enduring and intricately meshed levels of technical achievement outstrip by far anything achieved by our distant ancestors. We hail as masterpieces the cave paintings in southern France and elsewhere, dating back some 20,000 years. Ant societies existed in something like their present form more than seventy million years ago. Beside this, prehistoric man looks technologically primitive. Is this then some kind of intelligence, albeit of a different kind?

如此持久而错综复杂的技术成就远远超过了我们遥远的祖先。我们赞扬2万年前法国南部和其他地区的洞穴壁画。而蚂蚁社会在七千万多年前就以他们现在的形式存在。除此之外，史前人在技术上看起来很原始。尽管类型不同，这是某种智力的表现吗？

**第10段**

Research conducted at Oxford, Sussex and Zürich Universities has shown that when desert ants return from a foraging trip, they navigate by integrating bearings and distances, which they continuously update in their heads. They combine the evidence of visual landmarks with a mental library of local directions, all within a framework which is consulted and updated. So ants can learn too.

牛津大学，苏塞克斯大学和苏黎世大学进行的研究表明，当沙漠蚂蚁从觅食之旅中返回时，它们通过整合方位和距离来导航，并不断在大脑中更新。他们将视觉地标证据与大脑中储存的本地方向相结合，所有这些都在一个经过查询和更新的框架内进行。所以蚂蚁也可以学习。

**第11段**

And in a twelve-year programme of work, Ryabko and Reznikova have found evidence that ants can transmit very complex messages. Scouts who had located food in a maze returned to mobilise their foraging teams. They engaged in contact sessions, at the end of which the scout was removed in order to observe what her team might do. Often the foragers proceeded to the exact spot in the maze where the food had been. Elaborate precautions were taken to prevent the foraging team using odour clues. Discussion now centres on whether the route through the maze is communicated as a ‘left-right’ sequence of turns or as a ‘compass bearing and distance’ message.

在长达十二年的研究项目中，里亚布科和雷兹尼科娃发现了证据，证明蚂蚁可以传递非常复杂的信息。在迷宫中找到食物的侦察兵返回，动员他们的觅食队。它们进行接触会议。随后，侦察员被移除，以观察其团队接下来的行为。觅食者常常走到迷宫中放置食物的确切地点。研究人员采取了精心的预防措施，以防止觅食团队使用气味线索。现在讨论的中心在于穿过迷宫的路径究竟是通过左右转弯序列进行交流的，还是通过方向与距离信息来传达的。

**第12段**

During the course of this exhaustive study, Reznikova has grown so attached to her laboratory ants that she feels she knows them as individuals – even without the paint spots used to mark them. It’s no surprise that Edward Wilson, in his essay, ‘In the company of ants’, advises readers who ask what to do with the ants in their kitchen to: ‘Watch where you step. Be careful of little lives.’

在这项详尽的研究过程中，雷兹尼科娃深深地被其实验室的蚂蚁所吸引，以至于她觉得自己认识其中的每一只-即使没有用来标记它们的油漆斑点。爱德华·威尔逊（Edward Wilson）在其论文“在蚂蚁的陪伴下”建议那些询问如何处理厨房中蚂蚁的读者：“注意脚下，小心这些微小的生命”。

### [7Test3Passage2 Population movements and genetics 人口迁移与遗传学](http://www.laokaoya.com/24499.html)

**段落A**

Study of the origins and distribution of human populations used to be based on archaeological and fossil evidence. A number of techniques developed since the 1950s, however, have placed the study of these subjects on a sounder and more objective footing. The best information on early population movements is now being obtained from the ‘archaeology of the living body’, the clues to be found in genetic material.

过去，对人类起源和分布的研究主要建立在考古和化石证据之上。但是，自20世纪50年代以来许多技术的发展使对这些课题的研究拥有了更合理，更客观的基础。现在可以从“活体考古学”（遗传材料中包含的线索）中获得有关早期人口迁移的最佳信息。

**段落B**

Recent work on the problem of when people first entered the Americas is an example of the value of these new techniques. North-east Asia and Siberia have long been accepted as the launching ground for the first human colonisers of the New World1. But was there one major wave of migration across the Bering Strait into the Americas, or several? And when did this event, or events, take place? In recent years, new clues have come from research into genetics, including the distribution of genetic markers in modern Native Americans2.

关于人们何时首次进入美洲问题的最新研究是这些新技术价值的一个例子。东北亚地区文章来自老烤鸭雅思和西伯利亚地区长期被认为是新世界第一批人类探索者的出发地。但是，是只有一次穿过白令海峡到达美洲的大规模移民浪潮，还是有几次？并且它，或它们是什么时候发生的？近年来，遗传学研究通过现代美洲原住民中遗传标记的分布提供了新的线索。

**段落C**

An important project, led by the biological anthropologist Robert Williams, focused on the variants (called Gm allotypes) of one particular protein immunoglobin G – found in the fluid portion of human blood. All proteins ‘drift’, or produce variants, over the generations, and members of an interbreeding human population will share a set of such variants. Thus, by comparing the Gm allotypes of two different populations (e.g. two Indian tribes), one can establish their genetic ‘distance’, which itself can be calibrated to give an indication of the length of time since these populations last interbred.

由生物人类学家罗伯特·威廉姆斯主持的重要项目将注意力放在一种人类血液中发现的特定的蛋白质-免疫球蛋白G的变种上。世代之间，所有蛋白质都会“漂移”或产生变体，而相互繁殖的人类种群成员将共享一组此类变体。因此，通过比较两个不同群体的Gm免疫球蛋白（例如两个印度部落），研究人员可以确立他们的遗传“距离”。通过校准，它们可以揭示这些种群上一次互相繁殖的时间。

**段落D**

Williams and his colleagues sampled the blood of over 5,000 American Indians in western North America during a twenty-year period. They found that their Gm allotypes could be divided into two groups, one of which also corresponded to the genetic typing of Central and South American Indians. Other tests showed that the Inuit (or Eskimo) and Aleut3 formed a third group. From this evidence it was deduced that there had been three major waves of migration across the Bering Strait. The first, Paleo-Indian, wave more than 15,000 years ago was ancestral to all Central and South American Indians. The second wave, about 14,000-12,000 years ago, brought Na-Dene hunters, ancestors of the Navajo and Apache (who only migrated south from Canada about 600 or 700 years ago). The third wave, perhaps 10,000 or 9,000 years ago, saw the migration from North-east Asia of groups ancestral to the modern Eskimo and Aleut.

威廉姆斯和他的同事用了20年的时间在北美西部采集了超过5000名美洲印第安人的血液样本。他们发现他们的Gm免疫球蛋白可以分为两组，其中一组对应中美洲和南美洲印第安人的基因类型。其他测试表明，因纽特人（或爱斯基摩人）和阿留申人组成了第三组。从这一证据可以推断出白令海峡发生了三次大的移民浪潮。15000多年前的第一波Paleo-Indian浪潮构成所有中美洲和南美洲印第安人的祖先。大约12000年到14000之前的第二波浪潮带来了Na-Dene猎人。他们是Navajo和Apache的祖先，600或700年前才从加拿大向南迁移。9000年到10000年前的第三波浪潮见证了现代爱斯基摩人和阿申留人的祖先从东北亚的迁徙。

**段落E**

How far does other research support these conclusions? Geneticist Douglas Wallace has studied mitochondrial DNA4 in blood samples from three widely separated Native American groups: Pima-Papago Indians in Arizona, Maya Indians on the Yucatán peninsula, Mexico, and Ticuna Indians in the Upper Amazon region of Brazil. As would have been predicted by Robert Williams’s work, all three groups appear to be descended from the same ancestral (Paleo-Indian) population.

其他研究在多大程度上支持了这些结论呢？遗传学家道格拉斯· 华莱士研究了三个广泛分布的美洲本土人群（Arizona的Pima-Papago印第安人，墨西哥Yucatan半岛的玛雅印第安人，以及巴西北部亚马逊地区的Ticuna印第安人）血液样本中的线粒体DNA。正如罗伯特·威廉姆斯的研究所预测的那样，所有三组人群似乎来自同一祖先群体（Paleo-Indian）。

**段落F**

There are two other kinds of research that have thrown some light on the origins of the Native American population; they involve the study of teeth and of languages. The biological anthropologist Christy Turner is an expert in the analysis of changing physical characteristics in human teeth. He argues that tooth crowns and roots5 have a high genetic component, minimally affected by environmental and other factors. Studies carried out by Turner of many thousands of New and Old World specimens, both ancient and modern, suggest that the majority of prehistoric Americans are linked to Northern Asian populations by crown and root traits such as incisor6shoveling (a scooping out on one or both surfaces of the tooth), single-rooted upper first premolars6 and triple-rooted lower first molars6.

有另外两种研究在某种程度上揭示了美国原住民的起源。他们涉及对牙齿和语言的研究。生物人类学家克里斯蒂·特纳（Christy Turner）是分析人类牙齿物理特性变化的专家。他认为，牙冠和牙根具有很高的遗传成分，很少受环境和其他因素的影响。特纳对成千上万个古代和现代的新旧世界标本进行的研究表明，大多数史前美国人的牙冠与牙床特征与北亚人口存在联系。

According to Turner, this ties in with the idea of a single Paleo-lndian migration out of North Asia, which he sets at before 14,000 years ago by calibrating rates of dental micro-evolution. Tooth analyses also suggest that there were two later migrations of Na-Denes and Eskimo-Aleut.

特纳认为，这与Paleo-India人一次从北亚迁出的想法有关。他通过校准牙齿微观进化的速率将这一时间定在14000年前。牙齿分析还表明，后来存在Na-Denes和Eskimo – Aleut的两次迁移。

**段落G**

The linguist Joseph Greenberg has, since the 1950s, argued that all Native American languages belong to a single ‘Amerind’ family, except for Na-Dene and Eskimo-Aleut – a view that gives credence to the idea of three main migrations. Greenberg is in a minority among fellow linguists, most of whom favour the notion of a great many waves of migration to account for the more than 1,000 languages spoken at one time by American Indians. But there is no doubt that the new genetic and dental evidence provides strong backing for Greenberg’s view. Dates given for the migrations should nevertheless be treated with caution, except where supported by hard archaeological evidence.

语言学家约瑟夫·格林伯格（Joseph Greenberg）自20世纪50年代以来一直认为，除了Na-Dene和Eskimo-Aleut以外，所有美洲原住民的语言都属于“Amerind”族-这种观点支持三次主要移民浪潮的想法。格林伯格是语言学家中的少数派，其中大多数人都赞成多批次移民浪潮的概念，以解释美洲印第安人同时所讲的1000 多种语言。但是毫无疑问，新的遗传学和牙科证据为格林伯格的观点提供了强有力的支持。但是，除非有确凿的考古证据支持，否则我们应谨慎对待迁徙时间。

### [7Test3Passage3 European forests 欧洲森林保护](http://www.laokaoya.com/24538.html)

**第1段**

Forests are one of the main elements of our natural heritage. The decline of Europe’s forests over the last decade and a half has led to an increasing awareness and understanding of the serious imbalances which threaten them. European countries are becoming increasingly concerned by major threats to European forests, threats which know no frontiers other than those of geography or climate: air pollution, soil deterioration, the increasing number of forest fires and sometimes even the mismanagement of our woodland and forest heritage. There has been a growing awareness of the need for countries to get together to co-ordinate their policies. In December 1990, Strasbourg hosted the first Ministerial Conference on the protection of Europe’s forests. The conference brought together 31 countries from both Western and Eastern Europe. The topics discussed included the co-ordinated study of the destruction of forests, as well as how to combat forest fires and the extension of European research programs on the forest ecosystem. The preparatory work for the conference had been undertaken at two meetings of experts. Their initial task was to decide which of the many forest problems of concern to Europe involved the largest number of countries and might be the subject of joint action. Those confined to particular geographical areas, such as countries bordering the Mediterranean or the Nordic countries therefore had to be discarded. However, this does not mean that in future they will be ignored.

森林是我们自然遗产的主要元素之一。在过去的十五年里，欧洲森林的减少导致人们对威胁它v们的严重不平衡问题的认识和了解不断增加。欧洲国家越来越关注对欧洲森林的重大威胁，这些威胁忽略除地理或气候外的其他边界：空气污染，土壤退化，森林大火不断增加，有时甚至是我们自己对林地和森林遗产的管理不善。目前，人们越来越意识到国家需要团结在一起，共同协调其政策 。1990年12月，斯特拉斯堡主办了首届保护欧洲森林部长级会议。会议聚集了来自西欧和东欧的31个国家。议题包括对森林破坏的共同研究，如何扑灭森林大火，以及扩展欧洲对森林生态系统的研究项目。会议的筹备工作是在两次专家会议上进行的。他们的首要任务是确定欧洲关注的众多森林问题中哪一个涉及最多的国家，并可能成为联合行动的主题。 。因此，仅限于特定地理区域的那些问题，例如与地中海接壤的国家或北欧国家，必须被丢弃。但是，这并不意味着将来它们会被忽略。

**第2段**

As a whole, European countries see forests as performing a triple function: biological, economic and recreational. The first is to act as a ‘green lung’ for our planet; by means of photosynthesis, forests produce oxygen through the transformation of solar energy, thus fulfilling what for humans is the essential role of an immense, non-polluting power plant. At the same time, forests provide raw materials for human activities through their constantly renewed production of wood. Finally, they offer those condemned to spend five days a week in an urban environment an unrivalled area of freedom to unwind and take part in a range of leisure activities, such as hunting, riding and hiking. The economic importance of forests has been understood since the dawn of man – wood was the first fuel. The other aspects have been recognised only for a few centuries but they are becoming more and more important. Hence, there is a real concern throughout Europe about the damage to the forest environment which threatens these three basic roles.

总体而言，欧洲国家认为森林具有三重功能：生物，经济和娱乐。首先，森林充当我们星球的“绿肺”。通过光合作用，森林通过文章来自老烤鸭雅思太阳能的转化产生氧气，从而实现了对人类来言，巨大无污染的动力工厂的基本作用。同时，森林通过不断产生的木材为人类活动提供原材料。最后，他们为那些每周必须在城市环境中度过五天的人提供了无与伦比的自由空间，让他们放松身心并参加一系列休闲活动，例如狩猎，骑马和远足。作为第一种燃料，自从人来文明诞生开始，人们就认识到森林的经济重要性。其他方面在最近几个世纪才显露出来，但是它们变得越来越重要。因此，整个欧洲都存在对威胁到森林环境这三个基本功能的损害的真正担忧。

**第3段**

The myth of the ‘natural’ forest has survived, yet there are effectively no remaining ‘primary’ forests in Europe. All European forests are artificial, having been adapted and exploited by man for thousands of years. This means that a forest policy is vital, that it must transcend national frontiers and generations of people, and that it must allow for the inevitable changes that take place in the forests, in needs, and hence in policy. The Strasbourg conference was one of the first events on such a scale to reach this conclusion. A general declaration was made that ‘a central place in any ecologically coherent forest policy must be given to continuity over time and to the possible effects of unforeseen events, to ensure that the full potential of these forests is maintained’.

“天然”森林的神话一直存在，但实际上欧洲没有剩下任何的“原始”森林。欧洲所有的森林都是人造的，经过人类数千年的改造和开发。这意味着森林政策至关重要，必须超越国界和人类代际，并且必须考虑到森林中需求以及政策方面不可避免的变化。斯特拉斯堡会议是达成这一结论的首次此类活动。宣言称，“在任何生态上合乎逻辑的森林政策中，必须将其随时间推移的连续性和不可预见事件的可能影响置于中心位置，以确保维持这些森林的全部潜力” 。

**第4段**

That general declaration was accompanied by six detailed resolutions to assist national policy-making. The first proposes the extension and systematisation of surveillance sites to monitor forest decline. Forest decline is still poorly understood but leads to the loss of a high proportion of a tree’s needles or leaves. The entire continent and the majority of species are now affected: between 30%and 50% of the tree population. The condition appears to result from the cumulative effect of a number of factors, with atmospheric pollutants the principal culprits. Compounds of nitrogen and sulphur dioxide should be particularly closely watched. However, their effects are probably accentuated by climatic factors, such as drought and hard winters, or soil imbalances such as soil acidification, which damages the roots. The second resolution concentrates on the need to preserve the genetic diversity of European forests. The aim is to reverse the decline in the number of tree species or at least to preserve the ‘genetic material’ of all of them. Although forest fires do not affect all of Europe to the same extent, the amount of damage caused the experts to propose as the third resolution that the Strasbourg conference consider the establishment of a European databank on the subject. All information used in the development of national preventative policies would become generally available. The subject of the fourth resolution discussed by the ministers was mountain forests. In Europe, it is undoubtedly the mountain ecosystem which has changed most rapidly and is most at risk. A thinly scattered permanent population and development of leisure activities, particularly skiing, have resulted in significant long-term changes to the local ecosystems. Proposed developments include a preferential research program on mountain forests. The fifth resolution relaunched the European research network on the physiology of trees, called Eurosilva. Eurosilva should support joint European research on tree diseases and their physiological and biochemical aspects. Each country concerned could increase the number of scholarships and other financial support for doctoral theses and research projects in this area. Finally, the conference established the framework for a European research network on forest ecosystems. This would also involve harmonising activities in individual countries as well as identifying a number of priority research topics relating to the protection of forests. The Strasbourg conference’s main concern was to provide for the future. This was the initial motivation, one now shared by all 31 participants representing 31European countries. Their final text commits them to on-going discussion between government representatives with responsibility for forests.

伴随这一声明的是六个详细的决议，以协助国家政策的制定。第一项提议是扩大监测点并使其系统化，以监测森林的退化。人们对森林退化仍然知之甚少，但是它却导致大量的树针或树叶损失。现在整个大陆和大多数物种都受到了影响：占树木种群的30％至50％。这种情况似乎是由于许多因素的累积影响所致，其中大气污染物是主要罪魁祸首。应特别注意氮和二氧化硫的化合物。然而，气候因素（例如干旱和严冬）或土壤失衡（例如土壤酸化）会破坏根系，从而加剧其影响。第二项决议集中于维护欧洲森林基因多样性的需要。目的是扭转树种数量的下降，或至少保留所有树种的“遗传材料” 。尽管森林大火不会对整个欧洲产生相同程度的影响，但造成的破坏程度却使专家们提出了第三项决议：斯特拉斯堡会议考虑建立有关该问题的欧洲数据库。制定国家预防政策所使用的所有信息将普遍公开。部长们讨论的第四项决议的主题是山区森林。在欧洲，山区生态系统无疑变化最快，风险最大。零散的永久人口居住点和休闲活动的发展，尤其是滑雪的发展，导致当地生态系统重大长期的变化。拟议的改善包括一项关于山区森林的有限研究计划。第五项决议重新启动了被称为Eurosilva的欧洲树木生理学研究网络 。Eurosilva 应该支持欧洲在树木病害及其生理和生化方面的联合研究。每个相关国家都可以增加该领域的博士学位论文和研究项目的奖学金以及其他经济支持的数量。最后，会议为欧洲森林生态系统研究网络建立了框架。这将涉及协调各个国家的活动，并确定一些与森林保护有关的优先研究主题。斯特拉斯堡会议的主要关切是为未来做好准备。这是最初的动机，现在由代表31个欧洲国家的31位参与者共同拥有。他们的文本使其参与到负责森林相关问题的政府代表之间的持续讨论中。

## 7Test4

### [7Test4Passage1 Pulling strings to build pyramids 风筝用于修建金字塔](http://www.laokaoya.com/24614.html)

**第1段**

No one knows exactly how the pyramids were built. Marcus Chown reckons the answer could be ‘hanging in the air’.

没有人确切地知道金字塔是如何建造的。Marcus Chown 认为答案可能是“悬挂在空中” 。

**第2段**

The pyramids of Egypt were built more than three thousand years ago, and no one knows how. The conventional picture is that tens of thousands of slaves dragged stones on sledges. But there is no evidence to back this up. Now a Californian software consultant called Maureen Clemmons has suggested that kites might have been involved. While perusing a book on the monuments of Egypt, she noticed a hieroglyph that showed a row of men standing in odd postures. They were holding what looked like ropes that led, via some kind of mechanical system, to a giant bird in the sky. She wondered if perhaps the bird was actually a giant kite, and the men were using it to lift a heavy object.

埃及的金字塔建于三千多年前，没人知道是怎么完成的。传统观点认为该过程涉及数万名奴隶用雪橇拖运石头。但是没有证据可以证明这一点。现在，加利福尼亚一位叫做莫琳·克莱蒙斯（Maureen Clemmons）的软件顾问认为风筝可能参与其中。当她仔细一本关于埃及古迹的书时，她注意到一个象形文字，显示一排人以奇怪的姿势站立。他们拿着看起来像绳索的东西，通过某种机械系统引向天空中的一只大鸟。 她好奇这只鸟是否真的是一只巨大的风筝，而这些人正在用它提起沉重的物体。

**第3段**

Intrigued, Clemmons contacted Morteza Gharib, aeronautics professor at the California Institute of Technology. He was fascinated by the idea. ‘Coming from Iran, I have a keen interest in Middle Eastern science,’ he says. This article is from Laokaoya webiste. He too was puzzled by the picture that had sparked Clemmons’s interest. The object in the sky apparently had wings far too short and wide for a bird. ‘The possibility certainly existed that it was a kite,’ he says. And since he needed a summer project for his student Emilio Graff, investigating the possibility of using kites as heavy lifters seemed like a good idea.

克莱蒙斯对此深感兴趣，她与加州理工学院的航空学教授Morteza Gharib 联系。他对这个文章来自老烤鸭雅思想法着迷。他说：“我来自伊朗，对中东科学非常感兴趣。” 引起克莱蒙斯兴趣的那幅画也使他感到困惑。天空中的物体对于一只鸟来说翅膀太短又太宽。他说：“确实有可能是风筝。” 而且由于他需要为学生Emilio Graff进行暑期项目，因此研究将风筝用作重型起重器的可能性似乎是个好主意。

**第4段**

Gharib and Graff set themselves the task of raising a 4.5-metre stone column from horizontal to vertical, using no source of energy except the wind. Their initial calculations and scale-model wind-tunnel experiments convinced them they wouldn’t need a strong wind to lift the 33.5-tonne column. Even a modest force, if sustained over a long time, would do. The key was to use a pulley system that would magnify the applied force. So they rigged up a tent-shaped scaffold directly above the tip of the horizontal column, with pulleys suspended from the scaffold’s apex. The idea was that as one end of the column rose, the base would roll across the ground on a trolley.

Gharib和Graff为自己设定的任务如下：将一块4.5米长的石柱从水平位置变为竖直。在此过程中除了风能之外不使用其他任何能源。他们最初的计算和相应比例的风洞实验说服他们，他们并不需要强风来提起这一重达33.5吨的石柱。即使力量一般，如果长期维持下去，也能做到。关键是文章来自老烤鸭雅思使用滑轮系统放大施加的力。因此，他们在水平支柱的顶端直接架起了一个帐篷形的脚手架，并在脚手架的顶点上悬挂了滑轮。当时的想法是，当柱子的一端升起时，底座会在推车上滑过地面。

**第5段**

Earlier this year, the team put Clemmons’s unlikely theory to the test, using a 40-square-metre rectangular nylon sail. The kite lifted the column clean off the ground. We were absolutely stunned,’ Gharib says. ‘The instant the sail opened into the wind, a huge force was generated and the column was raised to the vertical in a mere 40 seconds.’

今年早些时候，团队使用40平方米的长方形尼龙帆将克莱蒙斯看起来不太可能的理论付诸测试。风筝把柱子从地面上抬起。我们超级震惊”，Gharib说，“帆向风张开的一瞬间就产生了巨大的力量，柱子在短短40秒内就上升到垂直位置”。

**第6段**

The wind was blowing at a gentle 16 to 20 kilometres an hour, little more than half what they thought would be needed. What they had failed to reckon with was what happened when the kite was opened. ‘There was a huge initial force- five times larger than the steady state force,’ Gharib says. This jerk meant that kites could lift huge weights, Gharib realised. Even a 300-tonne column could have been lifted to the vertical with 40 or so men and four or five sails. So Clemmons was right: the pyramid builders could have used kites to lift massive stones into place. ‘Whether they actually did is another matter,’ Gharib says. There are no pictures showing the construction of the pyramids, so there is no way to tell what really happened. ‘The evidence for using kites to move large stones is no better or worse than the evidence for the brute force method,’ Gharib says.

风以每小时16至20公里的平缓速度吹来，仅仅是他们认为所需速度的一半多一点。他们没有考虑到的是风筝打开时所发生的事情。Gharib说：“初始力很大，是稳定状态下力的五倍”。Gharib意识到，这一猛然的力道意味着风筝可以举起巨大的重量。甚至一根300吨重的柱子也可以用40名左右的人和四五个帆起吊到垂直位置。因此，克莱蒙斯说得对：金字塔建造者确实可能使用风筝将大块石头抬起。Gharib说：“他们是否真的这样做是另外一回事”。没有图片展示金字塔的建造过程，所以没有办法知道当时真正发生了什么。Gharib说：“用风筝移动大石头的证据并不比用蛮力的方法更好或更糟”。

**第7段**

Indeed, the experiments have left many specialists unconvinced. ‘The evidence for kite-lifting is non-existent,’ says Willeke Wendrich, an associate professor of Egyptology at the University of California, Los Angeles.

确实，实验并没有使许多专家信服。美国加州大学洛杉矶分校埃及学的副教授Willeke Wendrich说：“风筝抬起重物的证据是不存在的”。

**第8段**

Others feel there is more of a case for the theory. Harnessing the wind would not have been a problem for accomplished sailors like the Egyptians. And they are known to have used wooden pulleys, which could have been made strong enough to bear the weight of massive blocks of stone. In addition, there is some physical evidence that the ancient Egyptians were interested in flight. A wooden artefact found on the step pyramid at Saqqara looks uncannily like a modern glider. Although it dates from several hundred years after the building of the pyramids, its sophistication suggests that the Egyptians might have been developing ideas of flight for a long time. And other ancient civilisations certainly knew about kites; as early as 1250 BC, the Chinese were using them to deliver messages and dump flaming debris on their foes.

其他人则认为该理论还有其他案例支持。对于像埃及人这样熟练的水手来说，驾驭风不是问题。而且众所周知，他们确实使用木质滑轮。这些滑轮可以制造得足够坚固以承受巨大石块的重量。另外，有一些实际证据表明古埃及人对飞行感兴趣。在萨加拉（Saqqara）的台阶金字塔上发现的木制人工制品看起来特别像现代滑翔机。尽管它的历史可以追溯到金字塔建成后的数百年，但它的复杂性表明埃及人可能已经对飞行感兴趣很久了。当然其他古代文明也知道风筝。早在公元前1250年，中国人就用它们来传递信息，并将燃烧的碎片倾倒在敌人身上。

**第9段**

The experiments might even have practical uses nowadays. There are plenty of places around the globe where people have no access to heavy machinery, but do know how to deal with wind, sailing and basic mechanical principles. Gharib has already been contacted by a civil engineer in Nicaragua, who wants to put up buildings with adobe roofs supported by concrete arches on a site that heavy equipment can’t reach. His idea is to build the arches horizontally, then lift them into place using kites. ‘We’ve given him some design hints,’ says Gharib. ‘We’re just waiting for him to report back.’ So whether they were actually used to build the pyramids or not, it seems that kites may make sensible construction tools in the 21st century AD.

如今，这些实验甚至可能有实际用途。全球有很多地方的人们无法使用重型机械。但他们确实知道如何处理风，航海和基本的机械原理。尼加拉瓜的一位土木工程师已经联系了Gharib ，他希望在重型设备无法到达的地点建造由混凝土拱门支撑的带有土坯屋顶的建筑物。他的想法是水平建造拱门，然后使用风筝将其提升到位。“我们给了他一些设计上的提示”，Gharib说，”我们正在等待他的反馈”。因此，无论它们是否真的被用于建造金字塔，风筝似乎都可以在公元21世纪成为明智的建造工具。

### [7Test4Passage2 Endless Harvest 无尽的收获](http://www.laokaoya.com/24690.html)

**第1段**

More than two hundred years ago, Russian explorers and fur hunters landed on the Aleutian Islands, a volcanic archipelago in the North Pacific, and learned of a land mass that lay farther to the north. The islands’ native inhabitants called this land mass Aleyska, the ‘Great Land’; today, we know it as Alaska.

两百多年前，俄罗斯探险家和皮毛猎人踏上北太平洋的火山群岛-阿留申群岛上，并了解到更北边的陆地。这些岛屿的原住民称此地为Aleyska-“伟大土地”。今天，我们将其称为阿拉斯加。

**第2段**

The forty-ninth state to join the United States of America (in 1959), Alaska is fully one-fifth the size of the mainland 48states combined. It shares, with Canada, the second longest river system in North America and has over half the coastline of the United States. The rivers feed into the Bering Sea and Gulf of Alaska – cold, nutrient-rich waters which support tens of millions of seabirds, and over 400 species of fish, shellfish, crustaceans, and molluscs. Taking advantage of this rich bounty, Alaska’s commercial fisheries have developed into some of the largest in the world.

阿拉斯加是美国的第49个州（1959年加入美国），是位于美洲大陆48个州加起来面积的五分之一。它与加拿大共享北美第二长的河流系统，并且文章来自老烤鸭雅思拥有一半以上美国的海岸线。河流流入白令海文章来自老烤鸭雅思和阿拉斯加湾。这些营养丰富的寒冷水域支撑着数千万只海鸟以及超过400种鱼类，贝类，甲壳类和软体动物。利用这种丰富的资源，阿拉斯加的商业渔场已发展成为世界上最大的商业渔场之一。

**第3段**

According to the Alaska Department of Fish and Game (ADF&G), Alaska’s commercial fisheries landed hundreds of thousands of tonnes of shellfish and herring, and well over a million tonnes of groundfish (cod, sole, perch and pollock) in 2000. This article is from Laokaoya website. The true cultural heart and soul of Alaska’s fisheries, however, is salmon. ‘Salmon,’ notes writer Susan Ewing in The Great Alaska Nature Factbook, ‘pump through Alaska like blood through a heart, bringing rhythmic, circulating nourishment to land, animals and people.’ The ‘predictable abundance of salmon allowed some native cultures to flourish,’ and ‘dying spawners\* feed bears, eagles, other animals, and ultimately the soil itself.’ All five species of Pacific salmon – chinook, or king; chum, or dog; coho, or silver; sockeye, or red; and pink, or humpback – spawn\*\* in Alaskan waters, and 90% of all Pacific salmon commercially caught in North America are produced there. Indeed, if Alaska was an independent nation, it would be the largest producer of wild salmon in the world. During 2000, commercial catches of Pacific salmon in Alaska exceeded 320,000 tonnes, with an ex-vessel value of over $US260 million.

根据阿拉斯加鱼类与猎物部（ADF＆G）的统计，2000年，阿拉斯加的商业渔场捕捞了数十万吨贝类和鲱鱼，以及超过一百万吨的底栖鱼类（鳕鱼，鳎鱼，鲈鱼和狭鳕）。然而，阿拉斯加渔场的真正文化中心是鲑鱼。作家苏珊·尤因（Susan Ewing）在《阿拉斯加大自然概况》中写道，“鲑鱼” 像血液流过心脏一样穿过阿拉斯加，为土地，动物和人类带来有规律的循环营养。“可预测的鲑鱼数量使一些本土文化蓬勃发展”，“即将死亡的产卵者喂养熊，鹰，和其他动物，最后反哺土壤本身。“太平洋的五种鲑鱼-chinook, or king; chum, or dog; coho, or silver; sockeye, or red; and pink, or humpback-全部在阿拉斯加水域产卵。北美商业捕捞的所有太平洋鲑鱼中有90％在那里生产。事实上，如果阿拉斯加是一个独立的国家，它将成为世界上最大的野生鲑鱼生产商。2000年期间，阿拉斯加的太平洋鲑鱼商业捕捞量超过320,000 吨，前船价值超过2.6亿美元。

**第4段**

Catches have not always been so healthy. Between 1940 and 1959, overfishing led to crashes in salmon populations so severe that in 1953 Alaska was declared a federal disaster area. With the onset of statehood, however, the State of Alaska took over management of its own fisheries, guided by a state constitution which mandates that Alaska’s natural resources be managed on a sustainable basis. At that time, statewide harvests totalled around 25 million salmon. Over the next few decades average catches steadily increased as a result of this policy of sustainable management, until, during the 1990s, annual harvests were well in excess of 100 million, and on several occasions over 200 million fish.

捕捞并不总是那么健康。在1940年至1959年之间，过度捕捞导致鲑鱼种群急剧下降，以至于1953年阿拉斯加被宣布为联邦灾区。然而，随着建州开始，阿拉斯加州接手自己的渔场管理，州宪法规定阿拉斯加的自然资源必须以可持续的方式进行运营。当时，全州的鲑鱼总产量约为2500万。在此后的几十年中，由于采取了这种可持续的管理政策，平均捕捞量稳步增加，直到20世纪90年代，每年的捕捞量远远超过1亿条，有时甚至超过2 亿条。

**第5段**

The primary reason for such increases is what is known as ‘In-Season Abundance-Based Management’. There are biologists throughout the state constantly monitoring adult fish as they show up to spawn. The biologists sit in streamside counting towers, study sonar, watch from aeroplanes, and talk to fishermen. The salmon season in Alaska is not pre-set. The fishermen know the approximate time of year when they will be allowed to fish, but on any given day, one or more field biologists in a particular area can put a halt to fishing. Even sport fishing can be brought to a halt. It is this management mechanism that has allowed Alaska salmon stocks – and, accordingly, Alaska salmon fisheries – to prosper, even as salmon populations in the rest of the United States are increasingly considered threatened or even endangered.

这种增长的主要原因是所谓的“基于季节的丰度管理” 。整个州都有生物学家不断监测成年鱼产卵的过程。生物学家坐在河边的计数塔上，观察声纳，做飞机查看，并与渔民交谈。阿拉斯加的鲑鱼季节并非预先设定。渔民知道一年中允许捕鱼的大概时间。但在任意一天，特定区域中的一位或多位野外生物学家都可以要求停止捕鱼。甚至运动钓鱼也被制止。正是这种管理机制使得阿拉斯加的鲑鱼种群以及相应的鲑鱼捕捞繁荣增长，即使美国其他地区的鲑鱼种群日益被视为受到威胁，甚至濒临灭绝。

**第6段**

In 1999, the Marine Stewardship Council (MSC)\*\*\* commissioned a review of the Alaska salmon fishery. The Council, which was founded in 1996, certifies fisheries that meet high environmental standards, enabling them to use a label that recognises their environmental responsibility. The MSC has established a set of criteria by which commercial fisheries can be judged. Recognising the potential benefits of being identified as environmentally responsible, fisheries approach the Council requesting to undergo the certification process. The MSC then appoints a certification committee, composed of a panel of fisheries experts, which gathers information and opinions from fishermen, biologists, government officials, industry representatives, non-governmental organisations and others.

1999年，海洋管理委员会（MSC）委托对阿拉斯加鲑鱼渔场进行审查。委员会成立于1996年，对符合高环境标准的渔场进行认证，使他们能够使用认可其环境责任的标签。MSC已经建立了一套评估商业渔场的标准。认识到被确认为对环境负责的潜在好处，（阿拉斯加）渔场与理委员会联系，要求进行认证程序。随后，MSC任命一个由渔场专家组成认证委员会，该委员会从渔民，生物学家，政府官员，行业代表，非政府组织和其他组织收集信息和意见。

**第7段**

Some observers thought the Alaska salmon fisheries would not have any chance of certification when, in the months leading up to MSC’s final decision, salmon runs throughout western Alaska completely collapsed. In the Yukon and Kuskokwim rivers, chinook and chum runs were probably the poorest since statehood; subsistence communities throughout the region, who normally have priority over commercial fishing, were devastated.

一些观察家认为，在MSC做出最终决定的前几个月里，阿拉斯加西部的鲑鱼养殖完全崩溃了，因此阿拉斯加鲑鱼渔业不会有任何获得认证的机会。在育空河和库斯科克维姆河中，chinook和chum的养殖可能处于建州以来最差的情况。整个区域的维生体系遭到破坏，而它们通常优先于商业渔场。

**第8段**

The crisis was completely unexpected, but researchers believe it had nothing to do with impacts of fisheries. Rather, they contend, it was almost certainly the result of climatic shifts, prompted in part by cumulative effects of the el niño / la niña phenomenon on Pacific Ocean temperatures, culminating in a harsh winter in which huge numbers of salmon eggs were frozen. It could have meant the end as far as the certification process was concerned. However, the state reacted quickly, closing down all fisheries, even those necessary for subsistence purposes.

这场危机完全出乎意料，但研究人员认为，它与渔场的影响无关。相反，他们认为这几乎可以肯定是气候变化的结果，部分由于厄尔尼诺/拉尼娜现象对太平洋温度的持续影响，导致大量的鲑鱼卵在极度寒冷的冬天被冻结。就认证过程而言，这可能意味着终结。但是，阿拉斯加迅速作出反应，关闭了所有渔场，甚至包括那些维持生计所需的渔场。

**第9段**

In September 2000, MSC announced that the Alaska salmon fisheries qualified for certification. Seven companies producing Alaska salmon were immediately granted permission to display the MSC logo on their products. Certification is for an initial period of five years, with an annual review to ensure that the fishery is continuing to meet the required standards.

2000年9月，MSC宣布阿拉斯加鲑鱼渔场有资格获得认证。立刻有7家生产阿拉斯加鲑鱼的公司被许可在其产品上展示MSC标志。认证为期五年，每年进行一次审核以确保渔场持续符合所要求的标准。

### [7Test4Passage3 Effects of Noise 噪音的影响](http://www.laokaoya.com/24776.html)

**第1段**

In general, it is plausible to suppose that we should prefer peace and quiet to noise. And yet most of us have had the experience of having to adjust to sleeping in the mountains or the countryside because it was initially ‘too quiet’, an experience that suggests that humans are capable of adapting to a wide range of noise levels. Research supports this view. For example, Glass and Singer (1972) exposed people to short bursts of very loud noise and then measured their ability to work out problems and their physiological reactions to the noise. The noise was quite disruptive at first, but after about four minutes the subjects were doing just as well on their tasks as control subjects who were not exposed to noise. Their physiological arousal also declined quickly to the same levels as those of the control subjects.

大体而言，认为我们应该更喜欢安静与祥和而不是噪音很合理。然而，我们中许多人都有过因为山区或乡村太过安静，而不得不努力适应睡眠的情况。这表明，人类能够适应大范围的噪音水平。研究支持这种观点。例如，格拉斯和辛格(Glass and Singer，1972)将人们暴露于阵阵短促巨大的噪音中，然后测量他们解决问题的能力以及对噪音的生理反应。起初，噪音的干扰非常大。但是大约四分钟后，这些受试者在任务上的表现与不受噪音影响的对照受试者一样好。他们的生理反应也迅速下降到与对照组相同的水平。

**第2段**

But there are limits to adaptation and loud noise becomes more troublesome if the person is required to concentrate on more than one task. For example, high noise levels interfered with the performance of subjects who were required to monitor three dials at a time, a task not unlike that of an aeroplane pilot or an air-traffic controller (Broadbent, 1957). Similarly, this article is from Laokaoya website. noise did not affect a subject’s ability to track a moving line with a steering wheel, but it did interfere with the subject’s ability to repeat numbers while tracking (Finkelman and Glass, 1970).

但是，适应能力有其极限。如果人们需要专心于不止一项工作，嘈杂的声音就会变得麻烦许多。例如，较高的噪音水平干扰了需要同时监视三个拨盘的受试者的表现。这项任务与飞机文章来自老烤鸭雅思驾驶员或空中交通管制员的任务没有太大区别(Broadbent，1957)。同样，噪音也不会影响受试者使用方向盘跟踪运动曲线的能力，但是会干扰受试者在跟踪的同时重复数字的能力(Finkelman和Glass，1970)。

**第3段**

Probably the most significant finding from research on noise is that its predictability is more important than how loud it is. We are much more able to ‘tune out’ chronic background noise, even if it is quite loud, than to work under circumstances with unexpected intrusions of noise. In the Glass and Singer study, in which subjects were exposed to bursts of noise as they worked on a task, some subjects heard loud bursts and others heard soft bursts. For some subjects, the bursts were spaced exactly one minute apart (predictable noise); others heard the same amount of noise overall, but the bursts occurred at random intervals (unpredictable noise). Subjects reported finding the predictable and unpredictable noise equally annoying, and all subjects performed at about the same level during the noise portion of the experiment. But the different noise conditions had quite different after-effects when the subjects were required to proofread written material under conditions of no noise. As shown in Table 1 the unpredictable noise produced more errors in the later proofreading task than predictable noise; and soft, unpredictable noise actually produced slightly more errors on this task than the loud, predictable noise.

噪音研究的最重要发现可能是其可预测性比大小更重要。即使是在声音很大的情况下，我们也能够屏蔽长期的背景噪音，但我们却无法在意料之外的噪音干扰下工作。在格拉斯和辛格（Glass and Singer）的研究中，受试者在工作时暴露于噪音之下。一些受试者听到很大的声音，而另一些则听到轻柔的声音。对于某些受试者，声音的频率恰好是一分钟一次（可预测的噪音）。其他人听到的噪音总量相同，但间隔随机（不可预测的噪声）。受试者的报告发现，可预测和不可预测的噪音同样令人讨厌，并且在实验的噪音部分，所有受试者的表现大致相同。但是，当受试者被要求在无噪音的条件下校对书面材料时，不同的噪声条件具有非常不同的事后效应。如表1所示，不可预测的噪音在后来的校对任务中比可预测的噪音产生更多的错误。柔和的、无法预测的噪音实际上比响亮的、可预测的噪声在这个任务上产生的错误更多。

**第4段**

Apparently, unpredictable noise produces more fatigue than predictable noise, but it takes a while for this fatigue to take its toll on performance.

显然，不可预测的噪音比可预测的噪音产生更多的疲劳，但是这种疲劳需要一些时间才会影响人们的表现。

**第5段**

Predictability is not the only variable that reduces or eliminates the negative effects of noise. Another is control. If the individual knows that he or she can control the noise, this seems to eliminate both its negative effects at the time and its after-effects. This is true even if the individual never actually exercises his or her option to turn the noise off (Glass and Singer, 1972). Just the knowledge that one has control is sufficient.

可预测性不是减少或消除噪音负面影响的唯一变量。另一个变量是控制。如果一个人知道他或她可以控制噪音，这似乎可以消除当时和事后的负面影响。即使这个人从未真正行使过消除噪音的选择也同样如此(Glass and Singer，1972)。仅仅知道他拥有控制权就足够了。

**第6段**

The studies discussed so far exposed people to noise for only short periods and only transient effects were studied. But the major worry about noisy environments is that living day after day with chronic noise may produce serious, lasting effects. One study, suggesting that this worry is a realistic one, compared elementary school pupils who attended schools near Los Angeles’s busiest airport with students who attended schools in quiet neighbourhoods (Cohen et al., 1980). It was found that children from the noisy schools had higher blood pressure and were more easily distracted than those who attended the quiet schools. Moreover, there was no evidence of adaptability to the noise. In fact, the longer the children had attended the noisy schools, the more distractible they became. The effects also seem to be long lasting. A follow-up study showed that children who were moved to less noisy classrooms still showed greater distractibility one year later than students who had always been in the quiet schools (Cohen et al, 1981). It should be noted that the two groups of children had been carefully matched by the investigators so that they were comparable in age, ethnicity, race, and social class.

到目前为止讨论的研究仅将人们暴露在噪音之中很短的时间，并且只研究了短暂的影响。但是，对于嘈杂环境的主要担忧是，日复一日地长期生活在噪音之中可能会产生严重而持久的影响。一项研究表明，这种担忧十分现实。它比较了在洛杉矶最繁忙的机场旁上小学的学生与在安静环境下上小学的学生(Cohen等人，1980)。研究发现，与那些安静学校的孩子相比，嘈杂学校孩子的血压更高，更容易分心。而且没有证据表明对噪声存在适应性。实际上，孩子们进入嘈杂学校的时间越长，他们的注意力就变得越分散。其影响似乎也历久不衰。一项后续的研究表明，与一直在安静的学校里学习的学生相比，被转移到不那么吵闹的教室里的孩子在一年之后仍然容易注意力涣散(Cohen等，1981)。应当指出的是，调查人员对这两组孩子进行了仔细的匹配，以使他们在年龄，种族，人种和社会阶层上都具有可比性。

# 八

## 8Test1

### [8Test1Passage1 A Chronicle of Timekeeping 时间记录的历史](http://www.laokaoya.com/24834.html)

**段落A**

According to archaeological evidence, at least 5, 000 years ago, and long before the advent of the Roman Empire, the Babylonians began to measure time, introducing calendars to co-ordinate communal activities, to plan the shipment of goods and, in particular, to regulate planting and harvesting. They based their calendars on three natural cycles: the solar day, marked by the successive periods of light and darkness as the earth rotates on its axis; the lunar month, following the phases of the moon as it orbits the earth; and the solar year, defined by the changing seasons that accompany our planet’s revolution around the sun.

根据考古证据，至少在5000年前，距离罗马帝国出现还有很久的时候，巴比伦人已经开始计时，引入日历以协调公共活动，安排货物的运输，管理播种和收获。他们的日历基于三个自然周期：太阳日，以地球自转时连续产生的光明与黑暗为标志；阴历月，月球围绕地球旋转的阶段；以及太阳年，由随着地球围绕太阳公转而变化的季节定义。

**段落B**

Before the invention of artificial light, the moon had greater social impact. And, for those living near the equator in particular, its waxing and waning was more conspicuous than the passing of the seasons. Hence, this article is from Laokaoya website, the calendars that were developed at the lower latitudes were influenced more by the lunar cycle than by the solar year. In more northern climes, however, where seasonal agriculture was practised, the solar year became more crucial. As the Roman Empire expanded northward, it organised its activity chart for the most part around the solar year.

在人造光发明之前，月亮具有更大的社会影响。对于那些生活在赤道附近的人来说更是如此，它的阴晴圆缺比季节的流逝更加明显。因此，在低纬度文章来自老烤鸭雅思地区出现的日历受月球周期的影响大于受太阳年的影响。然而，在更北部实行季节性农业的气候中，太阳年变得更加关键。随着罗马帝国的向北扩张，它所组织的大多数活动都围绕太阳年展开。

**段落C**

Centuries before the Roman Empire, the Egyptians had formulated a municipal calendar having 12 months of 30 days, with five days added to approximate the solar year. Each period of ten days was marked by the appearance of special groups of stars called decans. At the rise of the star Sirius just before sunrise, which occurred around the all-important annual flooding of the Nile, 12 decans could be seen spanning the heavens. The cosmic significance the Egyptians placed in the 12 decans led them to develop a system in which each interval of darkness (and later, each interval of daylight) was divided into a dozen equal parts. These periods became known as temporal hours because their duration varied according to the changing length of days and nights with the passing of the seasons. Summer hours were long, winter ones short; only at the spring and autumn equinoxes were the hours of daylight and darkness equal. Temporal hours, which were first adopted by the Greeks and then the Romans, who disseminated them through Europe, remained in use for more than 2, 500 years.

罗马帝国出现前的几个世纪，埃及人制定了一种市历，共有12个月，每个月30天，最后加上五天以接近太阳年。每十天为一个周期，以被称为decan的特殊恒星群的出现为标志。天狼星刚好在日出前升起，这是12个decan横跨天空。而这一现象在每年十分重要的尼罗河泛滥期间出现。埃及人赋予12 decan的重大意义使他们开发出一种将黑夜（随后又将白天）12等分的体系。这些文章来自老烤鸭雅思时段被称为日光时，因为它们的持续时间会随着季节的流逝和昼夜长短的变化而变化。夏天长，冬天短；只有在春分和秋分，白天和黑夜的时间才相等。日光时最初由希腊人采用，然后由罗马人通过欧洲传播，至今已使用了2500多年。

**段落D**

In order to track temporal hours during the day, inventors created sundials, which indicate time by the length or direction of the sun’s shadow. The sundial’s counterpart, the water clock, was designed to measure temporal hours at night. One of the first water clocks was a basin with a small hole near the bottom through which the water dripped out. The falling water level denoted the passing hour as it dipped below hour lines inscribed on the inner surface. Although these devices performed satisfactorily around the Mediterranean, they could not always be depended on in the cloudy and often freezing weather of northern Europe.

为了在白天记录日光时，发明者创造了日晷，通过太阳阴影的长度或方向指示时间。日晷的对应物，水钟，旨在测量晚上的时间。最早的水钟之一是一个水池。水池的底部附近有一个小孔，水从该孔滴出来。水位下降到水池内部表面所刻着的小时线以下，代表着时间的流逝。虽然这些设备在地中海地区的表现令人满意，但在北欧多云和寒冷的天气下却不总是那么可靠。

**段落E**

The advent of the mechanical clock meant that although it could be adjusted to maintain temporal hours, it was naturally suited to keeping equal ones. With these, however, arose the question of when to begin counting, and so, in the early 14th century, a number of systems evolved. The schemes that divided the day into 24 equal parts varied according to the start of the count: Italian hours began at sunset, Babylonian hours at sunrise, astronomical hours at midday and ‘great clock’ hours, used for some large public clocks in Germany, at midnight. Eventually these were superseded by ‘small clock’, or French hours, which split the day into two 12-hour periods commencing at midnight.

机械钟的问世意味着尽管可以对其进行调节以维持日光时，但它天然地适合记录相等的时间。然而，有了这些，就出现了何时开始计时的问题，因此，14世纪初出现了许多系统。根据计时起点的不同，将一天分成24等份的方案也各不相同：意大利的时间从日落开始，巴比伦的时间从日出开始，天文学时间从中午开始，而德国一些用于大型公共场所的巨大时钟则从午夜开始。最终，这些计时方式被“小时钟”或法国时间所取代。它将一天分为两个12小时的时间段，从午夜开始。

**段落F**

The earliest recorded weight-driven mechanical clock was built in 1283 in Bedfordshire in England. The revolutionary aspect of this new timekeeper was neither the descending weight that provided its motive force nor the gear wheels (which had been around for at least 1, 300 years) that transferred the power; it was the part called the escapement. In the early 1400s came the invention of the coiled spring or fusee which maintained constant force to the gear wheels of the timekeeper despite the changing tension of its mainspring. By the 16th century, a pendulum clock had been devised, but the pendulum swung in a large arc and thus was not very efficient.

有记录的最早的重量驱动机械钟是于1283年在英格兰贝德福德郡建造的。这款崭新的计时器的革命性方面既不是由向下的重量进行驱动，也不是传递动力的齿轮（齿轮已经存在至少1300年了），而是所谓的擒纵机构。在15世纪初期，人们发明了一种螺旋弹簧，或者叫作均力圆锥轮，尽管其发条的张力发生变化，但它仍对计时装置的齿轮保持恒定的力。到了16世纪，摆钟被设计出来。但因为钟摆摆动弧度很大，因此效率不高。

**段落G**

To address this, a variation on the original escapement was invented in 1670, in England. It was called the anchor escapement, which was a lever-based device shaped like a ship’s anchor. The motion of a pendulum rocks this device so that it catches and then releases each tooth of the escape wheel, in turn allowing it to turn a precise amount. Unlike the original form used in early pendulum clocks, the anchor escapement permitted the pendulum to travel in a very small arc. Moreover, this invention allowed the use of a long pendulum which could beat once a second and thus led to the development of a new floor-standing case design, which became known as the grandfather clock.

为了解决这个问题，1670年人们在英国发明了原始擒纵装置的一种变型。这就是所谓的锚擒纵装置，它是一种基于杠杆原理的装置，形状像船的锚。摆锤的运动使该装置晃动，由此它抓住并随后释放擒纵轮的每个齿，从而使其精确的旋转。与早期的摆钟所使用的原始形式不同，锚式擒纵机构使钟摆能够以很小的弧度行进。而且，该发明使得使用较长的摆锤成为可能，它每秒跳动一次，从而推动新的落地柜式设计的发展。该设计被称为祖父钟（落地摆钟）。

**段落H**

Today, highly accurate timekeeping instruments set the beat for most electronic devices. Nearly all computers contain a quartz-crystal clock to regulate their operation. Moreover, not only do time signals beamed down from Global Positioning System satellites calibrate the functions of precision navigation equipment, they do so as well for mobile phones, instant stock-trading systems and nationwide power-distribution grids. So integral have these time-based technologies become to day-to-day existence that our dependency on them is recognised only when they fail to work.

如今，高精度的计时仪器为大多数电子设备的设置时间。几乎所有计算机都包含一个石英钟来控制其运行。此外，全球定位系统卫星发出的时间信号不仅可以校准精密导航设备的功能，而且还可以用于移动电话，即时股票交易系统和全国性的配电网。这些基于时间的技术已变得不可或缺，以至于只有它们在无法工作时我们才能意识到自己对它们的依赖。

### [8Test1Passage2 Air Traffic Control in the USA 美国航空交通管制](http://www.laokaoya.com/24870.html)

**段落A**

An accident that occurred in the skies over the Grand Canyon in 1956 resulted in the establishment of the Federal Aviation Administration (FAA) to regulate and oversee the operation of aircraft in the skies over the United States, which were becoming quite congested. The resulting structure of air traffic control has greatly increased the safety of flight in the United States, and similar air traffic control procedures are also in place over much of the rest of the world.

1956年，大峡谷上空发生的一次事故导致联邦航空管理局（FAA）的成立，以监管和监督美国上空越来越拥挤的飞机运营。由此产生的空中交通管制结构极大地提高了美国的飞行安全性，并且世界上许多其他地区也采用了类似的空中交通管制程序。

**段落B**

Rudimentary air traffic control (ATC) existed well before the Grand Canyon disaster. As early as the 1920s, the earliest air traffic controllers manually guided aircraft in the vicinity of the airports, using lights and flags, while beacons and flashing lights were placed along cross-country routes to establish the earliest airways. However, this article is from Laokaoya website, this purely visual system was useless in bad weather, and, by the 1930s, radio communication was coming into use for ATC. The first region to have something approximating today’s ATC was New York City, with other major metropolitan areas following soon after.

原始的空中交通管制（ATC）在大峡谷灾难发生之前就已经存在。早在20世纪20年代，最早的空中交通管制员就在飞机场附近使用灯光和旗帜手动引导飞机，而信标和闪光灯文章来自老烤鸭雅思则沿着穿过国家的路线放置，以建立最早的空中航线。但是，这种纯视觉的系统在恶劣的天气下没有什么用处。到20世纪30年代，无线电通信已用于ATC。第一个使用与今天的ATC差不多的系统的地区是纽约市，此后不久，其他主要城市也跟了上来。

**段落C**

In the 1940s, ATC centres could and did take advantage of the newly developed radar and improved radio communication brought about by the Second World War, but the system remained rudimentary. It was only after the creation of the FAA that full-scale regulation of America’s airspace took place, and this was fortuitous, for the advent of the jet engine suddenly resulted in a large number of very fast planes, reducing pilots’ margin of error and practically demanding some set of rules to keep everyone well separated and operating safely in the air.

20世纪40年代，空中交通管制中心可以而且确实利用了第二次世界大战带来的新开发的雷达和改进的无线电通信，但是该系统仍然是原始的。直到美国联邦航空局（FAA）建立之后，美国领空的全面管制才真正开始。而这完全是偶然的，因为喷气发动机的问世导致出现大量飞行速度非常快的飞机，从而缩减了飞行员的犯错空间，并出现制定一些规则的实际要求，以保证每架飞机互相分离，在空中安全运行。

**段落D**

Many people think that ATC consists of a row of controllers sitting in front of their radar screens at the nation’s airports, telling arriving and departing traffic what to do. This is a very incomplete part of the picture. The FAA realised that the airspace over the United States would at any time have many different kinds of planes, flying for many different purposes, in a variety of weather conditions, and the same kind of structure was needed to accommodate all of them.

许多人认为ATC由一排坐在机场雷达屏幕前的控制员组成，告诉到达和离开的飞机该做什么。这种想法是片面的。美国联邦航空局意识到，在美国空域任何时候都有许多不同种类的飞机在各种天气条件下出于不同目的而飞行，因此需要某种相同的结构来容纳所有这些飞机。

**段落E**

To meet this challenge, the following elements were put into effect. First, ATC extends over virtually the entire United States. In general, from 365m above the ground and higher, the entire country is blanketed by controlled airspace. In certain areas, mainly near airports, controlled airspace extends down to 215m above the ground, and, in the immediate vicinity of an airport, all the way down to the surface. Controlled airspace is that airspace in which FAA regulations apply. Elsewhere, in uncontrolled airspace, pilots are bound by fewer regulations. In this way, the recreational pilot who simply wishes to go flying for a while without all the restrictions imposed by the FAA has only to stay in uncontrolled airspace, below 365m, while the pilot who does want the protection afforded by ATC can easily enter the controlled airspace.

为了应对这一挑战，（美国联邦航空局）实行了以下几点。首先，空中交通管制几乎遍及整个美国。通常来说，整个国家地面365米以上的空域都受到控制。在某些地区，主要是在机场附近，受控空域一直延伸到地面上方215m，在临近机场的地方一直延伸到地面。受控空域是实行美国联邦航空局规定的空域。在其他不受控制的领空中，飞行员受到的法规约束较少。这样一来，希望不受美国联邦航空局（FAA）限制，只是飞行一段时间的休闲飞行员只需要停留在365m以下不受控制的领空即可，而希望获得ATC保护的飞行员可以轻松进入控制空域。

**段落F**

The FAA then recognised two types of operating environments. In good meteorological conditions, flying would be permitted under Visual Flight Rules (VFR), which suggests a strong reliance on visual cues to maintain an acceptable level of safety. Poor visibility necessitated a set of Instrumental Flight Rules (IFR), under which the pilot relied on altitude and navigational information provided by the plane’s instrument panel to fly safely. On a clear day, a pilot in controlled airspace can choose a VFR or IFR flight plan, and the FAA regulations were devised in a way which accommodates both VFR and IFR operations in the same airspace. However, a pilot can only choose to fly IFR if they possess an instrument rating which is above and beyond the basic pilot’s license that must also be held.

FAA随后界定出两种运行环境。在良好的气象条件下，允许利用视觉飞行规则（VFR）飞行，它极度依赖视觉线索来维持可接受的安全水平。能见度差的时候则必须使用一套仪表飞行规则（IFR）。飞行员必须依靠飞机仪表板提供的高度和导航信息安全飞行。在晴朗的日子里，受控空域中的飞行员可以选择VFR或IFR飞行计划，而FAA的规则设定可以在同一空域中同时容纳VFR和IFR操作。但是，飞行员只有在持有基础飞行执照之上的资质时，才可以选择使用IFR。

**段落G**

Controlled airspace is divided into several different types, designated by letters of the alphabet. Uncontrolled airspace is designated Class F, while controlled airspace below 5, 490m above sea level and not in the vicinity of an airport is Class E. All airspace above 5, 490m is designated Class A. The reason for the division of Class E and Class A airspace stems from the type of planes operating in them. Generally, Class E airspace is where one finds general aviation aircraft (few of which can climb above 5, 490m anyway), and commercial turboprop aircraft. Above 5, 490m is the realm of the heavy jets, since jet engines operate more efficiently at higher altitudes. The difference between Class E and A airspace is that in Class A, all operations are IFR, and pilots must be instrument-rated, that is, skilled and licensed in aircraft instrumentation. This is because ATC control of the entire space is essential. Three other types of airspace, Classes D, C and B, govern the vicinity of airports. These correspond roughly to small municipal, medium-sized metropolitan and major metropolitan airports respectively, and encompass an increasingly rigorous set of regulations. For example, all a VFR pilot has to do to enter Class C airspace is establish two-way radio contact with ATC. No explicit permission from ATC to enter is needed, although the pilot must continue to obey all regulations governing VFR flight. To enter Class B airspace, such as on approach to a major metropolitan airport, an explicit ATC clearance is required. The private pilot who cruises without permission into this airspace risks losing their license.

受控空域分为几种不同类型，并以字母表示。不受管制的空域被划为F级。而海拔5490米以下且不在机场附近的管制空域被划为E级。所有5490米以上的空域被划为A级。划分E级与A级空域的原因源自其中运行的飞机类型。通常，在E级空域可以找到通用航空飞机（无论如何，它们很少能爬升到5490米以上）和商用涡轮螺旋桨飞机。5490米以上是重型喷气式飞机的领域。这是因为喷气发动机在更高的海拔下可以更有效地运行。 E级和A级空域之间的区别在于，A级空域中的所有操作都是IFR，并且飞行员必须具有仪器等级，即熟练使用飞机仪表并具备执照。这是因为对整个空域进行ATC控制至关重要。其他三种类型的空域，D、C和B级，控制着机场附近。它们大致对应小型城市，中型城市和主要城市的机场，并且包含越来越严格的法规。例如，所有VFR飞行员在进入C级空域时必须建立与ATC的双向无线电联系。尽管飞行员必须继续遵守有关VFR飞行的所有规定，但不需要ATC的明确许可即可进入。要进入B级空域，例如接近大都市机场时，需要明确的ATC许可。未经许可进入该领空航行的私人飞行员可能会失去执照。

### [8Test1Passage3 Telepathy 心灵感应](http://www.laokaoya.com/24915.html)

**引言**

Can human beings communicate by thought alone? For more than a century the issue of telepathy has divided the scientific community, and even today it still sparks bitter controversy among top academics.

人类可以单独通过思想交流吗？一个多世纪以来，心灵感应问题一直困扰着科学界。直到今天，它仍然引发顶级学者之间的激烈争论。

**第1自然段**

Since the 1970s, parapsychologists at leading universities and research institutes around the world have risked the derision of sceptical colleagues by putting the various claims for telepathy to the test in dozens of rigorous scientific studies. The results and their implications are dividing even the researchers who uncovered them.

自20世纪70年代以来，全球领先大学和研究机构的超心理学家冒着受怀疑论者嘲笑的风险，在数十项严格的科学研究中对心灵感应进行测试。实验结果和它们的含义甚至使发现它们的研究人员也产生分歧。

**第2自然段**

Some researchers say the results constitute compelling evidence that telepathy is genuine. Other parapsychologists believe the field is on the brink of collapse, having tried to produce definitive scientific proof and failed. Sceptics and advocates alike do concur on one issue, however: that the most impressive evidence so far has come from the so-called ‘ganzfeld’ experiments, a German term that means ‘whole field’. Reports of telepathic experiences had by people during meditation led parapsychologists to suspect that telepathy might involve ‘signals’ passing between people that were so faint that they were usually swamped by normal brain activity. In this case, such signals might be more easily detected by those experiencing meditation-like tranquillity in a relaxing ‘whole field’ of light, sound and warmth.

一些研究人员认为，这些结果构成了令人信服的证据，证明心灵感应是真实的。其他超心理学家认为，该领域正处于崩溃的边缘。文章来自老烤鸭雅思他们试图提供确切的科学证据，但失败了。然而，持怀疑态度的人和拥护者们在一个问题上的确是一致的：到目前为止，最令人印象深刻的证据来自所谓的“ganzfeld”实验。这是德语术语，意为“整个领域”。人们在冥想过程中对心灵感应经历的报道使超心理学家怀疑心灵感应可能牵涉到人与人之间的“信号”传递。这些信号如此微弱，以至于它们通常被正常的大脑活动所淹没。在这种情况下，那些在轻松、美好和温暖的“整个领域”中体验冥想般的宁静的人可能更容易检测到此类信号。

**第3自然段**

The ganzfeld experiment tries to recreate these conditions with participants sitting in soft reclining chairs in a sealed room, listening to relaxing sounds while their eyes are covered with special filters letting in only soft pink light. In early ganzfeld experiments, the telepathy test involved identification of a picture chosen from a random selection of four taken from a large image bank. This article is from Laokaoya website. The idea was that a person acting as a ‘sender’ would attempt to beam the image over to the ‘receiver’ relaxing in the sealed room. Once the session was over, this person was asked to identify which of the four images had been used. Random guessing would give a hit-rate of 25 per cent; if telepathy is real, however, the hit-rate would be higher. In 1982, the results from the first ganzfeld studies were analysed by one of its pioneers, the American parapsychologist Charles Honorton. They pointed to typical hit-rates of better than 30 per cent – a small effect, but one which statistical tests suggested could not be put down to chance.

ganzfeld实验试图通过让参与者在密封的房间里坐在柔软的躺椅上，聆听放松的声音，用特殊的滤光片遮盖眼睛，只感受柔和的粉红色光线来重现这些条件。在早期的ganzfeld实验中，心灵感应测试涉及识别从大图像库中随机选取的四张图片中的图像。其想法是，一个充当“发送者”的人会试图将图像传送到在密封房间内放松的“接收者”。传输结束后，此人被要求确定使用了四个图像中的哪个。随机猜测的命中率为25％；然而如果心灵感应是真实的，那么命中率就会更高。1982年，第一批ganzfeld研究的结果由美国超心理学家查尔斯·霍顿（Charles Honorton），该领域的先驱者之一，进行了分析。他们指出典型的命中率要高于30％。虽然影响很小，但统计测试表明，不能仅仅将其归为偶然。

**第4自然段**

The implication was that the ganzfeld method had revealed real evidence for telepathy. But there was a crucial flaw in this argument – one routinely overlooked in more conventional areas of science. Just because chance had been ruled out as an explanation did not prove telepathy must exist; there were many other ways of getting positive results. These ranged from ‘sensory leakage’ – where clues about the pictures accidentally reach the receiver – to outright fraud. In response, the researchers issued a review of all the ganzfeld studies done up to 1985 to show that 80 per cent had found statistically significant evidence. However, they also agreed that there were still too many problems in the experiments which could lead to positive results, and they drew up a list demanding new standards for future research.

这意味着ganzfeld方法揭示了心灵感应存在的真实证据。但是这一论点存在一个在更为传统的科学领域经常被忽视的关键缺陷。仅仅排除偶然性因素，并不能证明心灵感应一定存在。还有很多其他方法可以取得积极的结果。它们从“感官泄漏”（有关图片的线索意外到达接收者）到彻底的欺诈。作为回应，研究人员发表了对1985年以前所做的所有ganzfeld研究的回顾，以显示80％的人发现了具有统计意义的证据。但是，他们也同意实验中仍然存在太多问题。这些问题可能会导致积极的结果。他们草拟了一份清单，要求为未来的研究制定新的标准。

**第5自然段**

After this, many researchers switched to autoganzfeld tests – an automated variant of the technique which used computers to perform many of the key tasks such as the random selection of images. By minimising human involvement, the idea was to minimise the risk of flawed results. In 1987, results from hundreds of autoganzfeld tests were studied by Honorton in a ‘meta-analysis’, a statistical technique for finding the overall results from a set of studies. Though less compelling than before, the outcome was still impressive.

此后，许多研究人员转而使用autoganzfeld测试-该技术的一种自动化变体。它使用计算机进行许多关键任务，例如图像的随机选择。其想法是通过减少人类的参与来降低产生错误结果的风险。1987年，Hontonon使用“元分析”（一种统计技术，可从一组研究中找到整体结果）研究了数百种autoganzfeld测试的结果。尽管它们没有以前那么引人注目，但仍然令人印象深刻。

**第6自然段**

Yet some parapsychologists remain disturbed by the lack of consistency between individual ganzfeld studies. Defenders of telepathy point out that demanding impressive evidence from every study ignores one basic statistical fact: it takes large samples to detect small effects. If, as current results suggest, telepathy produces hit-rates only marginally above the 25 per cent expected by chance, it’s unlikely to be detected by a typical ganzfeld study involving around 40 people: the group is just not big enough. Only when many studies are combined in a meta-analysis will the faint signal of telepathy really become apparent. And that is what researchers do seem to be finding.

然而，一些超心理学家仍然对不同ganzfeld研究之间缺乏一致性感到不安。心灵感应的辩护者指出，要求每项研究都得出令人印象深刻的证据忽略了一个基本的统计事实：需要大量样本才能检测出微小的影响。按照目前的实验结果，如果心灵感应的命中率仅仅因为偶然才勉强超过预期的25％，那么一项文章来自老烤鸭雅思涉及约40人的典型ganzfeld研究不太可能发现这一差别：研究群体不够大。只有在“元分析”中结合了许多研究后，微弱的心灵感应标志才会真正显现出来。这就是研究人员似乎正在发现的东西。

**第7自然段**

What they are certainly not finding, however, is any change in attitude of mainstream scientists: most still totally reject the very idea of telepathy. The problem stems at least in part from the lack of any plausible mechanism for telepathy.

但是，他们肯定没有发现主流科学家的态度有任何变化：大多数人仍然完全拒绝心灵感应的想法。该问题至少部分是由于心灵感应缺乏任何合理的机制。

**第8自然段**

Various theories have been put forward, many focusing on esoteric ideas from theoretical physics. They include ‘quantum entanglement’, in which events affecting one group of atoms instantly affect another group, no matter how far apart they may be. While physicists have demonstrated entanglement with specially prepared atoms, no-one knows if it also exists between atoms making up human minds. Answering such questions would transform parapsychology. This has prompted some researchers to argue that the future lies not in collecting more evidence for telepathy, but in probing possible mechanisms. Some work has begun already, with researchers trying to identify people who are particularly successful in autoganzfeld trials. Early results show that creative and artistic people do much better than average: in one study at the University of Edinburgh, musicians achieved a hit-rate of 56 per cent. Perhaps more tests like these will eventually give the researchers the evidence they are seeking and strengthen the case for the existence of telepathy.

各种各样的理论被提了出来。其中许多集中于理论物理学中的神秘思想。它们包括“量子纠缠”，即影响一组原子的事件会立即影响另一组原子，无论它们相距多远。尽管物理学家已经证明特殊制备的原子存在纠缠，但没人知道它是否也存在于组成人类思想的原子之间。回答这些问题将改变超心理学。这促使一些研究人员认为，未来不在于收集心灵感应的更多证据，而在于探索可能的机制。一些工作已经开始，研究人员试图找出在autoganzfeld试验中特别成功的人。早期的结果表明，富有创造力和艺术才能的人的表现要比平均水平要好得多：在爱丁堡大学的一项研究中，音乐家的命中率达到了56％。也许更多类似的测试最终将为研究人员提供他们正在寻找的证据，并增强了心灵感应的存在的理由。

## 8Test2

### [8Test2Passage1 sheet glass manufacture: the float process 玻璃制造](http://www.laokaoya.com/25298.html)

**第1自然段**

Glass, which has been made since the time of the Mesopotamians and Egyptians, is little more than a mixture of sand, soda ash and lime. When heated to about 1500 degrees Celsius (℃) this becomes a molten mass that hardens when slowly cooled. The first successful method for making clear, flat glass involved spinning. This method was very effective as the glass had not touched any surfaces between being soft and becoming hard, so it stayed perfectly unblemished, with a ‘fire finish’. However, the process took a long time and was labour intensive.

自美索不达米亚人和埃及人时代以来，玻璃仅是沙子，纯碱和石灰的混合物。当加热到约1500摄氏度（℃）时，它变成熔融物，缓慢冷却后会变硬。制造透明平板玻璃的第一种成功方法涉及到旋转。该方法非常有效，因为玻璃在变软和变硬之间没有接触到任何表面，因此保持了完美的光泽。但是，该过程耗时长并且劳动强度大。

**第2自然段**

Nevertheless, demand for flat glass was very high and glassmakers across the world were looking for a method of making it continuously. The first continuous ribbon process involved squeezing molten glass through two hot rollers, similar to an old mangle. This allowed glass of virtually any thickness to be made non-stop, but the rollers would leave both sides of the glass marked, and these would then need to be ground and polished. This part of the process rubbed away around 20 per cent of the glass, and the machines were very expensive.

然而，对平板玻璃的需求非常高，世界各地的玻璃制造商都在寻找一种连续制造平板玻璃的方法。第一种文章来自老烤鸭雅思连续制造工艺通过两个热辊挤压熔融的玻璃，类似于旧日的粉碎机。这样就可以使几乎任何厚度的玻璃被不间断地制造出来，但是滚子会在玻璃两面留下痕迹。稍后，它们需要进行研磨和抛光处理。该过程的这一部分消耗了大约20％的玻璃，并且机器非常昂贵。

**第3自然段**

The float process for making flat glass was invented by Alistair Pilkington. This process allows the manufacture of clear, tinted and coated glass for buildings, and clear and tinted glass for vehicles. This article is from Laokaoya website. Pilkington had been experimenting with improving the melting process, and in 1952 he had the idea of using a bed of molten metal to form the flat glass, eliminating altogether the need for rollers within the float bath. The metal had to melt at a temperature less than the hardening point of glass (about 600~C), but could not boil at a temperature below the temperature of the molten glass (about 1500~C). The best metal for the job was tin.

用于制造平板玻璃的浮法是阿利斯泰尔·皮尔金顿（Alistair Pilkington）发明的。该方法可以制造用于建筑物的透明，着色和涂层玻璃，以及用于车辆的透明和着色玻璃。皮尔金顿一直在尝试改善熔化过程，并在1952年提出使用熔融金属床来制造平板玻璃的想法，从而完全消除在漂浮池中使用滚筒的必要性。金属必须在低于玻璃硬化点的温度（约600℃）熔化，但不能在低于熔融玻璃的温度（约1500℃）下沸腾。最好的金属是锡。

**第4自然段**

The rest of the concept relied on gravity, which guaranteed that the surface of the molten metal was perfectly flat and horizontal. Consequently, when pouring molten glass onto the molten tin, the underside of the glass would also be perfectly flat. If the glass were kept hot enough, it would flow over the molten tin until the top surface was also flat, horizontal and perfectly parallel to the bottom surface. Once the glass cooled to 604~C or less it was too hard to mark and could be transported out of the cooling zone by rollers. The glass settled to a thickness of six millimetres because of surface tension interactions between the glass and the tin. By fortunate coincidence, 60 per cent of the flat glass market at that time was for six-millimetre glass.

这一想法的其余部分依靠重力，以确保熔融金属的表面完全平坦且水平。因此，当将熔融玻璃倒在熔融锡上时，玻璃的底面也将是完全平坦的。如果玻璃保持足够高温，它将在文章来自老烤鸭雅思熔融锡上流动，直到上表面也平坦，水平且与下表面完全平行。一旦玻璃冷却到604°C或更低，就会变得足够坚硬，很难留下痕迹，并且可以用滚轴运出冷却区。由于玻璃和锡之间表面张力的相互作用，玻璃只能是六毫米厚。碰巧的是，当时平板玻璃市场的60％都是六毫米玻璃。

**第5自然段**

Pilkington built a pilot plant in 1953 and by 1955 he had convinced his company to build a full-scale plant. However, it took 14 months of non-stop production, costing the company ￡100, 000 a month, before the plant produced any usable glass. Furthermore, once they succeeded in making marketable flat glass, the machine was turned off for a service to prepare it for years of continuous production. When it started up again it took another four months to get the process right again. They finally succeeded in 1959 and there are now float plants all over the world, with each able to produce around 1000 tons of glass every day, non-stop for around 15 years.

皮尔金顿于1953年建立了一个试验工厂，到1955年，他说服自己的公司建立了一个大型工厂。然而，在14个月的不间断生产，并每月花费公司100,000 英镑之后，工厂才生产出第一块能用的玻璃。一旦他们成功制造出可销售的平板玻璃，就关闭了机器，从而为多年的连续生产做准备。当它再次启动时，又花了四个月的时间才重新校准流程。他们终于在1959年取得了成功，现在世界各地都有浮法制玻工厂，每个工厂每天能够生产约1000吨玻璃，可以不间断生产约15年。

**第6自然段**

Float plants today make glass of near optical quality. Several processes – melting, refining, homogenising – take place simultaneously in the 2000 tonnes of molten glass in the furnace. They occur in separate zones in a complex glass flow driven by high temperatures. It adds up to a continuous melting process, lasting as long as 50 hours, that delivers glass smoothly and continuously to the float bath, and from there to a coating zone and finally a heat treatment zone, where stresses formed during cooling are relieved.

如今，浮法生产的玻璃接近光学品质。在熔炉中的2000吨熔融玻璃同时进行熔融，精制，均质化等多个过程。它们出现在由高温驱动的复杂玻璃流中的不同区域。连续熔化过程可以持续50小时，从而将玻璃平稳连续地输送到浮槽中，然后从那里到达镀膜区，并最后到达热处理区，在这里消除冷却过程中形成的应力。

**第7自然段**

The principle of float glass is unchanged since the 1950s. However, the product has changed dramatically, from a single thickness of 6. 8 mm to a range from sub-millimetre to 25 mm, from a ribbon frequently marred by inclusions and bubbles to almost optical perfection. To ensure the highest quality, inspection takes place at every stage. Occasionally, a bubble is not removed during refining, a sand grain refuses to melt, a tremor in the tin puts ripples into the glass ribbon. Automated on-line inspection does two things. Firstly, it reveals process faults upstream that can be corrected. Inspection technology allows more than 100 million measurements a second to be made across the ribbon, locating flaws the unaided eye would be unable to see. Secondly, it enables computers downstream to steer cutters around flaws.

自20世纪50年代以来，浮法玻璃的原理就没有改变。但是，产品发生了巨大的变化，从单一的6. 8毫米厚变成从亚毫米到25毫米不等，从经常被杂质和气泡损坏的平板到几乎完美的光学效果。为了确保最高质量，在每个阶段都要进行检查。有时，精炼过程中未能去除的气泡，无法融化的沙砾，以及锡的震颤会在玻璃带中形成波纹。自动化的在线检查会做两件事。首先，它揭示可以修正的上游流程故障。检测技术可以在玻璃板上进行每秒超过1亿次的测量，从而定位肉眼无法看到的缺陷。其次，它使下游计算机能够引导切割器解决缺陷。

**第8自然段**

Float glass is sold by the square metre, and at the final stage computers translate customer requirements into patterns of cuts designed to minimise waste.

浮法玻璃按平方出售，在最后阶段，计算机将客户需求转换为旨在最大程度减少浪费的切割模式。

### [8Test2Passage2 the little ice age 小冰期/小冰河时代](http://www.laokaoya.com/25354.html)

**A部分**

This book will provide a detailed examination of the Little Ice Age and other climatic shifts, but, before I embark on that, let me provide a historical context. We tend to think of climate – as opposed to weather – as something unchanging, yet humanity has been at the mercy of climate change for its entire existence, with at least eight glacial episodes in the past 730, 000 years. Our ancestors adapted to the universal but irregular global warming since the end of the last great Ice Age, around 10, 000years ago, with dazzling opportunism. They developed strategies for surviving harsh drought cycles, decades of heavy rainfall or unaccustomed cold; adopted agriculture and stock-raising, which revolutionised human life; and founded the world’s first pre-industrial civilisations in Egypt, Mesopotamia and the Americas. But the price of sudden climate change, in famine, disease and suffering, was often high.

本书将详细探讨小冰河时代和其他气候变化，但在我着手探讨之前，请让我先描述一下历史背景。我们倾向于将气候（与天气相对）视为不变的东西，但是人类在整个生存过程中一直受气候变化的支配。在过去的730000年中至少发生了八次冰川事件。自大约十万年前上一个大冰河时代结束以来，我们的祖先以令人眼花缭乱的机会主义适应了普遍但不规则的全球变暖。他们制定了应对严酷干旱，数十年暴雨或令人不适的严寒的策略；采用农业和畜牧业彻底改变了人类生活；并在埃及，美索不达米亚和美洲建立了世界上第一批前工业化文明 。但突然的气候变化所造成的代价（饥荒，疾病和苦难）往往很高。

**B部分**

The Little Ice Age lasted from roughly 1300 until the middle of the nineteenth century. Only two centuries ago, Europe experienced a cycle of bitterly cold winters; mountain glaciers in the Swiss Alps were the lowest in recorded memory, and pack ice surrounded Iceland for much of the year. The climatic events of the Little Ice Age did more than help shape the modern world. They are the deeply important context for the current unprecedented global warming. The Little Ice Age was far from a deep freeze, however; rather an irregular seesaw of rapid climatic shifts, few lasting more than a quarter-century, driven by complex and still little understood interactions between the atmosphere and the ocean. The seesaw brought cycles of intensely cold winters and easterly winds, then switched abruptly to years of heavy spring and early summer rains, mild winters, and frequent Atlantic storms, or to periods of droughts, light northeasterly winds, and summer heat waves.

小冰河时代大约从1300持续到19 世纪中叶。仅仅两个世纪前，欧洲经历了严寒的冬季。瑞士阿尔卑斯山的高山冰川处于有记录以来的最低点，而冰块文章来自老烤鸭雅思在一年中的大部分时间里都包围着冰岛。小冰河时代的气候事件不仅仅帮助塑造了现代世界。它们还是当前史无前例的全球变暖的极为重要的背景。然而，小冰河世纪并非极度寒冷，而是一种不规则的、交互的迅速气候变化。它们的持续时间很少超过四分之一世纪，由大气与海洋之间复杂而我们又知之甚少的相互作用驱动。它带来周期性的寒冷冬季和东风，然后突然转变为多年的漫长春季，初夏降雨，温和冬季和频繁的大西洋风暴，或者转为干旱，东北风和夏季热浪。

**C部分**

Reconstructing the climate changes of the past is extremely difficult, because systematic weather observations began only a few centuries ago, in Europe and North America. Records from India and tropical Africa are even more recent. For the time before records began, we have only ‘proxy records’ reconstructed largely from tree rings and ice cores, supplemented by a few incomplete written accounts. We now have hundreds of tree-ring records from throughout the northern hemisphere, and many from south of the equator, too, amplified with a growing body of temperature data from ice cores drilled in Antarctica, Greenland, the Peruvian Andes, and other locations. We are close to a knowledge of annual summer and winter temperature variations over much of the northern hemisphere going back 600 years.

重构过去的气候变化极为困难，因为系统的天气观测仅在几个世纪前才在欧洲和北美开始。来自印度和热带非洲的记录就更近了。在记录开始之前的时间里，我们仅能从年轮和冰芯中重建“代理记录”，并辅以一些不完整的书面记录。现在，我们有来自整个北半球的数百个年轮记录，而且也有来自赤道以南的许多年轮记录。它们与来自南极，格陵兰，秘鲁安第斯山脉和其他地区的冰芯温度数据一起增长。我们就快知道北半球过去600年间每年夏季和冬季的温度变化。

**D部分**

This book is a narrative history of climatic shifts during the past ten centuries, and some of the ways in which people in Europe adapted to them. Part One describes the Medieval Warm Period, roughly 900 to 1200. During these three centuries, Norse voyagers from Northern Europe explored northern seas, settled Greenland, and visited North America. It was not a time of uniform warmth, for then, as always since the Great Ice Age, there were constant shifts in rainfall and temperature. Mean European temperatures were about the same as today, perhaps slightly cooler.

这本书是过去十个世纪气候变化与欧洲人适应气候变化方法的叙事历史。第一部分描述了从大约900至1200年的中世纪温暖时期。在这三个世纪中，来自北欧的挪威航海家们探索了北海，在格陵兰定居，并访问了北美。那不是一个一直温暖的时期。自从大冰河世纪以来，降雨量和温度一直在不断变化。欧洲平均温度与今天大致相同，可能略低。

**E部分**

It is known that the Little Ice Age cooling began in Greenland and the Arctic in about 1200. As the Arctic ice pack spread southward, Norse voyages to the west were rerouted into the open Atlantic, then ended altogether. Storminess increased in the North Atlantic and North Sea. Colder, much wetter weather descended on Europe between 1315 and 1319, when thousands perished in a continent-wide famine. By 1400, the weather had become decidedly more unpredictable and stormier, with sudden shifts and lower temperatures that culminated in the cold decades of the late sixteenth century. Fish were a vital commodity in growing towns and cities, where food supplies were a constant concern. Dried cod and herring were already the staples of the European fish trade, but changes in water temperatures forced fishing fleets to work further offshore. The Basques, Dutch, and English developed the first offshore fishing boats adapted to a colder and stormier Atlantic. A gradual agricultural revolution in northern Europe stemmed from concerns over food supplies at a time of rising populations. The revolution involved intensive commercial farming and the growing of animal fodder on land not previously used for crops. The increased productivity from farmland made some countries self-sufficient in grain and livestock and offered effective protection against famine.

据了解，小冰期大约于1200年在格陵兰岛和北极开始。随着北极冰块向南蔓延，从挪威向西的航线已改道到开放的大西洋，随后彻底终结。北大西洋和北海的暴风雨增加。1315年至1319年间，欧洲出现了更冷，更潮湿的天气，成千上万的人死于整个大洲的饥荒。到1400年，天气变得更加不可预测、更加狂暴，突然的变化和更低的温度最终导致了16世纪后期的严寒。在不断增长的城镇和城市中，鱼是至关重要的商品，那里的粮食供应一直是人们关注的问题。鳕鱼和鲱鱼干已经成为欧洲鱼类贸易的主流，但是水温的变化迫使捕捞船队进一步远离海岸。巴斯克人，荷兰人和英国人发明了第一批能够适应更为寒冷和更为狂暴的大西洋的近海渔船。在欧洲北部的渐进农业革命起源于人们在人口增长时期对粮食供应的担心。革命涉及集约化商业耕作，以及在以前不用于种植农作物的土地上种植动物饲料。农田生产力的提高使一些国家的粮食和牲畜自给自足，并为对抗饥荒提供了有效的保护手段。

**F部分**

Global temperatures began to rise slowly after 1850, with the beginning of the Modern Warm Period. There was a vast migration from Europe by land-hungry farmers and others, to which the famine caused by the Irish potato blight contributed, to North America, Australia, New Zealand, and southern Africa. Millions of hectares of forest and woodland fell before the newcomers’ axes between 1850 and 1890, as intensive European farming methods expanded across the world. The unprecedented land clearance released vast quantities of carbon dioxide into the atmosphere, triggering for the first time humanly caused global warming. Temperatures climbed more rapidly in the twentieth century as the use of fossil fuels proliferated and greenhouse gas levels continued to soar. The rise has been even steeper since the early 1980s. The Little Ice Age has given way to a new climatic regime, marked by prolonged and steady warming. At the same time, extreme weather events like Category 5 hurricanes are becoming more frequent.

随着现代温暖时期的开始，全球温度于1850年之后开始缓慢上升。由于爱尔兰马铃薯疫病所造成的饥荒，渴望土地的农民和其他人从欧洲大量迁徙到北美，澳大利亚，新西兰和非洲南部。在1850年至1890年之间，随着集约化的欧洲耕种方法在世界范围内传播，数百万公顷的森林和林地倒在了新移民的斧子之下。前所未有的土地清理工作将大量二氧化碳释放到大气中，这是人类首次造成全球变暖。随着二十世纪化石燃料使用的激增和温室气体水平的持续飙升，温度上升地更快。自20世纪80年代初以来，上升幅度甚至更大。小冰河时代已经让位于一种新的气候体制，其特征是持续不断而稳定的变暖。同时，诸如5类飓风之类的极端天气事件变得越来越频繁。

### [8Test2Passage3 The meaning and power of smell 气味的意义与力量](http://www.laokaoya.com/25408.html)

**引言**

The sense of smell, or olfaction, is powerful. Odours affect us on a physical, psychological and social level. For the most part, however, we breathe in the aromas which surround us without being consciously aware of their importance to us. It is only when the faculty of smell is impaired for some reason that we begin to realise the essential role the sense of smell plays in our sense of well-being

嗅觉很强。气味会在身体，心理和社会层面上影响我们。然而，在大多数情况下，我们会呼吸周围的香气，却没有意识到它们对我们的重要性。只有当嗅觉能力因某种原因而受损时，我们才开始意识到嗅觉在我们的幸福感中所起的至关重要的作用。

**自然段A**

A survey conducted by Anthony Synott at Montreal’s Concordia University asked participants to comment on how important smell was to them in their lives. It became apparent that smell can evoke strong emotional responses. A scent associated with a good experience can bring a rush of joy, while a foul odour or one associated with a bad memory may make us grimace with disgust. Respondents to the survey noted that many of their olfactory likes and dislikes were based on emotional associations. Such associations can be powerful enough so that odours that we would generally label unpleasant become agreeable, and those that we would generally consider fragrant become disagreeable for particular individuals. The perception of smell, therefore, consists not only of the sensation of the odours themselves, but of the experiences and emotions associated with them.

一项由蒙特利尔康科迪亚大学的Anthony Synott所进行的研究，请参与者评论气味在他们的日常生活中有多么重要。很明显，气味会引起强烈的情感反应。与良好体验相关的气味会带来喜悦，而难闻的气味文章来自老烤鸭雅思或与不良记忆相关的气味可能使我们感到厌恶。接受调查的受访者指出，他们的许多嗅觉喜好都基于情感联系。这种关联足够强大，哪怕是我们普遍认为不愉悦的气味也会变得可以接受，而那些我们普遍认为芳香的气味也会也因为特定的人而变得令人不快。因此，嗅觉不仅包括气味本身的感觉，还包括与之相关的经验和情感。

**自然段B**

Odours are also essential cues in social bonding. One respondent to the survey believed that there is no true emotional bonding without touching and smelling a loved one. In fact, infants recognise the odours of their mothers soon after birth and adults can often identify their children or spouses by scent. In one well-known test, women and men were able to distinguish by smell alone clothing worn by their marriage partners from similar clothing worn by other people. Most of the subjects would probably never have given much thought to odour as a cue for identifying family members before being involved in the test, but as the experiment revealed, even when not consciously considered, smells register.

气味也是社交联系中必不可少的线索。一位接受调查的受访者认为，没有触摸和闻到爱人的气味，就没有真正的情感联系。实际上，婴儿在出生后不久便会认出母亲的气味，而成年人通常可以通过气味识别孩子或配偶。在一项众所周知的测试中，男女能够单独通过气味区分其配偶所穿的衣服与其他人所穿的相似衣物。大多数受试者在参与测试之前可能从来没有考虑过气味作为识别家庭成员的线索，但是正如实验所揭示的，即使没有有意识地考虑，气味仍然会有印记。

**自然段C**

In spite of its importance to our emotional and sensory lives, smell is probably the most undervalued sense in many cultures. The reason often given for the low regard in which smell is held is that, in comparison with its importance among animals, the human sense of smell is feeble and undeveloped. While it is true that the olfactory powers of humans are nothing like as fine as those possessed by certain animals, they are still remarkably acute. Our noses are able to recognise thousands of smells, and to perceive odours which are present only in extremely small quantities.

尽管气味对我们的情感和感官生活很重要，但它可能是许多文化中最被低估的感觉。人们经常不重视气味的原因是，与它在动物中的重要性相比，人类的嗅觉微弱并且不发达。虽然人类的嗅觉能力确实不如某些动物所拥有的嗅觉能力强，但它们仍然非常敏锐。我们的鼻子能够识别成千上万种气味，并能感知到极少量的气味。

**自然段D**

Smell, however, is a highly elusive phenomenon. Odours, unlike colours, for instance, cannot be named in many languages because the specific vocabulary simply doesn’t exist. ‘It smells like. . . , ‘ we have to say when describing an odour, struggling to express our olfactory experience. Nor can odours be recorded: there is no effective way to either capture or store them over time. In the realm of olfaction, we must make do with descriptions and recollections. This has implications for olfactory research.

然而，气味是一种高度难以捉摸的现象。例如，与颜色不同，因为特定的词汇根本就不存在，气味在许多语言中无法被命名。“它闻起来像…”，我们在描述气味时必须这么说，努力表达我们的嗅觉体验。同时，我们也无法记录气味：没有有效的方法可以捕获或长时间存储它们。在嗅觉领域，我们只能依赖描述和回忆。这对嗅觉研究有影响。

**自然段E**

Most of the research on smell undertaken to date has been of a physical scientific nature. Significant advances have been made in the understanding of the biological and chemical nature of olfaction, but many fundamental questions have yet to be answered. Researchers have still to decide whether smell is one sense or two – one responding to odours proper and the other registering odourless chemicals in the air. Other unanswered questions are whether the nose is the only part of the body affected by odours, and how smells can be measured objectively given the nonphysical components. Questions like these mean that interest in the psychology of smell is inevitably set to play an increasingly important role for researchers.

迄今为止，大多数有关气味的研究都是物理学性质的。在了解嗅觉的生物学和化学本质方面已取得重大进展，但许多基本问题尚待解答。研究人员仍需确定气味是一种感觉还是两种感觉-一种是对适当气味的响应，另一种是记录空气中无味的化学物质。其他未解决的问题是，鼻子是否是受气味影响的唯一身体部位，以及在非实体的情况下如何客观地测量气味。诸如此类的问题意味着，对嗅觉心理学的兴趣将不可避免地对研究人员发挥越来越重要的作用。

**自然段F**

However, smell is not simply a biological and psychological phenomenon. Smell is cultural, hence it is a social and historical phenomenon. Odours are invested with cultural values: smells that are considered to be offensive in some cultures may be perfectly acceptable in others. Therefore, our sense of smell is a means of, and model for, interacting with the world. Different smells can provide us with intimate and emotionally charged experiences and the value that we attach to these experiences is interiorised by the members of society in a deeply personal way. Importantly, our commonly held feelings about smells can help distinguish us from other cultures. The study of the cultural history of smell is, therefore, in a very real sense, an investigation into the essence of human culture.

但是，气味不仅仅是一种生物学和心理现象。气味是文化的，因此它也是一种社会和历史现象。气味蕴含文化价值：在某些文化中被认为惹人讨厌的气味在另外一些文化中则完全可以被接受。因此，我们的嗅觉是与世界互动的手段和模型。不同的气味能为我们提供亲密和充满激情的体验，而附加在这些体验之上的价值被社会成员以一种非常私人化的方式内化。重要的是，我们对气味的普遍理解可以帮助我们将自身与其他文化区分开来。因此，从真正意义上讲，对气味文化历史的研究是对人类文化本质的研究。

## 8Test3

### [8Test3Passage1 Striking Back at Lightning with Lasers 用激光回击闪电](http://www.laokaoya.com/25915.html)

**第1段**

Seldom is the weather more dramatic than when thunderstorms strike. Their electrical fury inflicts death or serious injury on around 500 people each year in the United States alone. As the clouds roll in, a leisurely round of golf can become a terrifying dice with death – out in the open, a lone golfer may be a lightning bolt’s most inviting target. And there is damage to property too. Lightning damage costs American power companies more than $100 million a year.

很少有天气比雷暴袭击更为剧烈。仅在美国，它们每年就造成500人死亡或重伤。随着云层翻滚中，一场悠闲的高尔夫可能变成与死亡的可怕赌博-站在开放地带，一个孤独的球员可能成为闪电最诱人的目标。财产也受到损害。雷电使美国电力公司每年损失超过1亿美元。

**第2段**

But researchers in the United States and Japan are planning to hit back. Already in laboratory trials they have tested strategies for neutralising the power of thunderstorms, and this winter they will brave real storms, equipped with an armoury of lasers that they will be pointing towards the heavens to discharge thunderclouds before lightning can strike.

但是美国和日本的研究人员正计划进行反击。他们已经在实验室测试了中和雷暴力量的方案。今年冬天，他们将冒着真正的暴风雨，配备激光武器，指向天空以在雷电袭击之前释放雷云的电荷。

**第3段**

The idea of forcing storm clouds to discharge their lightning on command is not new. In the early 1960s, researchers tried firing rockets trailing wires into thunderclouds to set up an easy discharge path for the huge electric charges that these clouds generate. The technique survives to this day at a test site in Florida run by the University of Florida, with support from the Electrical Power Research Institute (EPRI), based in California. EPRI, which is funded by power companies, is looking at ways to protect the United States’ power grid from lightning strikes. ‘We can cause the lightning to strike where we want it to using rockets, ‘ says Ralph Bernstein, manager of lightning projects at EPRI. The rocket site is providing precise measurements of lightning voltages and allowing engineers to check how electrical equipment bears up.

强迫暴风云按命令释放闪电的想法并不新鲜。在20世纪60年代初期，研究人员试图发射火箭将电线拖入雷云中，从而为这些云产生的巨大电荷建立一条简易的放电路径。在加利福尼亚州电力研究所（EPRI）的支持下，该技术文章来自老烤鸭雅思在佛罗里达大学经营的一个测试点中一直使用到今天。由电力公司资助的EPRI正在研究保护美国电网免受雷击的方法。EPRI闪电项目经理拉尔夫·伯恩斯坦（Ralph Bernstein）说：“我们可以用火箭让闪电击中我们想要的位置”。火箭场可以精确测量闪电电量，并允许工程师检查电气设备的承受能力。

**Bad Behaviour 不良行为**

**第4段**

But while rockets are fine for research, they cannot provide the protection from lightning strikes that everyone is looking for. The rockets cost around $1, 200 each, can only be fired at a limited frequency and their failure rate is about 40 per cent. And even when they do trigger lightning, things still do not always go according to plan. ‘Lightning is not perfectly well behaved, ‘ says Bernstein. ‘Occasionally, it will take a branch and go someplace it wasn’t supposed to go. ‘

但是，尽管火箭可以很好地用于研究，但它们并不能提供所有人所寻求的免除雷电袭击的保护。这些火箭的价格约为每枚1,200美元，只能以有限的频率发射，其失败率约为40％。即使它们确实触发了闪电，事情仍然不一定总是按计划进行。伯恩斯坦说：“闪电行为并不完美。有时，它会沿着一个分支，转到原本不应该去的地方”。

**第5段**

And anyway, who would want to fire streams of rockets in a populated area? ‘What goes up must come down, ‘ points out Jean-Claude Diels of the University of New Mexico. Diels is leading a project, which is backed by EPRI, to try to use lasers to discharge lightning safely – and safety is a basic requirement since no one wants to put themselves or their expensive equipment at risk. With around $500, 000 invested so far, a promising system is just emerging from the laboratory.

而且无论如何，谁愿意在人口稠密地区发射火箭？新墨西哥大学的让-克洛德·戴尔斯指出，“发射上去的东西一定会下来”。戴尔斯领导了一个由EPRI支持的项目，试图使用激光安全地释放闪电-安全是一项基本要求，因为没有人愿意将自己或昂贵的设备置于危险之中。到目前为止，已投入约50万美元，实验室中刚刚出现了一个有前途的系统。

**第6段**

The idea began some 20 years ago, when high-powered lasers were revealing their ability to extract electrons out of atoms and create ions. If a laser could generate a line of ionisation in the air all the way up to a storm cloud, this conducting path could be used to guide lightning to Earth, before the electric field becomes strong enough to break down the air in an uncontrollable surge. To stop the laser itself being struck, it would not be pointed straight at the clouds. Instead it would be directed at a mirror, and from there into the sky. The mirror would be protected by placing lightning conductors close by. Ideally, the cloud-zapper (gun)would be cheap enough to be installed around all key power installations, and portable enough to be taken to international sporting events to beam up at brewing storm clouds.

这个想法始于20年前，当时高功率激光显示了它们从原子中提取电子并产生离子的能力。如果激光能在空气中产生一条直至暴雨云的电离线，这一传导路径就可以在电场变得足以分离空气之前将闪电引导到地面。为了阻止激光本身受到电击，它不会直指云层。取而代之的是对准镜子，然后从那里射向天空。镜子通过在附近放置避雷针来得到保护。理想的情况是，云吹弹枪（枪支）的价格会足够便宜，可安装在所有关键的动力装置周围，并具有足够的便携性，可被带到国际体育赛事上，驱散正在酿造暴风雨的乌云。

**A stumbling block 绊脚石**

**第7段**

However, there is still a big stumbling block. The laser is no nifty portable: it’s a monster that takes up a whole room. Diels is trying to cut down the size and says that a laser around the size of a small table is in the offing. He plans to test this more manageable system on live thunderclouds next summer.

但是，仍然有一个很大的绊脚石。激光不是轻巧的便携设备：它是一个占据整个房间的怪物。戴尔斯正在努力缩小尺寸，并说即将出现像小桌子大小的激光设备。他计划明年夏天在实时雷云上测试这个更易于管理的系统。

**第8段**

Bernstein says that Diels’s system is attracting lots of interest from the power companies. But they have not yet come up with the $5 million that EPRI says will be needed to develop a commercial system, by making the lasers yet smaller and cheaper. ‘I cannot say I have money yet, but I’m working on it, ‘ says Bernstein. He reckons that the forthcoming field tests will be the turning point – and he’s hoping for good news. Bernstein predicts ‘an avalanche of interest and support’ if all goes well. He expects to see cloud-zappers eventually costing $50, 000 to $100, 000 each.

伯恩斯坦说戴尔斯的系统吸引了电力公司的许多兴趣。但是他们还没有提供EPRI所说的开发商业系统所需要的500万美元。这些钱将用于将激光设备变得更小，更便宜。伯恩斯坦说：“我不能说我没有钱，但我正在努力。” 他认为即将进行的现场测试将成为转折点-他希望有个好消息。如果一切顺利的话，伯恩斯坦预计会出现“大量的兴趣和支持”。他希望看到每个云吹弹枪最终只花费5万到10万美元。

**第9段**

Other scientists could also benefit. With a lightning ‘switch’ at their fingertips, materials scientists could find out what happens when mighty currents meet matter. Diels also hopes to see the birth of ‘interactive meteorology’ – not just forecasting the weather but controlling it. ‘If we could discharge clouds, we might affect the weather, ‘ he says.

其他科学家也可以受益。拥有触手可及的闪电“开关”，材料科学家就能发现强大的电流遇到物质时会发生什么。戴尔斯还希望看到“交互式气象学”的诞生-它不仅可以预测天气，还可以控制天气。他说：“如果我们能够为云层放电，我们可能也会影响天气。”

**第10段**

And perhaps, says Diels, we’ll be able to confront some other meteorological menaces. ‘We think we could prevent hail by inducing lightning, ‘ he says. Thunder, the shock wave that comes from a lightning flash, is thought to be the trigger for the torrential rain that is typical of storms. A laser thunder factory could shake the moisture out of clouds, perhaps preventing the formation of the giant hailstones that threaten crops. With luck, as the storm clouds gather this winter, laser-toting researchers could, for the first time, strike back.

戴尔斯说，也许，我们将能够应对一些其他气象威胁。他说，“我们认为可以通过引发闪电来防止冰雹”。雷声，雷电产生的冲击波，被认为是暴风雨的触发因素。一家激光雷电工厂可以将水分从云层中抖出，也许可以防止形成威胁农作物的巨大冰雹。幸运的是，当今年冬天乌云密布的时候，携带激光的研究人员可以第一次反击。

### [8Test3Passage2 The Nature of Genius 天才的本质](http://www.laokaoya.com/25988.html)

**第1段**

There has always been an interest in geniuses and prodigies. The word ‘genius’, from the Latin gens (= family) and the term ‘genius’, meaning ‘begetter’, comes from the early Roman cult of a divinity as the head of the family. In its earliest form, genius was concerned with the ability of the head of the family, the paterfamilias, to perpetuate himself. Gradually, genius came to represent a person’s characteristics and thence an individual’s highest attributes derived from his ‘genius’ or guiding spirit. Today, people still look to stars or genes, astrology or genetics, in the hope of finding the source of exceptional abilities or personal characteristics.

人们一直对天才和神童感兴趣。“genius”一词来自拉丁语gens（= family）和“genius”（意为“生子”）。它来自罗马人早期对一家之主神性的崇拜。天才最早的时候与一家之主使自己永存的能力有关。逐渐地，天才开始代表一个人的特征。因此一个人的最高属性源于他的“天才”或指导精神。如今，人们仍在寻找星象或基因，占星术或遗传学，以期找到卓越能力或个人特征的来源。

**第2段**

The concept of genius and of gifts has become part of our folk culture, and attitudes are ambivalent towards them. We envy the gifted and mistrust them. In the mythology of giftedness, it is popularly believed that if people are talented in one area, they must be defective in another, that intellectuals are impractical, that prodigies burn too brightly too soon and burn out, that gifted people are eccentric, that they are physical weaklings, that there’s a thin line between genius and madness, that genius runs in families, that the gifted are so clever they don’t need special help, that giftedness is the same as having a high IQ, that some races are more intelligent or musical or mathematical than others, that genius goes unrecognised and unrewarded, that adversity makes men wise or that people with gifts have a responsibility to use them. Language has been enriched with such terms as ‘highbrow’, ‘egghead’, ‘blue-stocking’, ‘wiseacre’, ‘know-all’, ‘boffin’ and, for many, ‘intellectual’ is a term of denigration.

天才和天赋的概念已成为我们民间文化的一部分。人们对它们的态度也很矛盾。我们羡慕有天赋的人，不信任他们。在天才的神话中，人们普遍认为，如果人们文章来自老烤鸭雅思在某个领域有才华，他们必定在另一个领域有缺陷，知识分子是不切实际的，天才们过早地燃烧并耗尽了精力，有天赋的人是古怪的，身体很虚弱，天才和疯狂之间的界限很窄，天才在家族中遗传，有天赋的人是如此聪明，他们不需要特殊的帮助，拥有天赋与拥有很高的智商一样，有些种族比其他人更聪明，或在音乐或数学更有优势，天才不被承认和很难得到奖励，逆境使人聪明，或者有天赋的人有责任使用它们。这些语言中充斥着“高傲”，“傻瓜”，“突破常规”，“ 自以为是”，“无所不知”，“ 书呆子”等词。对于许多人来说，“智力”是贬义词。

**第3段**

The nineteenth century saw considerable interest in the nature of genius, and produced not a few studies of famous prodigies. Perhaps for us today, two of the most significant aspects of most of these studies of genius are the frequency with which early encouragement and teaching by parents and tutors had beneficial effects on the intellectual, artistic or musical development of the children but caused great difficulties of adjustment later in their lives, and the frequency with which abilities went unrecognised by teachers and schools. However, this article is from Laokaoya website, the difficulty with the evidence produced by these studies, fascinating as they are in collecting together anecdotes and apparent similarities and exceptions, is that they are not what we would today call norm-referenced. In other words, when, for instance, information is collated about early illnesses, methods of upbringing, schooling, etc. , we must also take into account information from other historical sources about how common or exceptional these were at the time. For instance, infant mortality was high and life expectancy much shorter than today, home tutoring was common in the families of the nobility and wealthy, bullying and corporal punishment were common at the best independent schools and, for the most part, the cases studied were members of the privileged classes. It was only with the growth of paediatrics and psychology in the twentieth century that studies could be carried out on a more objective, if still not always very scientific, basis.

19世纪，人们对天才的本质产生了浓厚的兴趣，并产生了不少有关著名神童的研究。也许对今天的我们而言，这些天才研究中最重要的两个方面是：父母和家教早期的鼓励与教学对儿童的智力，艺术或音乐发展产生有益影响，但却给儿童适应日后生活造成了巨大困难的频率；以及能力不被教师和学校认可的频率。然而，虽然这些研究在收集轶事、相似性和例外性方面十分引人入胜，但其所给出的证据的缺陷在于它们并非我们今天所认可的规范参考。换句话说，例如，当整理有关早期疾病，养育方法，上学等的信息时，我们还必须考虑来自其他历史资料的信息来说明它们在当时是多么普遍或特殊。例如，婴儿死亡率很高，预期寿命比今天短得多，在贵族家庭中补习很普遍，在最好的私立学校中，欺负和体罚在十分常见。并且在大多数情况下，它们所研究的案例来自于特权阶级。随着二十世纪儿科和心理学的发展，研究才能在更客观的基础上进行，即使仍然不是很科学。

**第4段**

Geniuses, however, they are defined, are but the peaks which stand out through the mist of history and are visible to the particular observer from his or her particular vantage point. Change the observers and the vantage points, clear away some of the mist, and a different lot of peaks appear. Genius is a term we apply to those whom we recognise for their outstanding achievements and who stand near the end of the continuum of human abilities which reaches back through the mundane and mediocre to the incapable. There is still much truth in Dr Samuel Johnson’s observation, ‘The true genius is a mind of large general powers, accidentally determined to some particular direction’. We may disagree with the ‘general’, for we doubt if all musicians of genius could have become scientists of genius or vice versa, but there is no doubting the accidental determination which nurtured or triggered their gifts into those channels into which they have poured their powers so successfully. Along the continuum of abilities are hundreds of thousands of gifted men and women, boys and girls.

天才，无论它们如何定义，都不过是在历史的薄雾中脱颖而出的山峰。他们能被特点的观察者从特点的视角看到。改变观察者和观察位置，清除一些薄雾，然后就会出现许多不同的山峰。天才是一个术语，我们用它来形容那些因其杰出成就而得到认可，或者那些站在人类能力范围极限的人。塞缪尔·约翰逊（Samuel Johnson）博士的观察仍然有很多道理：“真正的天才具备杰出的普遍能力，无意中决定了某个特定方向”。我们可能会不同意“普遍”，因为我们怀疑是否所有的天才音乐家都可能成为天才科学家，反之亦然，但毫无疑问，偶然的决定使得他们的天赋进入能够成功发挥自己能力的渠道。成千上万的有才华的男人和女人，男孩和女孩分布在能力的光谱表上。

**第5段**

What we appreciate, enjoy or marvel at in the works of genius or the achievements of prodigies are the manifestations of skills or abilities which are similar to, but so much superior to, our own. But that their minds are not different from our own is demonstrated by the fact that the hard-won discoveries of scientists like Kepler or Einstein become the commonplace knowledge of schoolchildren and the once outrageous shapes and colours of an artist like Paul Klee so soon appear on the fabrics we wear. This does not minimise the supremacy of their achievements, which outstrip our own as the sub-four-minute milers outstrip our jogging.

我们所欣赏，喜爱或惊叹的天才的作品或神童的成就是他们技能或能力的体现，这些技能与能力与我们自己的能力相似但非常优越。但是，开普勒或爱因斯坦这样的科学家来之不易的发现成为学生的常识，而保罗·克利这样的艺术家曾经令人发指的形状和颜色很快在我们所穿的衣服上出现，这一事实证明了他们的想法与我们的想法没有什么不同。但这并不能损害他们成就的至高无上性。他们超越我们，就像能够跑进4分钟以内的跑步选手超越我们慢跑的速度一样。

**第6段**

To think of geniuses and the gifted as having uniquely different brains is only reasonable if we accept that each human brain is uniquely different. The purpose of instruction is to make us even more different from one another, and in the process of being educated we can learn from the achievements of those more gifted than ourselves. But before we try to emulate geniuses or encourage our children to do so we should note that some of the things we learn from them may prove unpalatable. We may envy their achievements and fame, but we should also recognise the price they may have paid in terms of perseverance, single-mindedness, dedication, restrictions on their personal lives, the demands upon their energies and time, and how often they had to display great courage to preserve their integrity or to make their way to the top.

只有当我们承认每个人的大脑都具有独特的差异时，将天才视为具有独特大脑的人才合理。这一说法的目的是使我们彼此之间变得更加不同。在接受教育的过程中，我们可以从那些比我们更有天赋的人的成就中学习。但是，在我们尝试模仿天才或鼓励我们的孩子这样做之前，我们应该注意，我们从他们那里学到的一些东西可能令人不快。我们可能会羡慕他们的成就和名声，但我们也应该认识到他们在以下方面所付出的代价：毅力，一心一意，奉献，对个人生活的节制，对精力和时间的要求，必须经常展现极大的勇气以保持自己的正直，或登上成功的巅峰。

**第7段**

Genius and giftedness are relative descriptive terms of no real substance. We may, at best, give them some precision by defining them and placing them in a context but, whatever we do, we should never delude ourselves into believing that gifted children or geniuses are different from the rest of humanity, save in the degree to which they have developed the performance of their abilities.

天才和天赋是没有什么实质内容的相对描述性术语。我们可能最多只能通过定义它们并将它们放在上下文中来赋予它们一些精确度，但是，无论我们做什么，我们都不应自欺欺人地相信有天赋的孩子或天才不同于其他人类，除非他们已经在某种程度上展现出自己的能力。

### [8Test3Passage3 How Does the Biological Clock Tick 生物钟如何工作](http://www.laokaoya.com/26024.html)

**段落A**

Our life span is restricted. Everyone accepts this as ‘biologically’ obvious. ‘Nothing lives for ever!’ However, in this statement we think of artificially produced, technical objects, products which are subjected to natural wear and tear during use. This leads to the result that at some time or other the object stops working and is unusable (‘death’ in the biological sense). But are the wear and tear and loss of function of technical objects and the death of living organisms really similar or comparable?

我们的寿命受到限制。每个人都认为这是“生物学上”显而易见的。 “没有什么能够永生！”但是，在这一说法中，我们想到的是人工生产的技术物品以及在使用过程中会遭受自然磨损的产品。这导致以下结果：物体有时会停止工作并且无法使用（生物学意义上的“死亡”）。但是，技术物品的磨损与功能丧失和有机物的死亡真的是相似的或可比较的吗？

**段落B**

Our ‘dead’ products are ‘static’, closed systems. It is always the basic material which constitutes the object and which, in the natural course of things, is worn down and becomes ‘older’. Ageing in this case must occur according to the laws of physical chemistry and of thermodynamics. Although the same law holds for a living organism, the result of this law is not inexorable in the same way. At least as long as a biological system has the ability to renew itself it could actually become older without ageing; an organism is an open, dynamic system through which new material continuously flows. Destruction of old material and formation of new material are thus in permanent dynamic equilibrium. The material of which the organism is formed changes continuously. Thus our bodies continuously exchange old substance for new, just like a spring which more or less maintains its form and movement, but in which the water molecules are always different.

我们的“死去的”产品是“静态的”封闭系统。构成物体的基本材料在事物的自然发展过程中会被磨损并变“旧”。在这种情况下，老化必须根据物理化学和热力学定律进行。尽管文章来自老烤鸭雅思同样的规律也适用于生物，但该规律的结果并非不可避免。至少只要生物系统具有更新自身的能力，它实际上就可以变老而不老化。生物是一个开放的，动态的系统。新材料在其中不断流动。因此，旧材料的破坏和新材料的形成处于永久的动态平衡中。形成生物的物质不断变化。 因此，我们的身体不断地将旧物质换为新物质，就像一个或多或少保持其形态和运动的弹簧一样，但是其中的水分子总是不同的。

**段落C**

Thus ageing and death should not be seen as inevitable, particularly as the organism possesses many mechanisms for repair. It is not, in principle, necessary for a biological system to age and die. Nevertheless, a restricted life span, ageing, and then death are basic characteristics of life. The reason for this is easy to recognise: in nature, the existent organisms either adapt or are regularly replaced by new types. Because of changes in the genetic material (mutations) these have new characteristics and in the course of their individual lives they are tested for optimal or better adaptation to the environmental conditions. Immortality would disturb this system – it needs room for new and better life. This is the basic problem of evolution.

因此，衰老和死亡不应被看作是必然的，尤其是当生物体具有许多修复机制。原则上，生物系统没有必要发生老化和死亡。然而，有限的寿命，衰老，然后死亡是生命的基本特征。我们很容易意识到其原因：在自然界中，现有的生物要么适应新生物，要么定期被新生物取代。由于遗传物质（突变）的变化，它们具有新的特征。在其个体生命过程中，它们经受测试以更好地适应环境条件。永生会扰乱这个系统-它需要为新的、更好的生命创造空间。这是进化的基本问题。

**段落D**

Every organism has a life span which is highly characteristic. There are striking differences in life span between different species, but within one species the parameter is relatively constant. For example, the average duration of human life has hardly changed in thousands of years. Although more and more people attain an advanced age as a result of developments in medical care and better nutrition, the characteristic upper limit for most remains 80 years. A further argument against the simple wear and tear theory is the observation that the time within which organisms age lies between a few days (even a few hours for unicellular organisms) and several thousand years, as with mammoth trees.

每个生物体都有其独具特色的生命长度。不同物种之间的寿命存在显著差异。但在一个物种内，参数相对恒定。例如，人类的平均寿命几千年来几乎没有变化。尽管越来越多的人由于医疗保健的发展和更好的营养而达到高龄，但对于大多数人来说，其典型的上限仍然是80岁。反对简单磨损理论的另一个论据来自以下观察，生物衰老的时间介于几天（单细胞生物甚至几小时）和数千年之间（正如巨杉树一样）。

**段落E**

If a life span is a genetically determined biological characteristic, it is logically necessary to propose the existence of an internal clock, which in some way measures and controls the ageing process and which finally determines death as the last step in a fixed programme. Like the life span, the metabolic rate has for different organisms a fixed mathematical relationship to the body mass. In comparison to the life span this relationship is ‘inverted’: the larger the organism the lower its metabolic rate. Again this relationship is valid not only for birds, but also, similarly on average within the systematic unit, for all other organisms (plants, animals, unicellular organisms).

如果寿命是遗传决定的生物学特征，那么从逻辑上讲，有必要提出一个内部时钟的存在。该时钟以某种方式测量和控制衰老过程，并最终将死亡确定为固定程序中的最后一步。像寿命一样，不同生物体的代谢率与其体重之间存在固定的数学关系。与寿命相比，这种关系是“倒置的”：生物体越大，其代谢率越低。同样，这种关系不仅对鸟类有效，而且对于系统单位内相似的所有其他生物同样有效（植物，动物，单细胞生物）。

**段落F**

Animals which behave ‘frugally’ with energy become particularly old, for example, crocodiles and tortoises. Parrots and birds of prey are often held chained up. Thus they are not able to ‘experience life’ and so they attain a high life span in captivity. Animals which save energy by hibernation or lethargy (e. g. bats or hedgehogs) live much longer than those which are always active. The metabolic rate of mice can be reduced by a very low consumption of food (hunger diet). They then may live twice as long as their well-fed comrades. Women become distinctly (about 10 per cent) older than men. If you examine the metabolic rates of the two sexes you establish that the higher male metabolic rate roughly accounts for the lower male life span. That means that they live life ‘energetically’ – more intensively, but not for as long.

表现“节俭”的动物能活的特别久，例如鳄鱼和乌龟。鹦鹉和猛禽经常被拴起来。因此，他们无法“体验生活”，但他们在囚禁中的寿命却很高。通过冬眠或嗜睡来节省能量的动物（例如蝙蝠或刺猬）的寿命比总是活跃的动物更长。极少消耗食物（饥饿饮食）可降低小白鼠的代谢率。然后，他们的寿命是他们经过良好喂养的同伴的两倍。女性明显比男性活的长（大约10%）。如果检查两个性别的新陈代谢率，则可以确定较高的男性新陈代谢率大致解释了较低的男性寿命。这意味着他们“精力充沛”地过着更加紧张的生活，但时间不长。

**段落G**

It follows from the above that sparing use of energy reserves should tend to extend life. Extreme high performance sports may lead to optimal cardiovascular performance, but they quite certainly do not prolong life. Relaxation lowers metabolic rate, as does adequate sleep and in general an equable and balanced personality. Each of us can develop his or her own ‘energy saving programme’ with a little self-observation, critical self-control and, above all, logical consistency. Experience will show that to live in this way not only increases the life span but is also very healthy. This final aspect should not be forgotten.

由上述内容可知，节约使用能量会倾向于延长寿命。极限的高性能运动可能会导致最佳的心血管运动表现，但无疑不会延长寿命。放松会降低新陈代谢的速度，充足的睡眠和良好的性格也会降低新陈代谢的速度。我们每个人都可以通过一些自我观察，严格的自我控制以及最重要的逻辑一致性来制定自己的“节能计划”。经验表明，以这种方式生活不仅可以延长寿命，而且非常健康。最后一个方面不应被忘记。

## 8Test4

### [8Test4Passage1 Land of the Rising Sum 数学崛起之地](http://www.laokaoya.com/26107.html)

**A部分**

Japan has a significantly better record in terms of average mathematical attainment than England and Wales. Large sample international comparisons of pupils’ attainments since the 1960s have established that not only did Japanese pupils at age 13 have better scores of average attainment, but there was also a larger proportion of ‘low’ attainers in England, where, incidentally, the variation in attainment scores was much greater. The percentage of Gross National Product spent on education is reasonably similar in the two countries, so how is this higher and more consistent attainment in maths achieved?

日本的平均数学水平要比英格兰和威尔士好得多。自20世纪60年代以来，国际上对学生学业成绩的大量样本比较表明，不仅13岁的日本学生的平均学业成绩更高，而且英格兰“低成绩”学生的比例也更大，同时其成绩差异也更明显。两国在教育上花费的国民生产总值的百分比十分相似，那么数学上更高和更一致的成就是如何获得的呢？

**B部分-第1段**

Lower secondary schools in Japan cover three school years, from the seventh grade (age 13) to the ninth grade (age 15). Virtually all pupils at this stage attend state schools: only 3 per cent are in the private sector. Schools are usually modern in design, set well back from the road and spacious inside. Classrooms are large and pupils sit at single desks in rows. Lessons last for a standardised 50 minutes and are always followed by a 10-minute break, which gives the pupils a chance to let off steam. Teachers begin with a formal address and mutual bowing, and then concentrate on whole-class teaching.

日本的初中涵盖从7 年级（13岁）到9年级（15岁）的三个学年。目前，几乎所有学生都在公立学校就读：只有3％在私立学校。学校通常采用现代设计，远离道路，内部宽敞。教室很大，学生们成排坐在单张桌子旁。上课时长文章来自老烤鸭雅思为标准的50分钟，之后总是有10分钟的休息时间，这使学生有机会发泄精力。教师从正式的问候和互相鞠躬开始，然后专注于全班教学。

**B部分-第2段**

Classes are large – usually about 40 – and are unstreamed. Pupils stay in the same class for all lessons throughout the school and develop considerable class identity and loyalty. Pupils attend the school in their own neighbourhood, which in theory removes ranking by school. In practice in Tokyo, because of the relative concentration of schools, there is some competition to get into the ‘better’ school in a particular area.

班级很大-通常约为40名学生-并且没有按照成绩分班。在整个学校的所有课程中，学生都待在同一个班级，并培养出可观的班级认同和忠诚度。学生在自己附近的学校上学。从理论上讲，这可以消除学校的排名。在东京的实践中，由于学校相对集中，进入某个特定地区“更好”的学校会有一些竞争。

**C部分**

Traditional ways of teaching form the basis of the lesson and the remarkably quiet classes take their own notes of the points made and the examples demonstrated. Everyone has their own copy of the textbook supplied by the central education authority, Monbusho, as part of the concept of free compulsory education up to the age of 15. These textbooks are, on the whole, small, presumably inexpensive to produce, but well set out and logically developed. (One teacher was particularly keen to introduce colour and pictures into maths textbooks: he felt this would make them more accessible to pupils brought up in a cartoon culture. ) Besides approving textbooks, Monbusho also decides the highly centralised national curriculum and how it is to be delivered.

传统的教学方法构成了课程的基础，而安静的课堂则记下老师提出的观点和所举的例子。每个人都有自己的中央教育当局（Monbusho）提供的教科书。它们是15岁以下免费义务教育概念的一部分。这些教科书总体上很小，生产成本低廉，但是出发点很好，逻辑流畅。（一位老师特别热衷于将色彩和图片引入数学教科书中：他认为这将使在卡通文化中成长的学生更容易使用它们。）除了批准教科书之外，Monbusho 还决定了高度集中的国家课程以及如何教授这些课程。

**D部分-第1段**

Lessons all follow the same pattern. At the beginning, the pupils put solutions to the homework on the board, then the teachers comment, correct or elaborate as necessary. Pupils mark their own homework: this is an important principle in Japanese schooling as it enables pupils to see where and why they made a mistake, so that these can be avoided in future. No one minds mistakes or ignorance as long as you are prepared to learn from them.

所有课程都遵循相同的模式。开始时，学生将家庭作业的解决方案写在黑板上，然后老师进行评论，根据需要进行更正或解释。学生批改自己的作业：这是日本学校教育中的一项重要原则，因为它使学生能够了解他们在哪里以及为什么犯错，以便将来可以避免。只要你准备向错误或无知学习，就不会有人介意它们。

**D部分-第2段**

After the homework has been discussed, the teacher explains the topic of the lesson, slowly and with a lot of repetition and elaboration. Examples are demonstrated on the board; questions from the textbook are worked through first with the class, and then the class is set questions from the textbook to do individually. Only rarely are supplementary worksheets distributed in a maths class. The impression is that the logical nature of the textbooks and their comprehensive coverage of different types of examples, combined with the relative homogeneity of the class, renders work sheets unnecessary. At this point, the teacher would circulate and make sure that all the pupils were coping well.

在讨论完作业后，老师会慢慢地讲解本节课的主题，并进行大量重复和解释。黑板上展示有例子；首先老师与全班一起处理教科书中的问题，然后学生独立完成教科书上的习题。很少在数学课上分发补充练习题。给人的印象是，教科书的逻辑性质以及它们对不同类型例子的全面覆盖，再加上班级的相对同质性，使练习题变得不必要。在这一点上，老师将四处巡视，并确保所有学生都很好地应对。

**E部分-第1段**

It is remarkable that large, mixed-ability classes could be kept together for maths throughout all their compulsory schooling from 6 to 15. Teachers say that they give individual help at the end of a lesson or after school, setting extra work if necessary. In observed lessons, any strugglers would be assisted by the teacher or quietly seek help from their neighbour. Carefully fostered class identity makes pupils keen to help each other – anyway, it is in their interests since the class progresses together.

值得注意的是，在从6岁到15岁的所有义务教育阶段中，数学课一直采用大型混合能力的班级形式。老师说，他们在课程结束后或放学后会提供个人帮助，并在必要时布置额外的作业。在所观察的课程中，任何挣扎的人都会得到老师的帮助，或者悄悄地寻求邻居的帮助。精心培养的班级认同使学生热衷于互相帮助-无论如何，班级一起进步符合他们的利益。

**E部分-第2段**

This scarcely seems adequate help to enable slow learners to keep up. However, the Japanese attitude towards education runs along the lines of ‘if you work hard enough, you can do almost anything’. Parents are kept closely informed of their children’s progress and will play a part in helping their children to keep up with class, sending them to ‘Juku’ (private evening tuition) if extra help is needed and encouraging them to work harder. It seems to work, at least for 95 per cent of the school population.

这似乎不足以帮助缓慢的学习者跟上进度。但是，日本人对教育的态度是“只要努力就可以做到几乎所有事情”。父母会密切了解孩子的学习情况，并会在帮助孩子跟上课堂进度。如果需要额外的辅助，他们会将孩子送至“ Juku ”（私人夜间补习），并鼓励他们更加努力地学习。这似乎至少对95％的学校人口都很有效。

**F部分-第1段**

So what are the major contributing factors in the success of maths teaching? Clearly, attitudes are important. Education is valued greatly in Japanese culture; maths is recognised as an important compulsory subject throughout schooling; and the emphasis is on hard work coupled with a focus on accuracy.

那么，数学教学成功的主要因素是什么？显然，态度很重要。在日本文化中，教育受到高度重视；数学被认为是整个教育过程中的重要必修课；重点是努力学习和准确性。

**F部分-第2段**

Other relevant points relate to the supportive attitude of a class towards slower pupils, the lack of competition within a class, and the positive emphasis on learning for oneself and improving one’s own standard. And the view of repetitively boring lessons and learning the facts by heart, which is sometimes quoted in relation to Japanese classes, may be unfair and unjustified. No poor maths lessons were observed. They were mainly good and one or two were inspirational.

其他相关要素涉及班级对较慢学生的支持态度，班级内部缺乏竞争，以及积极强调为自己学习和提高自己的水平。涉及到日本课堂时，有时会被引用的观点认为，它主要是无聊的重复和用心背诵事实。但这既不公平也不合理。没有观察到草稿的数学课程。它们大体而言都很好，还有一两个十分具有启发意义。

### [8Test4Passage2 Biological control of pests 生物防虫法](http://www.laokaoya.com/26286.html)

**第1段**

The continuous and reckless use of synthetic chemicals for the control of pests which pose a threat to agricultural crops and human health is proving to be counter-productive. Apart from engendering widespread ecological disorders, pesticides have contributed to the emergence of a new breed of chemical-resistant, highly lethal superbugs.

事实证明，持续不顾后果地使用合成化学品控制有害生物对农作物和人类健康构成威胁，并且会适得其反。除引起广泛的生态失调外，农药还促成具有抗药性和高致死性的超级害虫的诞生。

**第2段**

According to a recent study by the Food and Agriculture Organisation (FAO), more than 300species of agricultural pests have developed resistance to a wide range of potent chemicals. Not to be left behind are the disease-spreading pests, about 100 species of which have become immune to a variety of insecticides now in use.

根据粮食及农业组织（FAO）的最新研究，超过300种农业文章来自老烤鸭雅思害虫对多种强效化学物质产生了抗药性。更不用说传播疾病的害虫，其中约有100种已对目前使用的各种杀虫剂免疫。

**第3段**

One glaring disadvantage of pesticides’ application is that, while destroying harmful pests, they also wipe out many useful non-targeted organisms, which keep the growth of the pest population in check. This results in what agroecologists call the ‘treadmill syndrome’. Because of their tremendous breeding potential and genetic diversity, many pests are known to withstand synthetic chemicals and bear offspring with built-in resistance to pesticides.

农药施用的一个明显缺点是，在消灭有害生物的同时，它们还消灭了许多有用的非目标生物，从而使有害生物种群的生长受到控制。这导致了农业生态学家所说的“跑步机综合症”。由于害虫具有巨大的繁殖潜力和遗传多样性，许多害虫都能够抵抗合成化学物质并生育对农药具有内在抗性的后代。

**第4段**

The havoc that the ‘treadmill syndrome’ can bring about is well illustrated by what happened to cotton farmers in Central America. In the early 1940s, basking in the glory of chemical-based intensive agriculture, the farmers avidly took to pesticides as a sure measure to boost crop yield. The insecticide was applied eight times a year in the mid-1940s, rising to 28 in a season in the mid-1950s, following the sudden proliferation of three new varieties of chemical-resistant pests.

“跑步机综合症”可能造成的严重破坏已由中美洲棉农的遭遇充分说明。20世纪40年代初期，在以化学为基础的集约化农业的光辉下，农民们热衷于使用农药作为提高作物产量的可靠措施。20世纪40年代中期，杀虫剂每年施用八次。20世纪50年代，由于三种新的耐化学性害虫突然扩散开来，该数字上升到一个季度施用28次。

**第5段**

By the mid-1960s, the situation took an alarming turn with the outbreak of four more new pests, necessitating pesticide spraying to such an extent that 50% of the financial outlay on cotton production was accounted for by pesticides. This article is from Laokaoya website. In the early 1970s, the spraying frequently reached 70 times a season as the farmers were pushed to the wall by the invasion of genetically stronger insect species.

到20世纪60年代中期，情况发生了令人震惊的转折，又爆发了4种新的害虫，使得喷洒农药成为必要措施，以致于棉花生产中50%的经济支出都用在了农药上面。20世纪70年代初，由于基因上更强的昆虫物种的入侵，农民们被逼到极限，每个季度甚至经常喷洒70次。

**第6段**

Most of the pesticides in the market today remain inadequately tested for properties that cause cancer and mutations as well as for other adverse effects on health, says a study by United States environmental agencies. The United States National Resource Defense Council has found that DDT was the most popular of a long list of dangerous chemicals in use.

美国环境机构的一项研究表明，当今市场上大多数农药对导致癌症和突变的性质以及对健康的其他不利影响存在测试不足。美国国家资源保护委员会发现，DDT是许多正在使用的危险化学品中最受欢迎的一种。

**第7段**

In the face of the escalating perils from indiscriminate applications of pesticides, a more effective and ecologically sound strategy of biological control, involving the selective use of natural enemies of the pest population, is fast gaining popularity- though, as yet, it is a new field with limited potential. The advantage of biological control in contrast to other methods is that it provides a relatively low-cost, perpetual control system with a minimum of detrimental side-effects. When handled by experts, bio-control is safe, non-polluting and self-dispersing.

面对无差别使用农药不断加深的危险，生物控制，这一更有效和无害的生态战略（选择性害虫种群的天敌）正迅速受到欢迎-不过，至今它仍然是一个潜力有限的新领域。与其他方法相比，生物控制的优点在于它提供了一种成本相对较低，永性久的控制系统，且有害副作用最小。由专家处理时，生物控制是安全、无污染、并且可以自我扩散的。

**第8段**

The Commonwealth Institute of Biological Control (CIBC) in Bangalore, with its global network of research laboratories and field stations, is one of the most active, non-commercial research agencies engaged in pest control by setting natural predators against parasites. CIBC also serves as a clearing-house for the export and import of biological agents for pest control world-wide.

班加罗尔的英联邦生物防治学院（CIBC）与全球研究实验室和实地工作站都有联系，是从事害虫防治最活跃，非商业性的研究机构之一。其致力于寻找使用害虫的自然天敌。CIBC还是全球范围内用于虫害控制的生物制剂进出口的交换所。

**第9段**

CIBC successfully used a seed-feeding weevil, native to Mexico, to control the obnoxious parthenium weed, known to exert devious influence on agriculture and human health in both India and Australia. Similarly the Hyderabad-based Regional Research Laboratory (RRL), supported by CIBC, is now trying out an Argentinian weevil for the eradication of water hyacinth, another dangerous weed, which has become a nuisance in many parts of the world. According to Mrs Kaiser Jamil of RRL, ‘The Argentinian weevil does not attack any other plant and a pair of adult bugs could destroy the weed in 4-5 days. ‘ CIBC is also perfecting the technique for breeding parasites that prey on ‘disapene scale’ insects – notorious defoliants of fruit trees in the US and India.

CIBC成功地使用了一种原产于墨西哥的食用种子的象鼻虫来控制令人讨厌的银胶菊草。该草对印度和澳大利亚的农业和人类健康都产生了负面影响。同样，在CIBC的支持下，位于海得拉巴的地区实验室（RRL）现在正在尝试一种阿根廷象鼻虫，以根除另一种危险的杂草-水葫芦。这种杂草已在世界许多地方成为困扰。据RRL的Kaiser Jamil女士说：“阿根廷象鼻虫不会攻击任何其他植物，一对成年的昆虫可以在4-5天内破坏杂草。CIBC还正在完善繁殖以“二萜类”昆虫为食的寄生虫技术。这些臭名昭著昆虫使得美国和印度的果树落叶。

**第10段**

How effectively biological control can be pressed into service is proved by the following examples. In the late 1960s, when Sri Lanka’s flourishing coconut groves were plagued by leaf-mining hispides, a larval parasite imported from Singapore brought the pest under control. A natural predator indigenous to India, Neodumetia sangawani, was found useful in controlling the Rhodes grass-scale insect that was devouring forage grass in many parts of the US. By using Neochetina bruci, a beetle native to Brazil, scientists at Kerala Agricultural University freed a 12-kilometrelong canal from the clutches of the weed Salvinia molesta, popularly called ‘African Payal’ in Kerala. About 30, 000 hectares of rice fields in Kerala are infested by this weed.

以下例子证明了如何有效地实施生物防治。20世纪60年代后期，当斯里兰卡茂盛的椰子林被采叶类杀虫剂所困扰时，从新加坡进口的幼虫寄生虫使该害虫得到了控制。人们发现，印度本土的天然捕食者Neodumetia sangawani可用于控制罗得岛草鳞昆虫，该昆虫在美国许多地方都在吞食草料。喀拉拉邦农业大学的科学家们使用巴西本土的甲虫Neochetina bruci，使得一条长达12公里的运河从喀拉拉邦的杂草（Salvinia molesta，通常被称为“非洲Payal”）中解放出来。这种杂草在喀拉拉邦侵害了大约30,000公顷稻田。

### [8Test4Passage3 Collecting Ant Specimens 采集蚂蚁样本](http://www.laokaoya.com/26338.html)

**第1段**

Collecting ants can be as simple as picking up stray ones and placing them in a glass jar, or as complicated as completing an exhaustive survey of all species present in an area and estimating their relative abundances. The exact method used will depend on the final purpose of the collections. For taxonomy, or classification, long series, from a single nest, which contain all castes (workers, including majors and minors, and, if present, queens and males) are desirable, to allow the determination of variation within species. For ecological studies, the most important factor is collecting identifiable samples of as many of the different species present as possible. Unfortunately, these methods are not always compatible. The taxonomist sometimes overlooks whole species in favour of those groups currently under study, while the ecologist often collects only a limited number of specimens of each species, thus reducing their value for taxonomic investigations.

收集蚂蚁可以很简单，例如捡起走失的蚂蚁并将它们放在玻璃罐中，也可以很复杂，例如完成一个区域内所有蚂蚁种类的详尽调查，并估算它们的相对数量。所使用的具体方法将取决于收集的最终目的。对于分分类来说，最好是能够从一个巢穴中获取包含所有种类（包括成年和幼小的工蚁，以及蚁后和雄性，如果存在的话）在内的长序列，以便确定物种内的多样性。对于生态研究，最重要的因素是收集尽可能多的不同物种的可识别样本。不幸的是，这些方法并不总是能够互相兼容。分类学家有时会忽视整个物种，而倾向于当前正在研究的那些族群；而生态学家通常只收集每种物种数量有限的标本，这样就降低了它们在分类学研究中的价值。

**第2段**

To collect as wide a range of species as possible, several methods must be used. These include hand collecting, using baits to attract the ants, ground litter sampling, and the use of pitfall traps. Hand collecting consists of searching for ants everywhere they are likely to occur. This article is from Laokaoya website. This includes on the ground, under rocks, logs or other objects on the ground, in rotten wood on the ground or on trees, in vegetation, on tree trunks and under bark. When possible, collections should be made from nests or foraging columns and at least 20 to 25 individuals collected. This will ensure that all individuals are of the same species, and so increase their value for detailed studies. Since some species are largely nocturnal, collecting should not be confined to daytime. Specimens are collected using an aspirator (often called a pooter), forceps, a fine, moistened paint brush, or fingers, if the ants are known not to sting. Individual insects are placed in plastic or glass tubes (1. 5-3. 0 ml capacity for small ants, 5-8 ml for larger ants) containing 75% to 95% ethanol. Plastic tubes with secure tops are better than glass because they are lighter, and do not break as easily if mishandled.

为了收集尽可能广泛的物种，必须使用几种方法。它们包括手工收集，使用诱饵吸引蚂蚁，对地面垫料进行采样以及使用陷阱。手工收集包括文章来自老烤鸭雅思在可能出现蚂蚁的任何地方搜索蚂蚁。这包括地面上，岩石、原木或其他物体之下，地面腐烂的树木里，植被中，树干上和树皮下。可能的话，应从巢穴或觅食柱中收集，并至少收集20至25个个体。这样可以确保所有个体都属于同一物种，并因此可以增加它们进行详细研究的价值。由于某些物种主要在夜间活动，因此收集不应仅限于白天。可以使用吸气器（通常称为pooter），镊子，细的湿油漆刷俩进行收集。如果知道蚂蚁不会叮人的话，也可以使用手指。将单个蚂蚁放在装有75％至95％乙醇的塑料或玻璃管中（小蚂蚁为1. 5-3.0 ml，大蚂蚁为5-8 ml）。拥有固定盖子的塑料管比玻璃管更好，因为它们更轻，并且如果处理不当的话也不会轻易断裂。

**第3段**

Baits can be used to attract and concentrate foragers. This often increases the number of individuals collected and attracts species that are otherwise elusive. Sugars and meats or oils will attract different species and a range should be utilised. These baits Can be placed either on the ground or on the trunks of trees or large shrubs. When placed on the ground, baits should be situated on small paper cards or other flat, light-coloured surfaces, or in test-tubes or vials. This makes it easier to spot ants and to capture them before they can escape into the surrounding leaf litter.

诱饵可用于吸引和集中觅食者。这通常会增加收集到的个体数量，并吸引本来难以捉摸的物种。糖，肉或油会吸引不同的物种，因此应使用多种诱饵。这些诱饵可以放在地面，或者树木或大灌木的树干上。当放置在地面上时，诱饵应放在小纸片或其他浅色的平面上，或在试管或小瓶中。这样可以在蚂蚁逃脱到周围的枯枝落叶中之前，更轻松地发现并捕获它们。

**第4段**

Many ants are small and forage primarily in the layer of leaves and other debris on the ground. Collecting these species by hand can be difficult. One of the most successful ways to collect them is to gather the leaf litter in which they are foraging and extract the ants from it. This is most commonly done by placing leaf litter on a screen over a large funnel, often under some heat. As the leaf litter dries from above, ants (and other animals) move downward and eventually fall out the bottom and are collected in alcohol placed below the funnel. This method works especially well in rain forests and marshy areas. A method of improving the catch when using a funnel is to sift the leaf litter through a coarse screen before placing it above the funnel. This will concentrate the litter and remove larger leaves and twigs. It will also allow more litter to be sampled when using a limited number of funnels.

许多蚂蚁都很小，主要在地面上的树叶里和其他杂物中觅食。手工收集这些物种可能很困难。收集它们的最成功的方法之一是聚集它们正在觅食的叶子并从中提取蚂蚁。通常将落叶放在大漏斗上的滤网上，并进行加热。当叶子逐渐干燥时，蚂蚁（和其他动物）会向下移动并最终从底部掉出，并被收集在漏斗下方的酒精中。此方法在雨林和沼泽地区特别有效。一种在使用漏斗时提升捕获量的方法是，先将叶子通过粗滤网过滤一遍，然后再将其置于漏斗上方。这将使叶子更集中，并去除较大的叶子和树枝。当漏斗数量有限时，它还可以对更多的树叶进行采样。

**第5段**

The pitfall trap is another commonly used tool for collecting ants. A pitfall trap can be any small container placed in the ground with the top level with the surrounding surface and filled with a preservative. Ants are collected when they fall into the trap while foraging. The diameter of the traps can vary from about 18 mm to 10 cm and the number used can vary from a few to several hundred. The size of the traps used is influenced largely by personal preference (although larger sizes are generally better), while the number will be determined by the study being undertaken. The preservative used is usually ethylene glycol or propylene glycol, as alcohol will evaporate quickly and the traps will dry out. One advantage of pitfall traps is that they can be used to collect over a period of time with minimal maintenance and intervention. One disadvantage is that some species are not collected as they either avoid the traps or do not commonly encounter them while foraging.

陷阱是收集蚂蚁的另一种常用工具。陷阱可以是任何小型容器，该小容器可以放在地上，其顶部与周围的表面齐平，并装满防腐剂。蚂蚁在觅食时掉入陷阱并被收集。陷阱的直径可以在18毫米到10厘米之间变化，所用数量可以是几个到几百个不等。陷阱的大小在很大程度上受个人喜好的影响（尽管较大的陷阱通常更好），而陷阱的数量将由正在进行的研究确定。所使用的防腐剂通常是乙二醇或丙二醇，因为酒精会迅速蒸发使得陷阱会变干。陷阱的一个优势是，它们可以在一段时间内持续收集，而不怎么需要维护和干预。一个缺点是无法收集某些五种，因为它们要么避开陷阱，要么在觅食时通常不会遇到陷阱。

# 九

## 9Test1

### [9Test1Passage1 William Henry Perkin 合成染料的发明者](http://www.laokaoya.com/26388.html)

**第1段**

William Henry Perkin was born on March 12, 1838, in London, England. As a boy, Perkin’s curiosity prompted early interests in the arts, sciences, photography, and engineering. But it was a chance stumbling upon a run-down, yet functional, laboratory in his late grandfather’s home that solidified the young man’s enthusiasm for chemistry.

威廉·亨利·珀金（William Henry Perkin）于1838年3月12日出生于英国伦敦。珀金（Perkin）小时候的好奇心激发了他对艺术，科学，摄影和工程学的早期兴趣。但一次绊倒在他已故祖父家破旧但实用的实验室中的经历巩固了这名年轻人对化学的热爱。

**第2段**

As a student at the city of London School, Perkin became immersed in the study at chemistry. His talent and devotion to the subject were perceived by his teachers, Thomas Hall, who encouraged him to attend a series of lectures given by the eminent scientist Michael Faraday at the Royal Institution. Those speeches fired the young chemistry’s enthusiasm further, and he later went on to attend the Royal College of Chemistry, which he succeeded in entering in 1853, at the age of 15.

作为伦敦市立学校的学生，珀金开始沉迷于化学研究。他的老师托马斯·霍尔（Thomas Hall）意识到了他的才华与对这一学科的投入，他鼓励他文章来自老烤鸭雅思参加皇家学院著名科学家迈克尔·法拉第（Michael Faraday）的一系列讲座。这些讲座进一步激发了这名年轻化学家的热情，后来他继续就读于皇家化学学院，并于1853年在15岁的时候成功进入大学。

**第3段**

At the time of Perkin’s enrolment, the Royal College of Chemistry was headed by the noted German chemist August Wilhelm Hofmann. Perkin’s scientific gifts soon caught Hofmann’s attention and, within two years, he became Hofmann’s youngest assistant. Not long after that, Perkin made the scientific breakthrough that would bring him both fame and fortune.

珀金入学时，皇家化学学院由著名的德国化学家奥古斯特·威廉·霍夫曼（August Wilhelm Hofmann）领导。珀金的科学天赋很快引起了霍夫曼的注意。他在两年内成为霍夫曼最年轻的助手。此后不久，珀金取得了科学突破，这将为他带来名声和财富。

**第4段**

At the time, quinine was the only viable medical treatment for malaria. The drug is derived from the bark of the cinchona tree, native to South America, and by 1856, demand for the drug was surpassing the available supply. Thus, when Hofmann made some passing comments about the desirability of a synthetic substitute for quinine, it was unsurprising that his star pupil was moved to take up the challenge.

当时，奎宁是唯一有用的疟疾药物。该药物源自南美本地的金鸡纳树皮，到1856年，对该药物的需求已超过了供应量。因此，当霍夫曼（Hofmann）对奎宁合成替代品的需求发表一些评论时，他的明星学生毫不奇怪地接受了挑战。

**第5段**

During his vacation in 1856, Perkin spent his time in the laboratory on the top floor of his family’s house. He was attempting to manufacture quinine from aniline, an inexpensive and readily available coal tar waste product. Despite his best efforts, however, he did not end up with quinine. Instead, he produced a mysterious dark sludge. Luckily, Perkin’s scientific training and nature prompted him to investigate the substance further. Incorporating potassium dichromate and alcohol into the aniline at various stages of the experimental process, he finally produced a deep purple solution. And, proving the truth of the famous scientist Louis Pasteur’s words ‘chance favours only the prepared mind’, Perkin saw the potential of his unexpected find.

在1856年度假期间，珀金在他家房屋顶层的实验室里度过了大量时光。他正试图用苯胺生产奎宁。苯胺是一种廉价且容易获得的煤焦油废品。尽管尽了最大的努力，但是他最终都没有获得奎宁。相反，他产生了一种神秘的深色污泥。幸运的是，珀金的科学训练和天性促使他进一步研究了该物质。在实验过程的不同阶段将重铬酸钾和酒精掺入苯胺中，最终产生了深紫色溶液。珀金证明了著名科学家路易斯·巴斯德（Louis Pasteur）的话“机会只留给有准备的人”，他看到了这一意想不到的发现的潜力。

**第6段**

Historically, textile dyes were made from such natural sources as plants and animal excretions. Some of these, such as the glandular mucus of snails, were difficult to obtain and outrageously expensive. Indeed, the purple colour extracted from a snail was once so costly that in society at the time only the rich could afford it. Further, natural dyes tend to be muddy in hue and fade quickly. It was against this backdrop that Perkin’s discovery was made.

从历史上看，纺织染料是从植物和动物分泌物等天然来源制成的。其中一些，例如蜗牛的腺粘液，很难获得且非常昂贵。的确，从蜗牛中提取的紫色曾经非常昂贵，以至于当时的社会只有富人才能负担得起。此外，天然染料颜色混浊并很快褪色。正是在这种背景下，珀金得出了他的发现。

**第7段**

Perkin quickly grasped that his purple solution could be used to colour fabric, thus making it the world’s first synthetic dye. Realising the importance of this breakthrough, he lost no time in patenting it. But perhaps the most fascinating of all Perkin’s reactions to his find was his nearly instant recognition that the new dye had commercial possibilities.

珀金很快就意识到，他的紫色溶液可用于为织物着色，从而使其成为世界上第一种合成染料。意识到这一突破的重要性，他及时申请了专利。但是，也许珀金对他的发现最有意思的反应是他几乎立即意识到新染料具有商业潜力。

**第8段**

Perkin originally named his dye Tyrian Purple, but it later became commonly known as mauve (from the French for the plant used to make the colour violet). He asked advice of Scottish dye works owner Robert Pullar, who assured him that manufacturing the dye would be well worth it if the colour remained fast (i.e. would not fade) and the cost was relatively low. So, over the fierce objections of his mentor Hofmann, he left college to give birth to the modern chemical industry.

珀金最初将他的染料命名为Tyrian Purple，但后来被人们称为mauve（来自于法国用于制造紫罗兰色的植物）。他询问苏格兰染料厂老板罗伯特·普拉尔（Robert Pullar）的建议。他向他保证，如果颜色定型很快（即不会褪色）并且成本相对较低，那么制造这种染料就非常值得。因此，在他的导师霍夫曼（Hofmann）的强烈反对下，他离开了大学，开启了现代化学工业。

**第9段**

With the help of his father and brother, Perkin set up a factory not far from London. Utilising the cheap and plentiful coal tar that was an almost unlimited byproduct of London’s gas street lighting, the dye works began producing the world’s first synthetically dyed material in 1857. The company received a commercial boost from the Empress Eugenie of France, when she decided the new colour flattered her. Very soon, Mauve was the necessary shade for all the fashionable ladies in that country. Not to be outdone, England’s Queen Victoria also appeared in public wearing a mauve gown, thus making it all the rate in England as well. The dye was bold and fast, and the public clamoured for more. Perkin went back to the drawing board.

在他的父亲和兄弟的帮助下，珀金在离伦敦不远的地方建立了一家工厂。利用廉价和丰富的煤焦油（伦敦燃气街道照明几乎无限的副产品），该染料厂于1857年开始生产世界上第一种合成染料。该公司得到了法国女皇Eugenie的商业帮助。这种新颜色使她受宠若惊。很快，淡紫色就成为该国所有时尚女士的必备品。不甘落后的英格兰女王维多利亚也穿着淡紫色礼服在公众场合露面，使得该颜色在英国也流行起来。这种染料清晰而着色迅速，公众渴望更多。珀金回到实验室中。

**第10段**

Although Perkin’s fame was achieved and fortune assured by his first discovery, the chemist continued his research. Among other dyes he developed and introduced were aniline red (1859) and aniline black (1863) and, in the late 1860s, Perkin’s synthetic dye discoveries had outcomes far beyond the merely decorative. The dyes also became vital to medical research in many ways. For instance, they were used to stain previously invisible microbes and bacteria, allowing researchers to identify such bacilli as tuberculosis, cholera, and anthrax. Artificial dyes continue to play a crucial role today. And, in what would have been particularly pleasing to Perkin, their current use is in the search for a vaccine against malaria.

尽管珀金的首个发现为他赢取了名望和财富，但该化学家仍在继续他的研究。他开发和引进的其他染料包括苯胺红（1859年）和苯胺黑（1863年），以及19世纪60年代后期的珀金绿。珀金合成染料的发现所产生的成果远远超出了装饰性的范畴。染料在许多方面对医学研究也至关重要。例如，它们被用来标记以前看不见的微生物和细菌，从而使研究人员能够鉴定出诸如结核，霍乱和炭疽等细菌。如今，人造染料仍然扮演着至关重要的角色。而且，令珀金特别高兴的是，它们目前的用途是寻找对抗疟疾的疫苗。

### [9Test1Passage2 Is there anybody out there 外星有生命存在吗](http://www.laokaoya.com/26524.html)

**引言**

The question of whether we are alone in the Universe has haunted humanity for centuries, but we may now stand poised on the brick of the answer to that question, as the search for radio signals from other intelligent civilizations. This search, often known by the acronym SETI (search for extra-terrestrial intelligence), is a difficult one. Although groups around the world have been searching intermittently for three decades, it is only now that we have reached the level of technology where we can make a determined attempt to search all nearby stars for any sign of life.

关于我们是否在宇宙中独自存在的问题困扰着人类已有数百年之久。但随着对来自其他文明无线电信号的寻找，我们现在可能正处于解决该问题的边缘。这种搜索通常以缩写词SETI（search for extra-terrestrial intelligence）而闻名，是一项困难的工作。尽管世界各地的团体已经断断续续搜索了三十年，但直到现在我们才达到相应的技术水平，使我们可以坚定地尝试搜索所有附近的恒星以寻找生命迹象。

**A部分**

The primary reason for the search is basic curiosity—the same curiosity about the natural world that drives all pure science. We want to know whether life evolves naturally if given the right conditions, or whether there is something very special about the Earth to have fostered the variety of life forms that we see around us on the planet. The simple detection of a radio signal will be sufficient to answer this most basic of all the questions. In this sense, SETI is another cog in the machinery of pure science which is continually pushing out the horizon of our knowledge. However, there are other reasons for being interested in whether life exists elsewhere. For example, we have had civilization on Earth for perhaps only a few thousand years, and the threats of the nuclear war and pollution over the last few decades have told us that our survival may be tenuous. Will we last another two thousand years or will we wipe ourselves out? Since the lifetime of a planet like ours is several billion years, we can expect that, if other civilizations do survive in our galaxy, their ages will range from zero to several billion years. Thus any mere existence of such a civilization will tell us that long-term survival is possible, and gives us some cause for optimism. It is even possible that the older civilization may pass on the benefits of their experience in dealing with threats to survival such as nuclear war and global pollution, and other threats that we haven’t yet discovered.

进行搜索的主要原因是基本的好奇心-对自然世界的好奇心驱使所有科学向前发展。我们想知道，我们在宇宙中是否独自存在；我们想知道，如果条件合适生命是否会自然进化，或者地球上是否存在某种特殊的事物，从而孕育了我们在地球上看到的各种生命形式。无线电信号的简单检测就足以回答所有这些最基本的问题。从这个意义上讲，SETI是纯科学机器中的另一个齿轮，它正在不断推动我们知识的发展。但是，还有其他原因让我们对其他地方是否存在生命感兴趣。例如，我们在地球上的文明可能只有几千年的历史，而在过去的几十年中核战争和污染的威胁告诉我们，我们的生存可能十分脆弱。我们会再延续2000年，还是会导致自我毁灭？由于像地球这样的行星的寿命高达数十亿年，我们可以预期，如果其他文明确实在我们的银河系中生存下来，它们的年龄将在零到数十亿年之间。因此，我们听到的任何其他文明的年龄都可能比我们自身要古老的多。这样一个文明存在本身就可以告诉我们长期生存是可能的，并赋予我们一些乐观的理由。在应对生存威胁（例如核战争和全球污染）以及我们尚未发现的其他威胁时，更古老的文明甚至可能会传授他们的一些经验。

**B部分**

In discussing whether we are alone, most SETI scientists adopt two ground rules. First, UFOs (Unidentified Flying Objects) are generally ignored since most scientists don’t consider the evidence for them to be strong enough to bear serious consideration although it is also important to keep an open mind in case any really convincing evidence emerges in the future. Second, we make a very conservative assumption that we are looking for a life form that is pretty well like us, since if it differs radically from us we may well not recognize it as a life form, quite apart from whether we are able to communicate with it. In other words, the life form we are looking for may well have two green heads and seven fingers, but it will nevertheless resemble us in that it should communicate with its fellows, be interested in the Universe, live on a planet orbiting a star like our Sun, and perhaps most restrictively, have a chemistry, like us, based on carbon and water.

在讨论我们是否独自存在时，大多数SETI科学家采用两个基本规则。首先，UFO（不明飞行物）通常被忽略，因为大多数科学家认为文章来自老烤鸭雅思它们所提供的证据不足以进行认真考虑（尽管在将来出现任何真正令人信服的证据时保持开放的态度也很重要）。其次，我们做出一个非常保守的假设，即我们正在寻找一种与我们十分相似的生命形式，因为如果它与我们截然不同，我们很可能不认为它是一种生命形式。而不是我们是否能够与它交流。换句话说，我们正在寻找的生命形式可能有两个绿色的脑袋和七个手指，但是它仍然与我们相似，因为它应该与它的同伴交流，对宇宙感兴趣，生活在一个绕着类似于太阳这样的恒星运转的行星上，并且，或许最具限制性的条件是拥有跟我们相同的化学结构，建立在碳和水之上。

**C部分**

Even when we make these assumptions, our understanding of other life forms is still severely limited. We do not even know, for example, how many stars have planets, and we certainly do not know how likely it is that life will arise naturally, given the right conditions. However, when we look at the 100 billion stars in our galaxy (the milky way), and 100 billion galaxies in the observable Universe, it seems inconceivable that at least one of these planets does not have a life form on it: in fact, the best educated guess we can make, using the little we do know about the conditions for carbon-based life, leads us to estimate that perhaps one in 100,000 stars might have a life-bearing planet orbiting it. That means that our nearest neighbours are perhaps 100 light years away, which is almost next door in astronomical terms.

即使我们做出这些假设，我们对其他生命形式的理解仍然受到严重限制。例如，我们甚至不知道有多少颗恒星拥有行星，而且我们当然也不知道在适当的条件下自然产生生命的可能性。但是，当我们观察银河系中的1000亿颗恒星和可观察到的宇宙中的1000亿个星系时，似乎无法想象这些行星中没有一个拥有生命：事实上，我们对碳基生命的诞生条件了解很少，我们可以做出的最好的有猜测让我们估计，每十万颗恒星中可能有一颗有生命的行星正围绕它运行。这意味着我们与最近的邻居可能相距100光年。在天文学意义上，这几乎就是隔壁。

**D部分**

An alien civilization could choose many different ways of sending information across the galaxy, but many of these either require too much energy, or else are severely attenuated while traversing the vast distances across the galaxy. It turns out that, for a given amount of transmitted power, radio waves in the frequency range 1000 to 3000 MHz travel the greatest distance, and so all searches to date have concentrated on looking for radio waves in this frequency range. So far there have been a number of searches by various groups around the world, including Australian searches using the radio telescope at Parkes, New South Wales. Until now there have not been any detections from the few hundred stars which have been searched. The scale of the searches has been increased dramatically since 1992, when the US Congress NASA 110 million per year for ten years to conduct a thorough search for extra terrestrial life. Much of the money in this project is being spent on the developing the special hardware needed to search many frequencies at once. The project has two parts. One part is a targeted search using the world’s largest radio telescopes, the America-operated telescope in Arecibo, Puerto Rico and the French telescope in Nancy in France. This part of the project is searching the nearest 1000 likely stars with high sensitivity for signals in the frequency range 1000 to 3000 MHz. The other part of the project is an undirected search which is monitoring all of space with a lower sensitivity, using the smaller antennas of NASA’s Deep Space Network.

外星文明可以选择许多不同的方式在银河系之间发送信息，但是其中许多要么需要太多能量，要么在穿越星系的巨大距离时会严重衰减。事实证明，对于给定的发射功率，在1000到3000 MHz频率范围内的无线电波传播的距离最远。因此迄今为止，所有的搜索都集中在寻找该频率范围内的无线电波。目前，世界各地的各种团体进行了许多搜索，包括澳大利亚使用新南威尔士州帕克斯市的射电望远镜进行搜索。到现在为止，还没有从已经搜索的几百颗恒星中找到任何发现。自1992年以来，搜索的规模已急剧增加，当时美国国会给NASA每年1亿美元，连续十年进行深入的地外生命的搜索。该项目中的大部分资金都花在了开发可同时搜索多个频率所需的特殊硬件上。该项目分为两个部分。一部分是采用世界上最大的射电望远镜进行有目的的搜索。该项目的这一部分以较高的敏感度正在搜索最近1000个恒星，以寻找1000至3000MHz频率范围内的信号。该项目的另一部分是不定向搜索。它使用NASA深空网络的小型天线以较低的灵敏度监视所有空间。

**E部分**

There is considerable debate over how we should react if we detect a signal from an alien civilization. Everybody agrees that we should not reply immediately. Quite apart from the impracticality of sending a reply over such large distances at short notice, it raises a host of ethical questions that would have to be addressed by the global community before any reply could be sent. Would the human race face the culture shock if faced with a superior and much older civilization? Luckily, there is no urgency about this. The stars being searched are hundreds of light years away, so it takes hundreds of years for their signal to reach us, and a further few hundreds for our reply to reach them. It’s not important, then, if there’s a delay of a few years, or decades. While the human race debates the question of whether to reply, and perhaps carefully drafts a reply.

关于如果我们检测到来自外来文明的信号时该如何应对，存在着很多争论。所有人都同意我们不应该立即答复。除了在这么短的时间内跨越如此巨大的距离发送答复不切实际之外，它还提出了许多国际社会在发送任何答复之前必须解决的道德问题。如果人类面临着优越而古老的文明，人类会面对文化的冲击吗？幸运的是，这一问题并不紧迫。被搜寻的恒星距离我们有数百光年，因此它们的信号到达我们也需要数百年，而我们的回复还需要数百年才能抵达它们那里。因此，有几年或几十年的延迟并不重要。在人类辩论是否应回答的问题时，也许还要仔细起草答复。

### [9Test1Passage3 The history of the tortoise 乌龟的历史](http://www.laokaoya.com/26643.html)

**第1段**

If you go back far enough, everything lived in the sea. At various points in evolutionary history, enterprising individuals within many different animal groups moved out onto the land, sometimes even to the most parched deserts, taking their own private seawater with them in blood and cellular fluids. In addition to the reptiles, birds, mammals and insects which we see all around us, other groups that have succeeded out of water include scorpions, snails, crustaceans such as woodlice and land crabs, millipedes and centipedes, spider and various worms. And we mustn’t forget the plants, without whose prior invasion of the land none of the other migrations could have happened.

如果我们回溯的足够遥远，所有东西都生活在海洋之中。在进化史的各个阶段，许多不同动物群体的富有冒险精神的个体搬到陆地上，有时甚至到最干旱的沙漠里，将自己的海水融入血液和细胞液中。除了我们在身边看到的爬行动物，鸟类，哺乳动物和昆虫外，其他成功脱离水生生活的群体还包括蝎子，蜗牛，甲壳类动物（例如木虱和陆地蟹），千足虫和蜈蚣，蜘蛛和各种蠕虫。我们也千万不要忘记植物，没有它们事先侵入陆地，其他迁移都不会发生。

**第2段**

Moving from water to land involved a major redesign of every aspect of life, including breathing and reproduction. Nevertheless, a good number of thoroughgoing land animals later turned around, abandoned their hard-earned terrestrial re-tooling, and returned to the water again. Seals have only gone part way back. They show us what the intermediates might have been like, on the way to extreme cases such as whales and dugongs. Whales (including the small whales we call dolphins) and dugongs, with their close cousins the manatees, ceased to be land creatures altogether and reverted to the full marine habits of their remote ancestors. They don’t even come ashore to breed. They do, however, still breathe air, having never developed anything equivalent to the gills of their earlier marine incarnation. Turtles went back to the sea a very long time ago and, like all vertebrate returnees to the water, they breathe air. However, they are, in one respect, less fully given back to the water than whales or dugongs, for turtles still lay their eggs on beaches.

从水到陆地的迁移涉及到包括呼吸和生殖在内的生命各个方面的重大重新设计。但是，后来文章来自老烤鸭雅思有大量的陆地动物转过身去，放弃了来之不易的适应陆地生活的器官，并再次回到水里。海豹只是返回了一部分。他们向我们展示了在鲸鱼和儒艮等极端情况下的中间体可能是什么样的。鲸鱼（包括我们称为海豚的小鲸鱼）和儒艮，以及它们的近亲海牛，完全不再是陆地生物，而是恢复了其远洋祖先的全部海洋习性。他们甚至不用上岸繁殖。但是，它们确实仍然需要呼吸空气，从未进化出类似于腮这样早期海洋生物的器官。海龟很久以前就回到了大海，就像所有返回海域的脊椎动物一样，他们呼吸空气。但是，从某种意义上讲，它们没有像鲸鱼或儒艮一样完全返回水中，因为海龟仍在海滩上产卵。

**第3段**

There is evidence that all modern turtles are descended from a terrestrial ancestor which lived before most of the dinosaurs. There are two key fossils called Proganochleys quenstedti and Palaeochersis talampayensis dating from early dinosaur times, which appear to be close to the ancestry of all modern turtles and tortoises. You might wonder how we can tell whether fossil animal lived on land or in water, especially if only fragments are found. Sometimes it’s obvious. Ichthyosaurs were reptilian contemporaries of the dinosaurs, with fins and streamlined bodies. The fossils look like dolphins, and they surely lived like dolphines, in the water. With turtles it is a little less obvious. One way to tell is by measuring the bones of their forelimbs.

有证据表明，所有现代海龟均来自同一陆地祖先。它生活在比大多数恐龙还要遥远的时代。两个关键的化石，Proganochleys quenstedti 和Palaeochersis talampayensis，可以追溯到恐龙时代早期。它们似乎与所有现代乌龟和海龟的祖先十分接近。您可能想知道我们如何分辨化石中的动物究竟是生活在陆地上还是在水里，特别是如果仅发现碎片的时候。有时这很明显。带有鳍和流线型身体的鱼龙是生活在恐龙时代的爬行动物。其化石看起来像海豚，它们也肯定像海豚一样生活在水中。对于海龟来说，这一点并不那么明显。一种判断方法是测量前肢的骨头。

**第4段**

Walter Joyce and Jacques Gauthier, at Yale University, obtained three measurements in these particular bones of 71 species of living turtles and tortoises. They used a kind of triangular graph paper to plot the three measurements against one another. All the land tortoise species formed a tight cluster of points in the upper part of the triangle; all the water turtles cluster in the lower part of the triangular graph. There was no overlap except when they added some species that spend time both in water and on land. Sure enough, these amphibious species show up on the triangular graph approximately halfway between the ‘wet cluster’ of sea turtles and the ‘dry cluster’ of land tortoises. The next step was to determine where the fossils fell. The bones of P. quenstedti and P. talampayensis leave us in no doubt. Their points on the graph are right in the thick of the dry cluster. Both these fossils were dry-land tortoises. They come from the era before our turtles returned to the water.

耶鲁大学的Walter Joyce和Jacques Gauthier 对71种现存乌龟和海龟的这些特殊骨骼进行了三项测量。他们使用一种三角形方格纸对比这三项测量数据。所有陆龟物种在三角形的上部形成了紧密的点簇。所有的水生乌龟都聚集在三角形的下部。除了部分同时生活在水中和陆地上的物种外，它们没有任何重叠。而不出意料的是，这些两栖物种在三角形中处于海龟和陆龟所形成的点簇的中间部分。下一步是确定这两个化石处于图中何种位置。P. quenstedti和P. talampayensis的骨头没有给我们留下疑惑。它们在图中的点正好位于干燥点群的中心位置。这两个化石都是陆生乌龟。它们来自我们的海龟回到水中之前的时代。

**第5段**

You might think, therefore, that modern land tortoises have probably stayed on land ever since those early terrestrial times, as most mammals did after a few of them went back to the sea. But apparently not. If you draw out the family tree of all modern turtles and tortoises, nearly all the branches are aquatic. Today’s land tortoises constitute a single branch, deeply nested among branches consisting of aquatic turtles. This suggests that modern land tortoises have not stayed on land continuously since the time of P. quenstedti and P. talampayensis. Rather, their ancestors were among those who went back to the water, and they then re-emerged back onto the land in (relatively) more recent times.

因此，你可能会认为，自陆地时代早期以来，现代陆龟就可能一直待在陆地上，就像大多数哺乳动物在一些同伴回到海中之后所做的那样。但显然不是。如果你绘制所有现代陆龟和海龟的家谱，则几乎所有分支都是水生的。如今的陆龟组成一个独立的分支，深深地嵌套在由水龟组成的分支之间。这表明，从P. quenstedti 和P. talampayensis 的时代以来，现代陆龟并没有一直待在陆地上。相反，它们的祖先是那些回到水中，但随后又在近期（相对意义上来讲）再次回到陆地上的那些。

**第6段**

Tortoises therefore represent a remarkable double return. In common with all mammals, reptiles and birds, their remote ancestors were marine fish and before that various more or less worm-like creatures stretching back, still in the sea, to the primeval bacteria. Later ancestors lived on land and stayed there for a very large number of generations. Later ancestors still evolved back into the water and became sea turtles. And finally they returned yet again to the land as tortoises, some of which now live in the driest of deserts.

因此，乌龟代表了引人注目的双重回归。与所有哺乳动物，爬行动物和鸟类一样，它们的远古祖先是海洋鱼类，在此之前是各种或多或少的蠕虫状生物，再往前延伸是原始的细菌。后来的祖先居住在土地上，并在此繁衍了许多世代。在此之后，一些祖先仍然进化回水中，成为海龟。而最后它们再次回到了陆地，成为陆龟，其中一些现在居住在最干旱的沙漠里。

## 9Test2

### [9Test2Passage1 Hearing impairment 听觉障碍](http://www.laokaoya.com/26721.html)

**自然段A**

Hearing impairment or other auditory function deficit in young children can have a major impact on their development of speech and communication, resulting in a detrimental effect on their ability to learn at school. This is likely to have major consequences for the individual and the population as a whole. The New Zealand Ministry of Health has found from research carried out over two decades that 6-10% of children in that country are affected by hearing loss.

幼儿的听力障碍或其他听觉功能障碍可能会对他们的语言和交流能力产生重大影响，从而对他们在学校的学习能力产生不利影响。无论是对个人还是整个人口来说，这都有可能造成严重的后果。新西兰卫生部经过二十多年的研究发现，该国6-10％的儿童受到听力损失的影响。

**自然段B**

A preliminary study in New Zealand has shown that classroom noise presents a major concern for teachers and pupils. Modern teaching practices, the organizations of desks in the classroom, poor classroom acoustics, and mechanical means of ventilation such as air-conditioning units all contribute to the number of children unable to comprehend the teacher’s voice. Education researchers Nelson and Soli have also suggested that recent trends in learning often involve collaborative interaction of multiple minds and tools as much as individual possession of information. This all amounts to heightened activity and noise levels, which have the potential to be particularly serious for children experiencing auditory function deficit. Noise in classroom can only exacerbate their difficulty in comprehending and processing verbal communication with other children and instructions from the teacher.

新西兰的一项初步研究表明，教室的噪音是师生的主要困扰。现代教学实践，教室中桌子的摆放，较差的课堂声学效果以及机械通风方式（例如空调设备），都导致文章来自老烤鸭雅思无法听到老师声音的儿童人数的增加。教育研究人员尼尔森（Nelson）和索利（Soli）也指出，最近的学习趋势 涉及相同程度的多种思维和工具的协作互动，以及个人信息的获取。所有这些都增加了活动和噪音水平。对于拥有听觉功能障碍的儿童而言，这可能特别严重。教室里的噪音只会加剧他们在理解和处理与其他孩子的口头交流以及老师的指示方面的困难。

**自然段C**

Children with auditory function deficit are potentially failing to learn to their maximum potential because of noise levels generated in classrooms. The effects of noise on the ability of children to learn effectively in typical classroom environment are now the subjects of increasing concern. The International Institute of Noise Control Engineering (I-INCE), on the advice of the World Health Organization, has established an international working party, which includes New Zealand, to evaluate noise and reverberation control for school rooms.

听觉功能障碍的儿童可能会由于教室中产生的噪音而无法最大限度地发挥自己的潜能。教室环境中，噪音对儿童有效学习能力的影响现在受到越来越多的关注。根据世界卫生组织的建议，国际噪声控制工程学院（I-INCE）建立了一个包括新西兰在内的国际工作组，以评估学校教室的噪声和回声控制。

**自然段D**

While the detrimental effects of noise in classroom situations are not limited to children experiencing disability, those with a disability that affects their processing of speech and verbal communication could be extremely vulnerable. The auditory function deficits in question include hearing impairment, autistic spectrum disorders (ASD) and attention deficit disorders (ADD/ADHD).

虽然教室环境中噪声的有害影响不仅限于残疾儿童，但那些言语和交流能力有缺陷的儿童可能会非常脆弱。所讨论的听觉功能障碍包括听力障碍，自闭症谱系障碍（ASD）和注意障碍症（ADD / ADHD）。

**自然段E**

Autism is considered a neurological and genetic life-long disorder that causes discrepancies in the way information is processed. This disorder is characterized by interlinking problems with social imagination, social communication and social interaction. According to Janzen, this affects the ability to understand and relate in typical ways to people, understand events and objects in the environment, and understand or respond to sensory stimuli. Autism does not allow learning or thinking in the same ways as in children who are developing normally. Autistic spectrum disorders often result in major difficulties in comprehending verbal information and speech processing. Those experiencing these disorders often find sounds such as crowd noise and the noise generated by machinery painful and distressing. This is difficult to scientifically quantify as such extra-sensory stimuli vary greatly from one autistic individual to another. But a child who finds any type of noise in their classroom or learning space intrusive is likely to be adversely affected in their ability to process information.

自闭症被认为是一种神经和遗传的终生疾病，会导致信息处理方式上的差异。这种疾病的特征是在社会想象力，社会沟通能力和社会互动能力方面存在问题。Janzen认为，这会影响人们以特定的方式理解和与他人产生联系的能力，理解环境中事项与物品的能力，以及理解或回应感官刺激的能力。自闭症使得人们无法以与正常发育的儿童相同的方式进行学习或思考。自闭症谱系障碍通常在理解口头信息和处理语言方面造成重大困难。那些经历过这些疾病的人会经常觉得声音（如人群的噪音，机械产生的噪音）使人痛苦不堪。这很难进行科学地量化，因为这样的超感官刺激在不同自闭症个体之间变化很大。但是，觉得教室里或学习空间中任何噪音都十分烦扰的孩子，其信息处理能力均可能受到不利影响。

**自然段F**

The attention deficit disorders are indicative of neurological and genetic disorders and are characterized by difficulties with sustaining attention, effort and persistence, organization skills and disinhibition. Children experiencing these disorders find it difficult to screen out unimportant information, and focus on everything in the environment rather than attending to a single activity. Background noise in the classroom becomes a major distraction, which can affect their ability to concentrate.

注意缺陷障碍是神经系统疾病和遗传疾病的指示，其特征在于在维持注意力，努力和坚持，组织能力和抑制力等方面存在困难。患有这些疾病的儿童会觉得很难筛选出不重要的信息，并且容易专注于环境中的所有事物，而不是从事单项活动。教室中的背景噪音成为主要干扰因素，可能会影响他们的注意力集中能力。

**自然段G**

Children experiencing an auditory function deficit can often find speech and communication very difficult to isolate and process when set against high levels of background noise. These levels come from outside activities that penetrate the classroom structure, from teaching activities, and other noise generated inside, which can be exacerbated by room reverberation. Strategies are needed to obtain the optimum classroom construction and perhaps a change in classroom culture and methods of teaching. In particular, the effects of noisy classrooms and activities on those experiencing disabilities in the form of auditory function deficit need thorough investigation. It is probable that many undiagnosed children exist in the education system with ‘invisible’ disabilities. Their needs are less likely to be met than those of children with known disabilities.

当面对高水平的背景噪音时，患有听觉功能障碍的儿童通常会发现很难将语音和交流隔离出来并进行处理。这些背景噪音来自于穿过教室结构的外部活动，教学活动以及其他教室内部产生的噪音，这些噪音会因房间回声而加剧。需要采取策略来建设最佳的教室，并可能需要改变教室文化和教学方法。尤其是，嘈杂的教室和活动对拥有听觉功能障碍的残障人士的影响需要彻底调查。在教育系统中可能存在许多“隐形”残疾却未被确认的儿童。与已知残疾的儿童相比，他们需求不太可能得到满足。

**自然段H**

The New Zealand Government has developed a New Zealand Disability Strategy and has embarked on a wide-ranging consultation process. The strategy recognizes that people experiencing disability face significant barriers in achieving a full quality of life in areas such as attitude, education, employment and access to services. Objective 3 of the New Zealand Disability Strategy is to ‘Provide the Best Education for Disabled People’ by improving education so that all children, youth learners and adult learners will have equal opportunities to learn and develop within their already existing local school. For a successful education, the learning environment is vitally significant, so any effort to improve this is likely to be of great benefit to all children, but especially to those with auditory function disabilities.

新西兰政府制定了《新西兰残疾人战略》，并开始了广泛的磋商进程。该战略认识到，在态度，教育，就业和服务获取等领域，残障人士在实现充分的生活质量方面面临重大障碍。新西兰残疾战略的第三项目标是通过改善教育来“为残疾人提供最佳教育”，以使所有儿童，青年学习者和成人学习者在他们现有的当地学校中都有平等的学习和发展机会。对于成功的教育而言，学习环境至关重要，因此，为改善这一环境而做出的任何努力都可能会对所有儿童，特别是对有听觉功能障碍的儿童带来巨大的好处。

**自然段I**

A number of countries are already in the process of formulating their own standards for the control and reduction of classroom noise. New Zealand will probably follow their example. The literature to date on noise in school rooms appears to focus on the effects on schoolchildren in general, their teachers and the hearing impaired. Only limited attention appears to have been given to those students experiencing the other disabilities involving auditory function deficit. It is imperative that the needs of these children are taken into account in the setting of appropriate international standards to be promulgated in future.

许多国家已经在制定自己的控制和减少教室噪音的标准。新西兰可能会效法他们的榜样。迄今为止，有关学校教室噪音的文献似乎集中在对学童，老师和听力障碍者的总体影响上。那些拥有包括听觉功能障碍在内的其他残疾的学生似乎得到有限的关注。至关重要的是，在制定未来会公布的适宜的国家标准时，将这些孩子的需求考虑在内。

### [9Test2Passage2 venus in transit 金星凌日](http://www.laokaoya.com/26770.html)

**引言**

June 2004 saw the first passage, known as a ‘transit’, of the planet Venus across the face of the Sun in 122 years. Transits have helped shape our view of the whole Universe, as Healther Cooper and Nigel Henbest explain

2004年6月，金星122年来首次穿过太阳面，称为“凌日”。正如Healther Cooper和Nigel Henbest 解释的那样，凌日帮助塑造我们对整个宇宙的看法.

**自然段A**

On 8 June 2004, more than half the population of the world were treated to a rare astronomical event. For over six hours, the planet Venus steadily inched its way over the surface of the Sun. This ‘transit’ of Venus was the first since 6 December 1882. On that occasion, the American astronomer Professor Simon Newcomb led a party to South Africa to observe the event. They were based at a girl’s school, where—it is alleged—the combined forces of three schoolmistresses outperformed the professionals with the accuracy of their observations.

2004年6月8日，全世界一半以上的人口都可以观测到一起罕见的天文事件。在六个多小时的时间里，金星稳步向太阳表面前进。这次金星的“凌日”是自1882年12月6日以来的第一次。当时，美国天文学家西蒙·纽科姆教授率领团体前往南非观察这一事件。他们将观察点设在一所女子学校，据称，三名女教师的联合队伍在观察的准确性方面胜过专业人士。

**自然段B**

For centuries, transits of Venus have drawn explores and astronomers alike to the four corners of the globe. And you can put it all down to the extraordinary polymath Edmond Halley. In November 1677, Halley observed a transit of the innermost planet, Mercury, from the desolate island of St Helena in the south Pacific. He realized that, from different latitudes, the passage of the planet across the Sun’s disc would appear to differ. By timing the transit from two widely-separated locations, teams of astronomers could calculate the parallax angle—the apparent difference in position of an astronomical body due to a difference in the observer’s position. Calculating this angle would allow astronomers to measure what was then the ultimate goal: the distance of the Earth from the sun. This distance is known as the ‘astronomical’ or AU.

几个世纪以来，金星凌日吸引着探险家和天文学家来到地球的各个角落。你可以将其归因于非凡的博学大师埃德蒙·哈雷（Edmond Halley）。1677年11月，哈雷文章来自老烤鸭雅思从南太平洋荒凉的圣赫勒拿岛观察到太阳系最里面的行星-水星凌日。他意识到，从不同的纬度来看，行星穿过太阳的路径似乎有所不同。通过从两个相距较远的位置记录穿行的时间，天文学家团队可以计算视差角-由于观测者位置的差异所造成的天体位置的明显差异。计算该角度将使天文学家能够测量出当时的终极目标：地球与与太阳之间的距离。该距离称为“天文单位”或AU。

**自然段C**

Halley was aware that the AU was one of the most fundamental of all astronomical measurements. Johannes Kepler, in the early 17th century, had shown that the distances of the planets from the Sun governed their orbital speeds, which were easily measurable. But no-one had found a way to calculate accurate distances to the planets from the earth. The goal was to measure the AU; then, knowing the orbital speeds of all the other planets round the Sun, the scale of the Solar System would fall into place. However, Halley realized that Mercury was so far away that its parallax angle would be very difficult to determine. As Venus was closer to the Earth, its parallax angle would be larger, and Halley worked out that by using Venus it would be possible to measure the Sun’s distance to 1 part in 500. But there was a problem: transits of Venus, unlike those of Mercury, are rare, occurring in pairs roughly eight years apart every hundred or so years. Nevertheless, he accurately predicted that Venus would cross the face of the Sun in both 1761 and 1769—though he didn’t survive to see either.

哈雷意识到，AU是所有天文测量中最基本的一项。开普勒在17世纪初已经证明，行星距太阳的距离决定着它们的轨道速度，这是容易衡量的。但是，没有人找到一种计算其他行星距地球精确距离的方法。其目的就是为了测量AU。在知道所有其他行星绕太阳运行的轨道速度后，太阳系的规模就会明确起来。但是，哈雷意识到水星距离太远，以至于很难确定其视角差。由于金星离地球更近，其视差角会更大。哈雷由此得出结论，通过利用金星，可以将太阳距离的测量误差缩小到1/500。但是与水星不同，金星凌日的现象很少见，每100多年会成对出现两次，这两次之间相隔8年。虽然他准确地预测到金星将在1761年和1769年穿过太阳表面，但他并没有活着见到任何一次。

**自然段D**

Inspired by Halley’s suggestion of a way to pin down the scale of the Solar System, teams of British and French astronomers set out on expeditions to places as diverse as India and Siberia. But things weren’t helped by Britain and France being at war. The person who deserves most sympathy is the French astronomer Guillaume Le Gentil. He was thwarted by the fact that the British were besieging his observation site at Pondicherry in India. Feeling on a French warship crossing the Indian Ocean, Le Gentil saw a wonderful transit—but the ship’s pitching and rolling ruled out any attempt at making accurate observations. Undaunted, he remained south of the equator, keeping himself busy by studying the islands of Mauritius and Madagascar before setting off to observe the next transit in the Philippines. Ironically after travelling nearly 50,000 kilometres, his view was clouded out at the last moment, a very dispiriting experience.

受哈雷关于确定太阳系规模的建议的启发，英国和法国的天文学家团队开始对各种地方（包括印度和西伯利亚）进行考察。但是，英国和法国的交战帮了倒忙。最值得同情的人是法国天文学家Guillaume Le Gentil 。英国人包围了他在印度Pondicherry的观察站，使他受挫。乘坐法国军舰穿越印度洋时，Le Gentil观测到了一次完美的凌日。但船的起伏和摇晃使得进行准确观测的尝试化为泡影。他没有因此而退缩，一直待在赤道以南，忙着研究毛里求斯和马达加斯加的岛屿，然后出发去菲律宾观测下一次凌日。具有讽刺意味的是，在行驶了将近50,000公里之后，他的视线在最后一刻被云层遮挡，这是非常令人沮丧的经历。

**自然段E**

While the early transit timings were as precise as instruments would allow, the measurements were dogged by the ‘black drop’ effect. When Venus begins to cross the Sun’s disc, it looks smeared not circular—which makes it difficult to establish timings. This is due to diffraction of light. The second problem is that Venus exhibits a halo of light when it is seen just outside the Sun’s disc. While this showed astronomers that Venus was surrounded by a thick layer of gases refracting sunlight around it, both effects made it impossible to obtain accurate timings.

尽管早期对凌日时间的观测已经达到仪器所允许的上限，但测量却受到“黑点”效应的困扰。当金星开始越过太阳表面时，它看起来有点模糊，而不完全是圆的，使确定时间变得困难。这种现象是由于光的衍射。第二个问题是金星在跃出太阳表面时会出现光晕。尽管这向天文学家表明，金星被厚厚的气体层所包围。它会折射周围的阳光，但这两种现象都使得无法获得准确的时间。

**自然段F**

But astronomers laboured hard to analyse the results of these expeditions to observe Venus transits. John Franz Encke, Director of the Berlin Observatory, finally determined a value for the AU based on all these parallax measurements: 153,340,000km. Reasonably accurate for the time, that is quite close to today’s value of methods in accuracy. The AU is a cosmic measuring rod, and the basis of how we scale the Universe today. The parallax principle can be extended to measure the distances to the stars. If we look at a star in January—when Earth is at one point in its orbit—it will seem to be in a different position from where it appears six months later. Knowing the width of Earth’s orbit, the parallax shift lets astronomers calculate the distance.

但是天文学家们辛苦地分析了这些探险的结果，以观察金星凌日的现象。柏林天文台局长John Franz Encke 最终根据所有这些视差测量值确定了AU的数字：153,340,000 km。对于当时来说，这个数字已经足够准确，与当今雷达测量的数值（149,597,879km）十分接近。而雷达因其精准度已经取代了凌日观测和其他方法。AU是宇宙测量标杆，也是我们今天确定宇宙规模的基础。视差原理可以扩展到测量地球到恒星的距离。如果我们在一月份观测一颗恒星（当地球在其轨道上处于某一点时），其位置似乎与六个月后看到的位置不同。知道了地球轨道的宽度，视觉差可以让天文学家计算其距离。

**自然段G**

June 2004’s transit of Venus was thus more of an astronomical spectacle than a scientifically important event. But such transits have paved the way for what might prove to be one of the most vital breakthroughs in the cosmos—detecting Earth-sized planets orbiting other stars.

因此，2004年6月金星凌日更像是一场天文奇观，而不是科学上重要的事件。但是，这种凌日为可能是宇宙中最重要的突破之一-探测绕着其他恒星运行的类地行星- 铺平了道路。

### [9Test2Passage3 A neuroscientist reveals how to think differently 神经学家解密创新思考](http://www.laokaoya.com/26863.html)

**第1段**

In the last decade a revolution has occurred in the way that scientists think about the brain. We now know that the decisions humans make can be traced to the firing patterns of neurons in specific parts of the brain. These discoveries have led to the field known as neuroeconomics, which studies the brain’s secrets to success in an economic environment that demands innovation and being able to do things differently from competitors. A brain that can do this is an iconoclastic one. Briefly, an iconoclast is a person who does something that others say can’t be done.

在过去十年里，科学家思考大脑的方式发生了一场革命。我们现在知道，人类做出的决定可以追溯到大脑特定部位的神经元放电模式。这些发现导致神经经济学领域的出现。该领域研究大脑在需要创新的经济领域取得成功的秘密。能够做到这一点的大脑具有叛逆的特点。简而言之，叛逆者是做别人认为无法做到的事情的人。

**第2段**

This definition implies that iconoclasts are different from other people, but more precisely, it is the brains that are different in three distinct ways: perception, fear response, and social intelligence. Each of these three functions utilizes a different circuit in the brain. Naysayers might suggest that the brain is irrelevant that thinking in an original, even revolutionary, way is more a matter of personality than brain function. But the field of neuroeconomics was born out of the realization that the physical working of the brain place limitations on the way we make decisions. By understanding these constraints, we begin to understand why some people march to a different drumbeat.

这个定义意味着叛逆者与他人不同。但是更确切地说，是他们的大脑在三个截然不同的领域与他人不同：感知，恐惧反应和社会智慧。这三种功能中的每一种文章来自老烤鸭雅思都利用大脑中的不同回路。反对者可能认为，大脑无关紧要，以创新甚至是革命性的方式思考更多的是性格而非大脑的作用。但正是因为认识到大脑的客观运转限制着我们的决策方式，神经经济学才由此诞生。 通过了解这些约束，我们开始理解为什么有些人会产生不同的想法。

**第3段**

The first thing to realize is that the brain suffers from limited resources. It has a fixed energy budget, about the same as a 40 watt light bulb, so it has evolved to work as efficiently as possible. This is where most people are impeded from being an iconoclast. For example, when confronted with information streaming from the eyes, the brain will interpret this information in the quickest way possible. Thus it will draw on both past experience and any other source of information, such as what other people say, to make sense of what it is seeing. This happens all the time. The brain takes shortcuts that work so well we hardly ever aware of them. We think our perceptions of the world are real, but they are only biological and electrical rumblings. Perception is not simply a product of what your eyes or ears transmit to your brain. More than the physical reality of photons or sound waves, perception is a product of the brain.

首先要意识到的是，大脑拥有的资源有限。它具有固定的能量预算，大约与40瓦的灯泡相同，因此它已经进化为尽可能高效地工作。也正是这一点阻碍大多数人成为叛逆者。例如，当面对来自眼睛的信息流时，大脑将以最快的方式解读该信息。因此，它将利用过去的经验和任何其他信息来源（例如别人说的话）来理解所看到的内容。这事儿一直发生。大脑采取行之有效的捷径，以至于我们几乎没有意识到它们的存在。我们认为我们对世界的看法是真实的，但它其实仅仅是生物和电子的回响。感知不仅仅是眼睛或耳朵传输到大脑的产物。相比于光子或声波的物理现实，感知更多的是大脑的产物。

**第4段**

Perception is central to iconoclasm. Iconoclasts see things differently to other people. Their brains do not fail into efficiency pitfalls as much as the average person’s brain. Iconoclasts, either because they were born that way or through learning, have found ways to work around the perceptual shortcut that plague most people. Perception is not something that is hardwired into the brain. It is a learned process, which is both a curse and an opportunity for change. The brain faces the fundamental problem of interpreting physical stimuli from the sense. Everything the brain sees, hears, or touches has multiple interpretations. The one that is ultimately chosen is simply the brain’s best theory. In technical terms, these conjectures have their basis in the statistical likelihood of one interpretation over another and are heavily influenced by past experience and, importantly for potential iconoclasts, what other people say.

感知对于离经叛道至关重要。叛逆者对事物的看法与其他人不同。他们的大脑不会像普通人的大脑那样陷入效率陷阱。叛逆者，无论是因为他们出生如此还是后天习得，已经找到了绕过困扰大多数人的感知捷径的方法。感知不是大脑连接的硬件。这是一个学习的过程，既是诅咒，也是变革的机会。大脑面临着从感觉上解释身体刺激的根本问题。大脑看到，听到或触摸的一切都有多种解释。最终选择的只是大脑的最佳理论。用技术术语来说，这些猜想是建立在一种解释优于另一种解释的统计学可能性的基础之上的，并且受过去经验和其他人的观点的影响很大。这点对于潜在的叛逆者而言十分重要。

**第5段**

The best way to see things differently to other people is to bombard the brain with things it has never encountered before. Novelty releases the perceptual process from the chains of past experience and forces the brain to make new judgments. Successful iconoclasts have an extraordinary willingness to be exposed to what is fresh and different. Observation of iconoclasts shows that they embrace novelty while most people avoid things that are different.

获取与众不同的思维方式的最好办法是用从未经历过的事物轰炸大脑。新鲜事物从过去经验的锁链中释放出感知过程，并迫使大脑做出新的判断。成功的叛逆者非常愿意接触新鲜和不同的事物。对叛逆者的观察表明，他们拥抱新鲜事物，而大多数人则会避免与众不同的东西。

**第6段**

The problem with novelty, however, is that it tends to trigger the brain’s fear system. Fear is a major impediment to thinking like an iconoclast and stops the average person in his tracks. There are many types of fear, but the two that inhibit iconoclastic thinking and people generally find difficult to deal with are fear of uncertainty and fear of public ridicule. These may seem like trivial phobia. But fear of public speaking, which everyone must do from time to time, afflicts one-third of the population. This makes it too common to be considered a mental disorder. It is simply a common variant of human nature, one which iconoclasts do not let inhibit their reactions.

但是，新鲜事物的问题在于，它往往会触发大脑的恐惧系统。恐惧是像叛逆者那样思考的主要障碍，它将普通人困在既定轨道上。恐惧有多种类型，但抑制反传统思维并且人们发现很难处理的两种是：对不确定的恐惧和对公众嘲笑的恐惧。这看起来可能像是微不足道的东西。但对公开演讲的恐惧困扰着三分之一的人口，而每个人又都得时不时做公开演讲。正是因为这种现象太过常见，人们很难将其看作一种精神疾病。这使得人们普遍认为它是一种精神障碍。它只是人类本性的一种常见变化，而叛逆者则不会让其阻碍他们的反应。

**第7段**

Finally, to be successful iconoclasts, individuals must sell their ideas to other people. This is where social intelligence comes in. Social intelligence is the ability to understand and manage people in a business setting. In the last decade there has been an explosion of knowledge about the social brain and how the brain works when groups coordinate decision making. Neuroscience has revealed which brain circuits are responsible for functions like understanding what other people think, empathy, fairness, and social identity. These brain regions play key roles in whether people convince others of their ideas. Perception is important in social cognition too. The perception of someone’s enthusiasm, or reputation, can make or break a deal. Understanding how perception becomes interviewed with social decision making shows why successful iconoclasts are so rare.

最后，要成为成功的叛逆者，一个人必须向他人兜售自己的想法。这就轮到社交智慧登场了。社交智慧是在商业环境中理解和管理人的能力。在过去的十年中，人们对社会型大脑的认知突飞猛进，对这种大脑在团队协作共同决策时所起的作用也了如指掌。神经科学已经揭示了哪些大脑回路负责诸如理解他人想法，同理心，公平和社会认同等功能。这些大脑区域在人们是否能说服他人相信自己的想法方面起着关键作用。感知在社会认知中也很重要。对某人热情，或声誉的看法，可以成就或破坏异一场交易。若能了解感知与社会决策交缠的关系，就能明白为什么成功的叛逆者如此稀少。

**第8段**

Iconoclasts create new opportunities in every area from artistic expression to technology to business. They supply creativity and innovation not easily accomplished by committees. Rules aren’t important to them. Iconoclasts face alienation and failure, but can also be a major asset to any organization. It is crucial for success in any field to understand how the iconoclastic mind works.

从艺术表现到技术，再到商业，叛逆者在各个领域创造新的机会。他们所提供的创造力和创新是其他人所无法轻易企及的。规则对他们并不重要。叛逆者面临着疏远和失败，但对于任何组织来说他们也是一项重要的资产。了解叛逆者的大脑如何工作对于在任何领域取得成功至关重要。

## 9Test3

### [9Test3Passage1 Attitudes to language 对待语言的态度](http://www.laokaoya.com/27084.html)

**第1段**

It is not easy to be systematic and objective about language study. Popular linguistic debate regularly deteriorates into invective and polemic. Language belongs to everyone, so most people feel they have a right to hold an option about it. And when options differ, emotions can run high. Arguments can start as easily over minor points of usage as over major policies of linguistic education.

语言研究要想系统化和客观化并不容易。常见的语言辩论经常恶化为辱骂和诡辩。语言属于每个人，因此大多数人认为他们有权对其发表意见。当意见相左时，情绪就会激动起来。无论是针对微小的语言使用，还是针对重大的语言教育政策，争论都可能轻易开启。

**第2段**

Language, moreover, is a very public behavior, so it is easy for different usages to be noted and criticised. No part of society or social behavior is exempt. Linguistic factors influence how we judge personality, intelligence, social status, educational standards, job aptitude, and many other areas of identity and social survival. As a result, it is easy to hurt, and to be hurt, when language use is unfeelingly attacked.

此外，语言是一种非常公开的行为，因此不同的使用方式很容易受到注意和批评。任何社会部分文章来自老烤鸭雅思或社会行为均不能幸免。语言因素会影响我们对性格，智力，社会地位，教育水平，工作能力以及身份和社会生存等许多其他方面的判断。结果，当语言使用受到无情的攻击时，很容易伤害别人，也很容易受伤。

**第3段**

In its most general sense, prescriptivism is the view that one variety of language has an inherently higher value than others and that this ought to be imposed on the whole of the speech community. The view is propounded especially in relation to grammar and vocabulary, and frequently with reference to pronunciation. The variety which is favoured, in this account, is usually a version of the ‘standard’ written language, especially as encountered in literature, or in the formal spoken language which most closely reflects this style. Adherents to this variety are said to speak or write ‘correctly’ deviations from it are said to be ‘incorrect’.

从最普遍的意义上来讲，规定主义认为一种语言形式的内在价值要高于其他形式，并应将其强加给该语言群体的所有人。这一观点在词汇和语法方面尤其突出，并经常与发音联系起来。在这种观点中，最受青睐的语言形式通常为“标准”的书面版本，尤其存在于文学作品中，或者最能反映该风格的正式口语中。据说该语言形式的拥护者要说的或者写的“正确”，偏离该形式的行为会被认为是“不正确的”。

**第4段**

All the main languages have been studied prescriptively, especially in the 18th century approach to the writing of grammar and dictionaries. The aims of these early grammarians were threefold: (a) they wanted to codify the principles of their languages, to show that there was a system beneath the apparent chaos of usage; (b) they wanted a means of settling disputes over usage, and (c) they wanted to point out what they felt to be common errors, in order to ‘improve’ the language. The authoritarian nature of the approach is best characterized by its reliance on ‘rules’ of grammar. Some usages are ‘prescribed’, to be learnt and followed accurately; others are ‘proscribed’, to be avoided. In this early period, there were no half-measures: usage was either right or wrong, and it was the task of the grammarian not simply to record alternatives, but to pronounce judgment upon them.

所有主要语言已经经过规范性的研究，尤其是在18世纪对语法和词典的编写过程中。这些早期语法学家有三重目的的：（a）他们想编纂自己的语言原则，以表明在明显混乱的用法之下存在一个系统；（b）他们想要找出一种方式来解决用法上的争议，并且（c）他们想指出他们所认为的常见错误，以便“改善”语言。这种方法对语法规则的依赖最能反映其独裁的本质。一些用法是“规定”好的，需要准确学习和遵守；其他用法是“禁止”的，要避免使用。早期阶段没有中间地带：用法要么是对，要么是错。语法学家的任务不是简单地记录不同用法，而是对它们做出判断。

**第5段**

These attitudes are still with us, and they motivate a widespread concern that linguistic standards should be maintained. Nevertheless, there is an alternative point of view that is concerned less with standards than with the facts of linguistic usage. This approach is summarized in the statement that it is the task of the grammarian to describe, not prescribe—to record the facts of linguistic diversity, and not to attempt the impossible tasks of evaluating language variation or halting language change. In the second half of the 18thcentury, we already find advocates of this view, such as Joseph Priestley, whose Rudiments of English Grammar (1761) insists that ‘the custom of speaking is the original and only just standard of any language’. Linguistic issues, it is argued, cannot be solved by logic and legislation. And this view has become the tenet of the modern linguistic approach to grammatical analysis.

这些态度仍然存在，并且引起了人们对保留语言标准的广泛关注。然而，有一种观点更加关心语言的事实使用，而非其标准。这种观点可以总结为：语法学家的任务是描述而非规定，即记录语言多样性的事实，而不是尝试完成评价语言变种或者阻止语言改变这一不可能的任务。在18世纪后期，我们已经能够找到该观点的支持者，Joseph Preiestley。他的Rudiments of English Grammar指出：“说话的习惯是最初的语言标准，也是唯一的标准。语言问题不能通过逻辑或立法的方式来解决。这种观点已经成为现代语言学分析语法的宗旨。

**第6段**

In our own time, the opposition between ‘descriptivists’ and ‘prescriptivists’ has often become extreme, with both sides painting unreal pictures of the other. Descriptive grammarians have been presented as people who do not care about standards, because of the way they see all forms of usage as equally valid. Prescriptive grammarians have been presented as blind adherents to a historical tradition. The opposition has even been presented in quasi-political terms—of radical liberalism vs elitist conservatism.

在我们自己的时代，“描述主义者”和“规定主义者”之间的对立常常变得很极端。双方对彼此都存在误解。描述性语法学家被认为是不关心标准的人，因为在他们看来所有用法都是合理的。规定主义的语法学家被认为是历史传统的盲目拥护者。这种对立甚至可以用类似的政治术语来表示：激进自由主义与精英保守主义。

### [9Test3Passage2 Tidal Power 潮汐发电](http://www.laokaoya.com/27150.html)

**引言**

Undersea turbines which produce electricity from the tides are set to become an important source of renewable energy for Britain. It is still too early to predict the extent of the impact they may have, but all the signs are that they will play a significant role in the future

利用潮汐发电的水下涡轮机将注定成为英国可再生能源的重要来源。预测其具体的影响程度还为时过早，但所有迹象都表明它们将在未来发挥重要作用。

**自然段A**

Operating on the same principle as wind turbines, the power in sea turbines comes from tidal currents which turn blades similar to ships propellers, but, unlike wind, the tides are predictable and the power input is constant. The technology raises the prospect of Britain becoming self-sufficient in renewable energy and drastically reducing its carbon dioxide emissions. If tide, wind and wave-power are all developed, Britain would be able to close gas, coal and nuclear plants and export renewable power to other parts of Europe. Unlike wind power which Britain originally developed and then abandoned for 20 years allowing the Dutch to make it a major industry, undersea turbines could become a big export earner to island nations such as Japan and New Zealand.

与风力涡轮机的工作原理相同，海洋涡轮机的动力来自潮汐。它使得像船舶螺旋桨文章来自老烤鸭雅思一样的叶片转动。但与风不同，潮汐是可预测的，并且动力输入是恒定的。该技术提高了英国可再生能源自给自足，并大幅度减少其二氧化碳排放的前景。如果潮汐，风能和波浪能都发展良好，英国将能够关闭天然气，燃煤和核电站，并向欧洲其他地区出口可再生能源。与英国最初开发，然后废弃20年，使得荷兰将其作为主要产业的风力发电不同，海底涡轮机可以成为日本和新西兰等岛国的主要出口收入来源。

**自然段B**

Tidal sites have already been identified that will produce one sixth or more of the UK’s power—and at prices competitive with modern gas turbines and undercutting those of the already ailing nuclear industry. One site alone, the Pentland Firth, between Orkney and mainland Scotland, could produce 10% of the country’s electricity with banks of turbines under the sea, and another at Alderney in the Channel Islands three times the 1,2000 megawatts of Britain’s largest and newest nuclear plant, Sizewell B, in Suffolk. Other sites identified include the Bristol Channel and the west coast of Scotland, particularly the channel between Campbelltown and Northern Ireland.

已经确定潮汐发电站将产生英国六分之一或更多的电力。其价格与现代燃气涡轮机相比具有竞争力，并削弱本已陷入困境的核能发电的竞争力。位于奥克尼和苏格兰大陆之间的彭特兰峡湾（Pentland Firth）一个地方，就可以利用海底涡轮机产生全国10％的电力。而位于海峡群岛奥尔德尼岛的另一个发电站所产生的电量是英国最大、最新的位于萨福克的Sizewell B核电厂发电量（12000兆瓦）的三倍。其他已经确定的位置包括布里斯托尔海峡和苏格兰的西海岸，尤其坎特伯雷和北爱尔兰之间的海峡。

**自然段C**

Work on designs for the new turbine blades and sites are well advanced at the University of Southampton’s sustainable energy research group. The first station is expected to be installed off Lynmouth in Devon shortly to test the technology in a venture jointly funded by the Department of Trade and Industry and the European Union. AbuBakn Bahaj, in charge of the Southampton research, said: ‘The prospects for energy from tidal currents are far better than from wind because the flows of water are predictable and constant. The technology for dealing with the hostile saline environment under the sea has been developed in the North Sea oil industry and much is already known about turbine blade design, because of wind power and ship propellers. There are a few technical difficulties, but I believe in the next five to ten years we will be installing commercial marine turbine farm. Southampton has been rewarded £215,000 over three years to develop the turbines and is working with Marine Current Turbines, a subsidiary of IT power, on the Lynmouth project. EU research has now identified 106 potential sites for tidal power, 80% round the coasts of Britain. The best sites are between islands or around heavily indented coasts where there are strong tidal currents.

南安普敦大学可持续能源研究小组的新型涡轮叶片和站点设计工作已经取得了很大进展。第一站预计将很快在德文郡林茅斯附近安装，以便在由贸易和工业部与欧盟共同投资的合资企业中测试该技术。负责南安普敦研究的阿布巴肯· 巴哈伊（AbuBakn Bahaj）表示：“潮汐产生的能源前景远胜于风能，因为水流是可预测的且恒定的。在北海石油工业中已经开发出用于应对海底不利环境的技术，并且由于风力和船舶螺旋桨，涡轮叶片设计已广为人知。技术上有一些困难，但是我相信在未来的五到十年中，我们将安装可用于商业化的海底涡轮发电厂。南安普敦在过去三年中获得了215,000英镑的资助，用于开发涡轮机，并正与IT电力子公司Marine Current Turbines合作进行Lynmouth项目。欧盟的研究现已确定了106个潜在的潮汐发电点，其中80％位于英国沿海。最好的地点是在岛屿之间或在有强烈潮汐的深凹海岸附近。

**自然段D**

A marine turbine blade needs to be only one third of the size of a wind generator to produce three times as much power. The blades will be about 20 meters in diameter, so around 30 meters of water is required. Unlike wind power, there are unlikely to be environmental objections. Fish and other creatures are thought unlikely to be at risk from the relatively slow-turning blades. Each turbine will be mounted on a tower which will connect to the national power supply grid via underwater cables. The towers will stick out of the water and be lit, to warn shipping, and also be designed to be lifted out of the water for maintenance and to clean seaweed from the blades.

海洋涡轮叶片仅需是风力发电机尺寸的三分之一即可产生三倍的功率。叶片直径约为20米，因此需要约30米深的水。与风力发电不同，它不太可能有环境方面的反对意见。人们认为鱼和其他生物不太可能受到旋转相对较慢的叶片的威胁。每个涡轮机将安装在塔架上，该塔架通过水下电缆连接到国家电网。这些塔尖将伸出水面并发出光亮，以警告船只。它们还应被设计成可以从水中抬起以进行维护并清洁叶片上的海藻。

**自然段E**

Dr Bahaj has done most work on the Alderney site, where there are powerful currents. The single undersea turbine farm would produce far more power than needed for the Channel Islands and most would be fed into the French Grid and be re-imported into Britain via the cable under the Channel.

巴哈伊博士已经完成了奥尔德尼站点的大部分工作，那里有强大的洋流。单个海底涡轮发电场产生的电力将远远超过海峡群岛的需求。大多数将被输送到法国电网，并通过海峡下方的电缆重新输入英国。

**自然段F**

One technical difficulty is cavitation, where low pressure behind a turning blade causes air bubbles. These can cause vibration and damage the blades of the turbines. Dr Bahaj said: ‘We have to test a number of blade types to avoid this happening or at least make sure it does not damage the turbines or reduce performance. Another slight concern is submerged debris floating into the blades. So far we do not know how much of a problem it might be. We will have to make the turbines robust because the sea is a hostile environment, but all the signs that we can do it are good.

一项技术难题是气蚀，即叶片旋转所产生的低压将制造气泡。它们会引起振动并损伤涡轮机的叶片。巴哈伊博士说：“我们必须测试多种叶片类型，以避免这种情况的发生，或者至少确保它不会损坏涡轮机或降低其性能。另一个细微的问题是漂浮的水下碎片会撞向叶片。到目前为止，我们还不知道这一问题的麻烦程度。由于海洋不利的环境，我们将必须使涡轮机十分坚固才行，但我们能做到的所有迹象都是好的。

### [9Test3Passage3 information theory – the big idea 信息理论-伟大的构想](http://www.laokaoya.com/27263.html)

**引言**

Information theory lies at the heart of everything—from DVD players and the genetic code of DNA to the physics of the universe at its most fundamental. It has been central to the development of the science of communication, which enables data to be sent electronically and has therefore had a major impact on our lives

信息理论是一切的核心-从DVD播放机和DNA的遗传密码到最根本的宇宙物理学。它一直是传播学发展的核心所在。它使数据能够以电子方式发送，并因此已经对我们的生活产生重大影响

**段落A**

In April 2002 an event took place which demonstrated one of the many applications of information theory. The space probe Voyager I, launched in 1977, had sent back spectacular images of Jupiter and Saturn and then soared out of the Solar System on a one-way mission to the stars. After 25 years of exposure to the freezing temperatures of deep space, the probe was beginning to show its age. Sensors and circuits were on the brink of failing and NASA experts realized that they had to do something or lose contact with their probe forever. The solution was to get a message to Voyager I to instruct it to use spares to change the failing parts. With the probe 12 billion kilometers from Earth, this was not an easy task. By means of a radio dish belonging to NASA’s Deep Space Network, the message was sent out into the depths of space. Even travelling at the speed of light, it took over 11 hours to reach its target, far beyond the orbit of Pluto. Yet, incredibly, the little probe managed to hear the faint call from its home planet and successfully made the switchover.

2002年4月发生了一起事件。它证明了信息理论的许多应用之一。于1977年发射升空的“旅行者1号”太空探测器文章来自老烤鸭雅思送回了木星和土星的壮观影像，然后飞离太阳系执行探索恒星的单程任务。暴露于深空的冰冻温度25年后，该探测器开始老化。传感器和电路位于崩溃的边缘。NASA专家意识到他们必须做些什么，否则的话就会永远与探测器失去联系。解决办法是向旅行者1号发送一条消息，指示其使用备用零件更换出现故障的零件。考虑到探测器距地球有120亿公里，这并非易事。通过属于NASA深空网络的无线电天线，该消息被发送到太空深处。即使以光速行进，也花了11个多小时才能到达目标，远远超出冥王星的轨道。然而，令人难以置信的是，这一小型探测器设法听到了来自其母星的微弱声音，并成功进行了转换。

**段落B**

It was the longest-distance repair job history, and a triumph for the NASA engineers. But it also highlighted the astonishing power of the techniques developed by American communications engineer Claude Shannon, who had died just a year earlier. Born in 1916 in Petoskey, Michigan, Shannon showed an early talent for maths and for building gadgets and made breakthroughs in the foundations of computer technology when still a student. While at Bell Laboratories, Shannon developed information theory but shunned the resulting acclaim. In the 1940s, he single-handedly created an entire science of communication which has since inveigled its way into a host of applications, from DVDs to satellite communications to bar codes— any area, in short, where data has to be conveyed rapidly yet accurately.

这是历史上跨越最长距离的修理，也是NASA工程师的胜利。但是，它也突显了一年前去世的美国通信工程师克劳德·香农（Claude Shannon）所开发的技术的惊人力量。香农于1916年在密歇根州的佩托斯基（Petoskey）出生。他从小就展现出数学和搭建小工具方面的天赋，并在还是学生的时候就在计算机技术的基础上取得了突破。在贝尔实验室时，香农提出了信息理论，但回避了由此产生的好评。在20世纪40年代，他一手创建了后来应用于各种领域的通信科学，从DVD到卫星通讯再到条形码。简言之，任何需要对信息进行快速而准确的传输的领域。

**段落C**

This all seems light years away from the down-to-earth uses Shannon originally had for his work, which began when he was a 22-year-old graduate engineering student at the prestigious Massachusetts Institute of Technology in 1939. He set out with an apparently simple aim: to pin down the precise meaning of the concept of ‘information’. The most basic form of information, Shannon argued, is whether something is true or false—which can be captured in the binary unit, or ‘bit’, of form 1 or 0. Having identified this fundamental unit, Shannon set about defining otherwise vague ideas about information and how to transit it from place to place. In the process he discovered something surprising: it is always possible to guarantee the information will get through random interference—‘noise’—intact.

这一切似乎与香农最初的应用相差很远。1993年他22岁，是著名的麻省理工学院工程学的研究生。他一开始的目的很简单：确定“信息”这一概念的确切含义。香农认为，基本的信息形式是判断事物正确与否，这可以用二进制单位“比特”以1或者0的形式来记录。香农确定了此基本形式后，便着手定义关于信息和信息跨地区传输的其他模糊概念。在这个过程中，他发现了一些令人吃惊事情：总是有可能使信息穿过随机的干扰-噪音-而保持完整。

**段落D**

Noise usually means unwanted sounds which interfere with genuine information. Information theory generalizes this idea via theorems that capture the effects of noise with mathematical precision. In particular, Shannon showed that noise sets a limit on the rate at which information can pass along communication channels while remaining error-free. This rate depends on the relative strengths of the signal and noise travelling down the communication channel, and on its capacity (its ‘bandwidth’). The resulting limit, given in units of bits per second, is the absolute maximum rate of error-free communication given signal strength and noise level. The trick, Shannon showed, is to find ways of packaging up —‘coding’—information to cope with the ravages of noise, while staying within the information-carrying capacity—‘bandwidth’—of the communication system being used.

噪音通常表示会干扰到真正信息的多余声音。信息理论通过定理概括了这一概念。它以数学的精确度确定了噪声的影响。更确切的说，香农表示噪音在速度方面存在限制。在特定的速度上，信息可以通过通信频道并保持完整。该速度单位为比特/秒，是在给定的信号强度和噪音水平下，信息无误差传送的最大绝对速度。香农指出，提供这一速度的有效方法是在所使用的通信系统的传送能力（即带宽）范围内，找到将信息打包（即编码）的方式，来应对噪声的破坏。

**段落E**

Over the years scientists have devised many such coding methods, and they have proved crucial in many technological feats. The voyager spacecraft transmitted data using codes which added one extra bit for every single bit of information; the result was an error rate of just one bit in 10,000—and stunningly clear pictures of the planets. Other codes have become part of everyday life—such as the Universal Product Code, or bar code. Which uses a simple error-detecting system that ensures supermarket check-out lasers can read the price even on, say, a crumpled bag of crisps. As recently as 1993, engineers made a major breakthrough by discovering so-called turbo—which come very close to Shannon’s ultimate limit for the maximum rate that data can be transmitted reliably, and now play a key role in the mobile videophone revolution.

多年来，科学家们已经设计出许多这样的编码方法，也证明了它们对许多技术成就至关重要。旅行者号航天器利用编码传输数据，这些编码在每比特信息上都额外增加了一比特信息，使错误率仅为万分之一，得到清晰度惊人的行星图片。其他编码已成为日常生活的一部分，例如通用产品代码或条形码。它使用一种简单的错误检测系统，确保超市的激光结账设备甚至可以在皱巴巴的薯片袋上读取价格。就在1993年，工程师们取得了一项重大突破，发现所谓的Turbo码，这与香农提出的信息可以安全传送的最大速度极限非常接近。现在，Turbo码在移动可视电话变革中发挥着关键的作用，

**段落F**

Shannon also laid the foundations of more efficient ways of storing information, by stripping out superfluous (‘redundant’) bits from data which contributed little real information. As mobile phone text messages like ‘ I CN C U’ show, it is often possible to leave out a lot of data without losing much meaning. As with error correction, however, there’s a limit beyond which message become too ambiguous. Shannon showed how to calculate this limit, opening the way to the design of compression methods that cram maximum information into the minimum space.

通过去除含有较少真实信息的多余数据，香农也会开发更有效率地储存信息的方式奠定了基础。正如手机短信“I CN C U”（I can see you的缩写）一样，有可能在省略了很多数据之后，基本意思保持不变。但是，正如纠错一样，省略存在一定的限制。超过该限制信息就会变得模糊不清。香农说明了如何计算这一限制，为设计信息压缩方法，从而将最多的信息塞进最小的空间开辟了道路。

## 9Test4

### [9Test4Passage1 The life and work of Marie Curie 居里夫人的生活与工作](http://www.laokaoya.com/27486.html)

第1段

Marie Curie is probably the most famous woman scientist who has ever lived. Born Maria Sklodowska in Poland in 1867, she is famous for her work on radioactivity, and was twice a winner of the Nobel Prize. With her husband, Pierre Curie, and Henri Becquerel, she was awarded the 1903 Nobel Prize for Physics, and was then sole winner of the 1911 Nobel Prize for Chemistry. She was the first woman to win a Noble Prize.

居里夫人可能是有史以来最著名的女科学家。她于1867年出生在波兰的玛丽亚（Maria Sklodowska），以放射性研究而闻名，曾两次获得诺贝尔奖。她与丈夫皮埃尔·居里（Pierre Curie）和亨利·贝克勒（Henri Becquerel）一起获得了1903年诺贝尔物理学奖，然后成为1911年诺贝尔化学奖的唯一获得者。她是第一位获得诺贝尔奖的女性。

第2段

From childhood, Marie was remarkable for her prodigious memory, and at the age of 16 won a gold medal on completion of her secondary education. Because her father lost his savings through bad investment, she then had to take work as a teacher. From her earnings, she was able to finance her sister Bronia’s medical studies in Paris, on the understanding that Bronia would, in turn, later help her to get an education.

玛丽（Marie）从小就以出色的记忆力着称，并在16岁完成中学教育时获得了金牌。由于父亲文章来自老烤鸭雅思因不良投资而失去积蓄，她不得不当上老师。她的收入让她有能力资助姐姐Bronia在巴黎的医学学习，因为她了解到Bronia随后会帮助她接受教育。

第3段

In 1891 this promise was fulfilled and Marie went to Paris and began to study at the Sorbonne. She often worked far into the night and lived on little more than bread and butter and tea. She came first in the examination in the physical sciences in 1893, and in 1894 was placed second in the examination in mathematical sciences. It was not until the spring of that year that she was introduced to Pierre Curie.

1891年，这一诺言得以兑现，玛丽去了巴黎，开始在索邦大学学习。她经常工作到深夜，靠面包，黄油和茶为生。她在1893年的物理科学考试中排名第一，在1894年的数学科学考试中排名第二。那年春天，她被介绍给皮埃尔·居里。

第4段

Their marriage in 1895 marked the start of a partnership that was soon to achieve results of world significance. Following Henry Becquerel’s discovery in 1896 of a new phenomenon, which Marie later called ‘radioactivity’. Marie Curie decided to find out if the radioactivity discovered in uranium was to be found in other elements. She discovered that this was true for thorium.

他们于1895年结婚，这段关系标志着取得具有世界意义的结果的开始。在亨利·贝克勒尔（Henry Becquerel）在1896年发现一种新现象之后（玛丽后来将其称为“放射性”），玛丽·居里决定寻找铀中存在的放射性是否也在其他元素中存在。她发现钍的情况也是如此。

第5段

Turning her attention to minerals, she found her interest drawn to pitchblende, a mineral whose radioactivity, superior to that of pure uranium, could be explained only by the presence in the ore of small quantities of an unknown substance of very high activity. Pierre Curie joined her in the work that she had undertaken to resolve this problem, and that led to the discovery of the new elements, polonium and radium. While Pierre Curie devoted himself chiefly to the physical study of the new radiations, Marie Curie struggled to obtain pure radium in the metallic state. This was achieved with the help of the chemist Andre—Louis Debierne, one of Pierre Curie’s pupils. Based on the results of this research, Marie Curie received her Doctorate of Science, and Marie and Pierre shared with Becquerel the Nobel Prize for Physics for the discovery of radioactivity.

在将注意力转向矿物时，她发现自己对沥青藻感兴趣，这种矿物的放射性比纯铀高。这一点只能由矿石中存在少量未知的高活性物质来解释。她着手解决这个问题，皮埃尔·居里在加入了她的工作，并促成新的元素-钋和镭的发现。当皮埃尔·居里（Pierre Curie）主要致力于对新辐射源的物理研究时，玛丽·居里（Marie Curie）通过努力获取了金属态的纯镭。这是在皮埃尔·居里的学生之一-化学家Andre-Louis Debierne的帮助下实现的。根据这项研究的结果，玛丽·居里（Marie Curie）获得了科学博士学位。1903年玛丽（Marie）、皮埃尔（Pierre）与贝克勒尔（Becquerel）因发现放射性而共同获得了诺贝尔物理学奖。

第6段

The births of Marie’s two daughters, Irene and Eve, in 1897 and 1904 failed to interrupt her scientific work. She was appointed lecturer in physics at the Ecole Normale Superieure for girls in Serves. France (1900), and introduced a method of teaching based on experimental demonstrations. In December 1904 she was appointed chief assistant in the laboratory directed by Pierre Curie.

玛丽的两个女儿艾琳（Irene）和夏娃（Eve）在1897年和1904年的出生未能中断她的科学工作。1900年她被任命为法国高等师范学校物理系讲师，并引入了一种基于实验演示的教学方法。1904年12月，她被任命为Pierre Curie领导的实验室的首席助理。

第7段

The sudden death of her husband in 1906 was a bitter blow to Marie Curie, but was also a turning point in her career: henceforth she was to devote all her energy to completing alone the scientific work that they had undertaken. On May 13, 1906, she was appointed to the professorship that had been left vacant on her husband’s death, becoming the first woman to teach at the Sorbonne. In 1911 she was awarded the Nobel Prize for Chemistry for the isolation of a pure form of radium.

她的丈夫在1906年突然去世，这对玛丽·居里来说是个沉痛的打击，但这也是她事业的转折点：从此，她将全力以赴地独自完成他们所从事的科学工作。1906年5月13日，她走上丈夫去世后空缺的教授职位，成为第一位在索邦任教的女士。1911年，她因分离出纯净形式的镭而获得了诺贝尔化学奖。

第8段

During World War I, Marie Curie, with the help of her daughter Irene devoted herself to the development of the use of X-radiography, including the mobile units which came to be known as ‘little curies’, used for the treatment of wounded soldiers. In 1918 the Radium Institute, whose staff Irene had joined, began to operate in earnest, and became a centre for nuclear physics and chemistry. Marie Curie, now at the highest point of her fame and, from 1922, a member of the Academy of Medicine, researched the chemistry of radioactive substances and their medical applications.

第一次世界大战期间，玛丽·居里（Marie Curie）在女儿艾琳（Irene）的帮助下致力于X射线照相技术的发展，其中包括后来被称为“小咖喱”的，用于治疗受伤的士兵的可移动装置。1918年，艾琳所加入的镭研究所（Radiium Institute）开始认真运作，并成为核物理和化学的中心。玛丽·居里（Marie Curie）达到了其声望的最高点，并于1922年因研究放射性物质的化学性质及其医学应用开始担任医学科学院的成员。

第9段

In 1921, accompanied by her two daughters, Marie Curie made a triumphant journey to the United States to raise funds for research on radium. Women there presented her with a gram of radium for her campaign. Marie also gave lectures in Belgium, Brazil, Spain and Czechoslovakia and in addition, had the satisfaction of seeing the development of the Curie Foundation in Paris, and the inauguration in 1932 in Warsaw of the Radium Institute, where her sister Bronia became director.

1921年，玛丽·居里（Marie Curie）在她两个女儿的陪伴下，前往美国成功筹集了用于镭研究的资金。那里的女性因她的筹款活动送给她一克镭。玛丽还在比利时，巴西，西班牙和捷克斯洛伐克进行了演讲，此外，她十分欣慰地看到巴黎居里基金会的发展，以及1932年她的姐姐布罗尼亚出任华沙镭研究机构的主任的就职典礼。

第10段

One of Marie Curie’s outstanding achievements was to have understood the need to accumulate intense radioactive sources, not only to treat illness but also to maintain an abundant supply for research. The existence in Pairs at the Radium Institute of a stock of 1.5 grams of radium made a decisive contribution to the success of the experiments undertaken in the years around 1930. This work prepared the way for the discovery of the neutron by Sir James Chadwick and, above all, for the discovery in 1934 by Irene and Frederic Joliot-Curie of artificial radioactivity. A few months after this discovery, Marie Curie died as a result of leukaemia caused by exposure to radiation. She had often carried test tubes containing radioactive isotopes in her pocket, remarking on the pretty blue-green light they gave off.

居里夫人的杰出成就之一就是认识到积累大量放射源的必要性，以便治疗疾病，并保持充足的研究供应。巴黎镭研究所储存的1.5克镭对1930年左右的实验成功作出了决定性的贡献。这项工作为詹姆斯·查德威克爵士发现中子，以及艾琳（Irene）和弗雷德里克·乔里奥特·居里（Frederic Joliot-Curie）在1934年发现人工放射性铺平了道路。几个月后，居里夫人因暴露于辐射引发的白血病死亡。她经常在口袋里放着装有放射性同位素的试管，赞叹它们发出的漂亮的蓝绿色光。

第11段

Her contribution to physics had been immense, not only in her own work, the importance of which had been demonstrated by her two Nobel Prizes, but because of her influence on subsequent generations of nuclear physicists and chemists.

她对物理学的贡献是巨大的，不仅仅因为她自己的研究（两次诺贝尔奖证明了其重要性），还因为她对后来核物理学家和化学家的影响。

### [9Test4Passage2 Young children’s sense of identity 婴幼儿的自我认知](http://www.laokaoya.com/27549.html)

段落A

A sense of self develops in young children by degrees. The process can usefully be thought of in terms of the gradual emergence of two somewhat separate features: the self as a subject, and the self as an object. William James introduced the distinction in 1892, and contemporaries of his, such as Charles Cooley, added to the developing debate. Ever since then psychologists have continued building on the theory.

幼儿会逐步发展出自我意识。我们可以从两个某种程度上相互独立的特征的逐渐出现来考虑这一过程：作为主体的自我和作为客体的自我。威廉·詹姆斯（William James）在1892年引入这一区分，他同时代的人，例如查尔斯·库利（Charles Cooley），也加入这一场不断发展的辩论。从那时起，心理学家一直在持续构建该理论。

段落B

According to James, a child’s first step on the road to self-understanding can be seen as the recognition that he or she exists. This is an aspect of the self that he labelled ‘self-as-subject’, and he gave it various elements. These included an awareness of one’s own agency (i.e. one’s power to act), and an awareness of one’s distinctiveness from other people. These features gradually emerge as infants explore their world and interact with caregivers. Cooley (1902) suggested that a sense of the self-as-subject was primarily concerned with being able to exercise power. He proposed that the earliest examples of this are an infant’s attempts to control physical objects, such as toys or his or her own limbs. This is followed by attempts to affect the behavior of other people. For example, infants learn that when they cry or smile someone responds to them.

詹姆斯认为，孩子迈向自我认知的第一步可以看作是对自己存在的认可。这是自我的一个方面，他称之为“作为主体的自我”，并赋予了它各种要素。其中包括了解自己的代理机构（即自己的行为权），以及了解自己与众不同的特征。随着婴儿探索自己的世界并与照顾者互动，这些特征逐渐显现出来。Cooley（1902）提出，作为主体的自我认知主要与能够锻炼影响力有关。他提出，最早的例子是婴儿试图控制诸如玩具或自己的四肢之类的实在物体。随后是影响他人行为的尝试。例如，婴儿了解到，当他们哭泣或微笑时，有人会对他们做出反应。

段落C

Another powerful source of information for infants about the effects they can have on the world around them is provided when others mimic them. Many parents spend a lot of time, particularly in the early months, copying their infant’s vocalizations and expressions. In addition, young children enjoy looking in mirrors, where the movements they can see are dependent upon their own movements. This is not to say that infants recognize the reflection as their own image (a later development). However, Lewis and Brooks-Gunn (1979) suggest that infants’ developing understanding that the movements they see in the mirror are contingent on their own, leads to a growing awareness that they are distinct from other people. This is because they, and only they, can change the reflection in the mirror.

当其他人模仿婴儿时，可以为婴儿提供有关其对周围世界的影响的另一个强大信息来源。许多父母花很多时间，尤其是在最初的几个月里，模仿婴儿的声音和表情。此外，年幼的孩子喜欢照镜子，他们看到的动作取决于自己的动作。这并不是说婴儿将镜子中的反射视为自己的图像（后来的发展）。刘易斯和布鲁克斯-古恩（Lewis and Brooks-Gunn，1979）认为，婴儿对镜子中运动的理解是独立的，这使他们逐渐意识到自己与众不同。因为他们，并且只有他们可以改变镜中的反射。

段落D

This understanding that children gain of themselves as active agents continues to develop in their attempts to co-operate with others in play. Dunn (1988) points out that it is in such day-to-day relationships and interactions that the child’s understanding of his- or herself emerges. Empirical investigations of the self-as-subject in young children are, however, rather scarce because of difficulties of communication: even if young infants can reflect on their experience, they certainly cannot express this aspect of the self directly.

在与他人玩耍的过程中，儿童对自己作为积极行为者的理解不断发展。邓恩（Dunn，1988）指出，正是在这种日常关系和互动中，孩子才对自己产生了理解。然而，由于沟通困难，对幼儿自我主体的实证研究相当缺乏：即使幼儿可以反思自己的经历，他们也无法直接表达自我的这一方面。

段落E

Once children have acquired a certain level of self-awareness, they begin to place themselves in a whole series of categories, which together play such an important part in defining them uniquely as ‘themselves’. This second step in the development of a full sense of self is what James called the ‘self-as-object’. This has been seen by many to be the aspect of the self which is most influenced by social elements, since it is made up of social roles (such as student, brother, colleague) and characteristics which derive their meaning from comparison or interaction with other people (such as trustworthiness, shyness, sporting ability).

一旦孩子获得了一定程度的自我意识，他们便开始将自己置于一系列的类别中，这些类别在他们获取有关“自己”的独特定义中发挥着重要作用。全面自我意识发展的第二步就是詹姆斯所说的“客体的自我”。许多人认为这一方面的自我受社会影响最大，因为它是由社会角色（例如学生，兄弟，同事）和通过与他人的比较或互动而得出的特征（例如诚信，害羞，运动能力）组成的。

段落F

Cooley and other researchers suggested a close connection between a person’s own understanding of their identity and other people’s understanding of it. Cooley believed that people build up their sense of identity from the reactions of others to them, and from the view they believe others have of them. He called the self-as-object the ‘looking-glass self’, since people come to see themselves as they are reflected in others. Mead (1934) went even further, and saw the self and the social world as inextricably bound together: ‘The self is essentially a social structure, and it arises in social experience … it is impossible to conceive of a self arising outside of social experience.’

Cooley和其他研究人员认为，一个人对自己身份的理解与他人对其身份的理解之间存在密切联系。Cooley相信人们会从他人对他们的反应中，以及他们所认为的其他人对他们的看法中建立身份认同。他将客体自我称为“照镜子的自我”，因为人们通过他人的反馈来认识自己。米德（Mead，1934）走得更远，他认为自我和社会世界密不可分地联系在一起：“自我本质上是一种社会结构，它诞生于社会经验之中……无法想象在社会经验之外产生的自我。”

段落G

Lewis and Brooks-Gunn argued that an important development milestone is reached when children become able to recognize themselves visually without the support of seeing contingent movement. This recognition occurs around their second birthday. In one experiment, Lewis and Brooks-Gunn (1979) dabbed some red powder on the noses of children who were playing in front of a mirror, and then observed how often they touched their noses. The psychologists reasoned that if the children knew what they usually looked like, they would be surprised by the unusual red mark and would start touching it. On the other hand, they found that children of 15 to 18 months are generally not able to recognize themselves unless other cues such as movement are present.

ewis和Brooks-Gunn争辩说，发展过程中一项重要的里程碑是，儿童在看不到自己动作时却能在视觉上认识自己。这种认知出现在两岁左右。在一个实验中，刘易斯和布鲁克斯-古恩（Lewis and Brooks-Gunn，1979）在镜子前玩耍的孩子的鼻子上擦了一些红色粉末，然后观察他们多长时间触摸一次鼻子。心理学家认为，如果孩子们知道他们平时的模样，他们会对异常的红色标记感到惊讶并开始触摸它。另一方面，他们发现15到18个月大的孩子通常无法识别自己，除非存在动作之类的其他提示。

段落H

Finally, perhaps the most graphic expressions of self-awareness in general can be seen in the displays of rage which are most common from 18 months to 3 years of age. In a longitudinal study of groups of three or four children, Bronson (1975) found that the intensity of the frustration and anger in their disagreements increased sharply between the ages of 1 and 2 years. Often, the children’s disagreements involved a struggle over a toy that none of them had played with before or after the tug-of-war: the children seemed to be disputing ownership rather than wanting to play with it. Although it may be less marked in other societies, the link between the sense of ‘self’ and of ‘ownership’ is a notable feature of childhood in Western societies.

最后，或许普遍意义上自我认知最形象的表现体现在愤怒的展示上。这在18个月到3岁之间的孩子身上最为常见。在对三四个孩子构成的小组进行纵向研究时，Bronson（1975）发现，他们遇到分歧时，沮丧和愤怒的强度在1至2岁之间急剧增加。通常，孩子们的分歧涉及对他们在拔河之前或之后还没有玩过的玩具的争执：孩子们似乎在争辩所有权，而不是想玩它。尽管它在其他社会中可能没有那么明显，但是“自我认知”和“所有权”之间的联系是西方社会童年的显著特征。

### [9Test4Passage3 The Development of Museums 博物馆的发展](http://www.laokaoya.com/28366.html)

段落A

The conviction that historical relics provide infallible testimony about the past is rooted in the nineteenth and early twentieth centuries, when science was regarded as objective and value free. As one writer observes: ‘Although it is now evident that artefacts are as easily altered as chronicles, public faith in their veracity endures: a tangible relic seems ipso facto real.’ Such conviction was, until recently, reflected in museum displays. Museums used to look – and some still do – much like storage rooms of objects packed together in showcases: good for scholars who wanted to study the subtle differences in design, but not for the ordinary visitor, to whom it all looked alike. Similarly, the information accompanying the objects often made little sense to the lay visitor. The content and format of explanations dated back to a time when the museum was the exclusive domain of the scientific researcher.

历史遗迹提供了有关过去的可靠证明，这一信念源于19世纪和20世纪初。当时科学被视为是客观和价值中立的。正如一位作家所观察到的：“现在，如下事实十分明显，人工制品像编年史一样容易被改变，但是公众对它们的真实性的信念仍然存在：有形的文物似乎确实是真实的”。直到最近，这样的信念都可以从博物馆的展示里得到反映。博物馆过去-有些还在-看起来就像是将物品存放在展示柜中的储藏室一样：对想要研究设计上细微差别的学者非常有用，但不适用于普通游客。在他们看来，所有东西看起来都很像。同样，物品所附带的信息对游客来说意义不大。这种阐释的内容和形式可以追溯到博物馆作为科学研究者专有领域的时期。

段落B

Recently, however, attitudes towards history and the way it should be presented have altered. The key word in heritage display is now ‘experience’, the more exciting the better and if possible, involving all the senses. Good examples of this approach in the UK are the Jorvik Center in York; the National Museum of Photography, Film and Television in Bradford; and the Imperial War Museum in London. In the US the trend emerged much earlier: Williamsburg has been a prototype for many heritage developments in other parts of the world. No one can predict where the process will end. On so-called heritage sites the re-enactment of historical events is increasingly popular, and computers will soon provide virtual reality experiences, which will present visitors with a vivid image of the period of their choice, in which they themselves can act as if part of the historical environment. Such developments have been criticized as an intolerable vulgarization, but the success of many historical theme parks and similar locations suggests that the majority of the public does not share this opinion.

然而，近来，人们对历史及其呈现方式的态度发生了变化。现在文物展示的关键词是“体验” ，越令人兴奋越好。如果可能的话，最好文章来自老烤鸭雅思涉及所有的感官。在英国，这种方法优秀案例有位于约克的约尔维克中心，位于布拉德福德的国家摄影、电影和电视博物馆；以及位于伦敦的帝国战争博物馆。在美国，这种趋势出现得更早：威廉斯堡（Williamsburg）是世界其他地区许多遗产发展的原型。没有人能够预测这一变化过程将在哪里结束。在所谓的历史遗迹上，重演历史事件变得越来越流行，计算机很快能够提供虚拟现实的体验。这将为游客呈现他们所选择的时期的生动图景。在此过程中他们仿佛置身于历史环境中一样。这种发展被一些人批评为令人无法忍受的庸俗化。但是许多历史主题公园和类似地点的成功表明，大多数公众不同意这种观点。

段落C

In a related development, the sharp distinction between museum and heritage sites on the one hand, and theme parks on the other, is gradually evaporating. They already borrow ideas and concepts from one another. For example, museums have adopted story lines for exhibitions, sites have accepted ‘theming’ as a relevant tool, and theme parks are moving towards more authenticity and research-based presentations. In zoos, animals are no longer kept in cages, but in great spaces, either in the open air or in enormous greenhouses, such as the jungle and desert environments in Burgers’ Zoo in Holland. This particular trend is regarded as one of the major developments in the presentation of natural history in the twentieth century.

在相关的发展过程中，博物馆和文物古迹与主题公园之间的鲜明区分正在逐渐消失。他们相互借鉴了彼此的思想和观念。例如，博物馆采用故事情节来进行展览，场所将“主题”作为相关工具。而主题公园则正朝着更具真实性和以研究为基础的展示的方向发展。在动物园，动物不再被关在笼子里，而是在巨大的空间中活动，要么是露天场所，要么是大型的温室，如荷兰Burgers动物园的丛林和沙漠环境。这种特殊的趋势被认为是二十世纪自然历史呈现的主要发展之一。

段落D

Theme parks are undergoing other changes, too, as they try to present more serious social and cultural issues, and move away from fantasy. This development is a response to market forces and, although museums and heritage sites have a special, rather distinct, role to fulfil, they are also operating in a very competitive environments, where visitors make choices on how and where to spend their free time. Heritage and museum experts do not have to invent stories and recreate historical environments to attract their visitors: their assets are already in place. However, exhibits must be both based on artefacts and facts as we know them, and attractively presented. Those who are professionally engaged in the art of interpreting history are thus in a difficult position, as they must steer a narrow course between the demands of ‘evidence’ and ‘attractiveness’, especially given the increasing need in the heritage industry for income-generating activities.

主题公园也正在经历其他变化。它们试图呈现更严肃的社会和文化问题，并摆脱幻想。这种发展是对市场力量的回应。尽管博物馆和遗址需要履行十分特殊的职责，但它们在竞争非常激烈的环境中运作。游客可以选择如何以及在哪里度过闲暇时光。遗址和博物馆专家不必发明故事或重塑历史环境来吸引游客：他们的资本已经到位。但是，展示必须建立在物品本身以及我们所认识他们的基础上，同时又必须具有吸引力。因此，那些专业从事历史阐释艺术的人处于一种左右为难的境地，因为他们必须在“证据”和“吸引力”的要求之间寻找狭窄的路径，特别是考虑到遗产行业越来越需要可以创收的活动。

段落E

It could be claimed that in order to make everything in heritage more ‘real’, historical accuracy must be increasingly altered. For example, Pithecanthropus erectus is depicted in an Indonesian museum with Malay facial features, because this corresponds to public perceptions. Similarly, in the Museum of Natural History in Washington, Neanderthal man is shown making a dominant gesture to his wife. Such presentations tell us more about contemporary perceptions of the world than about our ancestors. There is one compensation, however, for the professionals who make these interpretations: if they did not provide the interpretation, visitors would do it for themselves, based on their own ideas, misconceptions and prejudices. And no matter how exciting the result, it would contain a lot more bias than the presentations provided by experts.

可以说，为了使遗迹中的一切都更加“真实” ，我们必须对历史准确性做出越来越多的改变。例如，印度尼西亚博物馆中的直立猿人拥有马来人的面部特征，就呼应了公众的观念。同样，在华盛顿的自然历史博物馆中，被展示的尼安德特人正在对妻子做出主导手势。这样的展现告诉我们的更多的是关于世界的当代看法，而非有关我们祖先的事情。但是，进行这种解释的专业人员可以得到一种心理安慰：如果他们不提供这种解释，那么游客就会根据自己的想法，误解和偏见来自己编造。而且，无论结果多么令人兴奋，它所包含的偏见都比专家提供的报告要多得多。

段落F

Human bias is inevitable, but another source of bias in the representation of history has to do with the transitory nature of the materials themselves. The simple fact is that not everything from history survives the historical process. Castles, palaces and cathedrals have a longer lifespan than the dwellings of ordinary people. The same applies to the furnishings and other contents of the premises. In a town like Leyden in Holland, which in the seventeenth century was occupied by approximately the same number of inhabitants as today, people lived within the walled town, an area more than five times smaller than modern Leyden. In most of the houses several families lived together in circumstances beyond our imagination. Yet in museums, fine period rooms give only an image of the lifestyle of the upper class of that era. No wonder that people who stroll around exhibitions are filled with nostalgia; the evidence in museums indicates that life was so much better in the past. This notion is induced by the bias in its representation in museums and heritage centers.

人类的偏见是不可避免的，但是历史展现的另一个偏见根源与材料本身的暂时性有关。一个简单的事实是，历史中并非所有的物品都能在历史进程中存留下来。城堡，宫殿和大教堂的寿命比老百姓的住所更长。房屋家具和其他物品也是如此。在像荷兰莱顿这样17世纪的居民数量与今天几乎相同的小镇中，人们所居住被围墙环绕的城镇面积还不到今天的五分之一。在大多数房屋里，几个家庭一起生活在我们无法想象的环境中。然而，在博物馆中，精美的​​房间只能提供那个时代上层社会生活方式的图景。难怪逛展览的人充满了怀旧之情。博物馆中的证据表明，过去的生活好多了。这种观念正是由博物馆和遗产在展示中存​​在的偏差而引起的。

# 十

## 10Test1

### [10Test1Passage1 stepwells 印度阶梯井](http://www.laokaoya.com/28632.html)

第1段

During the sixth and seventh centuries, the inhabitants of the modern-day states of Gujarat and Rajasthan in north-western India developed a method of gaining access to clean, fresh groundwater during the dry season for drinking, bathing, watering animals and irrigation. However, the significance of this invention – the stepwell – goes beyond its utilitarian application.

在公元六世纪和七世纪，现代印度西北部的古吉拉特邦和拉贾斯坦邦的居民开发了一种在旱季获得清洁，新鲜的地下水以供饮用、沐浴、给动物饮水和灌溉的方法。但是，这一发明的意义（阶梯井）远不止于其功利性的应用。

第2段

Unique to this region, stepwells are often architecturally complex and vary widely in size and shape. During their heyday, they were places of gathering, of leisure and relaxation and of worship for villagers of all but the lowest classes. Most stepwells are found dotted round the desert areas of Gujarat (where they are called vav) and Rajasthan (where they are called baori), while a few also survive in Delhi. Some were located in or near villages as public spaces for the community; others were positioned beside roads as resting places for travellers.

阶梯井是该地区独有的，结构上通常很复杂，大小和形状差别很大。在它们的鼎盛时期，这里文章来自老烤鸭雅思是除了最底层居民之外，所有村民聚会，休闲、放松和朝拜的地方。人们发现大多数阶梯井都分布在古吉拉特邦（在这里被称为vav）和拉贾斯坦邦（在这里它们被称为baori ）的沙漠地区周围。在德里也有少数存在。其中一些位于村庄内或附近，作为社区的公共空间；其他则被设置在道路旁，作为旅行者的休息场所。

第3段

As their name suggests, stepwells comprise a series of stone steps descending from ground level to the water source (normally an underground aquifer) as it recedes following the rains. When the water level was high, the user needed only to descend a few steps to reach it; when it was low, several levels would have to be negotiated.

顾名思义，由于水面会随着雨水而消退，阶梯井包括一系列从地面下到水源（通常为地下含水层）的台阶。当水位高时，用户仅需往下走几步即可达到。而当水位较低时，必须都走几个台阶。

第4段

Some wells are vast, open craters with hundreds of steps paving each sloping side, often in tiers. Others are more elaborate, with long stepped passages leading to the water via several storeys. Built from stone and supported by pillars, they also included pavilions that sheltered visitors from the relentless heat. But perhaps the most impressive features are the intricate decorative sculptures that embellish many step wells, showing activities from fighting and dancing to everyday acts such as women combing their hair or churning butter.

一些水井的开口十分巨大，通常每个斜坡都有上百层台阶按阶层分布。其他的则比较复杂，有长长的台阶通道穿过几层楼通往水面。它们由石头建成，并通过柱子支撑，包括能够让游客躲避炎热的看台。但也许是最令人印象深刻的特征是许多阶梯井中都有着复杂的装饰性雕塑，展示战斗、跳舞、以及诸如女性梳理头发和搅动黄油的日常活动。

第5段

Down the centuries, thousands of wells were constructed throughout northwestern India, but the majority have now fallen into disuse; many are derelict and dry, as groundwater has been diverted for industrial use and the wells no longer reach the water table. Their condition hasn’t been helped by recent dry spells: southern Rajasthan suffered an eight-year drought between 1996 and 2004.

几个世纪以来，在印度的西北部建造了数千口水井，但现在大多数已经废弃。由于地下水被转用于工业用途，水井不再能达到地下水水位，因此许多水井都已干涸。最近的干旱也加重了这一情况：拉贾斯坦邦南部在1996年至2004年间遭受了八年干旱。

第6段

However, some important sites in Gujarat have recently undergone major restoration, and the state government announced in June last year that it plans to restore the stepwells throughout the state.

然而，古吉拉特邦的一些重要水井最近进行了重大修复。州政府于去年6月份宣布，计划恢复整个州的阶梯井。

第7段

In Patan, the state’s ancient capital, the stepwell of Rani Ki Vav (Queen’s Stepwell) is perhaps the finest current example. It was built by Queen Udayamati during the late 11th century, but became silted up following a flood during the 13th century. But the Archaeological Survey of India began restoring it in the 1960s, and today it is in pristine condition. At 65 metres long, 20 metres wide and 27 metres deep, Rani Ki Vav features 500 sculptures carved into niches throughout the monument. Incredibly, in January 2001, this ancient structure survived an earthquake that measured 7.6 on the Richter scale.

在该州的古都帕坦（Patan），Rani Ki Vav（Queen’s Stepwell）的阶梯井也许是目前最好的例子。它是由乌达亚马蒂女王（Queen Udayamati）在11世纪后期建造的，但在13世纪的洪水之后就被淤塞了。但是印度考古调查局于20世纪60年代开始对其进行修复，如今它已恢复到原始状态。Rani Ki Vav长65米，宽20米，深27米。整个遗迹中拥有500座雕塑。令人难以置信的是，2001年1月，这座古建筑在里氏7.6级地震中幸存了下来。

第8段

Another example is the Surya Kund in Modhera, northern Gujarat, next to the Sun Temple, built by King Bhima I in 1026 to honour the sun god Surya. It actually resembles a tank (kund means reservoir or pond) rather than a well, but displays the hallmarks of stepwell architecture, including four sides of steps that descend to the bottom in a stunning geometrical formation. The terraces house 108 small, intricately carved shrines between the sets of steps.

另一个例子是位于古吉拉特邦北部Modhera的Surya Kund。它紧挨着由国王Bhima一世在1026为朝拜太阳神Surya而建造的太阳神神庙。它实际上类似于一个水箱（Kund的意思是水库或池塘），而不是一个水井。但它显示出阶梯井的结构特征，包括深入井底的，按照令人惊讶的几何结构所建立的四面台阶。台阶之间的露台设置着108个小巧精致的神社。

第9段

Rajasthan also has a wealth of wells. The ancient city of Bundi, 200 kilometres south of Jaipur, is renowned for its architecture, including its stepwells. One of the larger examples is Raniji Ki Baori, which was built by the queen of the region, Nathavatji, in 1699. At 46 meters deep, 20 metres wide and 40 metres long, the intricately carved monument is one of 21 baoris commissioned in the Bundi area by Nathavatji.

拉贾斯坦邦也有丰富的水井。Jaipur南面200公里处的古城Bundi因其建筑而闻名，这其中就包括阶梯井。一个较大的例子是Raniji Ki Baori。它由该地区的女王Nathavatji在1699年修建的。深46米，宽20米，长40米，它是Nathavatji在Bundi所修建的21个精致的建筑物之一。

第10段

In the old ruined town of Abhaneri, about 95 kilometers east of Jaipur, is Chand Baori, one of India’s oldest and deepest wells; aesthetically it’s perhaps one of the most dramatic. Built in around 850 AD next to the temple of Harshat Mata, the baori comprises hundreds of zigzagging steps that run along three of its sides, steeply descending 11 storeys, resulting in a striking pattern when seen from afar. On the fourth side, verandas which are supported by ornate pillars overlook the steps.

在Japipur以东约95公里处的古老废墟小镇阿布哈内里内（Abhaneri），坐落着印度最古老最深的水井之一，Chand Baori；从美学上讲，它可能是最引人注目的一个。建于公元850年左右，位于Harshat Mata寺庙旁边，该水井在三面分布着数百个曲折的台阶，下降11层的高度。从远处看构成令人惊讶的图像。在第四面，由华丽支柱支撑的阳台俯瞰着这些台阶。

第11段

Still in public use is Neemrana Ki Baoriy located just off the Jaipur-Delhi highway. Constructed in around 1700, it is nine storeys deep, with the last two being underwater. At ground level, there are 86 colonnaded openings from where the visitor descends 170 steps to the deepest water source.

Neemrana Ki Baoriy仍被公众使用，就位于 Jaipur-Delhi的高速公路旁。它建于1700年左右，深9层，最后两层位于水下。在地面上，有86个柱廊开口，游客从那里可以向下走过170个台阶到达最深的水源。

第12段

Today, following years of neglect, many of these monuments to medieval engineering have been saved by the Archaeological Survey of India, which has recognised the importance of preserving them as part of the country’s rich history. Tourists flock to wells in far-flung corners of northwestern India to gaze in wonder at these architectural marvels from hundreds of years ago, which serve as a reminder of both the ingenuity and artistry of ancient civilisations and of the value of water to human existence.

如今，在多年的忽视之后，印度考古调查局拯救了许多中世纪工程遗迹。人们已经意识到保存它们作为国家丰富历史一部分的重要性。游客涌向位于印度西北部遥远角落的水井，惊叹于几百年前的这些建筑奇观。这既使人想起了古代文明的创造力和艺术性，也让人明白水对人类生存的价值。

### [10Test1Passage2 European Transport Systems 1990-2010 欧洲交通运输系统](http://www.laokaoya.com/28667.html)

段落A

It is difficult to conceive of vigorous economic growth without an efficient transport system. Although modern information technologies can reduce the demand for physical transport by facilitating teleworking and teleservices, the requirement for transport continues to increase. There are two key factors behind this trend. For passenger transport, the determining factor is the spectacular growth in car use. The number of cars on European Union (EU) roads saw an increase of three million cars each year from 1990 to 2010, and in the next decade the EU will see a further substantial increase in its fleet.

很难想象蓬勃的经济发展之下没有高效的交通运输系统的支撑。尽管现代信息技术可以通过促进远程办公和远程服务来减少对物理运输的需要，但是对运输的需求仍在不断增加。这种趋势背后有两个关键因素。对于客运而言，决定性因素是汽车使用量的惊人增长。从1990年到2010年，欧盟（EU）道路上的汽车数量每年增加300万辆，并且在接下来的十年中，欧盟的汽车数量将进一步大幅增加。

段落B

As far as goods transport is concerned, growth is due to a large extent to changes in the European economy and its system of production: In the last 20 years, as internal frontiers have been abolished, the EU has moved from a ‘stock’ economy to a ‘flow’ economy. This phenomenon has been emphasised by the relocation of some industries, particularly those which are labour intensive, to reduce production costs, even though the production site is hundreds or even thousands of kilometers away from the final assembly plant or away from users.

就货物运输而言，增长在很大程度上是由于欧洲经济及其生产体系的变化：在过去20年中，由于内部边界文章来自老烤鸭雅思被废除，欧盟从“库存”经济转向“流动”经济。这种现象重点体现在一些产业的搬迁上，特别是那些是劳动密集型产业。为了降低生产成本，其生产场地与最终装配工厂或者消费者相距上百甚至上千公里。

段落C

The strong economic growth expected in countries which are candidates for entry to the EU will also increase transport flows, in particular road haulage traffic. In 1998, some of these countries already exported more than twice their 1990 volumes and imported more than five times their 1990 volumes. And although many candidate countries inherited a transport system which encourages rail, the distribution between modes has tipped sharply in favour of road transport since the 1990s. Between 1990 and 1998, road haulage increased by 19.4%, while during the same period rail haulage decreased by 43.5%, although – and this could benefit the enlarged EU – it is still on average at a much higher level than in existing member states.

有望加入欧盟的国家的强劲经济增长也将增加运输量，特别是公路运输量。1998年，其中一些国家的出口量已经是1990年的两倍以上，进口量也是1990年的五倍以上。尽管许多候选国都继承了鼓励铁路运输的运输系统，但自20世纪90年代以来，各种运输方式之间的分配急剧向公路运输倾斜。自1990年至1998年之间，公路运输量增加了19.4％，而同期铁路运输量则减少了43.5％，尽管-这有利于扩大后的欧盟-平均而言，它的水平仍然比现有成员国要高得多。

段落D

However, a new imperative – sustainable development – offers an opportunity for adapting the EU’s common transport policy. This objective, agreed by the Gothenburg European Council, has to be achieved by integrating environmental considerations into Community policies, and shifting the balance between modes of transport lies at the heart of its strategy. The ambitious objective can only be fully achieved by 2020, but proposed measures are nonetheless a first essential step towards a sustainable transport system which will ideally be in place in 30 years’ time, that is by 2040.

然而，一项新的当务之急-可持续发展-为协调欧盟的共同运输政策提供了机会。这一由哥德堡欧洲理事会同意的目标必须通过将环境因素纳入欧共体政策中来实现，而改变不同运输方式之间的平衡是其战略的核心。这一野心勃勃的目标只有在2020年才能完全实现，但提出的措施是实现可持续交通体系的一项重要步骤。该体系将在30年的时间里到位，即2040年之前。

段落E

In 1998, energy consumption in the transport sector was to blame for 28% of emissions of CO2, the leading greenhouse gas. According to the latest estimates, if nothing is done to reverse the traffic growth trend, CO2 emissions from transport can be expected to increase by around 50% to 1,113 billion tonnes by 2020, compared with the 739 billion tonnes recorded in 1990. Once again, road transport is the main culprit since it alone accounts for 84% of the CO2 emissions attributable to transport. Using alternative fuels and improving energy efficiency is thus both an ecological necessity and a technological challenge.

1998年，运输部门的能源消耗贡献了28%的二氧化碳排放（主要的温室气体）。根据最新估算，如果不采取任何措施扭转交通增长的趋势，到2020年，交通运输产生的二氧化碳排放量将增加约50％，达到11130亿吨，而1990年为7390亿吨。再一次的，公路运输是主要的罪魁祸首，因为仅它自己就占到交通运输整体二氧化碳排放量的84％。因此，使用替代燃料和提高能源效率既是生态上的需要，也是技术上的挑战。

段落F

At the same time greater efforts must be made to achieve a modal shift. Such a change cannot be achieved overnight, all the less so after over half a century of constant deterioration in favour of road. This has reached such a pitch that today rail freight services are facing marginalisation, with just 8% of market share, and with international goods trains struggling along at an average speed of 18km/h. Three possible options have emerged.

同时，必须做出更大的努力以实现模式转变。这样的改变不可能在一夜之间实现，尤其是在经过半个多世纪持续恶化之后（支持道路交通）。现在的差距如此之大，铁路货运业务面临边缘化的危险，其市场份额仅为8％。而国际货物列车正在以平均每小时18公里的速度挣扎。这样，出现了三个可能的选择。

段落G

The first approach would consist of focusing on road transport solely through pricing. This option would not be accompanied by complementary measures in the other modes of transport. In the short term it might curb the growth in road transport through the better loading ratio of goods vehicles and occupancy rates of passenger vehicles expected as a result of the increase in the price of transport. However, the lack of measures available to revitalise other modes of transport would make it impossible for more sustainable modes of transport to take up the baton.

第一种方法为仅通过定价关​​注公路运输。这一方法不会伴随对其他交通方式的补充措施。在短期内，由于运输价格的上涨，货车的运输量和乘用车的占用率都会提高，从而有望抑制公路运输的增长。但是，由于缺乏振兴其他运输方式的措施，更为可持续的运输方式将无以为继。

段落H

The second approach also concentrates on road transport pricing but is accompanied by measures to increase the efficiency of the other modes (better quality of services, logistics, technology). However, this approach does not include investment in new infrastructure, nor does it guarantee better regional cohesion. It could help to achieve greater uncoupling than the first approach, but road transport would keep the lion’s share of the market and continue to concentrate on saturated arteries, despite being the most polluting of the modes. It is therefore not enough to guarantee the necessary shift of the balance.

第二种方法也集中于公路运输的定价，但同时还采取措施来提高其他模式的效率（更好的服务质量，物流，技术等）。但是，这种方法不包括对新的基础设施的投资，也不能保证更好的区域凝聚力。与第一种方法相比，它可以帮助实现更大的分离。但道路运输作为污染最严重的交通方式，将保持最大的市场份额，并继续专注主要路线。因此，它并不足以实现平衡的转变。

段落I

The third approach, which is not new, comprises a series of measures ranging from pricing to revitalising alternative modes of transport and targeting investment in the trans-European network. This integrated approach would allow the market shares of the other modes to return to their 1998 levels and thus make a shift of balance. It is far more ambitious than it looks, bearing in mind the historical imbalance in favour of roads for the last fifty years, but would achieve a marked break in the link between road transport growth and economic growth, without placing restrictions on the mobility of people and goods.

第三种方法并不是什么新方法。它包括一系列措施，从定价到振兴替代交通方式，再到针对跨欧洲网络的投资。这种综合方法将使其他运输方式的市场份额恢复到1998年的水平，从而实现平衡的转移。考虑到过去50年偏爱道路交通的历史，这比听起来更加野心勃勃。但它将实现道路交通增长与经济增长之间联系的分割，而不对人员和物资的流动施加限制。

### [10Test1Passage3 The psychology of innovation 创新的心理](http://www.laokaoya.com/28748.html)

第1段

Innovation is key to business survival, and companies put substantial resources into inspiring employees to develop new ideas. There are, nevertheless, people working in luxurious, state-of-the-art centres designed to stimulate innovation who find that their environment doesn’t make them feel at all creative. And there are those who don’t have a budget, or much space, but who innovate successfully.

创新是商业赖以生存的关键，公司将大量的资源用于激励员工提出新想法。但是，仍然有那么一些人虽然在豪华、先进、并以刺激创新为目的而设计的中心工作，却觉得环境一点也没有让他们感到有创造的动力。也有一些人虽然没有充足的预算，或者足够的空间，却成功地实现了创新。

第2段

For Robert B. Cialdini, Professor of Psychology at Arizona State University, one reason that companies don’t succeed as often as they should is that Innovation starts with recruitment. Research shows that the fit between an employee’s values and a company’s values makes a difference to what contribution they make and whether, two years after they join, they’re still at the company. Studies at Harvard Business School show that, although some individuals may be more creative than others, almost every individual can be creative in the right circumstances.

对于亚利桑那州立大学心理学教授Robert B.Cialdini而言，公司未能获得应有的成功的原因之一在于创新始于招聘。研究表明，员工文章来自老烤鸭雅思价值观与公司价值观之间的契合度会影响他们做出的贡献以及加入两年后是否仍在该公司工作。哈佛商学院的研究表明，尽管某些人可能比其他人更具创造力，但几乎每个人都可以在适当的情况下发挥创造力。

第3段

One of the most famous photographs in the story of rock’n’roll emphasises Cialdini’s views. The 1956 picture of singers Elvis Presley, Carl Perkins, Johnny Cash and Jerry Lee Lewis jamming at a piano in Sun Studios in Memphis tells a hidden story. Sun’s ‘million-dollar quartet’ could have been a quintet. Missing from the picture is Roy Orbison, a greater natural singer than Lewis, Perkins or Cash. Sam Phillips, who owned Sun, wanted to revolutionise popular music with songs that fused black and white music, and country and blues. Presley, Cash, Perkins and Lewis instinctively understood Phillips’s ambition and believed in it. Orbison wasn’t inspired by the goal, and only ever achieved one hit with the Sun label.

一张摇滚故事中最著名的照片印证了Cialdini的观点。这张1956年，歌手Elvis Presley，Carl Perkins，Johnny Cash和Jerry Lee Lewis在孟菲斯Sun Studios的照片讲述了一个隐藏的故事。Sun的“百万美元四重奏”本来可以说是五重奏。照片中缺少的是Roy Orbison，一个比Lewis，Perkins或Cash更有天赋的歌手。拥有Sun的Sam Phillips希望通过融合黑白音乐，乡村音乐和布鲁斯音乐来革新流行音乐。Presley，Cash，Perkins和Lewis本能地理解Phillips的抱负，并对此抱有信心。而Orbison则没有受到这一目标的启发，只在唱片公司进行了一次演出。

第4段

The value fit matters, says Cialdini, because innovation is, in part, a process of change, and under that pressure we, as a species, behave differently, ‘When things change, we are hard-wired to play it safe.’ Managers should therefore adopt an approach that appears counterintuitive ­— they should explain what stands to be lost if the company fails to seize a particular opportunity. Studies show that we invariably take more gambles when threatened with a loss than when offered a reward.

Cialdini说，价值观的契合很重要，因为创新在某种程度上是变革的过程，在这种压力下，作为一个物种，我们的行为方式有所不同，“当事情发生变化时，我们本能地想要安全行事。” 因此，管理者应该采用一种看起来违反直觉的方法 -他们应该阐明如果公司未能抓住特定机会将会损失什么。研究表明，在遭受损失威胁时，我们总是会比面对奖励时更多地进行赌博。

第5段

管理创新是一门精致的艺术。由于市场营销，产品开发和财务部门各自从不同的人员那里获得不同的反馈，因此很容易将公司拉向相互矛盾的方向。而且，如果没有确保公司内部协作交流的系统，小型“创新项目”也很容易消失。创新是一种需要沟通的活动。你不能仅仅通过说：“我们正在朝这个方向前进，而你将跟我一起”来说服别人。

Managing innovation is a delicate art. It’s easy for a company to be pulled in conflicting directions as the marketing, product development, and finance departments each get different feedback from different sets of people. And without a system which ensures collaborative exchanges within the company, it’s also easy for small ‘pockets of innovation’ to disappear. Innovation is a contact sport. You can’t brief people just by saying, ‘We’re going in this direction and I’m going to take you with me.’

第6段

Cialdini believes that this ‘follow-the-leader syndrome, is dangerous, not least because it encourages bosses to go it alone. ‘It’s been scientifically proven that three people will be better than one at solving problems, even if that one person is the smartest person in the field.’ To prove his point, Cialdini cites an interview with molecular biologist James Watson. Watson, together with Francis Crick, discovered the structure of DNA, the genetic information carrier of all living organisms. ‘When asked how they had cracked the code ahead of an array of highly accomplished rival investigators, he said something that stunned me. He said he and Crick had succeeded because they were aware that they weren’t the most intelligent of the scientists pursuing the answer. The smartest scientist was called Rosalind Franklin who, Watson said, “was so intelligent she rarely sought advice”.’

Cialdini认为，这种“跟随领导综合症”是危险的，不仅仅因为它鼓励老板一意孤行。“科学证明，即使一个人是该领域最聪明的人，三个人在解决问题上也会比一个人更好。” 为了证明他的观点，Cialdini引用了分子生物学家James Watson（詹姆斯·沃森）的采访。沃森与弗朗西斯·克里克（Francis Crick）一起发现了DNA的结构，DNA是所有活着的生物体的遗传信息载体。当被问及他们是如何领先众多高水平的竞争者破解密码时，他说了一些令我震惊的东西。他说，他和克里克之所以成功，是因为他们意识到自己并不是追求答案的最聪明的科学家。沃森说，最聪明的科学家叫罗莎琳德·富兰克林（Rosalind Franklin），“他非常聪明，以至于很少寻求他人的建议”。

第7段

Teamwork taps into one of the basic drivers of human behaviour. ‘The principle of social proof is so pervasive that we don’t even recognise it,’ says Cialdini. ‘If your project is being resisted, for example, by a group of veteran employees, ask another old-timer to speak up for it.’ Cialdini is not alone in advocating this strategy. Research shows that peer power, used horizontally not vertically, is much more powerful than any boss’s speech.

团队合作是人类行为的基本动力之一。Cialdini说：“社会认同的原则是如此普遍，以至于我们甚至都没有意识到。” “例如，如果你的项目遭到一群资深员工的抵制，那就争取另一位老员工的支持。” 并非只有Cialdini提倡这种策略。研究表明，水平而非垂直使用的同事权力比任何老板的讲话都强大得多。

第8段

Writing, visualising and prototyping can stimulate the flow of new ideas. Cialdini cites scores of research papers and historical events that prove that even something as simple as writing deepens every individual’s engagement in the project. It is, he says, the reason why all those competitions on breakfast cereal packets encouraged us to write in saying, in no more than 10 words: ‘I like Kellogg’s Corn Flakes because….’ The very act of writing makes us more likely to believe it.

写作，想象和原型设计都可以激发新想法。Cialdini引用了许多研究论文和历史事件，证明即使是像写作这样简单的事情也能加深每个人对项目的参与。他说，这就是为什么所有那些早餐麦片包装比赛都鼓励我们用不超过10个词来书写：“我喜欢凯洛格的玉米片是因为……”。写作这一行为使我们更有可能相信它。

第9段

Authority doesn’t have to inhibit innovation but it often does. The wrong kind of leadership will lead to what Cialdini calls ‘captainitis, the regrettable tendency of team members to opt out of team responsibilities that are properly theirs’. He calls it captainitis because, he says, ‘crew members of multipilot aircraft exhibit a sometimes deadly passivity when the flight captain makes a clearly wrong-headed decision’. This behaviour is not, he says, unique to air travel, but can happen in any workplace where the leader is overbearing.

权威并不一定抑制创新，但却经常如此。错误的领导方式会导致Cialdini称为captainitis的现象。即团队成员推卸本属于他们责任的遗憾趋势。他称之为captainitis是因为“当机长做出错误的决定时，多飞行员的飞机机组有时会表现出一种致命的被动性”。他说，这种行为并非航空业所独有，可能在任何领导者过于专制的工作场所中发生。

第10段

At the other end of the scale is the 1980s Memphis design collective, a group of young designers for whom ‘the only rule was that there were no rules’. This environment encouraged a free interchange of ideas, which led to more creativity with form, function, colour and materials that revolutionised attitudes to furniture design.

与之相反的情况是20世纪80年代孟菲斯的设计团队。这是一群年轻的设计师，他们“唯一的规则是没有规则” 。这种环境鼓励思想的自由交流，从而在形式，功能，颜色和材料方面带来了更多的创造性，进而彻底改变了家具设计的理念。

第11段

Many theorists believe the ideal boss should lead from behind, taking pride in collective accomplishment and giving credit where it is due. Cialdini says: ‘Leaders should encourage everyone to contribute and simultaneously assure all concerned that every recommendation is important to making the right decision and will be given full attention.’ The frustrating thing about innovation is that there are many approaches, but no magic formula. However, a manager who wants to create a truly innovative culture can make their job a lot easier by recognising these psychological realities.

许多理论家认为，理想的老板应该在幕后领导，以集体成就为荣，并在适当的时候给予赞扬。Cialdini说：“领导应鼓励每个人做出贡献，同时向所有有关方面保证，每一项建议对于做出正确决定都是重要的，并将得到充分重视。” 令人沮丧的是，创新有很多方法，但不存在神奇的公式。然而，通过认识到这些心理层面的事实，想要创造真正创新文化的经理可以让自己的工作变得轻松许多。

## 10Test2

### [10Test2Passage1 Tea and the Industrial Revolution 茶与工业革命](http://www.laokaoya.com/28922.html)

**段落A**

Alan Macfarlane, professor of anthropological science at Kings College, Cambridge, has, like other historians, spent decades wrestling with the enigma of the Industrial Revolution. Why did this particular Big Bang – the world-changing birth of industry – happen in Britain? And why did it strike at the end of the 18th century?

剑桥大学国王学院的人类学教授艾伦·麦克法兰，也像其他史学家一样，数十年来一直致力于探索工业革命之谜。为什么这种特殊的“大爆炸”（改变世界的工业的诞生）在英国发生？为什么它在18世纪末出现？

**段落B**

B Macfarlane compares the puzzle to a combination lock, ‘There are about 20 different factors and all of them need to be present before the revolution can happen,’ he says. For industry to take off, there needs to be the technology and power to drive factories, large urban populations to provide cheap labour, easy transport to move goods around, an affluent middle-class willing to buy mass-produced objects, a market-driven economy and a political system that allows this to happen. While this was the case for England, other nations, such as Japan, the Netherlands and France also met some of these criteria but were not industrialising. ‘All these factors must have been necessary but not sufficient to cause the revolution,’ says Macfarlane. ‘After all, Holland had everything except coal, while China also had many of these factors. Most historians are convinced there are one or two missing factors that you need to open the lock.’

麦克法伦将这一谜题与密码锁相比较，他说：“大约有20种不同的因素。而在革命发生之前，所有这些因素都必须存在”。为了使工业腾飞，需要文章来自老烤鸭雅思有技术和动力来驱动工厂，大量的城市人口提供廉价劳动力，便利的交通系统方便货物运输，富裕的中产阶级愿意购买大量生产的物品，以及市场驱动的经济和允许这种情况发生的政治制度。虽然英国就是这种情况，但日本，荷兰和法国等其他国家也符合其中一些标准，不过它们并未实现工业化。“所有这些因素都十分必要，但并不足以引发革命”，麦克法兰说，“毕竟，荷兰拥有除了煤炭之外的一切条件，而中国也有许多因素。大多数历史学家相信，解开谜题仍然缺失一两个因素。”

**段落C**

The missing factors, he proposes, are to be found in almost every kitchen cupboard. Tea and beer, two of the nation’s favourite drinks, fuelled the revolution. The antiseptic properties of tannin, the active ingredient in tea, and of hops in beer – plus the fact that both are made with boiled water – allowed urban communities to flourish at close quarters without succumbing to water-borne diseases such as dysentery. The theory sounds eccentric but once he starts to explain the detective work that went into his deduction, the scepticism gives way to wary admiration. Macfarlane’s case has been strengthened by support from notable quarters – Roy Porter, the distinguished medical historian, recently wrote a favourable appraisal of his research.

他提出，我们可以在每家每户的橱柜中发现缺失的因素。茶和啤酒是该国最受欢迎的两种饮料。它们推动了这场革命。茶中的活性成分单宁和啤酒中啤酒花的防腐特性-以及二者均用开水制成的事实-使城市社区能够在狭小的范围内蓬勃发展，而不会屈从于痢疾等水源性疾病。这个理论听起来有些古怪，但是一旦他开始解释具体的推理过程，这种怀疑就让位于钦佩。麦克法兰的说法得到其他著名学者的支持-罗伊·波特，著名医学历史学家，最近赞扬了他的研究。

**段落D**

Macfarlane had wondered for a long time how the Industrial Revolution came about. Historians had alighted on one interesting factor around the mid-18th century that required explanation. Between about 1650 and 1740, the population in Britain was static. But then there was a burst in population growth. Macfarlane says: ‘The infant mortality rate halved in the space of 20 years, and this happened in both rural areas and cities, and across all classes. People suggested four possible causes. Was there a sudden change in the viruses and bacteria around? Unlikely. Was there a revolution in medical science? But this was a century before Listers revolution\*. Was there a change in environmental conditions? There were improvements in agriculture that wiped out malaria, but these were small gains. Sanitation did not become widespread until the 19th century. The only option left: is food. But the height and weight statistics show a decline. So the food must have got worse. Efforts to explain this sudden reduction in child deaths appeared to draw a blank.’

很久以来，麦克法伦一直想知道工业革命是如何发生的。历史学家在18世纪中叶发现了一个有趣的需要解释的因素。大约在1650年和1740年之间，英国人口保持静止不变。但随后其人口突然经历爆发性的增长。麦克法伦说：“婴儿死亡率在20年内减少了一半，这在农村和城市以及所有阶层中都发生了。人们提出四个可能的原因。是因为周围的病毒和细菌突然发生了变化吗？不太可能。医学界发生了革命吗？但这距离李斯特斯革命还有一个世纪的时间。环境条件有变化吗？农业方面确实有所提升消除了疟疾。但这些都是微不足道的改进。直到19世纪，卫生设施才开始普及。剩下的选择只有食物了。但是身高和体重的统计数据反而有所下降。所以食物肯定变糟了。解释这种儿童死亡人数突然减少的努力似乎一无所获。

**段落E**

This population burst seemed to happen at just the right time to provide labour for the Industrial Revolution. ‘When you start moving towards an industrial revolution, it is economically efficient to have people living close together,’ says Macfarlane. ‘But then you get disease, particularly from human waste.’ Some digging around in historical records revealed that there was a change in the incidence of water-borne disease at that time, especially dysentery. Macfarlane deduced that whatever the British were drinking must have been important in regulating disease. He says, ‘We drank beer. For a long time, the English were protected by the strong antibacterial agent in hops, which were added to help preserve the beer. But in the late 17th century a tax was introduced on malt, the basic ingredient of beer. The poor turned to water and gin and in the 1720s the mortality rate began to rise again. Then it suddenly dropped again. What caused this?’

人口爆炸似乎恰好发生在为工业革命提供劳动力的时候。麦克法伦说：“当你开始进行工业革命时，人们住在一起可以实现经济上的高效率。但是那样你就会染上疾病，尤其是那些来自人类废弃物的疾病。” 历史记录中的一些发现表明，当时水生疾病（尤其是痢疾）的发病率有所变化。麦克法兰推断，无论英国人当时喝什么东西，它对疾病控制一定十分重要。他说：“我们喝啤酒。长期以来，英国人受到啤酒花中强力抗菌剂的保护。它被添加以帮助保存啤酒。但是在17世纪后期，对啤酒的基本成分麦芽开始征税。穷人转向喝水和杜松子酒，在18世纪20年代，死亡率再次开始上升。然后却突然又下降了。是什么原因造成的呢？

**段落F**

Macfarlane looked to Japan, which was also developing large cities about the same time, and also had no sanitation. Water-borne diseases had a much looser grip on the Japanese population than those in Britain. Could it be the prevalence of tea in their culture? Macfarlane then noted that the history of tea in Britain provided an extraordinary coincidence of dates. Tea was relatively expensive until Britain started a direct clipper trade with China in the early 18th century. By the 1740s, about the time that infant mortality was dipping, the drink was common. Macfarlane guessed that the fact that water had to be boiled, together with the stomach-purifying properties of tea meant that the breast milk provided by mothers was healthier than it had ever been. No other European nation sipped tea like the British, which, by Macfarlane’s logic, pushed these other countries out of contention for the revolution.

麦克法兰将目光转向日本。日本在同一时间也出现了大型城市，而且也没有卫生设施。与英国相比，水生疾病对日本人口的影响要小很多。难道是因为他们文化中所盛行的茶吗？麦克法兰随后注意到，英国茶饮的历史提供了非同寻常的时间巧合。在18世纪初期英国开始与中国进行直接快船贸易之前，茶叶相对昂贵。到了18世纪40年代，大约在婴儿死亡率下降的时候，这种饮料就很普遍了。麦克法兰猜测，必须将水煮沸，再加上茶具有净化胃的特性，使得母亲提供的母乳比以往任何时候都更健康。没有其他欧洲国家像英国人那样饮茶。按照麦克法伦的逻辑，正是这一因素使得其他国家丧失了革命的机会。

**段落G**

But, if tea is a factor in the combination lock, why didn’t Japan forge ahead in a tea-soaked industrial revolution of its own? Macfarlane notes that even though 17th-century Japan had large cities, high literacy rates, even a futures market, it had turned its back on the essence of any work-based revolution by giving up labour-saving devices such as animals, afraid that they would put people out of work. So, the nation that we now think of as one of the most technologically advanced entered the 19th century having ‘abandoned the wheel’.

但是，如果茶是解开谜题的因素，那么为什么日本没有率先在茶起重要作用的工业革命中取得进展呢？麦克法兰指出，即使17世纪的日本拥有大型城市，较高的识字率，甚至是期货市场，但它因担心失业，而放弃了诸如动物这样节省劳动力的装置，从而违背了以工作实践为基础的革命的核心。因此，我们如今认为的作为技术最先进的国家之一的日本在进入19世纪的时候放弃了革命的机会。

### [10Test1Passage2 Gifted children and learning 天才儿童与学习](http://www.laokaoya.com/28968.html)

**段落A**

Internationally, ‘giftedness’ is most frequently determined by a score on a general intelligence test, known as an IQ test, which is above a chosen cutoff point, usually at around the top 2-5%. Children’s educational environment contributes to the IQ score and the way intelligence is used. For example, a very close positive relationship was found when children’s IQ scores were compared with their home educational provision (Freeman, 2010). The higher the children’s IQ scores, especially over IQ 130, the better the quality of their educational backup, measured in terms of reported verbal interactions with parents, number of books and activities in their home etc. Because IQ tests are decidedly influenced by what the child has learned, they are to some extent measures of current achievement based on age-norms; that is, how well the children have learned to manipulate their knowledge and know-how within the terms of the test. The vocabulary aspect, for example, is dependent on having heard those words. But IQ tests can neither identify the processes of learning and thinking nor predict creativity.

国际上，“天才”通常由一般智商测验（即智商测验）的分数来确定。他们的分数高于选定的分界点，通常在最高的2-5％左右。儿童的教育环境有助于提高智商和智力的使用方式。例如，研究发现孩子的智商与其家庭教育存在十分紧密的正向联系（Freeman，2010）。儿童智商越高，尤其是在130以上的时候，其家庭教育背景的质量越好。该质量由家庭中与父母之间的语言互动，图书数量，以及各项活动决定。因为智商测试一定会受到孩子所学知识的影响，所以它们在某种程度上是根据年龄状况衡量当前成就的标准；也就是说，孩子们在测试条件下能够多好的利用所学到的知识和道理。例如，词汇方面就取决于是否听到过这些单词。但是智商测试既不能识别学习和思考的过程，也不能预测创造力。

**段落B**

Excellence does not emerge without appropriate help. To reach an exceptionally high standard in any area very able children need the means to learn, which includes material to work with and focused challenging tuition -and the encouragement to follow their dream. There appears to be a qualitative difference in the way the intellectually highly able think, compared with more average-ability or older pupils, for whom external regulation by the teacher often compensates for lack of internal regulation. To be at their most effective in their self-regulation, all children can be helped to identify their own ways of learning – metacognition – which will include strategies of planning, monitoring, evaluation, and choice of what to learn. Emotional awareness is also part of metacognition, so children should be helped to be aware of their feelings around the area to be learned, feelings of curiosity or confidence, for example.

没有适当的帮助，卓越就不会出现。要在任何领域达到极高的水平，即便是非常有能力的孩子也需要学习方法，这包括练习材料文章来自老烤鸭雅思和集中的有挑战的教学，以及对他们追求梦想的鼓励。与能力一般或者年龄较大的学生相比，智力较高的人的思维方式似乎存在质的差异。对于前者来说，老师所施加的外部管理会弥补内在管理的缺失。为了最有效地进行自我管理，可以帮助所有孩子寻找他们自己的学习方式（元认知），这包括计划、监督、评价以及选择学习内容的策略。情绪意识也是元认知的一部分。所以应该帮助儿童了解他们在学习领域中的感受，如好奇心或者自信心等。

**段落C**

High achievers have been found to use self-regulatory learning strategies more often and more effectively than lower achievers, and are better able to transfer these strategies to deal with unfamiliar tasks. This happens to such a high degree in some children that they appear to be demonstrating talent in particular areas. Overviewing research on the thinking process of highly able children, (Shore and Kanevsky, 1993) put the instructor’s problem succinctly: ‘If they [the gifted] merely think more quickly, then we need only teach more quickly. If they merely make fewer errors, then we can shorten the practice’. But of course, this is not entirely the case; adjustments have to be made in methods of learning and teaching, to take account of the many ways individuals think.

研究发现，高成就者与低成就者相比，会更频繁、更有效地使用自我调节的学习策略，并能够更好地将这些策略应用于处理不熟悉的任务。在一些儿童中，这种情况出现的程度很高，以至于他们似乎在特定的领域展现出天赋。对高能儿童思维过程研究的概述将老师的问题简明的表述了出来，“如果有天赋的孩子只是思考的更快，那么我们也只需要教的更快就好。如果他们只是更少犯错，那么我们就可以缩短练习的时间”。但当然，事实并非完全如此。考虑到个体思维的多种方式，学习和教学方法必须有所调整。

**段落D**

Yet in order to learn by themselves, the gifted do need some support from their teachers. Conversely, teachers who have a tendency to ‘overdirect’ can diminish their gifted pupils’ learning autonomy. Although ‘spoon-feeding’, can produce extremely high examination results, these are not always followed by equally impressive life successes. Too much dependence on the teacher risks loss of autonomy and motivation to discover. However, when teachers help pupils to reflect on their own learning and thinking activities, they increase their pupils’ self-regulation. For a young child, it may be just the simple question ‘What have you learned today?’ which helps them to recognise what they are doing. Given that a fundamental goal of education is to transfer the control of learning from teachers to pupils, improving pupils’ learning to learn techniques should be a major outcome of the school experience, especially for the highly competent. There are quite a number of new methods which can help, such as child-initiated learning, ability-peer tutoring, etc. Such practices have been found to be particularly useful for bright children from deprived areas.

然而，即便是自学，有天赋的人也仍然需要一些来自老师的帮助。相反，喜欢过度指导的老师会消除他们有天赋的学生的学习自主性。虽然填鸭式教育能够产生极高的考试分数，但它们并非总是伴随着同样令人印象深刻的人生成功。对老师的过度依赖可能会有失去自主和发现动力的风险。但是，当老师帮助学生反思自己的学习和思考活动时，他们会增强学生的自我调节能力。对于年龄尚小的孩子来说，这可能只是一个简单的问题：“你今天学到了什么？” 这有助于他们认识自己在做什么。鉴于教育的基本目标是将学习的控制权从教师转移给学生，提高学生的学习技能应该是学校经历的主要成果，特别是对于能力较强的学生来说。有许多新方法可以提供帮助，例如由孩子发起学习，有能力的同伴进行辅导等。研究发现这种做法对来自贫困地区的聪明孩子特别有用。

**段落E**

But scientific progress is not all theoretical, knowledge is also vital to outstanding performance: individuals who know a great deal about a specific domain will achieve at a higher level than those who do not (Elshout, 1995). Research with creative scientists by Simonton (1988) brought him to the conclusion that above a certain high level, characteristics such as independence seemed to contribute more to reaching the highest levels of expertise than intellectual skills, due to the great demands of effort and time needed for learning and practice. Creativity in all forms can be seen as expertise mixed with a high level of motivation (Weisberg, 1993).

但是，科学进步并不全是理论上的，知识对于出色的表现也至关重要：对某个特定领域了解很多的人比不了解该领域的人取得的成就更高（Elshout ，1995）。Simonton与创新科学家进行的研究让他得出以下结论，在特定水平之上，由于学习和练习所需要的大量时间与精力，诸如独立一类的性格似乎比智力技能更有助于达到专业的最高水平。研究与创新的科学家由西蒙顿（1988年），为他带来了这样的结论：超过一定水平高，等特点，独立性似乎有助于更达不到智力技能专长的最高水平，因为需要时间和精力的巨大需求学习和练习。各种形式的创造力都可以看作是专业与高层次动力的混合。

**段落F**

To sum up, learning is affected by emotions of both the individual and significant others. Positive emotions facilitate the creative aspects of learning and negative emotions inhibit it. Fear, for example, can limit the development of curiosity, which is a strong force in scientific advance, because it motivates problem-solving behaviour. In Boekaerts’ (1991) review of emotion in the learning of very high IQ and highly achieving children, she found emotional forces in harness. They were not only curious, but often had a strong desire to control their environment, improve their learning efficiency, and increase their own learning resources.

总的来说，学习受到个体与他人的影响。积极情绪促进学习的创造性，而消极情绪则会抑制它。例如，恐惧会限制好奇心的发展，而好奇心是科学发展的强大力量，因为它激发解决问题的行为。在Boekaerts （1991）对高智商和成就卓越的孩子的学习情绪的回顾中，她发现情绪的力量可以驾驭。他们不仅好奇，而且常常渴望控制环境，提高学习效率并增加自己的学习资源。

### [10Test2Passage3 Museums of fine arts and their public 博物馆中艺术品的展示方式](http://www.laokaoya.com/29100.html)

**第1段**

One of the most famous works of art in the world is Leonardo da Vinci’s Mona Lisa. Nearly everyone who goes to see the original will already be familiar with it from reproductions, but they accept that fine art is more rewardingly viewed in its original form.

莱昂纳多·达·芬奇的《蒙娜丽莎》是世界上最著名的艺术品之一。几乎每个去看原始作品的人都已经从复制品中熟悉了它，但是他们认为观察艺术品的最初形式更为值得。

**第2段**

However, if Mona Lisa was a famous novel, few people would bother to go to a museum to read the writer’s actual manuscript rather than a printed reproduction. This might be explained by the fact that the novel has evolved precisely because of technological developments that made it possible to print out huge numbers of texts, whereas oil paintings have always been produced as unique objects. In addition, it could be argued that the practice of interpreting or ‘reading’ each medium follows different conventions. With novels, the reader attends mainly to the meaning of words rather than the way they are printed on the page, whereas the ‘reader’ of a painting must attend just as closely to the material form of marks and shapes in the picture as to any ideas they may signify.

但是，如果蒙娜丽莎是一本著名的小说，很少有人会去博物馆文章来自老烤鸭雅思作家的实际手稿而不是印刷品。这一现象可以由如下事实得到解释，正是由于技术发展使得印制大量的文本成为可能，小说才得以诞生，而油画一直都是被作为独一无二的物品被生产出来的。此外，也可以解释说，解读或者每一种媒介的行为遵循着不同的传统。对于小说而言，读者主要关注单词的含义，而不是页面上的印刷方式，而画作的“者”必须尽可能接近图片中的标记和形状的材料形式，以及它们可能暗示的任何想法。

**第3段**

Yet it has always been possible to make very accurate facsimiles of pretty well any fine art work. The seven surviving versions of Mona Lisa bear witness to the fact that in the 16th century, artists seemed perfectly content to assign the reproduction of their creations to their workshop apprentices as regular “bread and butter” work. And today the task of reproducing pictures is incomparably more simple and reliable, with reprographic techniques that allow the production of high-quality prints made exactly to the original scale, with faithful colour values, and even with duplication of the surface relief of the painting.

然而，任何精美的艺术品都可以做出十分准确的复制品。蒙娜·丽莎现存的七个版本证明了一个事实，即在16世纪，艺术家似乎很愿意将其作品的复制工作分配给他们工作室的学徒，作为他们常规的谋生手段。如今，复制图画的任务已经无比简单和可靠。影印技术可以制作出与原画比例完全一致的高品质复制品，色值可靠，甚至能再现图画表面的凹凸纹理。

**第4段**

But despite an implicit recognition that the spread of good reproductions can be culturally valuable, museums continue to promote the special status of original work.

但是尽管人们隐约意识到优秀复制品的传播具有文化价值，博物馆仍在继续提升原始作品的特殊体位。

**第5段**

Unfortunately, this seems to place severe limitations on the kind of experience offered to visitors.

不幸的是，这似乎会对游客的体验带来严重的限制。

**第6段**

One limitation is related to the way the museum presents its exhibits. As repositories of unique historical objects, art museums are often called ‘treasure houses’. We are reminded of this even before we view a collection by the presence of security guards, attendants, ropes and display cases to keep us away from the exhibits. In many cases, the architectural style of the building further reinforces that notion. In addition, a major collection like that of London’s National Gallery is housed in numerous rooms, each with dozens of works, any one of which is likely to be worth more than all the average visitor possesses. In a society that judges the personal status of the individual so much by their material worth, it is therefore difficult not to be impressed by one’s own relative ‘worthlessness’ in such an environment.

一种限制与博物馆展示其展品的方式有关。作为独特历史文物的仓库，美术馆通常被称为“宝库”。甚至在我们观看藏品之前，都会有保安、工作人员、绳索和展示柜在场，以确保我们远离展品。在许多情况下，建筑物的建筑风格进一步强化了这一概念。此外，像伦敦国家美术馆这样的地方，主要藏品被放在许多房间里，每个房间都有几十件作品，其中任何一件都可能比普通游客拥有的所有艺术品都值钱。在一个很大程度上根据个人的物质财富来判断其地位的社会中，这样的环境很难不让人产生自己一文不值的印象。

**第7段**

Furthermore, consideration of the ‘Value’ of the original work in its treasure house setting impresses upon the viewer that, since these works were originally produced, they have been assigned a huge monetary value by some person or institution more powerful than themselves. Evidently, nothing the viewer thinks about the work is going to alter that value, and so today’s viewer is deterred from trying to extend that spontaneous, immediate, self-reliant kind of reading which would originally have met the work.

此外，对原始作品在其宝库中“价值”的考虑更使参观者印象深刻。自从这些作品被生产出来以后，它们就被比参观者自己更为强大的人或机构赋予了巨大的货币价值。显然，观众对作品的想法并不会改变这一价值，因此今天的参观者不会像最初看到这些作品的人那样，试图进行那种无意识的、即时的、自主的解读。

**第8段**

The visitor may then be struck by the strangeness of seeing such diverse paintings, drawings and sculptures brought together in an environment for which they were not originally created. This ‘displacement effect’ is further heightened by the sheer volume of exhibits. In the case of a major collection, there are probably more works on display than we could realistically view in weeks or even months.

随后，参观者在最初并非为其创作的环境中看到如此多姿多彩的绘画、素描和雕塑可能会产生一种陌生感。庞大的展品数量进一步加深了这种“位移效果” 。对于大型展馆而言，展出的作品可能比我们在几周甚至几个月内实际看到的更多。

**第9段**

This is particularly distressing because time seems to be a vital factor in the appreciation of all art forms. A fundamental difference between paintings and other art forms is that there is no prescribed time over which a painting is viewed. By contrast, the audience encounters an opera or a play over a specific time, which is the duration of the performance. Similarly, novels and poems are read in a prescribed temporal sequence, whereas a picture has no clear place at which to start viewings or at which to finish. Thus art works themselves encourage us to view them superficially, without appreciating the richness of detail and labour that is involved.

这一点尤其令人不安，因为时间似乎是欣赏所有艺术形式的重要因素。绘画与其他艺术形式之间根本区别在于，欣赏一幅画作并没有固定的时间。相比之下，观众在特定的时间（即表演的持续时间）内观看歌剧或戏剧。同样，小说和诗歌也需要按照规定的时间顺序。而画作则没有清晰的开始欣赏或结束欣赏的位置。因此，艺术作品本身促使我们肤浅地看待它们，而无法欣赏其细节的丰富性和包含的劳动。

**第10段**

Consequently, the dominant critical approach becomes that of the art historian, a specialised academic approach devoted to ‘discovering the meaning’ of art within the cultural context of its time. This is in perfect harmony with the museum’s function, since the approach is dedicated to seeking out and conserving ‘authentic’, ‘original’ readings of the exhibits. Again, this seems to put paid to that spontaneous, participatory criticism which can be found in abundance in criticism of classic works of literature, but is absent from most art history.

因此，占主导地位的批判方法变成了艺术史学家的专属。这是一种专门的学术方法，致力于在其时代的文化背景下“发现艺术的意义”。这与博物馆的功能十分协调，因为这种方法专注于寻找和保存展品“真实”、“原始”的解读。同样，这似乎弥补了那种自发的、参与性的批评。这种批评大量出现在对经典文学作品的评论中，但是在多数艺术史中却是缺失的。

**第11段**

The displays of art museums serve as a warning of what critical practices can emerge when spontaneous criticism is suppressed. The museum public, like any other audience, experience art more rewardingly when given the confidence to express their views. If appropriate works of fine art could be rendered permanently accessible to the public by means of high-fidelity reproductions, as literature and music already are, the public may feel somewhat less in awe of them. Unfortunately, that may be too much to ask from those who seek to maintain and control the art establishment.

美术馆的陈列可以警醒人们，当压制自发评论时，会出现什么样的评判行为。博物馆公众与其他观众一样，只要被给予表达自己看法的自信，就可以更加有益地享受艺术。如果通过高保真的复制品，使大众一直可以接触到优秀的艺术作品，就像文学和音乐已经做到的那样，那么人们对它们就会少一些敬畏。对于那些希望维持和控制艺术领域的人来说，这一要求可能太过分了。

## 10Test3

### [10Test3Passage1 The Context, Meaning and Scope of Tourism 旅游业](http://www.laokaoya.com/29130.html)

段落A

Travel has existed since the beginning of time, when primitive man set out, often traversing great distances in search of game, which provided the food and clothing necessary for his survival. Throughout the course of history, people have travelled for purposes of trade, religious conviction, economic gain, war, migration and other equally compelling motivations. In the Roman era, wealthy aristocrats and high government officials also travelled for pleasure. Seaside resorts located at Pompeii and Herculaneum afforded citizens the opportunity to escape to their vacation villas in order to avoid the summer heat of Rome. Travel, except during the Dark Ages, has continued to grow and, throughout recorded history, has played a vital role in the development of civilisations and their economies.

旅游自古就有。当时原始人动身走过漫漫长路搜寻生存所必须的，能够为他们提供食物和衣物的猎物。历史长河之中，人们出于贸易、宗教信仰、经历利益、战争、移民和其他同样引人注目的因素而出行。在罗马时代，富裕的贵族和高级政府官员也乐在其中。位于庞贝和赫库兰尼姆的海滨度假胜地为市民提供休闲场所，从而避免罗马夏季的炎热。 除黑暗时代之外，旅行持续增长。在有记录的历史中，旅行对文明及其经济的发展起到至关重要的作用。

段落B

Tourism in the mass form as we know it today is a distinctly twentieth-century phenomenon. Historians suggest that the advent of mass tourism began in England during the industrial revolution with the rise of the middle class and the availability of relatively inexpensive transportation. The creation of the commercial airline industry following the Second World War and the subsequent development of the jet aircraft in the 1950s signalled the rapid growth and expansion of international travel. This growth led to the development of a major new industry: tourism. In turn, international tourism became the concern of a number of world governments since it not only provided new employment opportunities but also produced a means of earning foreign exchange.

我们今天所熟知的大众旅游是一种二十世纪才有的现象。历史学家认为，随着中产阶级的崛起文章来自老烤鸭雅思和相对便宜的交通的普及，大众旅游业开始在工业革命期间的英格兰出现。第二次世界大战之后商用航空产业的出现和随后20世纪50年代喷气式飞机的发明标志着国际旅游的迅速增长和扩张。这一增长导致了一种全新支柱产业的出现：旅游业。反过来，因为国际旅游业不仅提供新的就业机会，而且创造出一条赚取外汇的路径，它也成为众多国家政府所关注的问题。

段落C

Tourism today has grown significantly in both economic and social importance. In most industrialised countries over the past few years the fastest growth has been seen in the area of services. One of the largest segments of the service industry, although largely unrecognised as an entity in some of these countries, is travel and tourism. According to the World Travel and Tourism Council (1992), Travel and tourism is the largest industry in the world on virtually any economic measure including value-added capital investment, employment and tax contributions’. In 1992, the industry’s gross output was estimated to be $3.5 trillion, over 12 per cent of all consumer spending. The travel and tourism industry is the world’s largest employer with almost 130 million jobs, or almost 7 percent of all employees. This industry is the world’s leading industrial contributor, producing over 6 per cent of the world’s gross national product and accounting for capital investment in excess of $422 billion in direct, indirect and personal taxes cadi year. Thus, tourism has a profound impact both on the world economy and, because of the educative effect of travel and the effects on employment, on society itself.

当今旅游业在经济和社会意义上都取得了显著增长。在过去的几年中，大多数工业化国家增长速度最快的就是服务业。虽然在其中一些国家并未作为实体行业而受到认可，但服务业最大的组成部分之一正是旅游观光行业。根据世界旅行和旅游理事会（1992）的数据，无论以任何经济指标衡量（包括增值资本投资，就业和税收贡献等），旅游观光业都是世界上最大的产业。1992年，该行业的总产值估计为3.5万亿美元，占所有消费者支出的12％以上。旅游观光业是世界上最大的雇主，提供近1.3亿个工作岗位，约占所有雇员的7％。这个行业还是世界领先的工业产值贡献者，占世界国民生产总值的6％以上。每年在直接，间接和个人税收中，其资本投资就超过4220亿美元。因此，旅游业不仅对世界经济拥有深远影响，而且由于旅行的教育作用和对就业的影响，它对社会本身也有举足轻重的意义。

段落D

However, the major problems of the travel and tourism industry that have hidden, or obscured, its economic impact are the diversity and fragmentation of the industry itself. The travel industry includes: hotels, motels and other types of accommodation; restaurants and other food services; transportation services and facilities; amusements, attractions and other leisure facilities; gift shops and a large number of other enterprises. Since many of these businesses also serve local residents, the impact of spending by visitors can easily be overlooked or underestimated. In addition, Meis (1992) points out that the tourism industry involves concepts that have remained amorphous to both analysts and decision makers. Moreover, in all nations this problem has made it difficult for the industry to develop any type of reliable or credible tourism information base in order to estimate the contribution it makes to regional, national and global economics. However, the nature of this very diversity makes travel and tourism ideal vehicles for economic development in a wide variety of countries, regions or communities.

然而，旅游观光业本身多样化和分散性的问题掩盖或模糊了其经济影响力。旅游产业包括：酒店，汽车旅馆和其他类型的住宿；餐厅和其他食品服务；交通运输服务和设施；娱乐、景点和其他休闲设施；礼品店等众多企业。由于这些企业中的还有许多为当地居民服务，因此游客的消费影响很容易被忽视或低估。此外，Meis（1992）指出，旅游产业所涉及到的一些概念无论是对分析师还是决策者来说都仍然十分模糊。在所有国家中，这一问题使得该产业很难开发出任何类型的可靠或可信的旅游信息数据库，以评估它对地区、国家，乃至全球经济的贡献。但是，正是这一多样性的本质使得旅游业成为众多国家、地区和社区进行经济发展的理想载体。

段落E

Once the exclusive province of the wealthy, travel and tourism have become an institutionalised way of life for most of the population. In fact, McIntosh and Goeldner (1990) suggest that tourism has become the largest commodity in international trade for many nations and, for a significant number of other countries, it ranks second or third. For example, tourism is the major source of income in Bermuda, Greece, Italy, Spain, Switzerland and most Caribbean countries. In addition, Hawkins and Ritchie, quoting from data published by the American Express Company, suggest that the travel and tourism industry is the number one ranked employer in the Bahamas, Brazil, Canada, France, (the former) West Germany, Hong Kong, Italy, Jamaica, Japan, Singapore, the United Kingdom and the United States. However, because of problems of definition, which directly affect statistical measurement, it is not possible with any degree of certainty to provide precise, valid or reliable data about the extent of world-wide tourism participation or its economic impact. In many cases, similar difficulties arise when attempts are made to measure domestic tourism.

虽然旅游曾经是富裕阶层的专属领域，但它现在已经成为大多数人习以为常的生活方式。McIntosh和Goeldner（1990）指出，实际上，旅游业已成为许多国家国际贸易中最大的商品，并在许多其他国家中排名第二或第三。例如，旅游是百慕大、希腊、意大利、西班牙、瑞士和大多数加勒比海国家的主要收入来源。此外，Hawkins和Ritchie引用美国运通公司（American Express Company）公布的数据称，旅游业是巴哈马、巴西、加拿大、法国、西德、香港、意大利、牙买加、日本、新加坡、英国和美国提供就业岗位最多的行业。但是，由于定义问题直接影响统计方法，因此无法在任何程度上确切给出世界范围内旅游业参与度及其经济影响的准确、有效或可靠数据。许多情况下，试图衡量国内旅游业时也会遇到类似的困难。

### [10Test3Passage2 Autumn leaves 秋叶变红](http://www.laokaoya.com/29161.html)

A部分

One of the most captivating natural events of the year in many areas throughout North America is the turning of the leaves in the fall. The colours are magnificent, but the question of exactly why some trees turn yellow or orange, and others red or purple, is something which has long puzzled scientists.

在北美许多地区，一年之中最引人注目的自然现象之一就是秋天里树叶的变化。其颜色绚丽夺目。但究竟为什么一些树木变成黄色或橙色，而其他却变成红色或紫色？这一问题长期以来都困扰着科学家。

B部分

Summer leaves are green because they are full of chlorophyll, the molecule that captures sunlight and converts that energy into new building materials for the tree. As fall approaches in the northern hemisphere, the amount of solar energy available declines considerably. For many trees —­ evergreen conifers being an exception -the best strategy is to abandon photosynthesis\* until the spring. So rather than maintaining the now redundant leaves throughout the winter, the tree saves its precious resources and discards them. But before letting its leaves go, the tree dismantles their chlorophyll molecules and ships their valuable nitrogen back into the twigs. As chlorophyll is depleted, other colours that have been dominated by it throughout the summer begin to be revealed. This unmasking explains the autumn colours of yellow and orange, but not the brilliant reds and purples of trees such as the maple or sumac.

夏天的叶子是绿色的，因为它们充满了叶绿素。叶绿素文章来自老烤鸭雅思是一种捕获阳光并将该能量转化为新的树木增长材料的分子。随着北半球秋天的到来，可利用的太阳能数量大大减少。对于许多树木来说- 常绿针叶树除外-最佳策略是放弃光合作用直到春天来临。因此，与其保留冬季里十分多余的叶子，树木选择节省其宝贵的资源而抛弃它们。但在弃置这些叶子之前，树木会分解其中的叶绿素分子，并将里面含有的宝贵的氮元素运回枝干。随着叶绿素的枯竭，夏季里被它主导的颜色开始显现出来。这一显露过程解释了秋天里出现的黄色和橙色，但却无法解释诸如枫树或漆树之类的树木所呈现的艳丽的红色和紫色。

C部分

The source of the red is widely known: it is created by anthocyanins, water-soluble plant pigments reflecting the red to blue range of the visible spectrum. They belong to a class of sugar-based chemical compounds also known as flavonoids. What’s puzzling is that anthocyanins are actually newly minted, made in the leaves at the same time as the tree is preparing to drop them. But it is hard to make sense of the manufacture of anthocyanins—why should a tree bother making new chemicals in its leaves when it’s already scrambling to withdraw and preserve the ones already there?

红色的来源广为人知：它是由花青素（一种可反射可见光谱中红色到蓝色范围的水溶性植物色素）产生的。它们属于一类糖基化合物，也被称为类黄酮。令人费解的是，花青素实际上是新合成的，是在树木准备将树叶丢弃的同时在里面产生的。但是，很难理解合成花青素的意义-为什么树木在急于收回并保存原本存在于树叶中的化学物质时，还要在里面再制造出新的来呢？

D部分

Some theories about anthocyanins have argued that they might act as a chemical defence against attacks by insects or fungi, or that they might attract fruit-eating birds or increase a leaf’s tolerance to freezing. However there are problems with each of these theories, including the fact that leaves are red for such a relatively short period that the expense of energy needed to manufacture the anthocyanins would outweigh any anti-fungal or anti-herbivore activity achieved.

一些有关花青素的理论认为，它们可能是作为抵御昆虫或真菌攻击的化学防御，或者说，它们可能会吸引以果实维生的鸟类或者提升树叶对寒冷的耐受性。但是，这些理论都存在问题，例如树叶变红的时间如此之短，以至于制造花青素所需要耗费的能量会超过任何抗真菌或防食草动物行为所取得的收益。

E部分

It has also been proposed that trees may produce vivid red colours to convince herbivorous insects that they are healthy and robust and would be easily able to mount chemical defences against infestation. If insects paid attention to such advertisements, they might be prompted to lay their eggs on a duller, and presumably less resistant host. The flaw in this theory lies in the lack of proof to support it. No one has as yet ascertained whether more robust trees sport the brightest leaves, or whether insects make choices according to colour intensity.

还有一种理论认为，树木产生鲜艳的红色是为了让那些食草昆虫相信，它们十分健康强壮，能够轻松的发起抵御侵扰的化学防御。如果昆虫会注意到这些现象，它们可能会将卵产在颜色更为暗淡，不太可能进行抵抗的宿主上。这一理论的缺陷在于缺乏证据支持。尚无人能够确定，更健壮的树木是否会产生最鲜艳的叶子，又或者昆虫是否根据颜色强度来进行选择。

F部分

Perhaps the most plausible suggestion as to why leaves would go to the trouble of making anthocyanins when they’re busy packing up for the winter is the theory known as the ‘light screen’ hypothesis. It sounds paradoxical, because the idea behind this hypothesis is that the red pigment is made in autumn leaves to protect chlorophyll, the light-absorbing chemical, from too much light. Why does chlorophyll need protection when it is the natural world’s supreme light absorber? Why protect chlorophyll at a time when the tree is breaking it down to salvage as much of it as possible?

树叶为什么会在忙于为冬季做准备的时候还不嫌麻烦的生产叶绿素。这一现象最合理的解释是一种被称为“光屏障”的假说。它听起来有些自相矛盾。因为这种假说背后的想法是，秋天里树叶产生的红色素是为了防止叶绿素这种吸光物质吸收太多的阳光。为什么叶绿素作为自然界的吸光能手还需要保护呢？为什么要在树木分解叶绿素以拯救尽可能多的营养物质时去保护它呢？

G部分

Chlorophyll, although exquisitely evolved to capture the energy of sunlight, can sometimes be overwhelmed by it, especially in situations of drought, low temperatures, or nutrient deficiency. Moreover, the problem of oversensitivity to light is even more acute in the fall, when the leaf is busy preparing for winter by dismantling its internal machinery. The energy absorbed by the chlorophyll molecules of the unstable autumn leaf is not immediately channeled into useful products and processes, as it would be in an intact summer leaf. The weakened fall leaf then becomes vulnerable to the highly destructive effects of the oxygen created by the excited chlorophyll molecules.

虽然叶绿素经过精巧的演变来捕捉太阳光中的能量，但它有时也会被过多的阳光所伤害，尤其是在干旱、低温、或者营养缺乏的时候。此外，秋天里，当树叶正忙于拆解其内部结构为冬天做准备的时候，对阳光过度敏感的问题会更加严重。不稳定的秋叶中，叶绿素分子所吸收的能量并不会被立刻输送到有用的产品或过程中，就像夏天里完好无损的叶子里所发生的那样。这时候，衰弱的落叶十分容易受到活跃的叶绿素分子所产生的氧气的破坏。

H部分

Even if you had never suspected that this is what was going on when leaves turn red, there are clues out there. One is straightforward: on many trees, the leaves that are the reddest are those on the side of the tree which gets most sun. Not only that, but the red is brighter on the upper side of the leaf. It has also been recognised for decades that the best conditions for intense red colours are dry, sunny days and cool nights, conditions that nicely match those that make leaves susceptible to excess light. And finally, trees such as maples usually get much redder the more north you travel in the northern hemisphere. It’s colder there, they’re more stressed, their chlorophyll is more sensitive and it needs more sunblock.

即使你从未怀疑过这就是树叶变红时所发生的事情，也仍然存在许多提示线索。最简单明了的一条是：在许多树木上，最红的叶子出现在光照最多的那一侧。不仅如此，叶子上部的红色会更加鲜亮。几十年来，如下事实都广为人知，产生鲜艳红色的最佳条件为干燥、阳光充足的白天和寒冷的夜晚。这些条件恰好与那些使叶子容易遭受过度阳光损害的条件相匹配。最后，在北半球越往北去，枫树之类的树木就会变得越红。那里更加寒冷，它们要承受更多的压力，它们的叶绿素更加敏感，需要更多的光屏障。

I部分

What is still not fully understood, however, is why some trees resort to producing red pigments while others don’t bother, and simply reveal their orange or yellow hues. Do these trees have other means at their disposal to prevent overexposure to light in autumn? Their story, though not as spectacular to the eye, will surely turn out to be as subtle and as complex.

然而，至今仍未被完全理解的是，为什么一些树木会选择产生红色素，而其他的则嫌麻烦，只是显露出其橙色或者黄色而已。难道这些树木在抛弃叶子的时候拥有其他手段来防止过度暴露于秋天的阳光之下吗？它们的故事虽然不那么引人注目，但肯定也同样微妙和复杂。

### [10Test3Passage3 Beyond the blue horizon 航海探索](http://www.laokaoya.com/29203.html)

第1段

An important archaeological discovery on the island of Efate in the Pacific archipelago of Vanuatu has revealed traces of an ancient seafaring people, the distant ancestors of today’s Polynesians. The site came to light only by chance. An agricultural worker, digging in the grounds of a derelict plantation, scraped open a grave—the first of dozens in a burial ground some 3,000 years old. It is the oldest cemetery ever found in the Pacific islands, and it harbors the remains of an ancient people archaeologists call the Lapita.

在太平洋瓦努阿图群岛埃法特岛上的一项重要考古发现，揭示了古代航海者的踪迹。他们是当今波利尼西亚人的远古祖先。该遗址是偶然发现的。一名农业工人在一个废弃的种植园中挖地，刨开了一个坟墓。这是一处拥有3000多年历史的墓园里数十个坟墓中出土的第一个。它是有史以来在太平洋岛屿上发现的最古老的墓地，埋葬着考古学家称为Lapita的远古人类遗骸。

第2段

They were daring blue-water adventurers who used basic canoes to rove across the ocean. But they were not just explorers. They were also pioneers who carried with them everything they would need to build new lives—their livestock, taro seedlings and stone tools. Within the span of several centuries, the Lapita stretched the boundaries of their world from the jungle-clad volcanoes of Papua New Guinea to the loneliest coral outliers of Tonga.

他们是勇敢的海洋冒险家，使用原始的独木舟在海洋上漂泊。但他们文章来自老烤鸭雅思不仅仅是探索者，还是带着开启新生活所需一切物品（牲畜，芋头幼苗和石器）的开拓者。在几个世纪的时间里，Lapita将他们世界的边界从巴布亚新几内亚森林遍布的Papua火山，扩展到汤加半岛最偏远的珊瑚礁。

第3段

The Lapita left precious few dues about themselves, but Efate expands the volume of data available to researchers dramatically. The remains of 62 individuals have been uncovered so far, and archaeologists were also thrilled to find six complete Lapita pots. Other items included a Lapita burial urn with modeled birds arranged on the rim as though peering down at the human remains sealed inside. ‘It’s an important discovery’, says Matthew Spriggs, professor of archaeology at the Australian National University and head of the international team digging up the site, for it conclusively identifies the remains as Lapita.’

Lapita只留下有关自己的少许珍贵印记，但Efate极大地扩展了研究人员可获得的数据量。到目前为止，已经发现了62个人的遗体。而且考古学家还惊喜的找到了6个完整的Lapita罐子。其他物品还包括一个Lapita骨灰盒。其边缘装饰着鸟类模型，仿佛正在低头凝视着里面的人类遗体。澳大利亚国立大学考古学教授，挖掘该遗址的国际团队负责人马修·斯普里格斯（Matthew Spriggs）说：“这是一个重要发现。因为它彻底确认这些遗骸是Lapita人的”。

第4段

DNA teased from these human remains may help answer one of the most puzzling questions in Pacific anthropology: did all Pacific islanders spring from one source or many? Was there only one outward migration from a single point in Asia, or several from different points? ‘This represents the best opportunity we’ve had yet,’ says Spriggs, ‘to find out who the Lapita actually were, where they came from, and who their closest descendants are today.’

从这些人类遗骸中提取的DNA可能有助于回答太平洋人类学中最令人困扰的问题之一：所有的太平洋岛民究竟是来自同一个地方，还是许多地方？是只有一次从亚洲某个地点向外的迁徙呢，还是有从不同地点出发的许多次？斯普利格斯说，“这是我们迄今为止得到的最好机会，可以找出Lapita人究竟是谁，他们来自哪里，以及现在与他们血缘关系最近的后代又是谁”。

第5段

There is one stubborn question for which archaeology has yet to provide any answers: how did the Lapita accomplish the ancient equivalent of a moon landing, many times over? No-one has found one of their canoes or any rigging, which could reveal how the canoes were sailed. Nor do the oral histories and traditions of later Polynesians offer any insights, for they turn into myths long before they reach as far back in time as the Lapita.

有这样一个问题一直等待着考古学的回答：Lapita人究竟是如何在他们那个年代多次完成宛如登月一样的壮举。没有人找到过任何一艘他们使用的独木舟或绳索。这些东西可以揭示独木舟是如何航行的。后来的波利尼西亚人的口述历史和传统也没有提供任何线索，因为他们早在追溯到Lapita之前就已经成为神话传说。

第6段

‘All we can say for certain is that the Lapita had canoes that were capable of ocean voyages, and they had the ability to sail them,’ says Geoff Irwin, a professor of archaeology at the University of Auckland. Those sailing skills, he says, were developed and passed down over thousands of years by earlier mariners who worked their way through the archipelagoes of the western Pacific, making short crossings to nearby islands. The real adventure didn’t begin, however, until their Lapita descendants sailed out of sight of land, with empty horizons on every side. This must have been as difficult for them as landing on the moon is for us today. Certainly it distinguished them from their ancestors, but what gave them the courage to launch out on such risky voyages?

奥克兰大学考古学教授杰夫·欧文说：“我们可以肯定地说，Lapita拥有能够进行远洋航行的独木舟，而且他们具有航海能力。” 他说，这些航海技巧是由早期航海者开发并在几千年里传承下来的。这些航海者经过西太平洋群岛，抄近路穿过附近的岛屿。然而，直到他们的Lapita后裔驶出可见陆地的范围，四周空无一物，真正的冒险才开始。对于他们来说，这一定很困难，就像对今天的我们来说登陆月球一样。当然，这也将他们与他们的祖先区分开来。但究竟是什么给了他们勇气开启如此危险的航程呢？

第7段

The Lapita’s thrust into the Pacific was eastward, against the prevailing trade winds, Irwin notes. Those nagging headwinds, he argues, may have been the key to their success. ‘They could sail out for days into the unknown and assess the area, secure in the knowledge that if they didn’t find anything, they could turn about and catch a swift ride back on the trade winds. This is what would have made the whole thing work.’ Once out there, skilled seafarers would have detected abundant leads to follow to land: seabirds, coconuts and twigs carried out to sea by the tides, and the afternoon pile-up of clouds on the horizon which often indicates an island in the distance.

欧文注意到，Lapita对太平洋的探索是向东进行的，与盛行的季风方向想法。

他认为，那些持续不断的逆风可能是其成功的关键。“他们可以在未知的地方航行数日，并评估该区域，因为他们知道如果找不到任何东西，他们可以调头，利用信风快速返回。这就是整个事情得以成功的原因。” 一旦身处外海，熟练的海员就会发现有大量的线索可供追踪陆地：海鸟，被潮汐带到了大海的叶子和嫩枝，下午在地平线上堆积的云层，这通常表示远处存在岛屿。

第8段

For returning explorers successful or not, the geography of their own archipelagoes would have provided a safety net. Without this to go by, overshooting their home pores, getting lost and sailing off into eternity would have been all too easy. Vanuatu, for example, stretches more than 500 miles in a northwest-southeast trend, its scores of intervisible islands forming a backstop for mariners riding the trade winds home.

无论成功与否，对于返回的探索者来说，他们自身群岛的地理条件都提供了一张安全网。如果没有它的话，非常容易出现超过家乡港湾的范围，迷失航向并终生在外漂泊的情况。例如，瓦努阿图在西北偏南方向上延伸了500多英里，其数十个可互通的岛屿构成了乘风回返的水手的后盾。

第9段

All this presupposes one essential detail, says Atholl Anderson, professor of prehistory at the Australian National University: the Lapita had mastered the advanced art of sailing against the wind. ‘And there’s no proof they could do any such thing,’ Anderson says. ‘There has been this assumption they did, and people have built canoes to re-create those early voyages based on that assumption. But nobody has any idea what their canoes looked like or how they were rigged.’

澳大利亚国立大学史前学教授阿索尔·安德森（Atholl Anderson）说，所有这些都以一个关键细节为前提：Lapita掌握了逆风航行的先进技术。“没有证据表明他们可以做到这样的事情，”一直存在这样的假设，认为他们确实有此能力。还有人以此假设为基础制造独木舟来重现那些早期的航行。但没有人人道他们的独木舟长什么样子，以及如何操作“。

第10段

Rather than give all the credit to human skill, Anderson invokes the winds of chance. El Nino, the same climate disruption that affects the Pacific today, may have helped scatter the Lapita, Anderson suggests. He points out that climate data obtained from slow-growing corals around the Pacific indicate a series of unusually frequent El Ninos around the time of the Lapita expansion. By reversing the regular east-to-west flow of the trade winds for weeks at a time, these ‘super El Ninos’ might have taken the Lapita on long unplanned voyages.

与其将这些壮举都归功于人类的技能，安德森提出风的偶然因素。厄尔尼诺这种在今天仍然影响太平洋地区的气候扰动也许帮助了Lapita人的扩散。他指出，从缓慢生长的珊瑚中获得的有关太平洋气候的数据表明，在Lapita人扩张的时候，正好有一系列不同寻常的、频繁的厄尔尼诺现象。通过一次颠倒数周常规的从东向西方向的信风。这些超级厄尔尼诺想象可能将Lapita人带上事先并未计划的长期旅行。

第11段

However they did it, the Lapita spread themselves a third of the way across the Pacific, then called it quits for reasons known only to them. Ahead lay the vast emptiness of the central Pacific and perhaps they were too thinly stretched to venture farther. They probably never numbered more than a few thousand in total, and in their rapid migration eastward they encountered hundreds of islands – more than 300 in Fiji alone.

无论他们是怎么做到的，Lapita人都将自己的生活范围扩展到横跨太平洋的三分之一，然后又出于只有他们自己知道的原因而停了下来。在他们面前是巨大的、空旷的中太平洋。或许他们延伸的过于狭长，无力进一步冒险。他们的总人口可能一直都没有超过几千人。在他们迅速向东迁徙的过程中，他们遇到了上百座岛屿。单单在斐济一地就超过300个。

## 10Test4

### [10Test4Passage1 The megafires of California 加利福尼亚超级大火](http://www.laokaoya.com/29257.html)

第1段

Wildfires are becoming an increasing menace in the western United States, with Southern California being the hardest hit area. There’s a reason fire squads battling more frequent blazes in Southern California are having such difficulty containing the flames, despite better preparedness than ever and decades of experience fighting fires fanned by the ‘Santa Ana Winds’. The wildfires themselves, experts say, are generally hotter, faster, and spread more erratically than in the past.

在美国西部，野火正变得越来越严重，南加州是受打击最严重的区域。尽管准备工作比以往任何时候都要好，并且有数十年对抗“Santa Ana”飓风所煽起的火灾的经验，但在南加州，与更频繁的大火作斗争的消防队却很难控制火灾规模。这是有原因的。专家说，与过去相比，野火本身温度更好，起火更快，传播路线也更加不规则。

第2段

Megafires, also called ‘siege fires’, are the increasingly frequent blazes that burn 500,000 acres or more – 10 times the size of the average forest fire of 20 years ago. Some recent wildfires are among the biggest ever in California in terms of acreage burned, according to state figures and news reports.

超级大火也被称为“围攻火”，是越来越频繁的大火。他们文章来自老烤鸭雅思烧毁了50万英亩甚至更多的土地，是20年前森林火灾平均损毁面积的10倍。根据州数据和新闻报道，就燃烧面积而言，最近的一些野火是加州有史以来最大的火灾。

第3段

One explanation for the trend to more superhot fires is that the region, which usually has dry summers, has had significantly below normal precipitation in many recent years. Another reason, experts say, is related to the century-long policy of the US Forest Service to stop wildfires as quickly as possible. The unintentional consequence has been to halt the natural eradication of underbrush, now the primary fuel for megafires.

超高温火灾越来越多的一种解释是，该地区夏季通常十分干燥。近年来，其降水量大大低于正常水平。专家们说，另一个原因与美国森林服务局长达一个世纪的政策有关。该政策要求尽快扑灭野火。它意外的阻碍了对矮木丛的自然清理，而它们现在成为超级火灾的主要燃料。

第4段

Three other factors contribute to the trend, they add. First is climate change, marked by a 1-degree Fahrenheit rise in average yearly temperature across the western states. Second is fire seasons that on average are 78 days longer than they were 20 years ago. Third is increased construction of homes in wooded areas.

他们补充说，三个其他因素也加剧了这一趋势。首先是气候变化，西部各州的年平均气温升高了1华氏度。其次是火灾季节，平均比20年前长78天。第三是森林地带房屋建筑的增加。

第5段

‘We are increasingly building our homes in fire-prone ecosystems,’ says Dominik Kulakowski, adjunct professor of biology at Clark University Graduate School of Geography in Worcester, Massachusetts. ‘Doing that in many of the forests of the western US is like building homes on the side of an active volcano.’

“我们越来越多地把自己的家建在火灾易发的生态系统中”，马萨诸塞州伍斯特市克拉克大学研究生院生物学教授Dominik Kulakowski说，“在美国西部的许多森里中这样做，就仿佛是把家安在了活火山旁边”。

第6段

In California, where population growth has averaged more than 600,000 a year for at least a decade, more residential housing is being built. ‘What once was open space is now residential homes providing fuel to make fires burn with greater intensity,’ says Terry McHale of the California Department of Forestry firefighters’ union. ‘With so much dryness, so many communities to catch fire, so many fronts to fight, it becomes an almost incredible job.’

至少十年来，加利福尼亚平均每年人口增长超过600,000。更多的住宅被建造起来。“曾经的开阔地带现在被住宅所占据，它们为火灾提供燃料，使其燃烧的更为剧烈”，加利福尼亚森林消防工会的Terry Mchale说，“这么干燥的天气，这么多的社区着火，这么多的战线需要扑灭，这几乎是一项不可能完成的工作”。

第7段

That said, many experts give California high marks for making progress on preparedness in recent years, after some of the largest fires in state history scorched thousands of acres, burned thousands of homes, and killed numerous people. Stung in the past by criticism of bungling that allowed fires to spread when they might have been contained, personnel are meeting the peculiar challenges of neighborhood—and canyon—hopping fires better than previously, observers say.

话虽如此，在一些加州历史上最大的火灾烧焦了数千亩土地，烧毁了数千所房屋，并吞噬了无数生命之后，许多专家对加利福尼亚州近年来的备灾工作仍然给出了很高的评价。观察家说，相关人员过去曾因失败而饱受批评，因为他们让本可以受到控制的火灾四处蔓延，但现在他们更好地应对了奇特的挑战，火灾在住宅区和峡谷中隔空蔓延。

第8段

State promises to provide more up-to-date engines, planes, and helicopters to fight fires have been fulfilled. Firefighters’ unions that in the past complained of dilapidated equipment, old fire engines, and insufficient blueprints for fire safety are now praising the state’s commitment, noting that funding for firefighting has increased, despite huge cuts in many other programs. ‘We are pleased that the current state administration has been very proactive in its support of us, and [has] come through with budgetary support of the infrastructure needs we have long sought,’ says Mr. McHale of the firefighters’ union.

州政府关于提供更新的车辆、飞机和直升机以对抗火灾的承诺都已兑现。过去抱怨设备损坏，消防车老旧，以及缺乏足够消防安全蓝图的消防员工会，现在则对州政府的投入表示赞扬。他们注意到，尽管许多其他计划被大幅度削减，但用于消防的资金却有所增加。消防工会的McHale说：“我们感到高兴的是，现任州政府一直非常积极地支持我们，并且已经为我们长期以来寻求的基础设备需求提供了预算支持”。

第9段

Besides providing money to upgrade the fire engines that must traverse the mammoth state and wind along serpentine canyon roads, the state has invested in better command-and-control facilities as well as in the strategies to run them. ‘In the fire sieges of earlier years, we found that other jurisdictions and states were willing to offer mutual-aid help, but we were not able to communicate adequately with them,’ says Kim Zagaris, chief of the state’s Office of Emergency Services Fire and Rescue Branch. After a commission examined and revamped communications procedures, the statewide response ‘has become far more professional and responsive,’ he says. There is a sense among both government officials and residents that the speed, dedication, and coordination of firefighters from several states and jurisdictions are resulting in greater efficiency than in past ‘siege fire’ situations.

除了提供资金以更新那些必须穿越全州、并在峡谷蜿蜒的道路上行驶的车辆以外，该州还投资了更好的指挥和控制设施以及操作它们的策略。州紧急事务办公室火灾与救援分部的主任Kim Zagaris说：“在前几年的火灾中，我们发现其他辖区和州愿意提供互相帮助，但我们无法与他们进行充分的沟通”。在委员会审查并修改了通信程序之后，全州的响应“变得更加专业和迅速”。政府官员和居民都意识到，与过去“围攻火灾”相比，来自多个州和辖区的消防员的速度、投入，和相互协调带来了更高的效率。

第10段

In recent years, the Southern California region has improved building codes, evacuation procedures, and procurement of new technology. ‘I am extraordinarily impressed by the improvements we have witnessed,’ says Randy Jacobs, a Southern California-based lawyer who has had to evacuate both his home and business to escape wildfires. ‘Notwithstanding all the damage that will continue to be caused by wildfires, we will no longer suffer the loss of life endured in the past because of the fire prevention and firefighting measures that have been put in place,’ he says.

近年来，南加州地区已经改善了建筑规范，疏散程序和新技术的采购。“我对我们所见证到的改进印象十分深刻”，南加州的一名律师，Randy Jacobs说。他曾经两次撤离自己的家和办公室以逃避野火。“尽管野火必定会继续造成的损害，但由于采取了防火和消防措施，我们将不再遭受过去遭受的生命损失”。

### [10Test4Passage2 Second Nature 第二天性](http://www.laokaoya.com/29304.html)

段落A

Psychologists have long held that a person’s character cannot undergo a transformation in any meaningful way and that the key traits of personality are determined at a very young age. However, researchers have begun looking more closely at ways we can change. Positive psychologists have identified 24 qualities we admire, such as loyalty and kindness, and are studying them to find out why they come so naturally to some people. What they’re discovering is that many of these qualities amount to habitual behaviour that determines the way we respond to the world. The good news is that all this can be learned.

心理学家一直认为，一个人的性格不可能经历任何有意义的改变，并且性格的关键特点在年龄很小的时候就已经确定下来。然而，研究人员开始更密切的观察我们可以改变的方式。积极心理学家列举了我们所赞扬的24种品质，比如忠诚和善良，并对他们开展研究，以探究为什么它们对于一些人来说如此自然而然地就会出现。他们发现，许多这些品质等同于习惯性行为，决定着我们对世界的回应方式。好消息是，这些可以通过学习而活动。

Some qualities are less challenging to develop than others, optimism being one of them. However, developing qualities requires mastering a range of skills which are diverse and sometimes surprising. For example, to bring more joy and passion into your life, you must be open to experiencing negative emotions. Cultivating such qualities will help you realise your full potential.

一些品质比其他品质更容易培养。乐观就是其中之一。然而，培养品质需要掌握一系列十分多样，并且有时令人惊讶的技巧。例如，为了把更多的欢乐和热情带入你的生活，你必须对体验负面情绪保持开放态度。培养这些品质会帮助你实现自己的全部潜力。

段落B

‘The evidence is good that most personality traits can be altered,’ says Christopher Peterson, professor of psychology at the University of Michigan, who cites himself as an example. Inherently introverted, he realised early on that as an academic, his reticence would prove disastrous in the lecture hall. So he learned to be more outgoing and to entertain his classes. ‘Now my extroverted behaviour is spontaneous,’ he says.

密歇根大学心理学教授Christopher Peterson用自己作为例子说，“有很好的证据表明，大多数性格特征都是可以改变的”。作为一个天生内向的人，他很早文章来自老烤鸭雅思就意识到，身为一名学者，他的含蓄在讲堂里将是灾难性的。因此他学着更加外向一些，并努力活跃课堂气氛。“现在我外向的行为是自发的”，他说。

段落C

David Fajgenbaum had to make a similar transition. He was preparing for university; when he had an accident that put an end to his sports career. On campus, he quickly found that beyond ordinary counselling, the university had no services for students who were undergoing physical rehabilitation and suffering from depression like him. He therefore launched a support group to help others in similar situations. He took action despite his own pain – a typical response of an optimist.

David Fajgenbaum也不得不做出相似的转变。由于一场意外结束了自己的运动生涯，他正在准备考大学。校园里，他很快发现，除了普通的咨询之外，大学没有为像他那样正在经历身体复健并饱受抑郁困扰的学生提供任何服务。因此，他发起了一个支持小组来帮助拥有相似状况的人。不顾自己的痛苦，他仍然采取行动。而这正是一名乐观主义者的典型回应。

段落D

Suzanne Segerstrom, professor of psychology at the University of Kentucky, believes that the key to increasing optimism is through cultivating optimistic behaviour, rather than positive thinking. She recommends you train yourself to pay attention to good fortune by writing down three positive things that come about each day. This will help you convince yourself that favourable outcomes actually happen all the time, making it easier to begin taking action.

肯塔基大学心理学教授Suzanne Segerstrom认为，提升乐观的关键在于培养乐观行为，而非积极的思考模式。她推荐你通过记下每天发生的三件积极事情来训练自己去关注好运气。这会帮助你相信，有利的结果其实一直都在发生，从而让开始采取行动更加容易一些。

段落E

You can recognise a person who is passionate about a pursuit by the way they are so strongly involved in it. Tanya Streeter’s passion is freediving – the sport of plunging deep into the water without tanks or other breathing equipment. Beginning in 1998, she set nine world records and can hold her breath for six minutes. The physical stamina required for this sport is intense but the psychological demands are even more overwhelming. Streeter learned to untangle her fears from her judgment of what her body and mind could do. ‘In my career as a competitive freediver, there was a limit to what I could do – but it wasn’t anywhere near what I thought it was,’ she says.

你可以根据一个人对某项追求的大力投入来判断这个人对此满怀热情。Tanya Streeter’s的热情在于自由潜水-一项不带氧气罐或其他呼吸设备潜入水里深处的运动。从1998年开始，她创造了9项世界记录，并能够闭气6分钟。这项运动对身体耐力要求很高，但对心理状态的要求却更为关键。Streeter学会通过判断自己身体和精神能做到什么来驱散恐惧。她说：“在我作为一名优秀的自由潜水运动员的生涯中，我的能力确实存在极限-但它远远超出我曾经的设想”。

段落F

Finding a pursuit that excites you can improve anyone’s life. The secret about consuming passions, though, according to psychologist Paul Silvia of the University of North Carolina, is that ‘they require discipline, hard work and ability, which is why they are so rewarding.’ Psychologist Todd Kashdan has this advice for those people taking up a new passion: ‘As a newcomer, you also have to tolerate and laugh at your own ignorance. You must be willing to accept the negative feelings that come your way,’ he says.

找到一个能让你为之兴奋的追求可以提升任何人的生活质量。但是，根据北卡罗来纳大学心理学家Paul Silvia的说法，消耗激情的秘密在于“它们需要自律、努力和能力，这也是他们为什么如此值得去做的原因”。心理学家Todd Kashdan对刚刚开始新爱好的人提出如下建议，“作为一名新手，你不得不忍受和嘲笑自己的无知。你必须愿意接受随之而来的负面情感”。

段落G

In 2004, physician-scientist Mauro Zappaterra began his PhD research at Harvard Medical School. Unfortunately, he was miserable as his research wasn’t compatible with his curiosity about healing. He finally took a break and during eight months in Santa Fe, Zappaterra learned about alternative healing techniques not taught at Harvard. When he got back, he switched labs to study how cerebrospinal fluid nourishes the developing nervous system. He also vowed to look for the joy in everything, including failure, as this could help him learn about his research and himself.

2004年，医生兼心理学家Mauro Zappaterra在哈佛医学院开始了自己的博士研究。由于他的研究与自己对治疗的好奇并不匹配，他十分苦恼。最终，他决定中断学业，并在Santa Fe度过了8个月的时间。在那里，Zappaterra了解到哈佛大学并未教授的替代医疗技术。当他回归校园之后，他更换了实验室以研究脑脊髓炎如何滋养神经系统的发育。他还下定决心寻找一切事物中的乐趣，甚至包括失败，因为这能够帮助他了解自己的研究工作和自身。

One thing that can hold joy back is a person’s concentration on avoiding failure rather than their looking forward to doing something well. ‘Focusing on being safe might get in the way of your reaching your goals,’ explains Kashdan. For example, are you hoping to get through a business lunch without embarrassing yourself, or are you thinking about how fascinating the conversation might be?

一个人如果全神贯注于避免失败而非期待做好某事，那么快乐就会受到阻碍。“关注安全可能会阻碍你实现自己的目标”，Kashdan解释说。例如，你是希望在不使自己尴尬的情况下度过商业午宴，还是思考期间的对话可能会多么的有趣？

段落H

Usually, we think of courage in physical terms but ordinary life demands something else. For marketing executive Kenneth Pedeleose, it meant speaking out against something he thought was ethically wrong. The new manager was intimidating staff so Pedeleose carefully recorded each instance of bullying and eventually took the evidence to a senior director, knowing his own job security would be threatened. Eventually the manager was the one to go. According to Cynthia Pury, a psychologist at Clemson University, Pedeleose’s story proves the point that courage is not motivated by fearlessness, but by moral obligation. Pury also believes that people can acquire courage. Many of her students said that faced with a risky situation, they first tried to calm themselves down, then looked for a way to mitigate the danger, just as Pedeleose did by documenting his allegations.

通常，我们是从生理角度思考勇敢的含义，但日常生活需要别的东西。对于市场营销人员Kenneth Pedeleose来说，它意味着对某些他认为道德上错误的行为说不。新来的经理恐吓员工。所以Pedeleose仔细记录了每一次的欺凌，并最终将证据提交给资深主管，尽管他知道这么做自己的工作可能会受到威胁。最终，经理才是走人的那个。根据克莱门大学心理学家Cynthia Pury的说法，Pedeleose的故事证明了勇气并不是由无畏，而是由道德责任激发的。Pury也相信人们能够获得勇气。她的许多学生说，面临危险的情况时，他们首先尝试让自己冷静下来，然后寻找方法降低危险，正如Pedeleose通过记录指控证据所做的那样。

Over the long term, picking up a new character trait may help you move toward being the person you want to be. And in the short term, the effort itself could be surprisingly rewarding, a kind of internal adventure.

长期来看，获取新的性格特征可能会帮助你朝着自己想要成为的人前进。短期来看，这些努力自身可能就有出乎意料的回报。这是一种内心的冒险。

### [10Test4Passage3 When evolution runs backwards 进化后退](http://www.laokaoya.com/29385.html)

第1段

The description of any animal as an ‘evolutionary throwback’ is controversial. For the better part of a century, most biologists have been reluctant to use those words, mindful of a principle of evolution that says ‘evolution cannot run backwards’. But as more and more examples come to light and modern genetics enters the scene, that principle is having to be rewritten. Not only are evolutionary throwbacks possible, they sometimes play an important role in the forward march of evolution.

将任何动物描述为“进化倒退”是有争议的。该世纪的大部分时间里，大多数生物学家一直不愿意使用这些词汇。他们谨记着进化的一条基础原则，“进化不能后退”。但随着越来越多的例子出现，以及现代基因科学的诞生，这条规则不得不被改写。进化的倒退不仅是可能的，它们还在向前的进化中起着重要作用。

第2段

The technical term for an evolutionary throwback is an ‘atavism’, from the Latin atavus, meaning forefather. The word has ugly connotations thanks largely to Cesare Lombroso, a 19th-century Italian medic who argued that criminals were born not made and could be identified by certain physical features that were throwbacks to a primitive, sub-human state.

用于描述进化后退的技术词汇是“返祖现象”，它来自于拉丁语atavus，意思是祖先。该词具有一定的丑陋含义。这在很大程度上文章来自老烤鸭雅思要归功于19世纪意大利医务人员Cesare Lombroso。他认为犯罪分子是天生的，而不是后期造成的。并且可以根据特定的身体特征来进行识别。而这些特征可以追溯到原始的亚人类状态。

第3段

While Lombroso was measuring criminals, a Belgian palaeontologist called Louis Dollo was studying fossil records and coming to the opposite conclusion. In 1890 he proposed that evolution was irreversible: that ‘an organism is unable to return, even partially, to a previous stage already realised in the ranks of its ancestors’. Early 20th-century biologists came to a similar conclusion, though they qualified it in terms of probability, stating that there is no reason why evolution cannot run backwards—it is just very unlikely. And so the idea of irreversibility in evolution stuck and came to be known as ‘Dollo’s law’.

Lombroso在描述罪犯时，一名叫做Louis Dollo的比利时古生物学家正在研究化石记录，并得出相反的结论。1890年，他提出进化是不可逆的，“一种生物无法回到其祖先在进化序列中已经完成的任何先前阶段，即使是部分回归也不可能”。二十世纪早期的生物学家得出了相似的结论，尽管他们在概率上对其进行了限定，认为并没有任何理由支持进化无法后退，它仅仅是不太可能。因此，这种进化不可逆的观念扎根下来，并被称为“Dollo定律”。

第4段

If Dollo’s law is right, atavisms should occur only very rarely, if at all. Yet almost since the idea took root, exceptions have been cropping up. In 1919, for example, a humpback whale with a pair of leg-like appendages over a metre long, complete with a full set of limb bones, was caught off Vancouver Island in Canada. Explorer Roy Chapman Andrews argued at the time that the whale must be a throwback to a land-living ancestor. ‘I can see no other explanation,’ he wrote in 1921.

如果Dollo定律是正确的，那么返祖现象哪怕确实存在，也应该十分少见。然而，几乎从这一概念扎根以来，例外就一直出现。例如，1919年，加拿大温哥华岛上捕获了一头座头鲸。它有一双类似于腿的、一米多长的附属物，并拥有完整的四肢骨骼。探险家Roy Chapman Andrews那时认为这头鲸鱼一定退化成了其生活在陆地上的祖先状态。他于1921年写到，“我找不到任何其他解释”。

第5段

Since then, so many other examples have been discovered that it no longer makes sense to say that evolution is as good as irreversible. And this poses a puzzle: how can characteristics that disappeared millions of years ago suddenly reappear? In 1994, Rudolf Raff and colleagues at Indiana University in the USA decided to use genetics to put a number on the probability of evolution going into reverse. They reasoned that while some evolutionary changes involve the loss of genes and are therefore irreversible, others may be the result of genes being switched off. If these silent genes are somehow switched back on, they argued, long-lost traits could reappear.

从那时起，发现了如此之多的其他例子，以至于坚持进化不可逆这一理论不再有什么意义。这就提出了一个难题：那些几百万年前消失的特征怎么会再次突然出现？1994年，美国印第安纳大学Rudolf Raff和他的同事决定利用基因学量化进化倒退的可能性。他们考虑到，虽然一些进化变化涉及到基因的缺失，并因此是不可逆的。但其他的则可能是基因被关闭的结果。他们认为，如果这些沉默的基因以某种方式再次被打开，消失了很长时间的特征就会再次出现。

第6段

Raff’s team went on to calculate the likelihood of it happening. Silent genes accumulate random mutations, they reasoned, eventually rendering them useless. So how long can a gene survive in a species if it is no longer used? The team calculated that there is a good chance of silent genes surviving for up to 6 million years in at least a few individuals in a population, and that some might survive as long as 10 million years. In other words, throwbacks are possible, but only to the relatively recent evolutionary past.

Raff的团队继续计算这一现象发生的可能性。他们认为沉默的基因会积累随机突变，并最终使得它们变得毫无用处。所以，如果一个基因不再被使用，那么它在一个物种中可以存在多长时间呢？该团队计算，有很大概率，沉默的基因在种群中的一些个体里可以存在600万年，一些甚至可能延续1000万年那么久。换句话说，退化完全可能，但仅仅是退回相对较近的进化阶段。

第7段

As a possible example, the team pointed to the mole salamanders of Mexico and California. Like most amphibians these begin life in a juvenile ‘tadpole’ state, then metamorphose into the adult form—except for one species, the axolotl, which famously lives its entire life as a juvenile. The simplest explanation for this is that the axolotl lineage alone lost the ability to metamorphose, while others retained it. From a detailed analysis of the salamanders’ family tree, however, it is clear that the other lineages evolved from an ancestor that itself had lost the ability to metamorphose. In other words, metamorphosis in mole salamanders is an atavism. The salamander example fits with Raff’s 10-million-year time frame.

该团队列举了墨西哥和加利福尼亚的钝口螈为证。与大多数两栖动物类似，它们以一种年幼的“蝌蚪”形态开始自己的一生，然后转变为成年形态。只有一个品种例外：蝾螈。它因一生都保持着年幼状态而闻名。这一现象最简单的解释是，蝾螈这一单独分支失去了变形的能力，而其他分支则保留了这一能力。然而，通过对蝾螈家族谱系的细致分析发现，其他分支显然是从某一个已经失去变形能力的祖先进化而来的。话句话说，钝口螈的变形能力是一种返祖现象。钝口螈的例子符合Raff一千万年的时间框架。

第8段

More recently, however, examples have been reported that break the time limit, suggesting that silent genes may not be the whole story. In a paper published last year, biologist Gunter Wagner of Yale University reported some work on the evolutionary history of a group of South American lizards called Bachia. Many of these have minuscule limbs; some look more like snakes than lizards and a few have completely lost the toes on their hind limbs. Other species, however, sport up to four toes on their hind legs. The simplest explanation is that the toed lineages never lost their toes, but Wagner begs to differ. According to his analysis of the Bachia family tree, the toed species re-evolved toes from toeless ancestors and, what is more, digit loss and gain has occurred on more than one occasion over tens of millions of years.

然而，更近一些被报道的例子打破了时间限制，表明沉默的基因可能还不是故事的全部。在去年发表的一篇论文中，耶鲁大学生物学家Gunter Wagner公布了一些自己对一种名为Bachia的南美洲蜥蜴的进化历史所做的研究。它们许多都有微型四肢。一些看起来更像是蛇而不是蜥蜴。一些已经完全失去了后肢的指头。然而，其他物种的后肢上则出现了最多四个指头。最简单的解释是，有指头的分支从未丧失过这一特征。但Wagner持不同意见。根据他对Bachia家族谱系的研究，有指头的物种从没有指头的祖先那里再次进化出了指头。此外，这种脚趾的消失和再现在过去上千万年里曾不只出现过一次。

第9段

So what’s going on? One possibility is that these traits are lost and then simply reappear, in much the same way that similar structures can independently arise in unrelated species, such as the dorsal fins of sharks and killer whales. Another more intriguing possibility is that the genetic information needed to make toes somehow survived for tens or perhaps hundreds of millions of years in the lizards and was reactivated. These atavistic traits provided an advantage and spread through the population, effectively reversing evolution.

那么，到底是怎么回事呢？一种可能是，这些特征先是消失，然后只是简单的再次出现而已。就跟一些相似的结构可能独立出现在不相关的物种身上一样，比如鲨鱼和虎鲸的背鳍。另外一种更为有趣的可能是，需要用来制造指头的基因信息在蜥蜴中存在了数千万甚至上亿年，然后被再次激活了。这些返祖体征提供了一项优势，并在族群中传播开来，有效地逆转了进化进程。

第10段

But if silent genes degrade within 6 to 10 million years, how can long-lost traits be reactivated over longer timescales? The answer may lie in the womb. Early embryos of many species develop ancestral features. Snake embryos, for example, sprout hind limb buds. Later in development, these features disappear thanks to developmental programs that say ‘lose the leg’. If for any reason this does not happen, the ancestral feature may not disappear, leading to an atavism.

但如果沉默的基因在600万到1000万年的时间里退化，那么已经消失了很久的特征又是如何在更长的时间跨度里重现的呢？答案可能存在于子宫内部。许多物种的早期胚胎都发展出祖先的特征。例如，蛇的胚胎会长出后腿突起物。在随后的发育过程中，这些特征会由于发育程序的命令（丢掉这些腿）而消失。如果因为某种原因，这一机制没有起作用，那么祖先的特征就不会消失，导致返祖现象。

# 十一

## 11Test1

### [11Test1Passage1 crop-growing skyscrappers 垂直农业](http://www.laokaoya.com/29445.html)

第1段

By the year 2050, nearly 80% of the Earth’s population will live in urban centres. Applying the most conservative estimates to current demographic trends, the human population will increase by about three billion people by then. An estimated 10 hectares of new land (about 20% larger than Brazil) will be needed to grow enough food to feed them, if traditional farming methods continue as they are practised today. At present, throughout the world, over 80% of the land that is suitable for raising crops is in use. Historically, some 15% of that has been laid waste by poor management practices. What can be done to ensure enough food for the world’s population to live on?

到2050年，地球上将有近80％的人口居住在城市中心。将最保守的估计应用于当前的人口发展趋势，到那时，人口将增加约30亿。如果继续采用现在传统的耕作方法，预计需要10的9次方公顷的新土地（比巴西大20％）才能够种出足够的粮食来养活他们。目前，全世界适合耕种农作物的土地中，有80%已被使用。从历史上看，其中约15％由于管理不善而荒废。那么如何才能确保世界人民有足够的食物生存呢？

第2段

The concept of indoor farming is not new, since hothouse production of tomatoes and other produce has been in vogue for some time. What is new is the urgent need to scale up this technology to accommodate another three billion people. Many believe an entirely new approach to indoor farming is required, employing cutting-edge technologies. This is from Laokaoya website. One such proposal is for the ‘Vertical Farm’. The concept is of multi-storey buildings in which food crops are grown in environmentally controlled conditions. Situated in the heart of urban centres, they would drastically reduce the amount of transportation required to bring food to consumers. Vertical farms would need to be efficient, cheap to construct and safe to operate. If successfully implemented, proponents claim, vertical farms offer the promise of urban renewal, sustainable production of a safe and varied food supply (through year-round production of all crops), and the eventual repair of ecosystems that have been sacrificed for horizontal farming.

室内耕作的概念并不是什么新鲜事物，因为温室栽培西红柿和其他农产品已经流行了一段时间。新鲜的是扩展此技术以容纳另外30亿人口的迫切需求。许多人认为，需要利用文章来自老烤鸭雅思尖端技术采用全新的室内耕作方法。而其中一项提议就是“垂直农场”。这一概念是将粮食作物种植在环境条件受控的多层建筑中。它们位于城市中心地带，会急剧减少将食物运送到消费者手中所需要的运输量。垂直农场的效率要高，建造要便宜，运营要安全。支持者声称，如果成功实施的话，垂直农场将会带来城市复兴的希望，持续提供安全多样的食物（一年到头都可以生产各类作物），并最终修复由于水平农业而牺牲的生态系统。

第3段

It took humans 10,000 years to learn how to grow most of the crops we now take for granted. Along the way, we despoiled most of the land we worked, often turning verdant, natural ecozones into semi-arid deserts. Within that same time frame, we evolved into an urban species, in which 60% of the human population now lives vertically in cities. This means that, for the majority, we humans have shelter from the elements, yet we subject our food-bearing plants to the rigours of the great outdoors and can do no more than hope for a good weather year. However, more often than not now, due to a rapidly changing climate, that is not what happens. Massive floods, long droughts, hurricanes and severe monsoons take their toll each year, destroying millions of tons of valuable crops.

人类花了10,000年的时间来学习如何种植我们现在认为理所当然的大多数作物。在此过程中，我们破坏了耕作的大部分土地，经常将翠绿的自然生态区变成半干旱的沙漠。在相同的时间范围里，我们进化成城市物种，其中60％的人口现在在城市中垂直居住。这意味着，对于大多数人来说，我们人类可以躲避各种因素的影响，但我们将生产食物的植物置于严酷的户外条件下，只能祈祷天气良好。然而，由于快速变化的气候，情况并不如人们所愿。洪灾、长期干旱、飓风和严重的季风每年都会造成巨大的损失，摧毁数百万吨宝贵的农作物。

第4段

The supporters of vertical farming claim many potential advantages for the system. For instance, crops would be produced all year round, as they would be kept in artificially controlled, optimum growing conditions. There would be no weather-related crop failures due to droughts, floods or pests. All the food could be grown organically, eliminating the need for herbicides, pesticides and fertilisers. The system would greatly reduce the incidence of many infectious diseases that are acquired at the agricultural interface. Although the system would consume energy, it would return energy to the grid via methane generation from composting non- edible parts of plants. It would also dramatically reduce fossil fuel use, by cutting out the need for tractors, ploughs and shipping.

垂直农业的支持者声称该系统具有许多潜在优势。例如，由于农作物生长在人为控制的、理想的环境中，它们可以整年产出粮食。不会由于干旱、洪水或虫灾等与天气有关的因素而造成粮食欠收。所有食物都可以有机种植，从而消除对除草剂、杀虫剂和肥料的需求。该系统将大大降低在农业接触中感染一些传染病的概率。虽然该系统会消耗能量，但通过利用植物不可食用的部分进行沼气发电，可以将能量返还给电网。通过减少对拖拉机、犁和运输的需求，它也会大量减少化石燃料的使用。

第5段

A major drawback of vertical farming, however, is that the plants would require artificial light. Without it, those plants nearest the windows would be exposed to more sunlight and grow more quickly, reducing the efficiency of the system. Single- storey greenhouses have the benefit of natural overhead light: even so, many still need artificial lighting. A multi-storey facility with no natural overhead light would require far more. Generating enough light could be prohibitively expensive, unless cheap, renewable energy is available, and this appears to be rather a future aspiration than a likelihood for the near future.

然而，垂直耕作的主要缺点在于植物需要人造光。没有它，那些最靠近窗户的植物将暴露在更多的阳光下并且生长得更快，从而降低了系统的效率。单层温室受益于顶部的自然光线：即使如此，许多仍然需要人造光。缺乏自然顶部光线的多层设施则需要更多的人造光。除非能够获得廉价的可再生能源，否则产生足够的光线太过昂贵。而这似乎是一种未来的愿望，并非近期就可能实现的事情。

第6段

One variation on vertical farming that has been developed is to grow plants in stacked trays that move on rails. Moving the trays allows the plants to get enough sunlight. This system is already in operation, and works well within a single-storey greenhouse with light reaching it from above: it is not certain, however, that it can be made to work without that overhead natural light.

已经开发出来的垂直耕作的一种变体是将植物种植在堆叠式的、可以在轨道上移动的托盘里。移动托盘可使植物获得足够的阳光。该系统已经在运行，并且可以在顶部有光线的单层温室中正常工作：但是，不确定该系统是否可以在顶部没有自然光的情况下运转。

第7段

Vertical farming is an attempt to address the undoubted problems that we face in producing enough food for a growing population. At the moment, though, more needs to be done to reduce the detrimental impact it would have on the environment, particularly as regards the use of energy. While it is possible that much of our food will be grown in skyscrapers in future, most experts currently believe it is far more likely that we will simply use the space available on urban rooftops.

垂直耕作试图解决我们在为日益增长的人口生产足够的粮食时所必然面对的问题，但是现在需要做更多的工作来减少它对环境的不利影响，特别是在能源使用方面。虽然将来我们的大部分食物可能种植在摩天大楼里，但大多数专家目前认为，我们仅使用城市屋顶上的可用空间的可能性更大。

### [11Test1Passage2 The Falkirk Wheel 法尔柯克水轮](http://www.laokaoya.com/29560.html)

第1段

The Falkirk Wheel in Scotland is the world’s first and only rotating boat lift. Opened in 2002, it is central to the ambitious ￡84.5m Millennium Link project to restore navigability across Scotland by reconnecting the historic waterways of the Forth & Clyde and Union Canals.

苏格兰的法尔柯克水轮是世界上第一个也是唯一的旋转式船用升降机。它于2002年开放，是雄心勃勃的、耗资8450万英镑的Millennium Link项目的核心。该项目通过重新连接Forth＆Clyde和联合运河的历史航道来恢复整个苏格兰的航行能力。

第2段

The major challenge of the project lay in the fact that the Forth & Clyde Canal is situated 35 metres below the level of the Union Canal. Historically, the two canals had been joined near the town of Falkirk by a sequence of 11 locks – enclosed sections of canal in which the water level could be raised or lowered – that stepped down across a distance of 1.5 km. This had been dismantled in 1933, thereby breaking the link. When the project was launched in 1994, the British Waterways authority were keen to create a dramatic twenty-first- century landmark which would not only be a fitting commemoration of the Millennium, but also a lasting symbol of the economic regeneration of the region.

该项目的主要挑战在于，Forth＆Clyde运河位于联合运河水平面以下35米。从历史上看，这两个运河是在法尔柯克镇附近通过11道闸门在1.5公里的长度里逐渐下降从而连接在一起的-封闭的运河段文章来自老烤鸭雅思可以升高或降低水位。这些装置在1933年被拆除，从而切断了运河之间的联系。当该项目于1994年启动时，英国水道局渴望创建一个引人注目的二十一世纪地标。这不仅是对新千年的恰当纪念，而且是该地区经济复兴的持久象征。

第3段

Numerous ideas were submitted for the project, including concepts ranging from rolling eggs to tilting tanks, from giant see-saws to overhead monorails. The eventual winner was a plan for the huge rotating steel boat lift which was to become The Falkirk Wheel. The unique shape of the structure is claimed to have been inspired by various sources, both manmade and natural, most notably a Celtic double-headed axe, but also the vast turning propeller of a ship, the ribcage of a whale or the spine of a fish.

人们为该项目提出了许多想法，包括从滚动装置到倾斜的水箱，从巨型跷跷板到高架单轨铁路等概念。最终的胜利者是巨大的旋转钢制船舶升降机计划，也就是之后的法尔科克水轮。据称，这种结构的独特形状是受到各种因素的启发，人为和自然的都有，最著名的是凯尔特人的双头斧，船上巨大的旋转螺旋桨，鲸鱼的胸膛或是鱼类的脊柱。

第4段

The various parts of The Falkirk Wheel were all constructed and assembled, like one giant toy building set, at Butterley Engineering’s Steelworks in Derbyshire, some 400 km from Falkirk. A team there carefully assembled the 1,200 tonnes of steel, painstakingly fitting the pieces together to an accuracy of just 10 mm to ensure a perfect final fit. This article is from Laokaoya website. In the summer of 2001, the structure was then dismantled and transported on 35 lorries to Falkirk, before all being bolted back together again on the ground, and finally lifted into position in five large sections by crane. The Wheel would need to withstand immense and constantly changing stresses as it rotated, so to make the structure more robust, the steel sections were bolted rather than welded together. Over 45,000 bolt holes were matched with their bolts, and each bolt was hand-tightened.

法尔柯克水轮的各个部分都在德比郡布特利工程公司的钢铁厂（距福尔柯克约400公里）中建造和组装，就像一组巨大的玩具一样。那里的团队精心组装了1200吨钢铁部件，竭尽全力地以仅为10毫米的精确度将零件装配在一起，以保证最终的完美组合。2001年夏天，该设备被拆除，并用35辆卡车运输到法尔柯克，然后全部重新固定在地面上，最后用起重机将五大部分吊装到位。水轮在旋转时需要承受巨大且不断变化的应力，因此为了使结构更加牢固，钢制部分采用螺栓连接而不是焊接在一起。超过45,000个螺栓孔与它们的螺栓匹配，并且每个螺栓都是手动拧紧的。

第5段

The Wheel consists of two sets of opposing axe-shaped arms, attached about 25 metres apart to a fixed central spine. Two diametrically opposed water-filled ‘gondolas’, each with a capacity of 360,000 litres, are fitted between the ends of the arms. These gondolas always weigh the same, whether or not they are carrying boats. This is because, according to Archimedes’ principle of displacement, floating objects displace their own weight in water. So when a boat enters a gondola, the amount of water leaving the gondola weighs exactly the same as the boat. This keeps the Wheel balanced and so, despite its enormous mass, it rotates through 180° in five and a half minutes while using very little power. It takes just 1.5 kilowatt-hours (5.4 M J) of energy to rotate the Wheel – roughly the same as boiling eight small domestic kettles of water.

水轮由两组相对的斧形悬臂组成。它们以约25米的距离连接到固定的中心支柱上。两个截然相反的充满水的“贡多拉”，分别装在悬臂的末端，容量为360,000升。无论贡多拉是否载着船，它们的重量始终相同。这是因为，根据阿基米德的位移原理，漂浮物体会在水中排除自身的重量。因此，当船只进入贡多拉时，离开贡多拉的水的重量与船只的重量完全相同。这样可以使水轮保持平衡，因此尽管水轮质量巨大，但它能用非常少的能量在五分半钟内旋转180°。旋转水轮仅需1.5千瓦时（5.4 MJ）的能量-大约与煮沸八个家用小水壶所需要的能量相同。

第6段

Boats needing to be lifted up enter the canal basin at the level of the Forth & Clyde Canal and then enter the lower gondola of the Wheel. Two hydraulic steel gates are raised, so as to seal the gondola off from the water in the canal basin. The water between the gates is then pumped out. A hydraulic clamp, which prevents the arms of the Wheel moving while the gondola is docked, is removed, allowing the Wheel to turn. In the central machine room an array of ten hydraulic motors then begins to rotate the central axle. The axle connects to the outer arms of the Wheel, which begin to rotate at a speed of 1/8 of a revolution per minute. As the wheel rotates, the gondolas are kept in the upright position by a simple gearing system. Two eight-metre-wide cogs orbit a fixed inner cog of the same width, connected by two smaller cogs travelling in the opposite direction to the outer cogs – so ensuring that the gondolas always remain level. When the gondola reaches the top, the boat passes straight onto the aqueduct situated 24 metres above the canal basin.

需要升起的船只以Forth & Clyde运河的高度进入运河港池，然后进入水轮的下部吊舱。两个水力钢闸门被抬起，从而将调仓封闭于运河港池之中。然后闸门之间的水会被泵出。防止吊舱停靠时水轮悬臂移动的液压夹板会被移走，让水轮得以旋转。在中央机房中，由十个液压马达组成的阵列开始旋转中心轴。中心轴连接到水轮的外臂，外臂开始以每分钟1/8转的速度旋转。随着水轮的转动，吊舱通过简单的齿轮系统保持在垂直位置。两个八米宽的齿轮绕着相同宽度的固定内嵌齿轮旋转，它们由两个转动方向与外部齿轮相反的小齿轮连接，从而确保吊舱始终保持水平。当吊舱到达顶部时，船只直接穿过位于运河港池上方24米处的沟渠。

第7段

The remaining 11 metres of lift needed to reach the Union Canal is achieved by means of a pair of locks. The Wheel could not be constructed to elevate boats over the full 35-metre difference between the two canals, owing to the presence of the historically important Antonine Wall, which was built by the Romans in the second century AD. Boats travel under this wall via a tunnel, then through the locks, and finally on to the Union Canal.

到达联合运河所需的剩余11米距离是通过一对水闸来实现的。由于在历史上十分重要的安东尼墙的存在（该墙是罗马人在公元二世纪建造的），人们无法在两条运河之间搭建水轮以升起船只跨越35米的高度。船只通过隧道在这堵墙下面行驶，然后穿过船闸，最后到达联合运河。

### [11Test1Passage3 Reducing the Effects of Climate Change 改善全球变暖](http://www.laokaoya.com/29618.html)

**段落A**

Such is our dependence on fossil fuels, and such is the volume of carbon dioxide already released into the atmosphere, that many experts agree that significant global warming is now inevitable. They believe that the best we can do is keep it at a reasonable level, and at present the only serious option for doing this is cutting back on our carbon emissions. But while a few countries are making major strides in this regard, the majority are having great difficulty even stemming the rate of increase, let alone reversing it. Consequently, an increasing number of scientists are beginning to explore the alternative of geo-engineering – a term which generally refers to the intentional large-scale manipulation of the environment. According to its proponents, geo-engineering is the equivalent of a backup generator: if Plan A – reducing our dependency on fossil fuels – fails, we require a Plan B, employing grand schemes to slow down or reverse the process of global warming.

我们对化石燃料的依赖如此之重，已经排放到大气中的二氧化碳的量是如此之大，以至于许多专家认为严重的全球变暖已经不可避免。他们相信，我们最多也就是能将其保持在合理的水平。而现阶段这么做的唯一选择是削减二氧化碳排放量。但是，尽管一些国家在该方面大步前进，大多数国家哪怕是在是在抑制增长速率上都有很大困难，更不用说逆转它。因此，越来越来越多的科学家开始探索实施地球工程（国际性的大规模环境操控）这一替代方案。根据其支持者的说法，地球工程相当于备用发电机。如果A计划（减少我们对化石燃料的依赖性）失败了，我们需要B计划，即采用宏大的方案来减缓或者逆转全球变暖的过程。

**段落B**

Geo-engineering has been shown to work, at least on a small localised scale. For decades, May Day parades in Moscow have taken place under clear blue skies, aircraft having deposited dry ice, silver iodide and cement powder to disperse clouds. Many of the schemes now suggested look to do the opposite, and reduce the amount of sunlight reaching the planet. The most eye-catching idea of all is suggested by Professor Roger Angel of the University of Arizona. His scheme would employ up to 16 trillion minute spacecraft, each weighing about one gram, to form a transparent, sunlight-refracting sunshade in an orbit 1.5 million km above the Earth. This could, argues Angel, reduce the amount of light reaching the Earth by two per cent.

至少在较小的地方范围，地球工程已经被证明有效。几十年来，莫斯科的五一游行都在湛蓝的天空下举行。飞机播撒干冰，碘化银和水泥粉末来驱散云层。许多方案如今希望用相反的方式，来减少到达地球的太阳光。最引人注目的观点是由亚利桑那大学的Roger Angel教授提出来的。他的方案会利用多达16兆的微型飞行器，每个重量大约一克，在地球上方150万公里处的轨道上组成一个透明的，折射太阳光的遮光板。Angel认为，这将会减少2%的到达地球的阳光。

**段落C**

The majority of geo-engineering projects so far carried out – which include planting forests in deserts and depositing iron in the ocean to stimulate the growth of algae – have focused on achieving a general cooling of the Earth. But some look specifically at reversing the melting at the poles, particularly the Arctic. The reasoning is that if you replenish the ice sheets and frozen waters of the high latitudes, more light will be reflected back into space, so reducing the warming of the oceans and atmosphere.

大多数目前开展的地球工程（包括在沙漠中种树，以及将铁沉淀入海洋中来促进藻类生长）都致力于实现地球的整体降温。但一些特别文章来自老烤鸭雅思着眼于逆转两极的冰盖融化，尤其是北极。其背后的原因是，如果你补充高海拔地区的冰盖和冻水，更多的阳光会被反射回太空，从而减少减缓海洋和大气变暖。

**段落D**

The concept of releasing aerosol sprays into the stratosphere above the Arctic has been proposed by several scientists. This would involve using sulphur or hydrogen sulphide aerosols so that sulphur dioxide would form clouds, which would, in turn, lead to a global dimming. The idea is modelled on historic volcanic explosions, such as that of Mount Pinatubo in the Philippines in 1991, which led to a short-term cooling of global temperatures by 0.5℃. Scientists have also scrutinised whether it’s possible to preserve the ice sheets of Greenland with reinforced high-tension cables, preventing icebergs from moving into the sea. Meanwhile in the Russian Arctic, geo-engineering plans include the planting of millions of birch trees. Whereas the region’s native evergreen pines shade the snow and absorb radiation, birches would shed their leaves in winter, thus enabling radiation to be reflected by the snow. Re-routing Russian rivers to increase cold water flow to ice-forming areas could also be used to slow down warming, say some climate scientists.

一些科学家提出向北极上方的平流层释放喷雾剂。这包括使用硫或者氢化硫喷雾，从而使二氧化硫形成云层，进而造成全球变暗（多云）。这一想法仿照历史悠久的火山爆发。比如1991年菲律宾Pinatubo Mount的爆发造成全球气温在短期内降低了0.5度。科学家同样细致探讨了是否有可能利用强化线缆来保存格陵兰的冰盖，阻止冰山进入大海。与此同时，在俄罗斯北极地区，地球工程的计划包括种植数百万棵桦树。该地区土生土长的常青松树会遮挡雪地并吸收辐射，而桦树在冬天落叶，从而使得辐射能够被雪地反射回去。一些气候科学家认为，改变俄罗斯的河流方向以增加流向结冰区域的冷水同样可以减缓全球变暖。

**段落E**

But will such schemes ever be implemented? Generally speaking, those who are most cautious about geo-engineering are the scientists involved in the research. Angel says that his plan is ‘no substitute for developing renewable energy: the only permanent solution’. And Dr Phil Rasch of the US-based Pacific Northwest National Laboratory is equally guarded about the role of geo-engineering: ‘I think all of us agree that if we were to end geo-engineering on a given day, then the planet would return to its pre-engineered condition very rapidly, and probably within ten to twenty years. That’s certainly something to worry about.’

但这样的计划会被实施吗？大体来说，对地球工程持最谨慎态度的人正是那些参与研究的科学家。Angel说：“他的计划并不是发展可再生能源-唯一永久解决方案-的替代品”。美国太平洋西北国家实验室的Phil Rasch博士对地球工程的作用同样十分谨慎，“我认为，我们所有人都同意，如果我们在某一天结束地球工程，那么地球会迅速（可能在10到20年之内）回到实施工程前的状态。这必然让人担心。”

**段落F**

The US National Center for Atmospheric Research has already suggested that the proposal to inject sulphur into the atmosphere might affect rainfall patterns across the tropics and the Southern Ocean. ‘Geo-engineering plans to inject stratospheric aerosols or to seed clouds would act to cool the planet, and act to increase the extent of sea ice,’ says Rasch. ‘But all the models suggest some impact on the distribution of precipitation.’

美国国家大气研究中心已经表示，在大气中注入硫的提议可能会影响热带地区和南部海洋的降雨模式。“地球工程计划注入平流层喷雾或者制造云层的行动将会使地球冷却，并增加海洋冰面的范围”，Rasch说，“但所有的模型都显示，这会对降雨分布产生一些影响”。

**段落G**

‘A further risk with geo-engineering projects is that you can “overshoot”,’ says Dr Dan Lunt, from the University of Bristol’s School of Geophysical Sciences, who has studied the likely impacts of the sunshade and aerosol schemes on the climate. ‘You may bring global temperatures back to pre-industrial levels, but the risk is that the poles will still be warmer than they should be and the tropics will be cooler than before industrialisation.’ To avoid such a scenario, Lunt says Angel’s project would have to operate at half strength; all of which reinforces his view that the best option is to avoid the need for geo-engineering altogether.

布里斯托大学地球物理科学院的Dan Lunt博士在研究了遮挡阳光和气雾剂方案之后说：“地球工程还存在过度实施的深层风险”。“你可能将全球气温带回到工业革命之前的水平，但风险在于，极地气温仍然比应有的要高，而热带地区则会比工业化开始之前要低”。为了避免这种情况，Lunt说Angel的方案必须以一半的强度来实施；所有这些都加强了他自身的观点，即最好的选择是完全避免地球工程。

**段落H**

The main reason why geo-engineering is supported by many in the scientific community is that most researchers have little faith in the ability of politicians to agree – and then bring in – the necessary carbon cuts. Even leading conservation organisations see the value of investigating the potential of geo-engineering. According to Dr Martin Sommerkorn, climate change advisor for the World Wildlife Fund’s International Arctic Programme, ‘Human-induced climate change has brought humanity to a position where we shouldn’t exclude thinking thoroughly about this topic and its possibilities.’

地球工程得到科学界许多人支持的主要原因是，大多数研究人员并不认为政客会认可必要的碳排放削减。即便是一流的环保组织也看到了研究地球工程潜力的价值。根据世界野生动物基金会国际北极项目的气候变化顾问Martin Sommerkorn博士的说法，“人类引发的气候变化已经将人类置于如此处境，我们不应该抛弃对这一方案及其可能性的彻底思考”。

## 11Test2

### [11Test2Passage1 Raising the Mary Rose 玛丽玫瑰号](http://www.laokaoya.com/29681.html)

**第1段**

On 19 July 1545, English and French fleets were engaged in a sea battle off the coast of southern England in the area of water called the Solent, between Portsmouth and the Isle of Wight. Among the English vessels was a warship by the name of Mary Rose. Built in Portsmouth some 35 years earlier, she had had a long and successful fighting career, and was a favourite of King Henry VIII. Accounts of what happened to the ship vary: while witnesses agree that she was not hit by the French, some maintain that she was outdated, overladen and sailing too low in the water, others that she was mishandled by undisciplined crew. What is undisputed, however, is that the Mary Rose sank into the Solent that day, taking at least 500 men with her. After the battle, attempts were made to recover the ship, but these failed.

1545年7月19日，英国和法国舰队在英格兰南部海域发生了一起海战。该海域被称为索伦特，位于朴茨茅次和怀特岛之间。英国舰队中有一艘名为玛丽玫瑰号的战舰。她于35年前在朴茨茅次建造，拥有长久而成功的战斗历史，是国王亨利八世的挚爱。关于这艘战舰发生的事情描述各异：虽然目击者都认为她没有被法国舰队击中，但一些人坚持认为她已经过时，装载了太多的东西，吃水太深；而其他人则认为是纪律不良的船员进行了错误操作。然而，毫无争议的是，玛丽玫瑰号在那天沉入了索伦特水域。一同沉没的还有至少500名船员。战斗之后，人们尝试寻找这艘战舰，但都失败了。

**第2段**

The Mary Rose came to rest on the seabed, lying on her starboard (right) side at an angle of approximately 60 degrees. The hull (the body of the ship) acted as a trap for the sand and mud carried by Solent currents. As a result, the starboard side filled rapidly, leaving the exposed port (left) side to be eroded by marine organisms and mechanical degradation. Because of the way the ship sank, nearly all of the starboard half survived intact. During the seventeenth and eighteenth centuries, the entire site became covered with a layer of hard grey clay, which minimised further erosion.

玛丽玫瑰号靠在海床上，右舷着地成60度角。船体吞噬索伦特洋流所带来沙子和泥土。因此，右舷一侧迅速被填满，使得文章来自老烤鸭雅思左侧暴露在外面，很快被海洋生物和机械降解侵蚀。由于船只的沉没方式，右舷一侧几乎被完整地保留了下来。17世纪和18世纪，整个沉船区域被一层坚硬的灰色粘土覆盖，最大程度减少了进一步的侵蚀。

**第3段**

Then, on 16 June 1836, some fishermen in the Solent found that their equipment was caught on an underwater obstruction, which turned out to be the Mary Rose. Diver John Deane happened to be exploring another sunken ship nearby, and the fishermen approached him, asking him to free their gear. Deane dived down, and found the equipment caught on a timber protruding slightly from the seabed. Exploring further, he uncovered several other timbers and a bronze gun. Deane continued diving on the site intermittently until 1840, recovering several more guns, two bows, various timbers, part of a pump and various other small finds.

随后，1836年6月16日，索伦特海域的一些渔民发现他们的设备被某种水下障碍物卡住。而该障碍物正是玛丽玫瑰号。潜水员John Deane恰好在附近探索另外一艘沉船。渔民找到他，请他帮助解开他们的设备。Deane潜入水中，发现设备被挂在微微伸出海床的木杆上。进一步探查之后，他发现了一些其他木料，以及一把铜火枪。Deane断断续续地潜入该地点直到1840年。他发现了更多的火枪、两把弓、各种木材、水泵部件，以及其他各种各样的小东西。

**第4段**

The Mary Rose then faded into obscurity for another hundred years. But in 1965, military historian and amateur diver Alexander McKee, in conjunction with the British Sub-Aqua Club, initiated a project called ‘Solent Ships’. While on paper this was a plan to examine a number of known wrecks in the Solent, what McKee really hoped for was to find the Mary Rose. Ordinary search techniques proved unsatisfactory, so McKee entered into collaboration with Harold E. Edgerton, professor of electrical engineering at the Massachusetts Institute of Technology. In 1967, Edgerton’s side-scan sonar systems revealed a large, unusually shaped object, which McKee believed was the Mary Rose.

玛丽玫瑰号随后又销声匿迹了100多年。1965年，军事历史学家、业余潜水员Axexander Mckee与英国潜水俱乐部合作，发起了一项被称为“索伦特沉船”的项目。纸面上，该计划是要研究一些索伦特海域已知的沉船，但Mckee真正希望的是找到玛丽玫瑰号。常规的搜索技术被证明差强人意，所以Mckee开始与麻省理工学院的电子工程学教授Harold E. Edgerton合作。1967年，Edgerton的侧向扫描声纳系统发现了一个巨大的、形状与众不同的物体。Mckee相信这正是玛丽玫瑰号。

**第5段**

Further excavations revealed stray pieces of timber and an iron gun. But the climax to the operation came when, on 5 May 1971, part of the ship’s frame was uncovered. McKee and his team now knew for certain that they had found the wreck, but were as yet unaware that it also housed a treasure trove of beautifully preserved artefacts. Interest in the project grew, and in 1979, The Mary Rose Trust was formed, with Prince Charles as its President and Dr Margaret Rule its Archaeological Director. The decision whether or not to salvage the wreck was not an easy one, although an excavation in 1978 had shown that it might be possible to raise the hull. While the original aim was to raise the hull if at all feasible, the operation was not given the go-ahead until January 1982, when all the necessary information was available.

进一步的发掘找到了一些散落的木头片和一支铁制火枪。但整个行动的高潮发生在1971年5月5日。当时找到了部分船只框架。Mckee和他的团队现在明确知道他们发现了沉船，但还没有意识到里面储藏着保存完好的精美艺术品宝藏。人们对该项目的兴趣日益高涨。1979年玛丽玫瑰号信托基金成立，查尔斯王子担任主席，Margaret Rule担任考古负责人。尽管1978年的发掘显示有可能打捞起整个船体，但是否打捞船只的决定却并不容易做出。虽然最初的目的是只要有可能就将船体打捞上来，但该行动直到1982年1月所有信息完备之后才得到批准。

**第6段**

An important factor in trying to salvage the Mary Rose was that the remaining hull was an open shell. This led to an important decision being taken: namely to carry out the lifting operation in three very distinct stages. The hull was attached to a lifting frame via a network of bolts and lifting wires. The problem of the hull being sucked back downwards into the mud was overcome by using 12 hydraulic jacks. These raised it a few centimetres over a period of several days, as the lifting frame rose slowly up its four legs. It was only when the hull was hanging freely from the lifting frame, clear of the seabed and the suction effect of the surrounding mud, that the salvage operation progressed to the second stage. In this stage, the lifting frame was fixed to a hook attached to a crane, and the hull was lifted completely clear of the seabed and transferred underwater into the lifting cradle. This required precise positioning to locate the legs into the ‘stabbing guides’ of the lifting cradle. The lifting cradle was designed to fit the hull using archaeological survey drawings, and was fitted with air bags to provide additional cushioning for the hull‘s delicate timber framework. The third and final stage was to lift the entire structure into the air, by which time the hull was also supported from below. Finally, on 11 October 1982, millions of people around the world held their breath as the timber skeleton of the Mary Rose was lifted clear of the water, ready to be returned home to Portsmouth.

影响尝试打捞玛丽玫瑰号的一个重要因素在于残存的船体是一个开放的外壳。这导致做出一项重要的决定，即整个提升操作分为三个截然不同的阶段。船体通过螺栓和起吊绳索组成的网固定到起重框架上。利用12个液压起重机解决了船体向下被吸回到泥土中的问题。随着起吊框架缓慢抬升自己的四个支架，船体在几天的时间里被升起几厘米。只有当船体完全悬挂在起吊框架上，离开海床，不受周围泥土吸力的影响时，打捞行动才进行到第二阶段。在该阶段，起重框架被固定在起重机的吊钩上。船体完全脱离海床，在水下被转移到升降篮中。通过考古调查绘画，升降篮被设计的贴合船体，并用空气包填充，从而为船只脆弱的木制框架提供额外的缓冲。第三也是最后一个阶段是将整个船体升至空中。同时船体从下方得到支撑。最终，1982年10月11日，全球数百万人屏息见证了玛丽玫瑰号的木制骨架脱离水面，准备回到朴茨茅次。

### 11Test2Passage2[What destroyed the civilisation of Easter Island 什么破坏了复活节岛的文明](http://www.laokaoya.com/29752.html)

段落A

Easter Island, or Rapu Nui as it is known locally, is home to several hundred ancient human statues – the moai. After this remote Pacific island was settled by the Polynesians, it remained isolated for centuries. All the energy and resources that went into the moai – some of which are ten metres tall and weigh over 7,000 kilos – came from the island itself. Yet when Dutch explorers landed in 1722, they met a Stone Age culture. The moai were carved with stone tools, then transported for many kilometres, without the use of animals or wheels, to massive stone platforms. The identity of the moai builders was in doubt until well into the twentieth century. Thor Heyerdahl, the Norwegian ethnographer and adventurer, thought the statues had been created by pre-Inca peoples from Peru. Bestselling Swiss author Erich von Däniken believed they were built by stranded extraterrestrials. Modern science – linguistic, archaeological and genetic evidence – has definitively proved the moai builders were Polynesians, but not how they moved their creations. Local folklore maintains that the statues walked, while researchers have tended to assume the ancestors dragged the statues somehow, using ropes and logs.

复活节岛，也被当地人成为拉帕努伊岛，是数百个古代人类雕像（摩艾像）的所在地。这个遥远的太平洋岛屿在被波利尼西亚人定居之后，在好几个世纪里都保持着与世隔绝的状态。所有用于建造摩艾像的能源和资源都来自岛屿本身。其中一些摩艾像有10米高，重量超过700公斤。然而，当荷兰探索者在1722年踏上该岛屿时，他们见到的是尚处于石器时代的文明。摩艾像用石头工具雕刻，然后在不使用动物或轮子的情况下，运输好几公里，到达巨大的石头平台上。摩艾像建造者的身份直到20世纪都处于争议之中。挪威人种研究者、探险家Thor Heyerdahl认为，雕像由来自秘鲁的前印加时代的人建立。瑞士畅销书作家Erich von Däniken认为他们由滞留的外星人建造。现代科学-语言学，考古学和基因学的证据-证明摩艾像的建造者确实是波利尼西亚人，但尚不清楚他们如何移动自己的作品。当地人认为雕像会自己走动，而研究者则倾向于假定他们的祖先利用绳子和滚木以某种方式拖拽雕像。

段落B

When the Europeans arrived, Rapa Nui was grassland, with only a few scrawny trees. In the 1970s and 1980s, though, researchers found pollen preserved in lake sediments, which proved the island had been covered in lush palm forests for thousands of years. Only after the Polynesians arrived did those forests disappear. US scientist Jared Diamond believes that the Rapanui people – descendants of Polynesian settlers – wrecked their own environment. They had unfortunately settled on an extremely fragile island – dry, cool, and too remote to be properly fertilised by windblown volcanic ash. When the islanders cleared the forests for firewood and farming, the forests didn’t grow back. As trees became scarce and they could no longer construct wooden canoes for fishing, they ate birds. Soil erosion decreased their crop yields. Before Europeans arrived, the Rapanui had descended into civil war and cannibalism, he maintains. The collapse of their isolated civilisation, Diamond writes, is a ‘worst-case scenario for what may lie ahead of us in our own future’.

当欧洲人到来的时候，拉帕努伊岛是一片草地，只有少许几棵枯瘦的树木。然而，20世纪70年代和80年代，研究者文章来自老烤鸭雅思在湖泊沉积物中发现了花粉。这证明岛屿曾经在上千年的时间里被茂密的棕榈树林所覆盖。只是在波利尼西亚人到达之后，这些森林才消失。美国科学家Jared Diamond认为拉帕努伊人-波利尼西亚定居者的后代-破坏了他们自己的环境。他们不幸定居在一个生态环境极度脆弱的岛屿上-干燥，寒冷，太过遥远以至于无法受益于风吹来的火山灰从而变得富饶。当岛上居民为了柴火和农耕而清除森林时，森林无法恢复。随着树木变得稀少，他们无法继续建造木制独木舟来捕鱼，只能以鸟类为食。水土流失降低了他们的粮食产量。他认为，在欧洲人到达之前，拉帕努伊人沦落到内战和以人为食的地步。Diamond写到，他们孤立文明的崩溃，是我们自己的未来可能出现的最坏情况。

段落C

The moai, he thinks, accelerated the self-destruction. Diamond interprets them as power displays by rival chieftains who, trapped on a remote little island, lacked other ways of asserting their dominance. They competed by building ever bigger figures. Diamond thinks they laid the moai on wooden sledges, hauled over log rails, but that required both a lot of wood and a lot of people. To feed the people, even more land had to be cleared. When the wood was gone and civil war began, the islanders began toppling the moai. By the nineteenth century none were standing.

他认为，摩艾像加速了这一自我毁灭的过程。Diamond将它们解释为敌对首领之间的力量展示。他们被困在遥远的小岛上，缺乏其他方式来维护自己的统治。他们通过建造更大的雕像来互相竞争。Diamond认为，他们将摩艾像置于木制的雪橇上，在原木轨道上拖动。但这需要大量的木头和人力。为了供养这些人，更多的土地被清理出来。当木头用完，内战开启的时候，岛上居民开始推翻摩艾像。到19世纪时，已经没有任何摩艾像站立着了。

段落D

Archaeologists Terry Hunt of the University of Hawaii and Carl Lipo of California State University agree that Easter Island lost its lush forests and that it was an ‘ecological catastrophe‘ – but they believe the islanders themselves weren’t to blame. And the moai certainly weren’t. Archaeological excavations indicate that the Rapanui went to heroic efforts to protect the resources of their wind-lashed, infertile fields. They built thousands of circular stone windbreaks and gardened inside them, and used broken volcanic rocks to keep the soil moist. In short, Hunt and Lipo argue, the prehistoric Rapanui were pioneers of sustainable farming.

夏威夷大学考古学家Terry Hunt与加利福尼亚州州立大学Carl Lipo同意复活节岛失去了茂密的森林，而这是一场生态灾难。但他们认为这并不是岛上居民的错，也当然不是摩艾像的错。考古发掘表明拉帕努伊人做出了巨大的努力来保护他们受狂风席卷并且不肥沃的土地资源。他们建造了上千个环形石头防风林，在其中耕作，并利用破碎的火山岩来保持土壤湿润。简而言之，Hunt和Lipo认为，史前的拉帕努伊人是可持续农业的先驱者。

段落E

Hunt and Lipo contend that moai-building was an activity that helped keep the peace between islanders. They also believe that moving the moai required few people and no wood, because they were walked upright. On that issue, Hunt and Lipo say, archaeological evidence backs up Rapanui folklore. Recent experiments indicate that as few as 18 people could, with three strong ropes and a bit of practice, easily manoeuvre a 1,000 kg moai replica a few hundred metres. The figures’ fat bellies tilted them forward, and a D-shaped base allowed handlers to roll and rock them side to side.

Hunt和Lipo认为摩艾像的建造是一项帮助维持岛屿居民之间和平的活动。他们也认为，移动摩艾像并不需要多少人力，也不需要木头，因为他们可以直立行走。Hunt和Lipo说，在这个问题上，考古证据支持拉帕努伊人的民间传说。最近的实验表明，3条结实的绳子再加上一些练习，只要18个人就可以轻易控制一座1000公斤的摩艾像复制品移动几百米。雕像硕大的腹部使它们向前倾斜，而D型底座让操作人员可以把他们从一侧滚向另外一侧。

段落F

Moreover, Hunt and Lipo are convinced that the settlers were not wholly responsible for the loss of the island’s trees. Archaeological finds of nuts from the extinct Easter Island palm show tiny grooves, made by the teeth of Polynesian rats. The rats arrived along with the settlers, and in just a few years, Hunt and Lipo calculate, they would have overrun the island. They would have prevented the reseeding of the slow-growing palm trees and thereby doomed Rapa Nui’s forest, even without the settlers’ campaign of deforestation. No doubt the rats ate birds’ eggs too. Hunt and Lipo also see no evidence that Rapanui civilisation collapsed when the palm forest did. They think its population grew rapidly and then remained more or less stable until the arrival of the Europeans, who introduced deadly diseases to which islanders had no immunity. Then in the nineteenth century slave traders decimated the population, which shrivelled to 111 people by 1877.

此外，Hunt和Lipo坚信，定居者并不应该承担岛屿上树木消失的全部责任。考古研究发现，已经灭绝的复活节岛棕榈树的坚果上有微小的凹槽。这是由波利尼西亚老鼠的牙齿造成的。老鼠与定居者一同来到这里。Hunt和Lip计算，在几年的时间里，它们就充斥了整个岛屿。它们会阻碍生长缓慢的棕榈树再次播种。因此，即便没有定居者对森林的砍伐，它们也注定导致拉帕努伊岛森林的毁灭。毫无疑问，老鼠也会吃鸟蛋。Hunt和Lipo也没有发现任何证据表明，拉帕努伊文明随着森林的毁灭而崩溃。他们认为，其人口迅速增长，并在欧洲人到达之前保持稳定。欧洲人带来了致命的病毒，而岛上居民对此没有任何免疫能力。随后，19世纪里，奴隶贩子大量屠杀居民，导致其人口在1877年时缩减到了111人。

段落G

Hunt and Lipo’s vision, therefore, is one of an island populated by peaceful and ingenious moai builders and careful stewards of the land, rather than by reckless destroyers ruining their own environment and society. ‘Rather than a case of abject failure, Rapu Nui is an unlikely story of success’, they claim. Whichever is the case, there are surely some valuable lessons which the world at large can learn from the story of Rapa Nui.

因此，在Hunt和Lipo看来，这个岛屿居住着和平而具有独创精神的摩艾像建造者，他们小心翼翼地维护土地，并没有不计后果的破坏自己的环境和社会。他们认为：“拉帕努伊是一个不太可能发生的成功故事，而非凄惨的失败”。无论事实如何，世界一定可以从拉帕努伊的故事中学到一些宝贵经验。

### [Neuroaesthetics 神经美学 11Test2Passage3](http://www.laokaoya.com/29915.html)

第1段

An emerging discipline called neuroaesthetics is seeking to bring scientific objectivity to the study of art, and has already given us a better understanding of many masterpieces. The blurred imagery of Impressionist paintings seems to stimulate the brain’s amygdala, for instance. Since the amygdala plays a crucial role in our feelings, that finding might explain why many people find these pieces so moving.

一门正在兴起的，被称为神经美学的学科正试图将科学的客观性带给艺术研究，并已经让我们对许多名作有了更好的理解。例如，印象派画作模糊的画面似乎刺激了大脑的杏仁核。由于杏仁核对我们的感受至关重要，这一发现可能能够解释为什么许多人觉得这些画作如此让人感动。

第2段

Could the same approach also shed light on abstract twentieth-century pieces, from Mondrian’s geometrical blocks of colour, to Pollock’s seemingly haphazard arrangements of splashed paint on canvas? Sceptics believe that people claim to like such works simply because they are famous. We certainly do have an inclination to follow the crowd. When asked to make simple perceptual decisions such as matching a shape to its rotated image, for example, people often choose a definitively wrong answer if they see others doing the same. It is easy to imagine that this mentality would have even more impact on a fuzzy concept like art appreciation, where there is no right or wrong answer.

从蒙德里安的几何色块到波洛克看似随意泼洒在帆布上的色块，同样的方法也能够用于解释20世纪的抽象作品吗？持怀疑态度的人认为人们宣称喜欢这些作品不过是因为它们很有名罢了。我们文章来自老烤鸭雅思当然有从众的倾向。例如，当被要求做出给旋转的图像匹配形状这样的简单认知判断时，如果人们看到他人做出同样的行为，就往往会选择一个绝对错误的答案。很容易想象，这种心态会对诸如艺术品欣赏这样的模糊概念造成更大的影响。毕竟在这方面没有正确和错误之分。

第3段

Angelina Hawley-Dolan, of Boston College, Massachusetts, responded to this debate by asking volunteers to view pairs of paintings – either the creations of famous abstract artists or the doodles of infants, chimps and elephants. They then had to judge which they preferred. A third of the paintings were given no captions, while many were labelled incorrectly – volunteers might think they were viewing a chimp‘s messy brushstrokes when they were actually seeing an acclaimed masterpiece. In each set of trials, volunteers generally preferred the work of renowned artists, even when they believed it was by an animal or a child. It seems that the viewer can sense the artist’s vision in paintings, even if they can’t explain why.

马萨诸塞州波士顿学院的Angelina Hawley-Dolan通过让志愿者观看几组画作来对这一争论进行回应。它们要么是著名抽象艺术家的作品，要么是婴儿、大猩猩或者大象的涂鸦。他们随后需要判断自己更喜欢哪一种。有三分之一的画作没有给出说明文字，并且有许多被错误标注。当志愿者看到一幅受人赞扬的名作时，他们可能认为自己正在观看一头大猩猩杂乱无章的绘画。每一组实验中，志愿者普遍更喜欢著名艺术家的作品，即使他们认为这是由动物或者孩子创作的。似乎观看者能够察觉到艺术家在画作中的想象，哪怕他们无法解释原因。

第4段

Robert Pepperell, an artist based at Cardiff University, creates ambiguous works that are neither entirely abstract nor clearly representational. In one study, Pepperell and his collaborators asked volunteers to decide how ‘powerful’ they considered an artwork to be, and whether they saw anything familiar in the piece. The longer they took to answer these questions, the more highly they rated the piece under scrutiny, and the greater their neural activity. It would seem that the brain sees these images as puzzles, and the harder it is to decipher the meaning, the more rewarding is the moment of recognition.

卡迪夫大学的艺术家Robert Pepperell创作了一些既非完全抽象，也非清晰具象的模棱两可的作品。在一项研究中，Pepperell和他的同事要求志愿者判断他们认为一幅作品是多么“有力”，以及他们是否在作品中看到了一些熟悉的东西。他们用于回答这些问题的时间越长，经过仔细观察后给出的分数就越高，并且神经活动就越活跃。大脑似乎将这些图像当作谜题，解读其含义越困难，识别出来的时候奖励也越大。

第5段

And what about artists such as Mondrian, whose paintings consist exclusively of horizontal and vertical lines encasing blocks of colour? Mondrian’s works are deceptively simple, but eye-tracking studies confirm that they are meticulously composed, and that simply rotating a piece radically changes the way we view it. With the originals, volunteers’ eyes tended to stay longer on certain places in the image, but with the altered versions they would flit across a piece more rapidly. As a result, the volunteers considered the altered versions less pleasurable when they later rated the work.

那么像蒙德里安这样的艺术家呢？他的作品完全由水平和竖直的线以及包裹在其中的色块组成。蒙德里安的作品让人误以为十分简单，但眼球追踪研究证实它们其实是经过仔细创作的。仅仅旋转作品就会彻底改变我们观赏它的方式。对于原作，志愿者的眼睛往往在图画中特定的地方停留较长时间，但对于改动过的版本，他们会更加迅速的扫过整幅作品。因此，当志愿者随后对作品进行打分时，他们会认为改动过的版本不那么让人愉悦。

第6段

In a similar study, Oshin Vartanian of Toronto University asked volunteers to compare original paintings with ones which he had altered by moving objects around within the frame. He found that almost everyone preferred the original, whether it was a Van Gogh still life or an abstract by Miró. Vartanian also found that changing the composition of the paintings reduced activation in those brain areas linked with meaning and interpretation.

在一项相似的研究中，多伦多大学Oshin Vartanian要求志愿者比较原作与在作品框架内移动物品后的作品。他发现，几乎每个人都更加喜欢原作，不管它是梵高的静物作品，还是米罗的抽象作品。Vartanian还发现，改变作品的布局会降低那些与意义和理解有关的大脑区域的活动。

第7段

In another experiment, Alex Forsythe of the University of Liverpool analysed the visual intricacy of different pieces of art, and her results suggest that many artists use a key level of detail to please the brain. Too little and the work is boring, but too much results in a kind of ‘perceptual overload’, according to Forsythe. What’s more, appealing pieces both abstract and representational, show signs of ‘fractals’- repeated motifs recurring in different scales. Fractals are common throughout nature, for example in the shapes of mountain peaks or the branches of trees. It is possible that our visual system, which evolved in the great outdoors, finds it easier to process such patterns.

在另一项实验中，利物浦大学的Alex Forsythe分析了不同艺术作品的视觉复杂性。她的研究结果表明，许多艺术家会使用一定程度的细节来取悦大脑。根据Forstythe的观点，细节太少的话，作品会无聊，但太多了的话又会造成某种认知过载。此外，吸引人的作品，无论是抽象的还是具象的，都展现出“分形”的迹象-重复的图形以不同的比例重现。分形在自然界中十分常见，例如山峰或者树木枝杈的形状。我们在户外进化出来的视觉系统很有可能觉得处理这种模式更为简单。

第8段

It is also intriguing that the brain appears to process movement when we see a handwritten letter, as if we are replaying the writer’s moment of creation. This has led some to wonder whether Pollock’s works feel so dynamic because the brain reconstructs the energetic actions the artist used as he painted. This may be down to our brain’s ‘mirror neurons’, which are known to mimic others’ actions. The hypothesis will need to be thoroughly tested, however. It might even be the case that we could use neuroaesthetic studies to understand the longevity of some pieces of artwork. While the fashions of the time might shape what is currently popular, works that are best adapted to our visual system may be the most likely to linger once the trends of previous generations have been forgotten.

同样有趣的是，当我们看一封手写的信件时，大脑处理的举动就仿佛是我们在重放作者的创作过程。这导致一些人猜想波洛克的作品让人感觉如此生动，是否就是因为大脑重构了艺术家绘画时所使用的生动动作。这可能与我们大脑的“镜像神经元”有关，它们会模仿他人的动作。然而，这一假设需要彻底的验证。或许我们甚至可以使用神经美学研究来理解一些艺术作品的经久不衰。虽然一时的时尚可能会造就当下流行什么，但一旦之前的流行趋势被遗忘，最适应我们视觉系统的作品就更有可能流传下来。

第9段

It’s still early days for the field of neuroaesthetics – and these studies are probably only a taste of what is to come. It would, however, be foolish to reduce art appreciation to a set of scientific laws. We shouldn’t underestimate the importance of the style of a particular artist, their place in history and the artistic environment of their time. Abstract art offers both a challenge and the freedom to play with different interpretations. In some ways, it’s not so different to science, where we are constantly looking for systems and decoding meaning so that we can view and appreciate the world in a new way.

神经美学依然处于起始阶段。这些研究可能仅仅是即将到来的发现的前菜。然而，将艺术鉴赏简化为一系列的科学法则是不明智的。我们不应该低估特定艺术家的风格，他们在历史中的地位，以及所处时代的艺术环境的重要性。抽象派艺术对于不同的解读提出了挑战和自由。从某种方式上来讲，它与科学并没有很大不同。在科学领域，我们一直寻求体系并解读含义，以便我们能够以全新的方式观察和欣赏这个世界。

## 11Test3

### [11Test3Passage1 The story of silk 丝绸的故事](http://www.laokaoya.com/29973.html)

第1段

Silk is a fine, smooth material produced from the cocoons – soft protective shells – that are made by mulberry silkworms (insect larvae). Legend has it that it was Lei Tzu, wife of the Yellow Emperor, ruler of China in about 3000 BC, who discovered silkworms. One account of the story goes that as she was taking a walk in her husband’s gardens, she discovered that silkworms were responsible for the destruction of several mulberry trees. She collected a number of cocoons and sat down to have a rest. It just so happened that while she was sipping some tea, one of the cocoons that she had collected landed in the hot tea and started to unravel into a fine thread. Lei Tzu found that she could wind this thread around her fingers. Subsequently, she persuaded her husband to allow her to rear silkworms on a grove of mulberry trees. She also devised a special reel to draw the fibres from the cocoon into a single thread so that they would be strong enough to be woven into fabric. While it is unknown just how much of this is true, it is certainly known that silk cultivation has existed in China for several millennia.

丝绸是一种精致，柔顺的布料，产自桑蚕（昆虫幼体）制作出的蚕茧-即其柔软的起保护作用的外壳。根据传说，是公元前3000年左右统治中国的黄帝的妻子嫘祖发现了桑蚕。故事是这样讲述的：当她在她丈夫的公园里散步时，发现桑蚕破坏了几棵桑树。她收集了一些蚕茧，并坐下休息一会儿。当她在喝茶的时候，一粒收集到的蚕茧碰巧掉进了热茶中，开始松散成一根细丝。嫘祖发现她可以将这跟细线缠绕到自己手指上。于是，她说服丈夫让她在一片桑树林里养蚕。她还发明了一种特殊的卷盘来将蚕茧中的纤维纺成丝线，以便它们足够坚韧可以纺成织物。虽然不知道这个故事里有多少是真实可信的，但可以确定的是，丝绸的生产已经在中国存在了好几千年。

第2段

Originally, silkworm farming was solely restricted to women, and it was they who were responsible for the growing, harvesting and weaving. Silk quickly grew into a symbol of status, and originally, only royalty were entitled to have clothes made of silk. The rules were gradually relaxed over the years until finally during the Qing Dynasty (1644-1911 AD), even peasants, the lowest caste, were also entitled to wear silk. Sometime during the Han Dynasty (206 BC-220 AD), silk was so prized that it was also used as a unit of currency. Government officials were paid their salary in silk, and farmers paid their taxes in grain and silk. Silk was also used as diplomatic gifts by the emperor. Fishing lines, bowstrings, musical instruments and paper were all made using silk. The earliest indication of silk paper being used was discovered in the tomb of a noble who is estimated to have died around 168 AD.

一开始，桑蚕养殖仅限女性。她们负责养育、收获和纺织。丝绸很快变成地位的象征。最初，只有皇家可以穿丝绸制成的衣服。这些规矩文章来自老烤鸭雅思随着时间发展逐渐放松。最终，到了清朝（公元1644年-1911年），即便是农民这一最低阶层也可以穿丝绸了。汉朝（公元前206年到公元后220年）的某个时期，丝绸是如此宝贵，以至于它还被当作货币单位使用。朝廷官员的俸禄是用丝绸支付的，农民则用谷物和丝绸来纳税。丝绸还被皇帝当成外交礼物使用。渔线、弓弦、乐器和纸张均由丝绸制成。使用丝制纸张的最早证据发现于一名贵族的墓中。据估计，他大约死于公元168年左右。

第3段

Demand for this exotic fabric eventually created the lucrative trade route now known as the Silk Road, taking silk westward and bringing gold, silver and wool to the East. It was named the Silk Road after its most precious commodity, which was considered to be worth more than gold. The Silk Road stretched over 6,000 kilometres from Eastern China to the Mediterranean Sea, following the Great Wall of China, climbing the Pamir mountain range, crossing modern-day Afghanistan and going on to the Middle East, with a major trading market in Damascus. From there, the merchandise was shipped across the Mediterranean Sea. Few merchants travelled the entire route; goods were handled mostly by a series of middlemen.

对这一异国织物的需求最终催生出一条利润丰厚的贸易路线，即现在所谓的丝绸之路。它向西运送丝绸，并将黄金、白银和羊毛带回到东方。丝绸之路因其最宝贵的商品而得名。它被视为比黄金更贵重。丝绸之路绵延6000多公里，从东方的中国一直到地中海地区，沿着长城，攀越帕米尔山脊，穿过今日的阿富汗，并延伸到中东。在大马士革有一个主要的交易场所。从那里开始，商品被装上船穿过地中海。很少有商人走完整条路线。货物大多是由一系列中间商交接传递的。

第4段

With the mulberry silkworm being native to China, the country was the world’s sole producer of silk for many hundreds of years. The secret of silk-making eventually reached the rest of the world via the Byzantine Empire, which ruled over the Mediterranean region of southern Europe, North Africa and the Middle East during the period 330-1453 AD. According to another legend, monks working for the Byzantine emperor Justinian smuggled silkworm eggs to Constantinople (Istanbul in modern-day Turkey) in 550 AD, concealed inside hollow bamboo walking canes. The Byzantines were as secretive as the Chinese, however, and for many centuries the weaving and trading of silk fabric was a strict imperial monopoly. Then in the seventh century, the Arabs conquered Persia, capturing their magnificent silks in the process. Silk production thus spread through Africa, Sicily and Spain as the Arabs swept through these lands. Andalusia in southern Spain was Europe’s main silk-producing centre in the tenth century. By the thirteenth century, however, Italy had become Europe’s leader in silk production and export. Venetian merchants traded extensively in silk and encouraged silk growers to settle in Italy. Even now, silk processed in the province of Como in northern Italy enjoys an esteemed reputation.

由于桑蚕是中国的本地物种，这个国家在好几百年的时间里都是世界上唯一的丝绸生产商。制造丝绸的秘密最终经由拜占庭帝国传播到世界其他地方。它于公元330年到1453年统治着南欧、北非和中东组成的地中海地区。根据另一个传说，为拜占庭皇帝Justinian服务的僧侣在公元550年将桑蚕卵藏在空心的竹子手杖里，偷偷带到了君士坦丁堡（今日土耳其的伊斯坦布尔）。然而，拜占庭人和中国人一样保守秘密。在很多世纪里，丝绸的纺织与贸易严格由国家垄断。然后在七世纪，阿拉伯人征服了波斯，并在此过程中劫掠了宝贵的丝绸。丝绸生产由此随着阿拉伯人对非洲、西西里和西班牙的扫荡而传播到这些地区。西班牙南部的安达卢西亚是十世纪欧洲的主要丝绸生产中心。然而，到了十三世纪，意大利成为欧洲丝绸生产和出口的领导者。威尼斯商人到处进行丝绸贸易，并鼓励丝绸生产者到意大利定居。即使是现在，意大利北部科莫省加工的丝绸仍然享有很高的声誉。

第5段

The nineteenth century and industrialisation saw the downfall of the European silk industry. Cheaper Japanese silk, trade in which was greatly facilitated by the opening of the Suez Canal, was one of the many factors driving the trend. Then in the twentieth century, new manmade fibres, such as nylon, started to be used in what had traditionally been silk products, such as stockings and parachutes. The two world wars, which interrupted the supply of raw material from Japan, also stifled the European silk industry. After the Second World War, Japan’s silk production was restored, with improved production and quality of raw silk. Japan was to remain the world’s biggest producer of raw silk, and practically the only major exporter of raw silk, until the 1970s. However, in more recent decades, China has gradually recaptured its position as the world’s biggest producer and exporter of raw silk and silk yarn. Today, around 125,000 metric tons of silk are produced in the world, and almost two thirds of that production takes place in China.

十九世纪和工业化见证了欧洲丝绸产业的衰落。更为廉价的日本丝绸是推动这一趋势的众多因素之一。苏伊士运河的开通极大地方便了这一贸易的进行。到了20世纪，尼龙这样的新型人造纤维开始被用于传统的丝绸制品中，例如袜子和降落伞。两次世界大战中断了日本的原材料供给，也扼杀了欧洲的丝绸产业。第二次世界大战结束后，日本的丝绸生产得以重建，生丝的制作工艺和品质都有所提升。直到20世纪70年代，日本仍然是世界上最大的生丝生产商，实际上也是唯一的主要生丝出口商。然而，到了近几十年，中国逐渐夺回它曾经的地位，成为世界上生丝和丝线的最大生厂商与出口者。今天，全世界大约生产125000吨的丝绸，几乎三分之二都来自中国。

### [11Test3Passage2 Great Migrations 伟大的迁徙](http://www.laokaoya.com/29999.html)

第1段

Animal migration, however it is defined, is far more than just the movement of animals. It can loosely be described as travel that takes place at regular intervals – often in an annual cycle – that may involve many members of a species, and is rewarded only after a long journey. It suggests inherited instinct. The biologist Hugh Dingle has identified five characteristics that apply, in varying degrees and combinations, to all migrations. They are prolonged movements that carry animals outside familiar habitats; they tend to be linear, not zigzaggy; they involve special behaviours concerning preparation (such as overfeeding) and arrival; they demand special allocations of energy. And one more: migrating animals maintain an intense attentiveness to the greater mission, which keeps them undistracted by temptations and undeterred by challenges that would turn other animals aside.

无论如何定义动物迁徙，它都不仅仅是动物的移动而已。它可以大致被描述为按照规律的间隔（通常以一年为周期）所进行的旅行。这通常涉及某一种群中的大部分成员，并且只有在漫长的旅程之后才能得到奖励。这种行为显示出它们的遗传本能。生物学家Hugh Dingle总结出5个在不同程度上或者按照不同组合适用于所有迁徙的特点。它们是漫长的移动，将动物带出熟悉的栖息地；它们通常是线性的，而非蜿蜒曲折的；它们涉及到与准备（如过量饮食）和到达相关的特殊行为；它们需要独特的能量分配。此外还有一点，迁徙中的动物对这一伟大的任务高度专注。这让它们不会被诱惑所干扰，面对让其他动物止步不前的挑战不屈不挠。

第2段

An arctic tern, on its 20,000 km flight from the extreme south of South America to the Arctic circle, will take no notice of a nice smelly herring offered from a bird-watcher’s boat along the way. While local gulls will dive voraciously for such handouts, the tern flies on. Why? The arctic tern resists distraction because it is driven at that moment by an instinctive sense of something we humans find admirable: larger purpose. In other words, it is determined to reach its destination. The bird senses that it can eat, rest and mate later. Right now it is totally focused on the journey; its undivided intent is arrival. Reaching some gravelly coastline in the Arctic, upon which other arctic terns have converged, will serve its larger purpose as shaped by evolution: finding a place, a time, and a set of circumstances in which it can successfully hatch and rear offspring.

一只北极燕鸥在它从南美最南端到北极圈长达20000公里的飞行中，不会注意到路途上鸟类观察者的小船所提供的美味鲱鱼。尽管当地海鸥文章来自老烤鸭雅思会为这些馈赠而贪婪地俯冲下来，燕鸥却继续向前飞行。这是为什么呢？北极燕鸥之所以拒绝这一诱惑是因为那时它被一种我们人类十分钦佩的本能所驱动着，即更大的目标。换句话说，它下定决心要到达自己的目的地。这只鸟感觉自己可以稍后进食、休息和交配。现在，它全神贯注于这一旅程，全部的心思都是抵达。到达北极沙砾遍布、其他北极燕鸥聚集的海岸便能达成由进化所塑造出来的更大的目标：找到某个地方，某个时间，以及一系列的环境条件。在其中，它可以成功地孵化和养育后代。

第3段

But migration is a complex issue, and biologists define it differently, depending in part on what sorts of animals they study. Joel Berger, of the University of Montana, who works on the American pronghorn and other large terrestrial mammals, prefers what he calls a simple, practical definition suited to his beasts: ‘movements from a seasonal home area away to another home area and back again’. Generally the reason for such seasonal back-and-forth movement is to seek resources that aren’t available within a single area year-round.

但是，迁徙是一个复杂的问题，根据生物学家所研究的动物种类不同，他们对它的定义也各有不同。蒙大拿大学、研究美国叉角羚和其他大型陆生哺乳动物的Joel Berger，倾向于使用一个适用于他所研究的动物类型的，简单实用的定义：“从一个季节性的栖息地离开，到另外一个栖息地去，并再次返回的过程”。大体来说，这种季节性往返移动的原因是为了寻找在某个单一区域并非全年存在的资源。

第4段

But daily vertical movements by zooplankton in the ocean – upward by night to seek food, downward by day to escape predators – can also be considered migration. So can the movement of aphids when, having depleted the young leaves on one food plant, their offspring then fly onward to a different host plant, with no one aphid ever returning to where it started.

但是，海洋中浮游生物每天的垂直移动-夜里向上寻找食物，白天向下躲避捕食者-也可以被认为是迁徙。蚜虫的活动同样如此，在吃光了一株植物上的嫩叶之后，它们的后代会飞到一株不同的宿主植物上。没有一个蚜虫会返回到出发的地方。

第5段

Dingle is an evolutionary biologist who studies insects. His definition is more intricate than Berger’s, citing those five features that distinguish migration from other forms of movement. They allow for the fact that, for example, aphids will become sensitive to blue light (from the sky) when it’s time for takeoff on their big journey, and sensitive to yellow light (reflected from tender young leaves) when it’s appropriate to land. Birds will fatten themselves with heavy feeding in advance of a long migrational flight. The value of his definition, Dingle argues, is that it focuses attention on what the phenomenon of wildebeest migration shares with the phenomenon of the aphids, and therefore helps guide researchers towards understanding how evolution has produced them all.

Dingle是一名研究昆虫的进化生物学家。他的定义与Berger相比要更加精致一些，列举出迁徙区别于其他形式移动的5个特征。它们考虑到以下事实：例如蚜虫在开启自己宏大旅程的时候会变得对来自天空的蓝色光线更为敏感，而在适合降落的时候会对反射自嫩叶的黄色光线更为敏感。鸟类会在漫长迁徙飞行之前会大量饮食来让自身变得肥胖。Dingle认为，其定义的价值在于，它将注意力放在角马迁徙与蚜虫迁徙现象的共性上，并由此来帮助引导研究者理解进化是如何产生所有这些共性的。

第6段

Human behaviour, however, is having a detrimental impact on animal migration. The pronghorn, which resembles an antelope, though they are unrelated, is the fastest land mammal of the New World. One population, which spends the summer in the mountainous Grand Teton National Park of the western USA, follows a narrow route from its summer range in the mountains, across a river, and down onto the plains. Here they wait out the frozen months, feeding mainly on sagebrush blown clear of snow. These pronghorn are notable for the invariance of their migration route and the severity of its constriction at three bottlenecks. If they can’t pass through each of the three during their spring migration, they can’t reach their bounty of summer grazing; if they can’t pass through again in autumn, escaping south onto those windblown plains, they are likely to die trying to overwinter in the deep snow. Pronghorn, dependent on distance vision and speed to keep safe from predators, traverse high, open shoulders of land, where they can see and run. At one of the bottlenecks, forested hills rise to form a V, leaving a corridor of open ground only about 150 metres wide, filled with private homes. Increasing development is leading toward a crisis for the pronghorn, threatening to choke off their passageway.

然而，人类行为对动物迁徙有着负面影响。叉角羚虽然与羚羊无关，但看起来很像。它是新世界速度最快的陆生哺乳动物。其中一个族群会在美国西部大提顿国家公园的山脉之间度过夏天，然后从其山间的夏季牧场沿一条狭窄的路径南下，穿过河流，到达平原。在这里，他们等待寒冷月份结束，主要以被风吹过露出雪面的灌木为生。这些叉羚羊之所以引人注目是因为其迁徙路线的不变性，以及三个瓶颈的严重限制。如果它们在春季迁徙中无法通过三个中的任何一个，它们就不能到达食物充足的夏季草场。如果他们在秋季时不能再次通过，就无法向南逃到被风吹拂的平原上，并很有可能在试图度过厚厚冰雪的冬季中死亡。叉羚羊依赖其远视能力和速度来躲避捕食者。他们穿行于陆地高耸开阔的地带，便于四处观察和奔跑。在其中一个瓶颈中，遍布森林的山峰耸立，形成V字形状，只留下一条大约150米宽的走廊。其间充满私人住宅。不断的发展正在引发一场叉羚羊的生存危机，有堵塞它们通道的风险。

第7段

Conservation scientists, along with some biologists and land managers within the USA’s National Park Service and other agencies, are now working to preserve migrational behaviours, not just species and habitats. A National Forest has recognised the path of the pronghorn, much of which passes across its land, as a protected migration corridor. But neither the Forest Service nor the Park Service can control what happens on private land at a bottleneck. And with certain other migrating species, the challenge is complicated further – by vastly greater distances traversed, more jurisdictions, more borders, more dangers along the way. We will require wisdom and resoluteness to ensure that migrating species can continue their journeying a while longer.

物种保护科学家，以及来自美国国家公园管理局和其他机构的一些生物学家和土地管理者，现在正努力保护动物的迁徙行为，而不仅仅是它们的种群和栖息地。一片国家森林将叉角羚的迁徙路线（很大一部分路径要穿行其中）列为受保护的迁徙走廊。但无论是森林服务局还是公园服务局都无法控制瓶颈地带私人土地上所发生的事情。对于其他一些迁徙物种来说，挑战要更加复杂一些。它们一路上穿越更长的距离，更多的管辖区，更多的边境，面对更多的危险。我们需要智慧和决心来确保迁徙中的物种能够将他们的旅途进行的更长久一些。

### [11Test3Passage3 Preface to How the other half thinks: Adventures in the mathematical reasoning](http://www.laokaoya.com/30054.html)

A部分

Occasionally, in some difficult musical compositions, there are beautiful, but easy parts – parts so simple a beginner could play them. So it is with mathematics as well. There are some discoveries in advanced mathematics that do not depend on specialized knowledge, not even on algebra, geometry, or trigonometry. Instead they may involve, at most, a little arithmetic, such as ‘the sum of two odd numbers is even’, and common sense. Each of the eight chapters in this book illustrates this phenomenon. Anyone can understand every step in the reasoning.

在一些复杂的音乐作品中，偶尔会有优美却简单的部分。这些部分是如此容易，一名初学者也可以演奏。数学也是一样。高等数学中的一些发现并不依赖专业知识，甚至不需要代数、几何或者三角函数。与之相反，它们可能最多只涉及一些四则运算和常识，比如“两个奇数的和为偶数”。 这本书八个章节中的每一章都说明了这一现象。任何人都能够理解推理过程中的每个步骤。

The thinking in each chapter uses at most only elementary arithmetic, and sometimes not even that. Thus all readers will have the chance to participate in a mathematical experience, to appreciate the beauty of mathematics, and to become familiar with its logical, yet intuitive, style of thinking.

每个章节中的思考最多只用到基础的算术法则，有时甚至连这都不需要。因此，所有读者都有机会文章来自老烤鸭雅思参与到一场数学体验中去，来欣赏数学的美妙，熟悉它的富有逻辑却又充满直觉的思考方式。

B部分

One of my purposes in writing this book is to give readers who haven’t had the opportunity to see and enjoy real mathematics the chance to appreciate the mathematical way of thinking. I want to reveal not only some of the fascinating discoveries, but, more importantly, the reasoning behind them.

我写这本书的目的之一，是为了给那些没有机会见到和享受真正数学的读者一个机会，让他们可以欣赏数学的思考方式。我想要揭示的不仅仅是一些引人入胜的发现，更重要的是它们背后的思考过程。

In that respect, this book differs from most books on mathematics written for the general public. Some present the lives of colorful mathematicians. Others describe important applications of mathematics. Yet others go into mathematical procedures, but assume that the reader is adept in using algebra.

在该方面，这本书区别于大多数为普通大众而写就的数学书籍。它们或者呈现数学家丰富多彩的生活，或者描述数学的重要应用，还有一些深入研究数学步骤，却假定读者能够熟练的使用代数。

C部分

I hope this book will help bridge that notorious gap that separates the two cultures: the humanities and the sciences, or should I say the right brain (intuitive) and the left brain (analytical, numerical). As the chapters will illustrate, mathematics is not restricted to the analytical and numerical; intuition plays a significant role. The alleged gap can be narrowed or completely overcome by anyone, in part because each of us is far from using the full capacity of either side of the brain. To illustrate our human potential, I cite a structural engineer who is an artist, an electrical engineer who is an opera singer, an opera singer who published mathematical research, and a mathematician who publishes short stories.

我希望这本书可以搭建起一座桥梁，跨越那道臭名昭著的间隙，从而沟通两种文化：人文与科学，或者我也许应该将其称之为右脑（直觉性的）与左脑（分析性的，数学的）。正如书中章节将要说明的那样，数学不仅仅是分析性的和数字性的。直觉也扮演着重要的角色。任何人都能够缩小或者完全克服这道所谓的间隙，部分是因为我们每个人都远远没有用出任何一侧大脑的全部能力。为了说明我们人类的潜力，我引用了如下例子：一名结构工程师同时也是一名艺术家；一名电气工程师同时也是一名歌剧演唱家；一名歌剧演唱家出版了一本数学研究著作，以及一名数学家发表了一些短篇小说。

D部分

Other scientists have written books to explain their fields to non-scientists, but have necessarily had to omit the mathematics, although it provides the foundation of their theories. The reader must remain a tantalized spectator rather than an involved participant, since the appropriate language for describing the details in much of science is mathematics, whether the subject is expanding universe, subatomic particles, or chromosomes. Though the broad outline of a scientific theory can be sketched intuitively, when a part of the physical universe is finally understood, its description often looks like a page in a mathematics text.

其他科学家也写了一些书籍来向非科学家解释他们的领域，但却不得不忽略数学部分，尽管它为他们的理论提供了基础。由于细致描述大部分科学（无论主题是膨胀的宇宙，还是亚原子粒子，又或者是染色体）的恰当语言是数学，读者只好全程做一个跃跃欲试而不得的旁观者，而不是加入其中的参与者。虽然一个科学理论的大致轮廓可以通过直觉来刻画，但当某部分实体宇宙最终被人们所理解，它的描述经常看起来像是数学课本中的某一页。

E部分

Still, the non-mathematical reader can go far in understanding mathematical reasoning. This book presents the details that illustrate the mathematical style of thinking, which involves sustained, step-by-step analysis, experiments, and insights. You will turn these pages much more slowly than when reading a novel or a newspaper. It may help to have a pencil and paper ready to check claims and carry out experiments.

非数学专业的读者仍然可以深入理解数学的推导过程。这本书呈现出的细节解释了数学的思维方式。它包含连续的、一步步的分析，实验和思考。与小说或者报纸相比，你翻页的速度会慢很多。旁边放支铅笔和纸张，随时准备核验书中理论和进行实验会很有帮助。

F部分

As I wrote, I kept in mind two types of readers: those who enjoyed mathematics until they were turned off by an unpleasant episode, usually around fifth grade, and mathematics aficionados, who will find much that is new throughout the book.

我在写作时，脑子里有两种类型的读者：一类人直到被某一不愉快的插曲劝退之前都挺喜欢数学的，而这通常发生在5年级左右。另一类人是数学的狂热爱好者，他们会在书中发现许多全新的东西。

This book also serves readers who simply want to sharpen their analytical skills. Many careers, such as law and medicine, require extended, precise analysis. Each chapter offers practice in following a sustained and closely argued line of thought. That mathematics can develop this skill is shown by these two testimonials.

这本书也适合那些仅仅想要磨练自己分析技能的读者。诸如法律和医药等许多职业都需要全面、精确的分析能力。每一章在连续、严密的思维论证之后都会给出练习。下面两份证词可以展示数学确实能够提升该项能力。

G部分

A physician wrote, ‘The discipline of analytical thought processes [in mathematics] prepared me extremely well for medical school. In medicine one is faced with a problem which must be thoroughly analyzed before a solution can be found. The process is similar to doing mathematics.’

一名医生写到：“（数学中）分析思维过程的原则让我为医学院的学习做足了准备。在医学中，一个人面临的问题必须经过透彻的分析才能够找到解决方案。这一过程与做数学题十分相似”。

A lawyer made the same point, ‘Although I had no background in law – not even one political science course – I did well at one of the best law schools. I attribute much of my success there to having learned, through the study of mathematics, and, in particular, theorems, how to analyze complicated principles. Lawyers who have studied mathematics can master the legal principles in a way that most others cannot.’

一名律师也发表了相同的意见，“虽然我没有法律的相关背景，甚至也不曾修读过任何一门政治科学课程，但我在一所顶级法学院中成绩优异。我将自己在那里取得的成功归功于曾经的数学学习，尤其是对各种定理的学习，了解如何分析复杂的原理。学习过数学的律师能够以一种大多数其他律师所无法掌握的方式掌握法律原理”。

I hope you will share my delight in watching as simple, even naïve, questions lead to remarkable solutions and purely theoretical discoveries find unanticipated applications.

我希望你能够分享我的喜悦，去观察简单甚至幼稚的问题如何引向非同寻常的解决方案，以及纯粹的理论发现如何找到意料之外的用途。

## 11Test4

### [11Test4Passage1 Research using twins 利用双胞胎研究](http://www.laokaoya.com/30128.html)

**第1段**

To biomedical researchers all over the world, twins offer a precious opportunity to untangle the influence of genes and the environment – of nature and nurture. Because identical twins come from a single fertilized egg that splits into two, they share virtually the same genetic code. Any differences between them – one twin having younger looking skin, for example – must be due to environmental factors such as less time spent in the sun.

对于全世界的生物医学研究者来说，双胞胎提供了理清基因与环境影响（或者说先天与后天）的宝贵机会。由于同卵双胞胎来自于一分为二的同一个受精卵，他们拥有几乎完全相同的基因编码。他们之间的任何差异-比如一个拥有看起来更为年轻的肌肤-一定是由环境因素造成的，比如晒太阳的时间更少。

**第2段**

Alternatively, by comparing the experiences of identical twins with those of fraternal twins, who come from separate eggs and share on average half their DNA, researchers can quantify the extent to which our genes affect our lives. If identical twins are more similar to each other with respect to an ailment than fraternal twins are, then vulnerability to the disease must be rooted at least in part in heredity.

另一方面，通过比较同卵双胞胎和异卵双胞胎（来自不同的受精卵，平均有一半的DNA相同）的经历，研究者文章来自老烤鸭雅思可以量化基因在多大程度上影响着我们的生活。如果同卵双胞胎对某一种疾病的反应比异卵双胞胎更为相似，那么这种疾病的易受性至少部分来自于遗传因素。

**第3段**

These two lines of research – studying the differences between identical twins to pinpoint the influence of environment, and comparing identical twins with fraternal ones to measure the role of inheritance – have been crucial to understanding the interplay of nature and nurture in determining our personalities, behavior, and vulnerability to disease.

这两条研究方向-研究同卵双胞胎的差异以明确环境的影响，以及比较同卵双胞胎和异卵双胞胎来衡量遗传的作用-对理解先天和后天在决定我们性格、行为和疾病易受性方面的互动至关重要。

**第4段**

The idea of using twins to measure the influence of heredity dates back to 1875, when the English scientist Francis Galton first suggested the approach (and coined the phrase ‘nature and nurture‘). But twin studies took a surprising twist in the 1980s, with the arrival of studies into identical twins who had been separated at birth and reunited as adults. Over two decades 137 sets of twins eventually visited Thomas Bouchard’s lab in what became known as the Minnesota Study of Twins Reared Apart. Numerous tests were carried out on the twins, and they were each asked more than 15,000 questions.

使用双胞胎来衡量遗传因素的影响的想法可以追溯到1875年。那时英国科学家Francis Galton第一次提出这一方法，并创造出“先天和后天”这一组词汇。但双胞胎研究在20世纪80年代发生了令人惊讶的转折，研究对象放在了那些出生之后相互分离，但长大后又重新团聚的同卵双胞胎身上。在二十年的时间里，一共有137对双胞胎走进Thomas Bouchard的实验室。这次研究后来被人称为“Minnesota Study of Twins Reared Apart”。他们在双胞胎身上进行了大量的测试，每个人都回答了超过15000个问题。

**第5段**

Bouchard and his colleagues used this mountain of data to identify how far twins were affected by their genetic makeup. The key to their approach was a statistical concept called heritability. In broad terms, the heritability of a trait measures the extent to which differences among members of a population can be explained by differences in their genetics. And wherever Bouchard and other scientists looked, it seemed, they found the invisible hand of genetic influence helping to shape our lives.

Bouchard和他的同事利用这些如山般的数据来检测双胞胎在多大程度上受他们基因组成的影响。其研究方法的关键在于一种被称为“遗传性”的统计学概念。广义来讲，一种特质的可遗传性所衡量的是人口群体中各个成员之间的个体差异在何种程度上可以由他们之间的基因差异来解释。无论Bouchard和其他科学家看向何处，他们发现基因影响这一看不见的手似乎都在帮助塑造我们的生活。

**第6段**

Lately, however, twin studies have helped lead scientists to a radical new conclusion: that nature and nurture are not the only elemental forces at work. According to a recent field called epigenetics, there is a third factor also in play, one that in some cases serves as a bridge between the environment and our genes, and in others operates on its own to shape who we are.

然后，最近的双胞胎研究帮助将科学家引向一个全新的结论：先天和后天并不是唯一发挥作用的基础因素。根据近期出现的、被称为“表观遗传性”的研究领域，在此过程中还有第三个因素。它在一些情况下架起了环境与基因之间的桥梁，在另外一些情况下则独自发挥作用塑造我们的人生。

**第7段**

Epigenetic processes are chemical reactions tied to neither nature nor nurture but representing what researchers have called a ‘third component‘. These reactions influence how our genetic code is expressed: how each gene is strengthened or weakened, even turned on or off, to build our bones, brains and all the other parts of our bodies.

表观遗传的过程是这样一些化学反应。它们与先天和后天都不相关，但却代表了研究者所称之为的“第三种因素”。这些反应影响我们基因编码的表达方式：即每个基因如何被强化或弱化，甚至被打开或关闭，来构建我们的骨骼，大脑和身体的其他部分。

**第8段**

If you think of our DNA as an immense piano keyboard and our genes as the keys – each key symbolizing a segment of DNA responsible for a particular note, or trait, and all the keys combining to make us who we are – then epigenetic processes determine when and how each key can be struck, changing the tune being played.

如果你将我们的DNA想象成巨大的钢琴键盘，将基因想象成琴键-每个琴键象征着DNA的一个片段，它负责某个特定的音调或者特征。而所有的琴键结合在一起构建我们自身-那么表观遗传过程就决定了每个琴键什么时候以及如何被按下，从而改变演奏的乐曲。

**第9段**

One way the study of epigenetics is revolutionizing our understanding of biology is by revealing a mechanism by which the environment directly impacts on genes. Studies of animals, for example, have shown that when a rat experiences stress during pregnancy, it can cause epigenetic changes in a fetus that lead to behavioral problems as the rodent grows up. Other epigenetic processes appear to occur randomly, while others are normal, such as those that guide embryonic cells as they become heart, brain, or liver cells, for example.

表观遗传学的研究通过揭示环境直接影响基因的机制彻底改变了我们对生物学的理解。例如，对动物的研究表明，当一只老鼠在怀孕期间经受压力时，就可能在其胎儿中引发表观遗传性的改变，进而随着这只啮齿动物的成长而导致行为方面的问题。一些表观遗传过程似乎是随机发生的，但其他的则是常规现象，比如在胚胎细胞变成心脏、大脑或者肝脏细胞过程中起指导作用的那些。

**第10段**

Geneticist Danielle Reed has worked with many twins over the years and thought deeply about what twin studies have taught us. ‘It’s very clear when you look at twins that much of what they share is hardwired,’ she says. ‘Many things about them are absolutely the same and unalterable. But it’s also clear, when you get to know them, that other things about them are different. Epigenetics is the origin of a lot of those differences, in my view.’

基因学家Danielle Reed多年来研究了许多对双胞胎，对双胞胎研究给我们的启示进行了深入的思考。“当你观察双胞胎的时候，很明显，他们大部分相同的地方是由基因决定的”。她说，“他们的许多特点完全相同而且无法改变。但同样明显的是，当你了解他们之后，与他们相关的其他东西则存在差别。在我看来，表观遗传学正是大多数这些差异的根源”。

**第11段**

Reed credits Thomas Bouchard’s work for today’s surge in twin studies. ‘He was the trailblazer,’ she says. ‘We forget that 50 years ago things like heart disease were thought to be caused entirely by lifestyle. Schizophrenia was thought to be due to poor mothering. Twin studies have allowed us to be more reflective about what people are actually born with and what’s caused by experience.’

Reed将今天双胞胎研究的兴起归功于Thomas Bouchard的工作。“他是这个领域的先驱”，她说，“我们忘记了，50年前，像心脏病这样的事情被认为是完全由生活方式造成的。精神分裂被认为由于不良的照料方式所引发的。双胞胎研究让我们能够进一步反思哪些东西是人们与生俱来的，哪些东西是由经历造成的”。

**第12段**

Having said that, Reed adds, the latest work in epigenetics promises to take our understanding even further. ‘What I like to say is that nature writes some things in pencil and some things in pen,’ she says. ‘Things written in pen you can’t change. That’s DNA. But things written in pencil you can. That’s epigenetics. Now that we’re actually able to look at the DNA and see where the pencil writings are, it’s sort of a whole new world.’

在这之后，Reed补充到，表观基因学的最新研究还有可能进一步加深我们的理解。“我想要说的是，部分先天特质是用铅笔写成的，部分则是用钢笔写成的”，她说，“用钢笔写成的东西无法更改。那是DNA。但用铅笔写成的东西可以更改。那是表观遗传学。现在，我们已经能够研究DNA，来观察哪里是由铅笔写就的，这是一个全新的世界”。

### [11Test4Passage2 An Introduction to Film Sound 电影声音介绍](http://www.laokaoya.com/30175.html)

**第1段**

Though we might think of film as an essentially visual experience, we really cannot afford to underestimate the importance of film sound. A meaningful sound track is often as complicated as the image on the screen, and is ultimately just as much the responsibility of the director. The entire sound track consists of three essential ingredients: the human voice, sound effects and music. These three tracks must be mixed and balanced so as to produce the necessary emphases which in turn create desired effects. Topics which essentially refer to the three previously mentioned tracks are discussed below. They include dialogue, synchronous and asynchronous sound effects, and music.

虽然我们可能认为电影在本质上是一种视觉体验，但我们确实不能低估电影声音的重要性。一段含义丰富的音轨往往与屏幕上的画面同样复杂，并且导演最终要为此承当同样多的责任。完整的音轨包含三个基本元素：人声，音效和音乐。这三条音轨必须混合在一起，而且互相平衡，才能产生必要的侧重点，进而创造出想要的效果。针对以上提到的三种音轨所展开的话题将在后文中进行讨论。它们包括对话，同步和不同步的音效，以及音乐。

**第2段**

Let us start with dialogue. As is the case with stage drama, dialogue serves to tell the story and expresses feelings and motivations of characters as well. Often with film characterization the audience perceives little or no difference between the character and the actor. Thus, for example, the actor Humphrey Bogart is the character Sam Spade; film personality and life personality seem to merge. Perhaps this is because the very texture of a performer‘s voice supplies an element of character.

让我们从对话开始。与舞台剧相同，对话起着讲述故事，表达角色情感与动机的作用。随着电影的人物刻画，观众文章来自老烤鸭雅思往往分别不出角色和演员之间的差别。因此，举例而言，演员Humphrey Bogart就是Sam Spade。电影中的人格似乎与生活中的人格融为一体。或许这是因为表演者的声音特质构成了角色的一项基本元素。

**第3段**

When voice textures fit the performer‘s physiognomy and gestures, a whole and very realistic persona emerges. The viewer sees not an actor working at his craft, but another human being struggling with life. It is interesting to note that how dialogue is used and the very amount of dialogue used varies widely among films. For example, in the highly successful science-fiction film 2001, little dialogue was evident, and most of it was banal and of little intrinsic interest. In this way the film-maker was able to portray what Thomas Sobochack and Vivian Sobochack call, in An Introduction to Film, the ‘inadequacy of human responses when compared with the magnificent technology created by man and the visual beauties of the universe’.

当声音特点符合演员的容貌和姿态，一个完整而真实的人物就出现了。观众看到的不是一名演员在展现自己的技艺，而是另一个人在生活中挣扎。有意思的是，不同电影之间，对话的使用和对话的数量差别很大。例如，在《2001》这部非常成功的科幻电影中，很少有明显的对话。这些对话的大部分也都是平淡无味，没有什么内在含义。这样一来，电影制作者的以描绘出Thomas Sobochack和Vivian Sobochack在《电影简介》中所说到的那种效果：“相比于人类创造出的宏大技术与宇宙的视觉美感，人们的反应是那么微不足道”。

**第4段**

The comedy Bringing Up Baby, on the other hand, presents practically non-stop dialogue delivered at breakneck speed. This use of dialogue underscores not only the dizzy quality of the character played by Katherine Hepburn, but also the absurdity of the film itself and thus its humor. The audience is bounced from gag to gag and conversation to conversation; there is no time for audience reflection. The audience is caught up in a whirlwind of activity in simply managing to follow the plot. This film presents pure escapism – largely due to its frenetic dialogue.

另一方面，《育婴奇谭》这部喜剧片呈现出几乎不停歇的、语速飞快的对话。对话的使用不仅强调了Katherine Hepburn所扮演的角色的愚蠢特点，而且还突出了电影本身的荒诞以及由此而来的幽默。观众从一个噱头被抛向另一个噱头，从一场对话被拉入另一场对话。没有时间给观众去思考。观众置身于一场各种行为快速切换的旋风之中，只能努力跟上剧情发展。这部电影呈现出纯粹的逃避现实的风格-这在很大程度上是由于其狂乱的对话。

**第5段**

Synchronous sound effects are those sounds which are synchronized or matched with what is viewed. For example, if the film portrays a character playing the piano, the sounds of the piano are projected. Synchronous sounds contribute to the realism of film and also help to create a particular atmosphere. For example, the “click” of a door being opened may simply serve to convince the audience that the image portrayed is real, and the audience may only subconsciously note the expected sound. However, if the ‘click’ of an opening door is part of an ominous action such as a burglary, the sound mixer may call attention to the ‘click’ with an increase in volume; this helps to engage the audience in a moment of suspense.

同步音效是那些与观众看到的内容同步或者相匹配的声音。例如，如果电影中的人物正在弹钢琴，那么钢琴的声音就会被投放出来。同步音效增加了电影的真实感，并且帮助创造出一种特定的氛围。例如，门被打开的咔哒声可能只是为了说服观众，其所刻画的画面是真实的。而观众也可能只是在潜意识里注意到这个意料之内的声音。然而，如果开门的咔哒声是即将到来的不幸事件的一部分（例如入室盗窃），混音师可能会提升音量来吸引注意力。这会帮助观众融入紧张的气氛中。

**第6段**

Asynchronous sound effects, on the other hand, are not matched with a visible source of the sound on screen. Such sounds are included so as to provide an appropriate emotional nuance, and they may also add to the realism of the film. For example, a film-maker might opt to include the background sound of an ambulance‘s siren while the foreground sound and image portrays an arguing couple. The asynchronous ambulance siren underscores the psychic injury incurred in the argument; at the same time the noise of the siren adds to the realism of the film by acknowledging the film’s city setting.

另一方面，不同步音效并不与屏幕上可见的声音来源相匹配。这些声音被包含进来，以便提供某种恰当的情绪氛围。它们或许也可以增进电影的真实性。例如，当前台声音和画面刻画出一对争吵的夫妻时，电影制作者可能选择在背景音乐中加入救护车的鸣笛声。不同步的救护车鸣笛声突出了争吵所带来的精神伤害。同时，汽笛的噪音通过提示电影的城市背景设定增加了电影的真实感。

**第7段**

We are probably all familiar with background music in films, which has become so ubiquitous as to be noticeable in its absence. We are aware that it is used to add emotion and rhythm. Usually not meant to be noticeable, it often provides a tone or an emotional attitude toward the story and/or the characters depicted. In addition, background music often foreshadows a change in mood. For example, dissonant music may be used in film to indicate an approaching (but not yet visible) menace or disaster.

我们可能对电影中的背景音乐十分熟悉。它变得如此普遍，以至于缺失的时候反而会引起人们的注意。我们知道它被用来渲染情绪和韵律。通常来说它并不想要引人注意，而是为影片中所刻画的故事和/或人物提供某种基调或情绪态度。此外，背景音乐往往预示着情绪上的改变。例如，电影中可能使用不协调的音乐来暗示即将到来（但还不可见）的危害或灾难。

**第8段**

Background music may aid viewer understanding by linking scenes. For example, a particular musical theme associated with an individual character or situation may be repeated at various points in a film in order to remind the audience of salient motifs or ideas.

背景音乐可以通过联系场景来帮助观众理解。例如，与某一人物或场景相联系的特定的音乐主题可能会在电影的不同地方重复出现，以提醒观众其核心主旨或主题思想。

**第9段**

Film sound comprises conventions and innovations. We have come to expect an acceleration of music during car chases and creaky doors in horror films. Yet, it is important to note as well that sound is often brilliantly conceived. The effects of sound are often largely subtle and often are noted by only our subconscious minds. We need to foster an awareness of film sound as well as film space so as to truly appreciate an art form that sprang to life during the twentieth century – the modern film.

电影声音同时包含了传统与创新。我们在汽车追逐时会期待音乐加速，在恐怖电影中会期待咯吱作响的门。然而，注意到这一点也十分重要：声音通常是以一种高明的方式被人们所感知。声音的作用在很大程度上都是微妙的，往往只会被我们的潜意识所注意。我们需要培养对电影声音和电影空间的意识，从而真正欣赏这一在20世纪出现的鲜活的艺术形式-现代电影。

### [11Test4Passage3 This Marvellous Invention 伟大的发明](http://www.laokaoya.com/30257.html)

**段落A**

Of all mankind’s manifold creations, language must take pride of place. Other inventions – the wheel, agriculture, sliced bread – may have transformed our material existence, but the advent of language is what made us human. Compared to language, all other inventions pale in significance, since everything we have ever achieved depends on language and originates from it. Without language, we could never have embarked on our ascent to unparalleled power over all other animals, and even over nature itself.

在人类所有各种各样的发明中，语言必定占有重要位置。其他发明-轮子，农耕，切片面包-可能改变了我们的物质生活，但语言的出现才让我们成为人类。与语言相比，其他所有发明在重要性上都黯然失色。这是因为我们目前所取得的一切都建立在语言之上，并源自于它。没有语言，我们永远不可能登上凌驾于所有其他动物，甚至自然本身的至高地位。

**段落B**

But language is foremost not just because it came first. In its own right it is a tool of extraordinary sophistication, yet based on an idea of ingenious simplicity: ‘this marvellous invention of composing out of twenty-five or thirty sounds that infinite variety of expressions which, whilst having in themselves no likeness to what is in our mind, allow us to disclose to others its whole secret, and to make known to those who cannot penetrate it all that we imagine, and all the various stirrings of our soul’. This was how, in 1660, the renowned French grammarians of the Port-Royal abbey near Versailles distilled the essence of language, and no one since has celebrated more eloquently the magnitude of its achievement. Even so, there is just one flaw in all these hymns of praise, for the homage to language’s unique accomplishment conceals a simple yet critical incongruity. Language is mankind’s greatest invention – except, of course, that it was never invented. This apparent paradox is at the core of our fascination with language, and it holds many of its secrets.

但语言的至高地位并不仅仅是因为它首先出现。就自身而言，它是一种极其精密复杂的工具，但其基础理念却又如此简单：“这一伟大的发明可以利用25或26种声音组合成无穷无尽、各种各样的表达。这些发音自身虽然与我们心中所想并无相似之处，但却使得我们可以借此向他人展露出心中的所有秘密。令那些原本无法透视我们心灵的他人知晓我们全部的想象意念，以及我们灵魂中的所有震撼悸动“。这就是在1660年，位于凡尔赛附近Port-Royal修道院中那些著名的法语语法大师们所用来精炼地阐释语言精髓的措辞，在那以来再也没有其他人能用更加雄辩的方式来高度赞颂语言所取得成就辉煌灿烂、举足轻重了。即便如此，在所有这些赞颂之词中还是存在着一个问题，因为对于语言独一无二成就的敬辞掩盖了一个简单却又至关重要的不一致性。语言是人类最伟大的发明-只是除了，它根本不是发明出来的。这种显而易见的悖论正是我们痴迷于语言的核心原因，它包含着许多自身的秘密。

**段落C**

Language often seems so skillfully drafted that one can hardly imagine it as anything other than the perfected handiwork of a master craftsman. How else could this instrument make so much out of barely three dozen measly morsels of sound? In themselves, these configurations of mouth -p,f,b,v,t,d,k,g,s,h,a,e and so on – amount to nothing more than a few haphazard spits and splutters, random noises with no meaning, no ability to express, no power to explain. But run them through the cogs and wheels of the language machine, let it arrange them in some very special orders, and there is nothing that these meaningless streams of air cannot do: from sighing the interminable boredom of existence to unravelling the fundamental order of the universe.

语言的创作显得如此精妙，以至于除了将它想象成某个大师级工匠所造就的完美作品之外，再也没有合适的比喻。若非如此，这个工具文章来自老烤鸭雅思如何能用仅仅三十多个读音就组合出这么多的含义。就它们自身而言，这些不同口型所发出的声音-p,f,b,v,t,d,k,g,s,h,a,e等等-不过就是一些混乱的声响，没有任何含义的噪音，不具备表达能力，也不具备解释的力量。但将它们送进语言机器的齿轮进行加工，让它用一种十分特别的顺序对它们进行排列，这些原本毫无意义的气流就会变得无所不能：从感叹存在的永恒乏味，到揭示宇宙的基本规律。

**段落D**

The most extraordinary thing about language, however, is that one doesn’t have to be a genius to set its wheels in motion. The language machine allows just about everybody – from pre-modern foragers in the subtropical savannah, to post-modern philosophers in the suburban sprawl – to tie these meaningless sounds together into an infinite variety of subtle senses, and all apparently without the slightest exertion. Yet it is precisely this deceptive ease which makes language a victim of its own success, since in everyday life its triumphs are usually taken for granted. The wheels of language run so smoothly that one rarely bothers to stop and think about all the resourcefulness and expertise that must have gone into making it tick. Language conceals art.

然而，语言最非比寻常的特点在于，一个人并不需要是个天才才能让它的齿轮开始运转。语言机器让几乎每个人-从亚热带稀疏草原上过着原始生活的采集者，到生活在城郊杂乱地区的后现代哲学家-都可以将这些无意义的声响结合在一起，传达出无限多种微妙的感受，而且整个过程显得不费吹灰之力。然而，正是这种颇具欺骗性的轻而易举，让语言成为它自身成功的受害者。日常生活中，它的伟大总是被视为理所当然。语言的齿轮运转的如此流畅，以至于一个人很少会费心停下来去思考，要让它工作所必需的丰富资源和专业知识。语言掩盖了艺术。

**段落E**

Often, it is only the estrangement of foreign tongues, with their many exotic and outlandish features, that brings home the wonder of language’s design. One of the showiest stunts that some languages can pull off is an ability to build up words of breath-breaking length, and thus express in one word what English takes a whole sentence to say. The Turkish word şehirliliştiremediklerimizdensiniz, to take one example, means nothing less than ‘you are one of those whom we can’t turn into a town-dweller’. (In case you were wondering, this monstrosity really is one word, not merely many different words squashed together – most of its components cannot even stand up on their own.)

通常来说，只有外语所带来的疏远，以及他们诸多奇异古怪的特征，才能让我们意识到语言设计的奇妙。一些语言所展现出来的最引人注目的特征之一，是其构建超长单词，并由此可以用一个词汇来表达英语中要用一整句话才能说明白的含义的能力。例如，土耳其词汇şehirliliştiremediklerimizdensiniz所表达的含义为：“你是那种我们无法转变为城里人的人”。（以防你好奇，这一巨大的字眼真的是一个单词，而不是许多不同单词拼接而成-其大部分组成元素不具备任何含义）。

**段落F**

And if that sounds like some one-off freak, then consider Sumerian, the language spoken on the banks of the Euphrates some 5,000 years ago by the people who invented writing and thus enabled the documentation of history. A Sumerian word like munintuma’a (‘when he had made it suitable for her’) might seem rather trim compared to the Turkish colossus above. What is so impressive about it, however, is not its lengthiness but rather the reverse – the thrifty compactness of its construction. The word is made up of different slots, each corresponding to a particular portion of meaning. This sleek design allows single sounds to convey useful information, and in fact even the absence of a sound has been enlisted to express something specific. If you were to ask which bit in the Sumerian word corresponds to the pronoun ‘it’ in the English translation ‘when he had made it suitable for her’, then the answer would have to be nothing. Mind you, a very particular kind of nothing: the nothing that stands in the empty slot in the middle. The technology is so fine-tuned then that even a non-sound, when carefully placed in a particular position, has been invested with a specific function. Who could possibly have come up with such a nifty contraption?

如果这听起来像是某种例外，那么请考虑下苏美尔语。这种语言在大约5000年前由生活在幼发拉底河岸的人们使用。他们发明了书写，因此使得文字记录历史成为可能。像munintuma’s（当他为她把它准备合适的时候）这样的苏美尔单词，可能看起来比刚才提到的土耳其巨词要简洁许多。然而，它令人印象深刻的地方并不在于长度，恰恰相反，在于其构架的简约紧凑。该单词由不同的片段组成。每个片段对应特定的含义。这一流畅的设计使得单个声响也能传递有用的信息。事实上，甚至声音的缺失也被用来表达某种特定的意思。如果你想问，苏美尔单词中的哪部分对应英语翻译“当他为她把它准备合适的时候”中的“它”，那么答案只能是没有。提醒你一下，这是一种非常独特的没有，是位于中间空白片段的没有。当时的语言编制是如此精良，以至于即便是没有发出的声音，当被仔细置于特定的位置时，也会被赋予特定的功能。谁能够提出如此精妙的设置呢？

# 十二

## 12Test5

### [12Test5Passage1 cork 木栓](http://www.laokaoya.com/30311.html)

第1段

Cork – the thick bark of the cork oak tree (Quercus suber) – is a remarkable material. It is tough, elastic, buoyant, and fire-resistant, and suitable for a wide range of purposes. It has also been used for millennia: the ancient Egyptians sealed their sarcophagi (stone coffins) with cork, while the ancient Greeks and Romans used it for anything from beehives to sandals.

木栓，即栓皮橡树（栓皮槠）厚实的树皮，是一种非凡的材料。它坚韧，有弹性，能浮起来，而且还防火，适用于各种目的。它已经被人们使用了数千年：埃及人用木栓来密封他们的石棺，而希腊人和罗马人则用它制作从蜂箱到凉鞋等各种物品。

第2段

And the cork oak itself is an extraordinary tree. Its bark grows up to 20cm in thickness, insulating the tree like a coat wrapped around the trunk and branches and keeping the inside at a constant 20°C all year round. Developed most probably as a defence against forest fires, the bark of the cork oak has a particular cellular structure – with about 40 million cells per cubic centimetre – that technology has never succeeded in replicating. The cells are filled with air, which is why cork is so buoyant. It also has an elasticity that means you can squash it and watch it spring back to its original size and shape when you release the pressure.

栓皮橡树本身就是一种不同寻常的树木。它的树皮可以长到20厘米厚，像外衣一样将树干和枝杈包裹起来，保持内部温度全年恒定在20度。很有可能是为了对抗森林火灾才形成的特点，栓皮橡树的树皮文章来自老烤鸭雅思有着一种独特的细胞结构-每立方厘米大约有4千万个细胞。这种结构从来都没有被技术成功的复制过。细胞中充满了空气，这也是为什么木栓浮力如此之大的原因。它同样富有弹性。这意味着你可以将它挤压变形。释放压力后，看着它恢复原来的形状和大小。

第3段

Cork oaks grow in a number of Mediterranean countries, including Portugal, Spain, Italy, Greece and Morocco. They flourish in warm, sunny climates where there is a minimum of 400 millimetres of rain per year, and not more than 800 millimetres. Like grape vines, the trees thrive in poor soil, putting down deep roots in search of moisture and nutrients. Southern Portugal’s Alentejo region meets all of these requirements, which explains why, by the early 20th century, this region had become the world’s largest producer of cork, and why today it accounts for roughly half of all cork production around the world.

栓皮橡树生长在许多地中海国家，包括葡萄牙、西班牙、意大利、希腊和摩洛哥。它们在温暖、阳光充沛的地区中茂盛生长。那里每年降水量不小于400厘米，但又不多于800厘米。像葡萄藤一样，这些树木在贫瘠的土地中茁壮生长。它们的根系深入土地以寻找水分和养料。葡萄牙南部的Alentejo地区符合所有这些要求。这也是该地区在20世纪初成为世界上最大的木栓生产商的原因，以及为什么直到今天，它还占着全世界木栓产量的一半左右。

第4段

Most cork forests are family-owned. Many of these family businesses, and indeed many of the trees themselves, are around 200 years old. Cork production is, above all, an exercise in patience. From the planting of a cork sapling to the first harvest takes 25 years, and a gap of approximately a decade must separate harvests from an individual tree. And for top-quality cork, it’s necessary to wait a further 15 or 20 years. You even have to wait for the right kind of summer’s day to harvest cork. If the bark is stripped on a day when it’s too cold – or when the air is damp – the tree will be damaged.

大多数栓皮森林为家族所有。许多这些家族企业，以及树木自身，都有着200年左右的历史。木栓生产是一种十分需要耐心的操作。从种下栓皮幼树到第一次收获需要25年，而且每棵树的收割要间隔大约10年。对于最高品质的木栓来说，必须继续等待15或20年才可以。人们甚至还要等待合适的夏日天气才能收割木栓。如果剥离树皮的天气太过寒冷，或者空气太过潮湿，树木就会被损坏。

第5段

Cork harvesting is a very specialised profession. No mechanical means of stripping cork bark has been invented, so the job is done by teams of highly skilled workers. First, they make vertical cuts down the bark using small sharp axes, then lever it away in pieces as large as they can manage. The most skilful cork-strippers prise away a semi-circular husk that runs the length of the trunk from just above ground level to the first branches. It is then dried on the ground for about four months, before being taken to factories, where it is boiled to kill any insects that might remain in the cork. Over 60% of cork then goes on to be made into traditional bottle stoppers, with most of the remainder being used in the construction trade. Corkboard and cork tiles are ideal for thermal and acoustic insulation, while granules of cork are used in the manufacture of concrete.

木栓收割是一种高度专业化的职业。至今还没有发明机器剥离栓皮的方法，所以这些工作由技艺高超的工人完成。首先，他们用锋利的小型斧头在树皮上垂直切下，然后将它一点点的撬开。木片越大越好。技艺最纯熟的栓皮工人会撬出一片半圆形的树皮，其长度相当于地面到第一节树枝的树干长度。被放在地面上干燥4个月左右之后，它会被送到工厂里去。在那里通过加热煮沸来杀死可能残留在栓皮中的各种昆虫。60%以上的栓皮随后被用于制作传统瓶塞，剩下的大部分会被用于建筑行业。软木板和软木砖是理想的隔热、隔音材料，而软木颗粒则被用于混凝土的制造。

第6段

Recent years have seen the end of the virtual monopoly of cork as the material for bottle stoppers, due to concerns about the effect it may have on the contents of the bottle. This is caused by a chemical compound called 2,4,6-trichloroanisole (TCA), which forms through the interaction of plant phenols, chlorine and mould. The tiniest concentrations – as little as three or four parts to a trillion – can spoil the taste of the product contained in the bottle. The result has been a gradual yet steady move first towards plastic stoppers and, more recently, to aluminium screw caps. These substitutes are cheaper to manufacture and, in the case of screw caps, more convenient for the user.

由于担心软木塞可能会影响瓶子中的液体，它作为瓶塞材料的实际垄断地位在最近几年迎来了终结。这是由一种叫做2,4,6-三聚苯甲醚的化合物引起的。这种化合物会在植物酚，氯和霉菌的相互作用中形成。哪怕是极其微小的浓度-低至每万亿三到四单位-也会破坏瓶中产品的口味。因此，人们先是逐渐却坚定的使用塑料瓶塞，最近又转向铝制螺旋盖。这些替代品不仅制造起来更为便宜，而且螺旋瓶盖对用户来说也更加方便。

第7段

The classic cork stopper does have several advantages, however. Firstly, its traditional image is more in keeping with that of the type of high quality goods with which it has long been associated. Secondly – and very importantly – cork is a sustainable product that can be recycled without difficulty. Moreover, cork forests are a resource which support local biodiversity, and prevent desertification in the regions where they are planted. So, given the current concerns about environmental issues, the future of this ancient material once again looks promising.

然而，经典的软木瓶塞确实有几项优势。首先，它的传统形象与高品质物品更为匹配。这些东西与它长期联系在一起。其次并且很重要的是，木栓是一种可以轻易回收的可持续产品。第三，栓木森林的资源可以支持当地的生物多样性，并阻止其所种植地区的沙漠化。所以，考虑到当前对环境问题的担忧，这一古老材料的未来看起来再一次充满了希望。

### [12Test5Passage2 Collecting as a hobby 作为爱好的收藏](http://www.laokaoya.com/30361.html)

第1段

Collecting must be one of the most varied of human activities, and it’s one that many of us psychologists find fascinating. Many forms of collecting have been dignified with a technical name: an archtophilist collects teddy bears, a philatelist collects postage stamps, and a deltiologist collects postcards. Amassing hundreds or even thousands of postcards, chocolate wrappers or whatever, takes time, energy and money that could surely be put to much more productive use. And yet there are millions of collectors around the world. Why do they do it?

收藏一定是最为多样化的人类活动之一。许多心理学家都觉得它十分迷人。不少收藏形式都被冠以专门的技术术语：archtophilist收藏泰迪熊；philatelist收藏邮票，而deltiologist则收藏明信片。收集成百上千张明信片，巧克力包装纸或者其他任何东西都需要时间，精力和金钱。而它们完全可以被用于更有成效的事情。但是，世界上有数百万的收藏者。他们为什么要从事这样活动呢？

第2段

There are the people who collect because they want to make money – this could be called an instrumental reason for collecting; that is, collecting as a means to an end. They’ll look for, say, antiques that they can buy cheaply and expect to be able to sell at a profit. But there may well be a psychological element, too – buying cheap and selling dear can give the collector a sense of triumph. And as selling online is so easy, more and more people are joining in.

有人收藏是因为他们想要赚钱-这可以被称为收藏的工具性原因，即收藏作为实现目的的手段。比如，他们会寻找可以低价买入，希望高价卖出的古董。但这其中很有可能也存在心理因素。低买高卖可以赋予收藏者一种成就感。并且由于网上售卖十分简单，越来越多的人正加入这一行列。

第3段

Many collectors collect to develop their social life, attending meetings of a group of collectors and exchanging information on items. This is a variant on joining a bridge club or a gym, and similarly brings them into contact with like-minded people.

许多收藏者进行收藏是为了拓展自己的社交生活，参加收藏家的团体聚会并交换物品信息。这是一种加入桥牌俱乐部或者健身房的变体，同样使他们能够接触到志趣相投的人。

第4段

Another motive for collecting is the desire to find something special, or a particular example of the collected item, such as a rare early recording by a particular singer. Some may spend their whole lives in a hunt for this. Psychologically, this can give a purpose to a life that otherwise feels aimless. There is a danger, though, that if the individual is ever lucky enough to find what they’re looking for, rather than celebrating their success, they may feel empty, now that the goal that drove them on has gone.

另一种收藏的动机是渴望找到某种特别的东西，或者特定的藏品，比如某一歌手早期十分稀有的唱片。一些人可能会穷尽一生来追寻它。心理学上讲，这可以赋予人生某种意义，使它不至于感到漫无目的。然而，这也存在一定的危险。如果这个人足够幸运找到了他们所寻找的物品，与其庆祝自己的成功，他们反而可能感到空虚。曾经驱使他们前进的目标现在消失了。

第5段

If you think about collecting postage stamps, another potential reason for it – or, perhaps, a result of collecting – is its educational value. Stamp collecting opens a window to other countries, and to the plants, animals, or famous people shown on their stamps. Similarly, in the 19th century, many collectors amassed fossils, animals and plants from around the globe, and their collections provided a vast amount of information about the natural world. Without those collections, our understanding would be greatly inferior to what it is.

如果你考虑收藏邮票，那么其教育价值是另一个潜在的原因。邮票收集打开了一扇了解其他国家、植物、动物以及邮票上名人的窗户。类似的，在19世纪，许多收藏家从全球收集化石、动物和植物。他们的藏品提供了大量有关自然界的信息。没有这些收藏，我们的理解远远达不到现在的水平。

第6段

In the past – and nowadays, too, though to a lesser extent – a popular form of collecting, particularly among boys and men, was trainspotting. This might involve trying to see every locomotive of a particular type, using published data that identifies each one, and ticking off each engine as it is seen. Trainspotters exchange information, these days often by mobile phone, so they can work out where to go to, to see a particular engine. As a by­product, many practitioners of the hobby become very knowledgeable about railway operations, or the technical specifications of different engine types.

过去–现在也一样，只不过程度较轻–男孩和成年男子之间十分流行的一种收藏是猜火车。这可能包括观赏每一种特定类型的火车头，利用公开发表的数据区分它们，并划掉已经见过的火车引擎。猜火车者互相交换信息，在今天这一般通过手机完成，以便他们可以知道要去那里才能看到特定的引擎。随之而来的结果是，许多这一爱好的实践者对铁路运营，或者不同引擎种类的技术细节知之甚深。

第7段

Similarly, people who collect dolls may go beyond simply enlarging their collection, and develop an interest in the way that dolls are made, or the materials that are used. These have changed over the centuries from the wood that was standard in 16th century Europe, through the wax and porcelain of later centuries, to the plastics of today’s dolls. Or collectors might be inspired to study how dolls reflect notions of what children like, or ought to like.

类似的，收集玩偶的人可能不仅仅是扩大自己的藏品，而是会对玩偶的制作方式或者使用的材料产生兴趣。这些在过去几个世纪里发生了变化。从16世纪欧洲常见的木制品，到之后几个世纪所使用的蜡和陶瓷，再到今天的塑料质地。此外，收藏者也会受到鼓舞去研究玩偶如何反映孩子所喜欢或者应该喜欢的东西。

第8段

Not all collectors are interested in learning from their hobby, though, so what we might call a psychological reason for collecting is the need for a sense of control, perhaps as a way of dealing with insecurity. Stamp collectors, for instance, arrange their stamps in albums, usually very neatly, organising their collection according to certain commonplace principles – perhaps by country in alphabetical order, or grouping stamps by what they depict – people, birds, maps, and so on.

然而，不是所有的收藏者都对从他们的爱好中获取知识感兴趣。所以我们或许可以将收藏背后的一种心理因素称为对控制感的需求。这可能是一种应对不安全感的方式。例如，邮票收集者通常将他们的邮票整齐的摆放在相册里，根据特定的普遍原则进行排列。或者根据国家首字母顺序，或者根据它们所描绘的对象（人物，鸟类，地图等等）。

第9段

One reason, conscious or not, for what someone chooses to collect is to show the collector’s individualism. Someone who decides to collect something as unexpected as dog collars, for instance, may be conveying their belief that they must be interesting themselves. And believe it or not, there is at least one dog collar museum in existence, and it grew out of a personal collection.

无论是否意识到，人们收藏某种特定物品的原因是为了展示收藏者的个性。一些人决定收集一些意料之外的东西，比如狗项圈。这可能是在传达一种信息：它们本身是很有趣的。无论你是否相信，世界上都至少有一个狗项圈博物馆存在，而且它来自于个人收藏。

第10段

Of course, all hobbies give pleasure, but the common factor in collecting is usually passion: pleasure is putting it far too mildly. More than most other hobbies, collecting can be totally engrossing, and can give a strong sense of personal fulfilment. To non-collectors it may appear an eccentric, if harmless, way of spending time, but potentially, collecting has a lot going for it.

当然，所有的爱好都能带来乐趣。但收藏的共同因素往往是热爱：乐趣一词形容的太过温和了。与其他大多数爱好相比，收藏可以使人全神贯注，并且赋予一种很强的个人成就感。对于非收藏者来说，它可能是一种奇怪但无害的打发时间方式。但收藏其实有着许多的潜在理由。

### [12Test5Passage3 What’s the purpose of gaining knowledge 获取知识的目的是什么](http://www.laokaoya.com/30483.html)

段落A

‘I would found an institution where any person can find instruction in any subject.’ That was the founder’s motto for Cornell University, and it seems an apt characterization of the different university, also in the USA, where I currently teach philosophy. A student can prepare for a career in resort management, engineering, interior design, accounting, music, law enforcement, you name it. But what would the founders of these two institutions have thought of a course called ‘Arson for Profit’? I kid you not: we have it on the books. Any undergraduates who have met the academic requirements can sign up for the course in our program in ‘fire science’.

“我将成立一所任何人都可以学到任何学科的机构”。这是康奈尔大学创建者的座右铭。这似乎十分恰当地描述了另一所大学的特征。它也位于美国，而我正在那里教授哲学。学生在这里可以为将来各种各样的职业做好准备，包括度假村管理，工程学，室内设计，会计，音乐，法律实施等。但这两所学校的创办者会怎么看待一门叫做“纵火谋利”的课程呢？我并没有跟你开玩笑。这门课程是有案可查的。任何满足学术要求的本科生都可以在我们“火灾科学”这一项目中选择该课程。

段落B

Naturally, the course is intended for prospective arson investigators, who can learn all the tricks of the trade for detecting whether a fire was deliberately set, discovering who did it, and establishing a chain of evidence for effective prosecution in a court of law. But wouldn’t this also be the perfect course for prospective arsonists to sign up for? My point is not to criticize academic programs in fire science: they are highly welcome as part of the increasing professionalization of this and many other occupations. However, it’s not unknown for a firefighter to torch a building. This example suggests how dishonest and illegal behavior, with the help of higher education, can creep into every aspect of public and business life.

当然，这一课程是为那些未来的纵火调查员设计的。他们可以学习该领域的各种窍门，判断一场火灾是否是蓄意而为，找出纵火者，并建立证据链文章来自老烤鸭雅思以在法庭上可以进行有效的诉讼。但这难道不也是一门未来纵火犯可以报名的完美课程吗？我的重点不是批评纵火科学领域的学术项目：它们作为该行业以及许多其他行业日益专业化的一部分，受到高度欢迎。然而，对于消防员来说，烧毁一栋建筑并不陌生。这一例子表明，在高等教育的帮助下，欺诈和不法行为是如何悄悄潜入公众和商业生活的方方面面的。

段落C

I realized this anew when I was invited to speak before a class in marketing, which is another of our degree programs. The regular instructor is a colleague who appreciates the kind of ethical perspective I can bring as a philosopher. There are endless ways I could have approached this assignment, but I took my cue from the title of the course: ‘Principles of Marketing’. It made me think to ask the students, ‘Is marketing principled?’ After all, a subject matter can have principles in the sense of being codified, having rules, as with football or chess, without being principled in the sense of being ethical. Many of the students immediately assumed that the answer to my question about marketing principles was obvious: no. Just look at the ways in which everything under the sun has been marketed; obviously it need not be done in a principled (=ethical) fashion.

当我受邀在市场营销课程（我们学校的另一门专业）上演讲时，我重新认识了这一点。这门课的日常老师是我的同事。他很欣赏我作为一名哲学家所带来的伦理视角。我有无数种方式可以切入这一任务，但我受到课程名称-市场营销原理-的启发。这让我想要询问学生，市场营销是有原则可循的吗？毕竟，一门课程从被编纂、设置规则的意义上讲，是能够拥有原理的，正如足球和国际象棋那样。但从伦理意义而言，是没有原则可以遵循的。许多学生很快认为我关于市场营销原理的问题的答案是显而易见的。只需要研究一下世上万物被营销的方式即可。显然，它不需要以一种“有原则的”（即伦理的）方式进行。

段落D

Is that obvious? I made the suggestion, which may sound downright crazy in light of the evidence, that perhaps marketing is by definition principled. My inspiration for this judgement is the philosopher Immanuel Kant, who argued that any body of knowledge consists of an end (or purpose) and a means.

这不明显么？我认为，或许市场营销按定义而言就是有规则的。这在大量的证据之下可能听起来很疯狂。我这一判断的灵感来自于哲学家伊曼努尔·康德。他认为任何知识的本体既包含结果（或目的），也包含手段。

段落E

Let us apply both the terms ‘means’ and ‘end’ to marketing. The students have signed up for a course in order to learn how to market effectively. But to what end? There seem to be two main attitudes toward that question. One is that the answer is obvious: the purpose of marketing is to sell things and to make money. The other attitude is that the purpose of marketing is irrelevant: each person comes to the program and course with his or her own plans, and these need not even concern the acquisition of marketing expertise as such. My proposal, which I believe would also be Kant’s, is that neither of these attitudes captures the significance of the end to the means for marketing. A field of knowledge or a professional endeavor is defined by both the means and the end; hence both deserve scrutiny. Students need to study both how to achieve X, and also what X is.

让我们将“手段”和“结果”这两个术语应用于市场营销。报名该课程的学生是为了学习如何有效营销。但为了实现什么结果呢？关于这个问题似乎有两种主要态度。一种认为答案显而易见：市场营销的目的是出售物品和赚钱。另一种则认为市场营销的目的无关紧要：每个学习这门课程的人都带着他们自己的计划。这些计划甚至不需要与市场营销技能的获取有关。我的想法是，这两种态度都没有抓住结果对于市场营销手段的重要性。我相信康德也会这么认为。一个知识领域或专业技能由手段和结果共同定义。因此，两者都需要仔细审视。学生既需要学习如何实现X，也需要研究X是什么。

段落F

It is at this point that ‘Arson for Profit’ becomes supremely relevant. That course is presumably all about means: how to detect and prosecute criminal activity. It is therefore assumed that the end is good in an ethical sense. When I ask fire science students to articulate the end, or purpose, of their field, they eventually generalize to something like, ‘The safety and welfare of society,’ which seems right. As we have seen, someone could use the very same knowledge of means to achieve a much less noble end, such as personal profit via destructive, dangerous, reckless activity. But we would not call that firefighting. We have a separate word for it: arson. Similarly, if you employed the ‘principles of marketing’ in an unprincipled way, you would not be doing marketing. We have another term for it: fraud. Kant gives the example of a doctor and a poisoner, who use the identical knowledge to achieve their divergent ends. We would say that one is practicing medicine, the other, murder.

正是在这一点上，纵火谋利变得十分相关起来。该课程的一切都与手段有关：如何侦测与起诉犯罪活动。人们因此假定，其目的在伦理意义上是好的。当我要求纵火科学的学生说清楚他们所学领域的结果或目的时，他们最终会总结出类似“社会安全与福祉”这样似乎正确的说法。正如我们所见，一个人可以使用完全相同的知识手段来实现不那么高尚的目标，比如通过破坏性的、危险的、鲁莽的行为来获取个人利益。但我们不会将其称为消防行为。我们对其有单独的说法：纵火。相似的，如果你以一种不遵守原则的方式利用市场营销原理，那么你所做的就不是市场营销。我们有另外的说法：欺诈。康德举了医生和投毒者的例子。他们利用完全相同的知识实现不同的结果。我们会说其中一人在进行医学实践，而另一个则是杀人犯。

## 12Test6

### [12Test6Passage1 The risks agriculture faces in developing countries 发展中国家农业面临的风险](http://www.laokaoya.com/30547.html)

段落A

Two things distinguish food production from all other productive activities: first, every single person needs food each day and has a right to it; and second, it is hugely dependent on nature. These two unique aspects, one political, the other natural, make food production highly vulnerable and different from any other business. At the same time, cultural values are highly entrenched in food and agricultural systems worldwide.

两件事情将食物生产与其他所有类型的生产活动区分开来：首先，每个人每天都需要食物，并且有权利获取它。其次，它很大程度上依赖于自然条件。这两个独特的因素，一个政治层面，一个自然层面，使得食物生产十分脆弱，并与其他行业都截然不同。与此同时，文化价值已深深地渗透进世界范围的食物与农业系统。

段落B

Farmers everywhere face major risks, including extreme weather, long-term climate change, and price volatility in input and product markets. However, smallholder farmers in developing countries must in addition deal with adverse environments, both natural, in terms of soil quality, rainfall, etc., and human, in terms of infrastructure, financial systems, markets, knowledge and technology. Counter-intuitively, hunger is prevalent among many smallholder farmers in the developing world.

世界各地的农民都面临着巨大风险，包括极端天气，长期的气候变化，以及原材料与产品市场的价格波动。然而，发展中国家的小农户文章来自老烤鸭雅思还要面临其他不利的环境条件，既有自然层面的，比如土壤质量、降水等；也有人文层面的，比如基础设施，金融体系，市场，知识和技术。与直观感受相反，饥饿在发展中国家许多小农户中十分普遍。

段落C

Participants in the online debate argued that our biggest challenge is to address the underlying causes of the agricultural system’s inability to ensure sufficient food for all, and they identified as drivers of this problem our dependency on fossil fuels and unsupportive government policies.

网上辩论的参与者认为，我们最大的挑战是找到农业体系无法为所有人提供充足食物的根本原因。他们将这一问题归结于我们对化石燃料的依赖，以及政府支持政策的缺失。

段落D

On the question of mitigating the risks farmers face, most essayists called for greater state intervention. In his essay, Kanayo F. Nwanze, President of the International Fund for Agricultural Development, argued that governments can significantly reduce risks for farmers by providing basic services like roads to get produce more efficiently to markets, or water and food storage facilities to reduce losses. Sophia Murphy, senior advisor to the Institute for Agriculture and Trade Policy, suggested that the procurement and holding of stocks by governments can also help mitigate wild swings in food prices by alleviating uncertainties about market supply.

在降低农民所面临风险这一问题上，大多数分析者都呼吁更多的国家介入。国际农业发展基金会主席Kanayo F. Nwanze在文章中提到，政府可以通过提供基础服务（如修建道路以便产品可以更加高效地到达市场，或者修建水利和食物储藏设施来减少损失）降低农民的风险。农业与贸易政策机构的资深顾问Sophia Murphy认为，政府采购和贮藏也能够帮助通过降低市场供给的不确定性来减少食物价格的剧烈波动。

段落E

Shenggen Fan, Director General of the International Food Policy Research Institute, held up social safety nets and public welfare programmes in Ethiopia, Brazil and Mexico as valuable ways to address poverty among farming families and reduce their vulnerability to agriculture shocks. However, some commentators responded that cash transfers to poor families do not necessarily translate into increased food security, as these programmes do not always strengthen food production or raise incomes. Regarding state subsidies for agriculture, Rokeya Kabir, Executive Director of Bangladesh Nari Progati Sangha, commented in her essay that these ‘have not compensated for the stranglehold exercised by private traders. In fact, studies show that sixty percent of beneficiaries of subsidies are not poor, but rich landowners and non-farmer traders.’

国际粮食政策研究所所长Shenggen Fan认为埃塞俄比亚、巴西和墨西哥开展的社会保障和公共福利项目是一种解决农民家庭贫困问题并降低他们面对农业冲击时脆弱性的宝贵手段。然而，一些评论家回应，拨付给贫困家庭的资金不一定转化成更高的食物安全，因为这些项目并不总是能够加强农业生产或者提高收入。至于国家农业补贴，BNPS的执行理事Rokeya Kabir在她的文章中说到，“这些补贴并没有弥补个体商人所施加的束缚。事实上，研究表明60%的社会补贴受益者并不是贫困人口，而是富裕的地主以及非农民的中间商”。

段落F

Nwanze, Murphy and Fan argued that private risk management tools, like private insurance, commodity futures markets, and rural finance can help small-scale producers mitigate risk and allow for investment in improvements. Kabir warned that financial support schemes often encourage the adoption of high-input agricultural practices, which in the medium term may raise production costs beyond the value of their harvests. Murphy noted that when futures markets become excessively financialised they can contribute to short-term price volatility, which increases farmers’ food insecurity. Many participants and commentators emphasised that greater transparency in markets is needed to mitigate the impact of volatility, and make evident whether adequate stocks and supplies are available. Others contended that agribusiness companies should be held responsible for paying for negative side effects.

Nwanze，Murphy和Fan认为个人风险管理工具，比如私人保险，商品期货市场，以及乡村农业金融可以帮助小型生产者降低风险，并通过投资改善条件。Kabir警告，金融支持计划通常会鼓励采取高投入的农业实践。这在中期可能会使生产成本超过收获的价值。Murphy注意到，当期货市场高度金融化时，它们可能会加剧短期的价格波动，从而增加农民的粮食风险。许多参与者和评论家强调，需要更大的市场透明度来减弱价格波动的影响，并且要让是否有充足的库存和供应量变得显而易见。其他人认为，农业综合公司应该为副作用承担责任。

段落G

Many essayists mentioned climate change and its consequences for small-scale agriculture. Fan explained that ‘in addition to reducing crop yields, climate change increases the magnitude and the frequency of extreme weather events, which increase smallholder vulnerability.’ The growing unpredictability of weather patterns increases farmers’ difficulty in managing weather-related risks. According to this author, one solution would be to develop crop varieties that are more resilient to new climate trends and extreme weather patterns. Accordingly, Pat Mooney, co-founder and executive director of the ETC Group, suggested that ‘if we are to survive climate change, we must adopt policies that let peasants diversify the plant and animal species and varieties/breeds that make up our menus.’

许多分析家提到气候变化以及它对小规模农业的影响。Fan解释到，“除了降低粮食产量之外，气候变化还增加了极端天气的程度和频率，从而让小农户变得更加脆弱”。天气模式的日益不可预测性增加了农民在管理天气相关风险时的难度。根据这位作者的观点，一种解决方案是提升粮食多样性，以适应新的气候趋势和极端天气模式。相应的，ETC集团的联合创始人兼执行理事Pat Mooney认为，“如果我们想在气候变化中生存，我们必须采取相应政策，让农民丰富出现在我们菜单上的农作物和牲畜的种类。

段落H

Some participating authors and commentators argued in favour of community-based and autonomous risk management strategies through collective action groups, co-operatives or producers’ groups. Such groups enhance market opportunities for small-scale producers, reduce marketing costs and synchronise buying and selling with seasonal price conditions. According to Murphy, ‘collective action offers an important way for farmers to strengthen their political and economic bargaining power, and to reduce their business risks.’ One commentator, Giel Ton, warned that collective action does not come as a free good. It takes time, effort and money to organise, build trust and to experiment. Others, like Marcel Vernooij and Marcel Beukeboom, suggested that in order to ‘apply what we already know’, all stakeholders, including business, government, scientists and civil society, must work together, starting at the beginning of the value chain.

一些参与作者和评论家青睐基于社区并自主运行的风险管理策略。这种策略通过集体行动小组、合作社以及生产者团体实现。这些团体可以提升小规模生产者的市场机会，降低营销成本，并使买卖与季节性的价格条件相同步。根据Murphy的观点，“集体行动为农民提供了一种重要的方式来加强他们政治与经济的议价能力，并降低他们的商业风险。一名评论者，Giel Ton警告，集体行动并不是唾手可得。它需要时间、精力和金钱来组织、建立信任并进行实验。其他人，比如Marcel Vernooij和Marcel Beukeboom认为，为了应用我们已经知道的方法，包括企业、政府、科学家和市民社会在内的所有利益相关方必须从价值链的起点开始，一起努力。

段落I

Some participants explained that market price volatility is often worsened by the presence of intermediary purchasers who, taking advantage of farmers’ vulnerability, dictate prices. One commentator suggested farmers can gain greater control over prices and minimise price volatility by selling directly to consumers. Similarly, Sonali Bisht, founder and advisor to the Institute of Himalayan Environmental Research and Education (INHERE), India, wrote that community-supported agriculture, where consumers invest in local farmers by subscription and guarantee producers a fair price, is a risk-sharing model worth more attention. Direct food distribution systems not only encourage small-scale agriculture but also give consumers more control over the food they consume, she wrote.

一些参与者解释到，中间商的存在往往会加剧市场价格波动。他们利用农民的脆弱性操纵价格。一名评论者认为，农民可以通过直接向消费者出售商品来获得更大的价格控制权，并使价格波动最小化。相似的，印度喜马拉雅环境研究与教育机构的创始人和顾问Sonali Bisht写到，社区互助农业是一种值得关注的风险分摊模式。在这种模式中，消费者通过订购和承诺生产者一个公平的价格来投资当地农民。她写道，食物直销系统不仅会鼓励小规模农业，而且还能让消费者对他们所消费的食物有更多的控制。

### [12Test6Passage2 The lost city 失落的城市](http://www.laokaoya.com/30629.html)

段落A

When the US explorer and academic Hiram Bingham arrived in South America in 1911, he was ready for what was to be the greatest achievement of his life: the exploration of the remote hinterland to the west of Cusco, the old capital of the Inca empire in the Andes mountains of Peru. His goal was to locate the remains of a city called Vitcos, the last capital of the Inca civilisation. Cusco lies on a high plateau at an elevation of more than 3,000 metres, and Bingham’s plan was to descend from this plateau along the valley of the Urubamba river, which takes a circuitous route down to the Amazon and passes through an area of dramatic canyons and mountain ranges.

当美国探险家和学者Hiram Bingham于1911年到达南美大陆时，他已经为即将到来的自己人生中最伟大的成就做好了准备：探索库斯科西部遥远的内陆地区，秘鲁安第斯山脉印加帝国的古都所在。他的目标是找到被称为Vitcos的城市遗迹，印加文明最后的首都。库斯科位于海拔3000多米的高原之上。Bingham计划沿着乌鲁班巴河的河谷一路向下。走环形路线到达亚马逊，并穿过一片巨大的峡谷和山脉。

段落B

When Bingham and his team set off down the Urubamba in late July, they had an advantage over travellers who had preceded them: a track had recently been blasted down the valley canyon to enable rubber to be brought up by mules from the jungle. Almost all previous travellers had left the river at Ollantaytambo and taken a high pass across the mountains to rejoin the river lower down, thereby cutting a substantial corner, but also therefore never passing through the area around Machu Picchu.

当Bingham和他的团队在7月末沿着乌鲁班巴河顺流而下时，他们与之前的旅行者相比拥有一项优势：一条沿着峡谷的小道刚刚被开辟出来，以方便文章来自老烤鸭雅思骡马从森林中运输橡胶。几乎所有之前的旅行者都在Ollantaytambo离开河道，在高处穿过山脉，再在低处与河流汇合。这样虽然少走了不少路，但也因此从来都没有穿越过马丘比丘附近的区域。

段落C

On 24 July they were a few days into their descent of the valley. The day began slowly, with Bingham trying to arrange sufficient mules for the next stage of the trek. His companions showed no interest in accompanying him up the nearby hill to see some ruins that a local farmer, Melchor Arteaga, had told them about the night before. The morning was dull and damp, and Bingham also seems to have been less than keen on the prospect of climbing the hill. In his book Lost City of the Incas, he relates that he made the ascent without having the least expectation that he would find anything at the top.

7月24日，他们在山谷中已经走了一些日子。这天天亮的很慢。Bingham正努力为下一阶段的路途安排足够的骡子。他的同伴对陪同他登上附近的山丘，观察当地农民Melchor Arteaga前天晚上告诉他们的一些遗迹毫无兴趣。那天早晨阴暗潮湿，Bingham似乎也对攀登小山的前景不那么期待。他在《印加的失落城市》一书中提到，他爬山时根本就没有期望能在山顶发现任何东西。

段落D

Bingham writes about the approach in vivid style in his book. First, as he climbs up the hill, he describes the ever-present possibility of deadly snakes, ‘capable of making considerable springs when in pursuit of their prey’; not that he sees any. Then there’s a sense of mounting discovery as he comes across great sweeps of terraces, then a mausoleum, followed by monumental staircases and, finally, the grand ceremonial buildings of Machu Picchu. ‘It seemed like an unbelievable dream … the sight held me spellbound …’ he wrote.

Bingham在书中用生动的语言描述了这一过程。一开始在爬山过程中，他描述到致命毒蛇出现的风险。它们在捕捉猎物时能够高高弹起。虽然他并没有见到任何一条。随着他走过巨大的看台，陵墓，壮观的台阶，并最终达到马丘比丘宏伟的仪式建筑，他的发现越来越多。他写到，“这似乎是一场令人难以置信的梦境，那景象令我着迷”。

段落E

We should remember, however, that Lost City of the Incas is a work of hindsight, not written until 1948, many years after his journey. His journal entries of the time reveal a much more gradual appreciation of his achievement. He spent the afternoon at the ruins noting down the dimensions of some of the buildings, then descended and rejoined his companions, to whom he seems to have said little about his discovery. At this stage, Bingham didn’t realise the extent or the importance of the site, nor did he realise what use he could make of the discovery.

然而，我们应当记住，《印加的失落城市》是一部事后作品，直到1948年才写成。那时他的旅行已经结束许多年了。他按照时间写成的日志揭示了更多其成就逐渐被理解的过程。他在废墟中花了一下午，记录一些建筑的尺寸，然后下山与同伴汇合。他似乎并没有跟他们提及自己的发现。这时候，Bingham还没有意识到这个地方的重要性，他也没有意识到自己能利用这一发现做什么。

段落F

However, soon after returning it occurred to him that he could make a name for himself from this discovery. When he came to write the National Geographic magazine article that broke the story to the world in April 1913, he knew he had to produce a big idea. He wondered whether it could have been the birthplace of the very first Inca, Manco the Great, and whether it could also have been what chroniclers described as ‘the last city of the Incas’. This term refers to Vilcabamba, the settlement where the Incas had fled from Spanish invaders in the 1530s. Bingham made desperate attempts to prove this belief for nearly 40 years. Sadly, his vision of the site as both the beginning and end of the Inca civilisation, while a magnificent one, is inaccurate. We now know that Vilcabamba actually lies 65 kilometres away in the depths of the jungle.

然而，在返回不久之后，他想到自己可以利用这一发现出名。当他终于在1913年四月在《国家地理》杂志刊登文章将这个故事公布于世时，他意识到自己需要一个更大胆的想法。他猜想，它有没有可能是印加文明的诞生地-伟大的曼科，或者它有没有可能是编年史作家所描述的印加最后的城市-Vilcabamba，即16世纪30年代印加人躲避西班牙入侵者的聚居地。Bingham用了将近40年的时间竭尽全力证明这一想法。遗憾的是，他所到之处虽然景象十分壮观，但无论是作为印加文明的起始之地，还是结束之处，均与史实不符。我们现在知道，Vilcabamba实际上位于65公里外的丛林深处。

段落G

One question that has perplexed visitors, historians and archaeologists alike ever since Bingham, is why the site seems to have been abandoned before the Spanish Conquest. There are no references to it by any of the Spanish chroniclers – and if they had known of its existence so close to Cusco they would certainly have come in search of gold. An idea which has gained wide acceptance over the past few years is that Machu Picchu was a moya, a country estate built by an Inca emperor to escape the cold winters of Cusco, where the elite could enjoy monumental architecture and spectacular views. Furthermore, the particular architecture of Machu Picchu suggests that it was constructed at the time of the greatest of all the Incas, the emperor Pachacuti (c. 1438-71). By custom, Pachacuti’s descendants built other similar estates for their own use, and so Machu Picchu would have been abandoned after his death, some 50 years before the Spanish Conquest.

自Bingham以来，一直困扰着游客、历史学家和考古学家的一个问题是，为什么这座城市在被西班牙占领之前就被抛弃。没有任何西班牙编年史作者提到此处。而如果他们知道它的位置与库斯科如此之近，他们肯定会来寻找黄金的。过去几年里被人们普遍接受的一种观点是，马丘比丘位于火山之上，一名印加国王在这里建造城市以逃避库斯科寒冷的冬季。而精英阶层则可以享受巨大的建筑并欣赏壮观的景象。此外，马丘比丘独特的建筑表明，它建设于印加文明最为鼎盛的时期-帕查库蒂国王在位期间（c.1438-1471年）。根据传统，帕查库蒂的后代们建造了其他相似的建筑供自己使用。因此，在他死后，马丘比丘就被遗弃了。差不多50年后，西班牙入侵者才到来。

### [12Test6Passage3 The Benefits of Being Bilingual 双语使用者的优势](http://www.laokaoya.com/31005.html)

段落A

According to the latest figures, the majority of the world’s population is now bilingual or multilingual, having grown up speaking two or more languages. In the past, such children were considered to be at a disadvantage compared with their monolingual peers. Over the past few decades, however, technological advances have allowed researchers to look more deeply at how bilingualism interacts with and changes the cognitive and neurological systems, thereby identifying several clear benefits of being bilingual.

根据最新的数据，世界上大多数人口现在都能够使用两种或多种语言（说着两种或更多种语言长大）。过去，与只说一种语言的同龄人相比，这些孩子被认为处于劣势。但在过去几十年里，技术的进步让研究者可以更加深入地探索双语使用如何影响并改变认知和神经系统，从而找出能够使用两种语言的一些明显好处。

段落B

Research shows that when a bilingual person uses one language, the other is active at the same time. When we hear a word, we don’t hear the entire word all at once: the sounds arrive in sequential order. Long before the word is finished, the brain’s language system begins to guess what that word might be. If you hear ‘can’, you will likely activate words like ‘candy’ and ‘candle’ as well, at least during the earlier stages of word recognition. For bilingual people, this activation is not limited to a single language; auditory input activates corresponding words regardless of the language to which they belong. Some of the most compelling evidence for this phenomenon, called ‘language co-activation’, comes from studying eye movements. A Russian-English bilingual asked to ‘pick up a marker’ from a set of objects would look more at a stamp than someone who doesn’t know Russian, because the Russian word for ‘stamp’, marka, sounds like the English word he or she heard, ‘marker’. In cases like this, language co-activation occurs because what the listener hears could map onto words in either language.

研究发现，当双语人士使用一种语言时，另一种也会同时处于活跃状态。当我们听到一个单词时，我们并不是立刻听到完整的词汇：单词音节文章来自老烤鸭雅思按顺序传到耳朵里。早在单词说完之前，大脑的语言系统就开始猜测这个单词可能是什么。如果你听到can，你可能会激活诸如candy和candle这样的单词。至少在单词识别的早期阶段如此。对于双语使用者而言，这一激活过程并不局限于一种语言。不论单词所属的语言是什么，听觉输入都会激活相应的它们。这一被称作“语言协调激活”的现象最有说服力的证据来自于对眼球运动的研究。与不会俄语的人相比，一名俄语和英语的使用者被要求从一组物品中“pick up marker”时，会更多的看向邮票，因为俄语中对应邮票的单词marka，听起来与他/她听到的英语单词marker十分相似。在诸如此类的案例中，语言协调激活的出现是因为人们把听到的内容映射到任一语言的单词上。

段落C

Having to deal with this persistent linguistic competition can result in difficulties, however. For instance, knowing more than one language can cause speakers to name pictures more slowly, and can increase ‘tip-of-the-tongue states’, when you can almost, but not quite, bring a word to mind. As a result, the constant juggling of two languages creates a need to control how much a person accesses a language at any given time. For this reason, bilingual people often perform better on tasks that require conflict management. In the classic Stroop Task, people see a word and are asked to name the colour of the word’s font. When the colour and the word match (i.e., the word ‘red’ printed in red), people correctly name the colour more quickly than when the colour and the word don’t match (i.e., the word ‘red’ printed in blue). This occurs because the word itself (‘red’) and its font colour (blue) conflict. Bilingual people often excel at tasks such as this, which tap into the ability to ignore competing perceptual information and focus on the relevant aspects of the input. Bilinguals are also better at switching between two tasks; for example, when bilinguals have to switch from categorizing objects by colour (red or green) to categorizing them by shape (circle or triangle), they do so more quickly than monolingual people, reflecting better cognitive control when having to make rapid changes of strategy.

然而，应对这种持续的语言竞争会导致一些困难。例如，通晓不止一种语言会造成人们在说出图片名称时较为缓慢，并出现更多“话在嘴边”的现象，即你几乎能想到某个单词，却无法说出口。这样一来，两种语言持续的斗争就要求人们在任何时候都控制好语言的接入。正因为这一原因，双语使用者通常在那些需要管理冲突的任务上表现更好。在经典的斯特色谱任务中，参与者被要求说出所看到的字体的颜色。相比于颜色与单词不匹配的情况（比如red被印刷成蓝色），当颜色与单词匹配时（比如red被印刷成红色），人们可以更快地准确说出颜色名称。这是因为单词自身（red）与它的字体颜色（blue）相冲突。双语使用者通常在这类任务中表现的更好。他们擅长忽略干扰性信息而专注于输入信息中的有效内容。双语使用者在任务转换方面表现的也更好。例如，当双语使用者需要从将物体按颜色（红色或绿色）分类的任务中转换到按形状（圆形或三角形）分类时，他们会比单一语言使用者更快。这反映出，当需要进行快速的策略转变时，他们拥有更好的认知控制能力。

段落D

It also seems that the neurological roots of the bilingual advantage extend to brain areas more traditionally associated with sensory processing. When monolingual and bilingual adolescents listen to simple speech sounds without any intervening background noise, they show highly similar brain stem responses. When researchers play the same sound to both groups in the presence of background noise, however, the bilingual listeners’ neural response is considerably larger, reflecting better encoding of the sound’s fundamental frequency, a feature of sound closely related to pitch perception.

双语优势的神经根源似乎延伸到传统上与感官处理更为相关的大脑区域。当使用单一语言的青少年和使用两种语言的青少年在没有背景噪音的干扰下听一段简单的演讲时，他们展现出高度相似的脑干反应。然而，当研究者在有背景噪音的情况下，为两组人播放相同的音频时，双语使用者的神经反应更为明显。这反映出他们可以更好地对声音的基础频率进行编码，而声音基础频率这一特征与音调知觉紧密相关。

段落E

Such improvements in cognitive and sensory processing may help a bilingual person to process information in the environment, and help explain why bilingual adults acquire a third language better than monolingual adults master a second language. This advantage may be rooted in the skill of focusing on information about the new language while reducing interference from the languages they already know.

这些认知和感官处理方面的提升可能有助于双语使用者处理环境中的信息，并有助于解释为什么使用双语的成年人会比使用单一语言的成年人更好的掌握第三种语言。这一优势的根源可能在于专注新语言的信息并减少已知语言干扰的能力。

段落F

Research also indicates that bilingual experience may help to keep the cognitive mechanisms sharp by recruiting alternate brain networks to compensate for those that become damaged during aging. Older bilinguals enjoy improved memory relative to monolingual people, which can lead to real-world health benefits. In a study of over 200 patients with Alzheimer’s disease, a degenerative brain disease, bilingual patients reported showing initial symptoms of the disease an average of five years later than monolingual patients. In a follow-up study, researchers compared the brains of bilingual and monolingual patients matched on the severity of Alzheimer’s symptoms. Surprisingly, the bilinguals’ brains had more physical signs of disease than their monolingual counterparts, even though their outward behaviour and abilities were the same. If the brain is an engine, bilingualism may help it to go farther on the same amount of fuel.

研究也表明，通过利用大脑备用网络来弥补那些由于老化而受到损伤的部分，双语经历可以帮助保持认知机制的灵敏。与单一语言使用者相比，老年双语使用者的记忆力较好。这会给我们的健康带来切实的好处。在一项对超过200名阿尔兹海默症（一种大脑退化疾病）患者的研究中，使用两种语言的病人报告症状比只使用一种语言的病人平均晚5年。在随后的一项研究中，研究者比较了阿尔兹海默症症状严重程度一致的双语病人和单一语言病人的大脑。令人惊讶的是，与单一语言的病人相比，双语使用者的大脑拥有更多的疾病体征，尽管他们展现出来的行为和能力是相同的。如果大脑是台发动机的话，双语能力可能会帮助它在相同燃料的情况下走的更远。

段落G

Furthermore, the benefits associated with bilingual experience seem to start very early. In one study, researchers taught seven-month-old babies growing up in monolingual or bilingual homes that when they heard a tinkling sound, a puppet appeared on one side of a screen. Halfway through the study, the puppet began appearing on the opposite side of the screen. In order to get a reward, the infants had to adjust the rule they’d learned; only the bilingual babies were able to successfully learn the new rule. This suggests that for very young children, as well as for older people, navigating a multilingual environment imparts advantages that transfer far beyond language.

此外，与双语经历相关的好处似乎很早就显现出来。在一项研究中，研究者教授来自单语或双语家庭的7个月大的婴儿。当他们听到清脆的声音时，一个木偶会出现在屏幕的一侧。在研究进行到一半时，木偶开始出现在屏幕的另一侧。为了得到奖励，婴儿必须调整他们所学到的规则。只有双语婴儿能够成功地学习新规则。这表明，对于年龄非常小的孩子以及年龄更大的人来说，在多语言环境中成长赋予他们远超语言的优势。

## 12Test7

### [12Test7Passage1 Flying tortoises 飞翔的乌龟](http://www.laokaoya.com/31269.html)

段落A

Forests of spiny cacti cover much of the uneven lava plains that separate the interior of the Galapagos island of lsabela from the Pacific Ocean. With its five distinct volcanoes, the island resembles a lunar landscape. Only the thick vegetation at the skirt of the often cloud-covered peak of Sierra Negra offers respite from the barren terrain below. This inhospitable environment is home to the giant Galapagos tortoise. Some time after the Galapagos’s birth, around five million years ago, the islands were colonised by one or more tortoises from mainland South America. As these ancestral tortoises settled on the individual islands, the different populations adapted to their unique environments, giving rise to at least 14 different subspecies. Island life agreed with them. In the absence of significant predators, they grew to become the largest and longest-living tortoises on the planet, weighing more than 400 kilograms, occasionally exceeding 1.8 metres in length and living for more than a century.

起伏不平的熔岩平原上布满了多刺的仙人掌。它将Isabela省加拉帕戈斯岛的内陆与太平洋分割开来。拥有五座独立的火山，该岛看起来就像是月球表面一样。只有在内格拉山脉经常云雾缭绕的山顶周围长得郁郁葱葱的植被，能缓解山下土地贫瘠荒凉的景象。这一不适宜人类居住的环境是巨大的加拉帕戈斯龟的家园。加拉帕戈斯岛诞生于大约500万年前。在那之后的某个时间，有一只或者更多来自南美大陆的龟来到这里。随着这些乌龟祖先在各个岛屿上定居，不同的族群逐渐适应他们独特的环境，诞生了至少14个亚种。它们颇为适应岛上的生活。由于没有什么天敌，它们成长为地球上体型最大，寿命最长的乌龟。体重超过400公斤，身长偶尔超过1.8米，能活一百多年。

段落B

Before human arrival, the archipelago’s tortoises numbered in the hundreds of thousands. From the 17th century onwards, pirates took a few on board for food, but the arrival of whaling ships in the 1790s saw this exploitation grow exponentially. Relatively immobile and capable of surviving for months without food or water, the tortoises were taken on board these ships to act as food supplies during long ocean passages. Sometimes, their bodies were processed into high- grade oil. In total, an estimated 200,000 animals were taken from the archipelago before the 20th century. This historical exploitation was then exacerbated when settlers came to the islands. They hunted the tortoises and destroyed their habitat to clear land for agriculture. They also introduced alien species — ranging from cattle, pigs, goats, rats and dogs to plants and ants — that either prey on the eggs and young tortoises or damage or destroy their habitat.

在人类到来之前，加拉帕戈斯龟的数量有成千上万只。从17世纪开始，海盗会带一些上船作为食物。但18世纪90年代捕鲸船的到来造成这一举措的指数型增长。这种龟不怎么活动，可以在没有食物和水源的情况下生存好几个月，因此它们被带上船，作为漫长越洋航行中的食物补给。有时候，它们的身体文章来自老烤鸭雅思还会被加工成优质油脂。据估计，在20世纪之前，总共有200000只龟被从群岛上带走。这种漫长的侵害行为在人们来到岛屿定居之后变本加厉。他们捕捉象龟，摧毁他们的栖息地以腾出地方来发展农业。他们还引入了外来物种，从牛、猪、山羊、老鼠和狗到植物和蚂蚁。这些动物要么猎食象龟蛋和象龟幼崽，或者破坏它们的栖息地。

段落C

Today, only 11 of the original subspecies survive and of these, several are highly endangered. In 1989, work began on a tortoise-breeding centre just outside the town of Puerto Villamil on Isabela, dedicated to protecting the island’s tortoise populations. The centre’s captive-breeding programme proved to be extremely successful, and it eventually had to deal with an overpopulation problem.

今天，最初的亚种中只有11个生存下来。其中还有好几种处于极度濒危的状态。1989年，一座旨在保护岛上龟群的龟类繁殖中心开始在伊莎贝拉岛维利亚米尔港镇外破土动工。事实证明，该中心的人工繁殖项目十分成功，以至于它最终不得不面临象龟数量过多的问题。

段落D

The problem was also a pressing one. Captive-bred tortoises can’t be reintroduced into the wild until they’re at least five years old and weigh at least 4.5 kilograms, at which point their size and weight — and their hardened shells — are sufficient to protect them from predators. But if people wait too long after that point, the tortoises eventually become too large to transport.

这一问题同样十分紧迫。人工繁殖的象龟至少要长到5岁，体重达到4.5公斤才能被再次放回野外。这时，它们的大小和体重，以及坚硬的外壳，已经足以保护它们免受捕食者的侵害。但如果人们在此之后仍然等待很长的时间，这些象龟就会变得太过巨大而无法运输。

段落E

For years, repatriation efforts were carried out in small numbers, with the tortoises carried on the backs of men over weeks of long, treacherous hikes along narrow trails. But in November 2010, the environmentalist and Galapagos National Park liaison officer Godfrey Merlin, a visiting private motor yacht captain and a helicopter pilot gathered around a table in a small café in Puerto Ayora on the island of Santa Cruz to work out more ambitious reintroduction. The aim was to use a helicopter to move 300 of the breeding centre’s tortoises to various locations close to Sierra Negra.

多年来，放归活动一直以小规模进行。人类背着象龟，沿着狭窄的小路，克服种种困难，一连走上好几周才能完成。但2010年11月，环境学家兼加拉帕戈斯国家公园外联主任Godfrey Merlin，一位来访的私人游艇船长和一位直升机飞行员在圣克鲁斯岛阿约拉岗的一家小咖啡馆里聚在一起，制定出更为宏大的放归计划。他们打算利用直升机将繁殖中心的300只象龟运送到Sierra Negra附近的不同地点。

段落F

This unprecedented effort was made possible by the owners of the 67-metre yacht White Cloud, who provided the Galapagos National Park with free use of their helicopter and its experienced pilot, as well as the logistical support of the yacht, its captain and crew. Originally an air ambulance, the yacht’s helicopter has a rear double door and a large internal space that’s well suited for cargo, so a custom crate was designed to hold up to 33 tortoises with a total weight of about 150 kilograms. This weight, together with that of the fuel, pilot and four crew, approached the helicopter’s maximum payload, and there were times when it was clearly right on the edge of the helicopter’s capabilities. During a period of three days, a group of volunteers from the breeding centre worked around the clock to prepare the young tortoises for transport. Meanwhile, park wardens, dropped off ahead of time in remote locations, cleared landing sites within the thick brush, cacti and lava rocks.

这一史无前例的行动得以开展，多亏了67米长的游艇“白云号”的所有者们。他们为加拉帕戈斯国家公园免费提供直升机与经验丰富的驾驶员，以及游艇，船长及船员们的后勤支持。游艇上的直升机原本是一架空中救援机，有着双扇后开门和巨大的内部空间，非常适合运输。为此人们还特意设计了一种集装箱，能够装下33只乌龟，总重大约150公斤。这一重量，再加上燃油、飞行员和四名机组成员，逼近直升机的最大载重量。有几次载重量明显达到了飞机能力的极限。在三天的时间里，来自繁殖中心的志愿者日夜不停地为运输幼年象龟做着准备。与此同时，公园的管理员提前到达各个偏远的地点，在茂盛的灌木丛、仙人掌和熔岩中清理出直升机降落的地点。

段落G

Upon their release, the juvenile tortoises quickly spread out over their ancestral territory, investigating their new surroundings and feeding on the vegetation. Eventually, one tiny tortoise came across a fully grown giant who had been lumbering around the island for around a hundred years. The two stood side by side, a powerful symbol of the regeneration of an ancient species.

一经释放，这些幼年象龟很快在它们祖先的土地上四散开来，探索周围的环境，并以植物为食。最终，一只小象龟遇到了一只完全成长的巨大象龟。它已经在岛上度过了100年左右的时间。这两只象龟站在一起，成为古老物种复苏的有力标志。

### [12Test7Passage2 The Intersection of Health Sciences and Geography](http://www.laokaoya.com/31304.html)

段落A

While many diseases that affect humans have been eradicated due to improvements in vaccinations and the availability of healthcare, there are still areas around the world where certain health issues are more prevalent. In a world that is far more globalized than ever before, people come into contact with one another through travel and living closer and closer to each other. As a result, super-viruses and other infections resistant to antibiotics are becoming more and more common.

虽然由于疫苗接种的进步和健康服务的存在，许多影响人类的疾病已经被彻底消除，但世界上仍然有一些区域更为盛行某种特定的健康问题。在一个全球化程度前所未有的世界里，人们在旅行中彼此接触，住的也越来越密集。这样一来，对抗生素存在抗性的超级病毒和其他感染正变得越来越常见。

段落B

Geography can often play a very large role in the health concerns of certain populations. For instance, depending on where you live, you will not have the same health concerns as someone who lives in a different geographical region. Perhaps one of the most obvious examples of this idea is malaria-prone areas, which are usually tropical regions that foster a warm and damp environment in which the mosquitos that can give people this disease can grow. Malaria is much less of a problem in high-altitude deserts, for instance.

地理位置在特定人群的健康问题中扮演着重要角色。例如，取决于你生活在哪里，你与居住在另外一个地理区域的人将会有着不同的健康困扰。或许这一观点最明显的证据之一就是那些疟疾高发区域。它们通常都是热带地区，造就了温暖潮湿的环境，滋生能够给人类带来这种疾病的蚊子。疟疾在高纬度沙漠这样的地方就不算是一个重大问题。

段落C

In some countries, geographical factors influence the health and well-being of the population in very obvious ways. In many large cities, the wind is not strong enough to clear the air of the massive amounts of smog and pollution that cause asthma, lung problems, eyesight issues and more in the people who live there. Part of the problem is, of course, the massive number of cars being driven, in addition to factories that run on coal power. The rapid industrialization of some countries in recent years has also led to the cutting down of forests to allow for the expansion of big cities, which makes it even harder to fight the pollution with the fresh air that is produced by plants.

在一些国家，地理因素以十分明显的方式影响着人群的健康。在许多大城市，风力不足以清除空气中的大量雾霾和污染。它们给居住在那里的人造成哮喘、肺部疾病、视力问题和许多其他疾病。当然，这一问题的部分原因文章来自老烤鸭雅思在于路上行驶的大量汽车，以及依赖煤炭能源的工厂。近年来一些国家迅速的工业化也造成森林被大量砍伐，以便为大城市的扩展腾出空间。如此一来，想要靠植物制造的新鲜空气来对抗污染就变得愈发的困难。

段落D

It is in situations like these that the field of health geography comes into its own. It is an increasingly important area of study in a world where diseases like polio are re-emerging, respiratory diseases continue to spread, and malaria-prone areas are still fighting to find a better cure. Health geography is the combination of, on the one hand, knowledge regarding geography and methods used to analyse and interpret geographical information, and on the other, the study of health, diseases and healthcare practices around the world. The aim of this hybrid science is to create solutions for common geography-based health problems. While people will always be prone to illness, the study of how geography affects our health could lead to the eradication of certain illnesses, and the prevention of others in the future. By understanding why and how we get sick, we can change the way we treat illness and disease specific to certain geographical locations.

正是在这样一些情况下，健康地理这一领域应运而生。它的重要性在如今这个世界日益增长。诸如小儿麻痹之类的疾病又在重新冒头，呼吸系统疾病在持续不断地传播，疟疾肆虐的地区还在努力寻找更好的治疗方案。健康地理学一方面结合地理知识和用于分析解读地理信息的方法，另一方面又包括对世界范围内健康、疾病和医疗实践的研究。这一混合科学的目的是为那些常见的基于地理因素的健康问题提供解决方案。虽然人们总会得病，但研究地理如何影响我们的健康能够消除特定的疾病，并在未来预防其他疾病。通过弄清楚我们为什么以及如何得病，我们可以改变治疗某些地理区域所特有的疾病的方法。

段落E

The geography of disease and ill health analyses the frequency with which certain diseases appear in different parts of the world, and overlays the data with the geography of the region, to see if there could be a correlation between the two. Health geographers also study factors that could make certain individuals or a population more likely to be taken ill with a specific health concern or disease, as compared with the population of another area. Health geographers in this field are usually trained as healthcare workers, and have an understanding of basic epidemiology as it relates to the spread of diseases among the population.

疾病和亚健康地理会分析某些特定疾病出现在世界上不同区域的频率，并将这些数据与该地区的地理特征将叠加，以研究两者之间是否存在关系。健康地理学家也会通过与其他地区的人口进行对比，研究使得特定个体或群体更容易遭受某种健康问题困扰或染上某种疾病的因素。这一领域的健康地理学家通常会作为医务人员接受训练，并且懂得传染学的基本知识，因为它与疾病在人群中的传播有关。

段落F

Researchers study the interactions between humans and their environment that could lead to illness (such as asthma in places with high levels of pollution) and work to create a clear way of categorizing illnesses, diseases and epidemics into local and global scales. Health geographers can map the spread of illnesses and attempt to identify the reasons behind an increase or decrease in illnesses, as they work to find a way to halt the further spread or re-emergence of diseases in vulnerable populations.

研究者会研究那些可能引发疾病的、人类与环境之间的相互影响（例如高污染地区的哮喘），并创造一种清晰的方式，将疾病、疫情和传染病按照本地和全球的规模进行分类。健康地理学家在寻找方法阻止疾病在易感染人群中的进一步传播或重新冒头时，会绘制疾病传播的地图，并试图找出疾病上升或者下降背后的因素。

段落G

The second subcategory of health geography is the geography of healthcare provision. This group studies the availability (or lack thereof) of healthcare resources to individuals and populations around the world. In both developed and developing nations there is often a very large discrepancy between the options available to people in different social classes, income brackets, and levels of education. Individuals working in the area of the geography of healthcare provision attempt to assess the levels of healthcare in the area (for instance, it may be very difficult for people to get medical attention because there is a mountain between their village and the nearest hospital). These researchers are on the frontline of making recommendations regarding policy to international organisations, local government bodies and others.

健康地理学的第二个分支是健康医疗资源供给的地理特性。它研究世界各地的个体和群体是否享有（或缺乏）医疗资源。无论是在发达国家还是在发展中国家，不同社会阶层、收入水平和教育程度的人群所拥有的选择往往存在巨大差异。健康医疗供给地理学领域的研究者试图评估该区域的医疗保障水平（例如，如果人们居住的村庄与最近的医院之间隔着一座大山的话，他们想要获得医疗照料就是一件非常困难的事情）。这些研究者工作在第一线，为国际组织、当地政府和其他机构的政策提供建议。

段落H

The field of health geography is often overlooked, but it constitutes a huge area of need in the fields of geography and healthcare. If we can understand how geography affects our health no matter where in the world we are located, we can better treat disease, prevent illness, and keep people safe and well.

健康地理学这一领域经常受到忽视，但它在地理学和医疗领域存在巨大的需求。如果无论我们处于世界何处，都能够理解地理影响我们健康的方式，那么我们就可以更好的治疗和预防疾病，保障人们的健康和安全。

### [12Test7Passage3 Music and the emotions 音乐与情感](http://www.laokaoya.com/31342.html)

第1段

Why does music make us feel? On the one hand, music is a purely abstract art form, devoid of language or explicit ideas. And yet, even though music says little, it still manages to touch us deeply. When listening to our favourite songs, our body betrays all the symptoms of emotional arousal. The pupils in our eyes dilate, our pulse and blood pressure rise, the electrical conductance of our skin is lowered, and the cerebellum, a brain region associated with bodily movement, becomes strangely active. Blood is even re-directed to the muscles in our legs. In other words, sound stirs us at our biological roots.

音乐为什么能让我们有所触动？一方面，音乐是种完全抽象的艺术形式，没有任何语言或者清晰的想法。但即便音乐什么都没有说，它仍然可以触及我们的心底深处。当听到我们最喜爱的歌曲时，我们的身体会显示出各种情绪受到激发的现象。眼睛瞳孔会扩张，心跳加快，血压上升，皮肤的电导率会下降，而小脑-与身体运动有关的大脑区域-会变得异常活跃。血液甚至会重新导入我们腿部的肌肉。换句话说，声音会从我们最深处的生物根源撩动我们。

第2段

A recent paper in Nature Neuroscience by a research team in Montreal, Canada, marks an important step in revealing the precise underpinnings of ‘the potent pleasurable stimulus‘ that is music. Although the study involves plenty of fancy technology, including functional magnetic resonance imaging (FMRI) and ligand-based positron emission tomography (PET) scanning, the experiment itself was rather straightforward. After screening 217 individuals who responded to advertisements requesting people who experience ‘chills’ to instrumental music, the scientists narrowed down the subject pool to ten. They then asked the subjects to bring in their playlist of favourite songs – virtually every genre was represented, from techno to tango – and played them the music while their brain activity was monitored. Because the scientists were combining methodologies (PET and fMRI), they were able to obtain an impressively exact and detailed portrait of music in the brain. The first thing they discovered is that music triggers the production of dopamine – a chemical with a key role in setting people’s moods – by the neurons (nerve cells) in both the dorsal and ventral regions of the brain. As these two regions have long been linked with the experience of pleasure, this finding isn’t particularly surprising.

最近由加拿大蒙特利尔的一个研究团队发表在《自然神经科学》上的一篇论文标志着在揭示音乐这一“强烈愉悦刺激”的本质上向前迈出了一步。虽然该研究涉及到许多高端技术，包括功能性核磁共振成像以及基于配体的正电子释放层成像扫描，但实验自身其实十分简单明了。在对217名响应广告的个体进行筛选之后（广告征集那些听到器乐感到“全身颤抖”的人），科学家将实验对象缩小到10人。然后，他们让这些人提供自己最喜欢的歌曲的播放清单-几乎包括了所有风格，从科技电音到探戈曲目等等，并在为他们播放这些音乐的时候对他们的大脑活动进行监测。由于科学家结合了PET和fMRI这两种方法，他们可以获得大脑中音乐十分准确细致的图像。他们的第一个发现是，音乐刺激大脑背面和腹面的神经元产生多巴胺-一种调节人们情绪的关键化学物质。由于这两个区域早已被证明与愉悦的体验有关，这一发现并不是很让人惊讶。

第3段

What is rather more significant is the finding that the dopamine neurons in the caudate – a region of the brain involved in learning stimulus-response associations, and in anticipating food and other ‘reward’ stimuli – were at their most active around 15 seconds before the participants’ favourite moments in the music. The researchers call this the ‘anticipatory phase’； and argue that the purpose of this activity is to help us predict the arrival of our favourite part. The question, of course, is what all these dopamine neurons are up to. Why are they so active in the period preceding the acoustic climax? After all, we typically associate surges of dopamine with pleasure, with the processing of actual rewards. And yet, this cluster of cells is most active when the ‘chills’ have yet to arrive, when the melodic pattern is still unresolved.

更重要的一项发现是，尾状核（大脑区域中负责学习刺激-应激关联和预期食物与其他奖励刺激的区域）中的多巴胺神经元在实验对象最喜欢的乐曲部分到来之前的15秒处于最活跃的状态。研究者文章来自老烤鸭雅思将其称之为“预期阶段”，并认为这一活动的目的是帮助我们迎接最喜欢的部分的到来。当然，问题在于这些多巴胺神经元究竟想做什么。它们为什么在乐曲高潮之前如此活跃？毕竟，我们通常将多巴胺的激增与愉悦，以及处理实际的奖励联系在一起。然而，这些细胞在“颤抖”还没到来，在旋律结构尚未完全展开的时候就处于最活跃的状态。

第4段

One way to answer the question is to look at the music and not the neurons. While music can often seem (at least to the outsider) like a labyrinth of intricate patterns, it turns out that the most important part of every song or symphony is when the patterns break down, when the sound becomes unpredictable. If the music is too obvious, it is annoyingly boring, like an alarm clock. Numerous studies, after all, have demonstrated that dopamine neurons quickly adapt to predictable rewards. If we know what’s going to happen next, then we don’t get excited. This is why composers often introduce a key note in the beginning of a song, spend most of the rest of the piece in the studious avoidance of the pattern, and then finally repeat it only at the end. The longer we are denied the pattern we expect, the greater the emotional release when the pattern returns, safe and sound.

回答该问题的一种方法是研究音乐而非神经元。虽然音乐常常像精致模式组成的迷宫一样（至少在外人看来），但每首歌或者交响曲最重要的部分其实发生在这些模式破裂，声音变得不可预测的时候。如果音乐模式太过明显，它就会变得像闹钟一样无聊至极，惹人厌烦。毕竟，无数的研究都证明多巴胺神经元会快速适应可预测的奖励。如果我们知道接下来会发生什么，那么我们就不会变的兴奋。因此，作曲家经常会在一首歌开始的地方引入一个关键音符，在接下来的篇幅中竭尽全力避免出现该模式，然后只在结尾的地方对它进行重复。我们期待该模式却不得的时间越长，当这一模式最终圆满回归的时候，我们的情感释放也会越强烈。

第5段

To demonstrate this psychological principle, the musicologist Leonard Meyer, in his classic book Emotion and Meaning in Music (1956), analysed the 5th movement of Beethoven’s String Quartet in C-sharp minor, Op. 131. Meyer wanted to show how music is defined by its flirtation with – but not submission to – our expectations of order. Meyer dissected 50 measures (bars) of the masterpiece, showing how Beethoven begins with the clear statement of a rhythmic and harmonic pattern and then, in an ingenious tonal dance, carefully holds off repeating it. What Beethoven does instead is suggest variations of the pattern. He wants to preserve an element of uncertainty in his music, making our brains beg for the one chord he refuses to give us. Beethoven saves that chord for the end.

为了证实这一心理学原理，音乐学家Leonard Meyer在他发表于1956年的经典著作《音乐中的情绪与意义》中，分析了贝多芬弦乐四重奏升C小调131号作品中的第五乐章。Meyer希望展示出，音乐如何通过挑逗而非服从我们对秩序的期待定义自身。Meyer分解了这首大师之作的50个小节，由此展示贝多芬如何以节奏分明并和谐的模式开始，然后在接下来独具匠心的音符舞蹈中小心翼翼地避免重复它。贝多芬所做的是暗示该模式的种种变化。他希望在他的音乐中保留一种不确定的元素，让我们的大脑祈求那一组他拒绝赐予我们的和弦。贝多芬将那组和弦一直留到最后。

第6段

According to Meyer, it is the suspenseful tension of music, arising out of our unfulfilled expectations, that is the source of the music’s feeling. While earlier theories of music focused on the way a sound can refer to the real world of images and experiences – its ‘connotative‘ meaning – Meyer argued that the emotions we find in music come from the unfolding events of the music itself. This ‘embodied meaning’ arises from the patterns the symphony invokes and then ignores. It is this uncertainty that triggers the surge of dopamine in the caudate, as we struggle to figure out what will happen next. We can predict some of the notes, but we can’t predict them all, and that is what keeps us listening, waiting expectantly for our reward, for the pattern to be completed.

根据Meryer的看法，正是音乐这种从我们得不到满足的期望中诞生的悬而未决的张力构成音乐触及我们感受的根源。虽然音乐的早期理论关注于声音指向真实世界图像或经验的方式-即它的“隐晦”含义，Meryer认为我们在音乐中发现的种种情感来自于音乐本身所展开的事项。这一“体现型含义”来自于交响乐所激发又可以忽视的模式。正是这种不确定性引发尾状核中多巴胺的激增，因为我们会努力弄清楚接下来要发生什么。我们能够预测到一些音符，但我们无法预测到所有的旋律。这是这一点让我们继续听下去，充满期待地等待着我们的奖励，等待着模式最终完成。

## 12Test8

### [12Test8Passage1 The History of Glass 玻璃的历史](http://www.laokaoya.com/31420.html)

第1段

From our earliest origins, man has been making use of glass. Historians have discovered that a type of natural glass — obsidian — formed in places such as the mouth of a volcano as a result of the intense heat of an eruption melting sand — was first used as tips for spears. Archaeologists have even found evidence of man-made glass which dates back to 4000 BC; this took the form of glazes used for coating stone beads. It was not until 1500 BC, however, that the first hollow glass container was made by covering a sand core with a layer of molten glass.

从我们最早的起源开始，人类就一直在使用玻璃。历史学家发现，一种通常形成于火山口一类的地方（由于火山爆发的高温融化了沙子）的天然玻璃-黑曜石-被当作矛尖使用。考古学家甚至发现过可以追溯到公元前4000年的人造玻璃的证据，即用来包裹石头珠子的玻璃涂层。然而，直到公元前1500年，通过用融化的玻璃覆盖沙子模型才制作出第一个中空的玻璃容器。

第2段

Glass blowing became the most common way to make glass containers from the first century BC. The glass made during this time was highly coloured due to the impurities of the raw material. In the first century AD, methods of creating colourless glass were developed, which was then tinted by the addition of colouring materials. The secret of glass making was taken across Europe by the Romans during this century. However, they guarded the skills and technology required to make glass very closely, and it was not until their empire collapsed in 476 AD that glass-making knowledge became widespread throughout Europe and the Middle East. From the 10th century onwards, the Venetians gained a reputation for technical skill and artistic ability in the making of glass bottles, and many of the city’s craftsmen left Italy to set up glassworks throughout Europe.

从公元前1世纪开始，吹玻璃就是制作玻璃容器最常见的方法。由于原材料中存在杂质，这一时期制作的玻璃颜色各异。公元1世纪，制造无色玻璃的方法被发明出来。这些玻璃可以通过添加有色材料来沾染其他颜色。同样在该世纪，罗马人将玻璃制造的秘密带到欧洲。但他们十分严密的保守制作玻璃的工艺和技术。直到罗马帝国于公元476年崩溃，玻璃制作的知识文章来自老烤鸭雅思才在欧洲和中东广泛传播。从10世纪开始，威尼斯人因制作玻璃瓶子的高超技术和艺术水准而声名远扬。这座城市的许多手工艺人离开意大利，在欧洲各地建立自己的玻璃作坊。

第3段

A major milestone in the history of glass occurred with the invention of lead crystal glass by the English glass manufacturer George Ravenscroft (1632—1688). He attempted to counter the effect of clouding that sometimes occurred in blown glass by introducing lead to the raw materials used in the process. The new glass he created was softer and easier to decorate, and had a higher refractive index, adding to its brilliance and beauty, and it proved invaluable to the optical industry. It is thanks to Ravenscroft’s invention that optical lenses, astronomical telescopes, microscopes and the like became possible.

玻璃发展史上的一个重要里程碑是英国玻璃制造商George Ravenscroft (1632-1588)发明了铅水晶玻璃。为了消除在吹制玻璃中有时发生的雾化效应，他在该过程所使用的原材料中加入了铅。他制造的新玻璃更柔软，更容易装饰，并且有着更高的折射率，增加了玻璃本身的亮度和美感。这对于光学工业来说价值无限。正是由于Ravenscroft的发明，光学镜片、天文望远镜、显微镜和诸如此类的东西才成为可能。

第4段

In Britain, the modern glass industry only really started to develop after the repeal of the Excise Act in 1845. Before that time, heavy taxes had been placed on the amount of glass melted in a glasshouse, and were levied continuously from 1745 to 1845. Joseph Paxton’s Crystal Palace at London’s Great Exhibition of 1851 marked the beginning of glass as a material used in the building industry. This revolutionary new building encouraged the use of glass in public, domestic and horticultural architecture. Glass manufacturing techniques also improved with the advancement of science and the development of better technology.

在英国，现代玻璃产业直到1845年废除消费税法之后才开始真正起步。在这之前，玻璃作坊中所融化的玻璃被征以重税，而且这一税收在1745年到1845年之间被持续收取。Joseph Paxton为1851年伦敦世界博览会所设计的水晶宫殿标志着玻璃开始作为一种材料被应用于建筑工业中。这一革命性的新建筑鼓励在人们在公共、私人以及园艺建筑中使用玻璃。随着科学的进步和更好技术的出现，玻璃制作工业也有所提升。

第5段

From 1887 onwards, glass making developed from traditional mouth-blowing to a semi-automatic process, after factory-owner HM Ashley introduced a machine capable of producing 200 bottles per hour in Castleford, Yorkshire, England — more than three times quicker than any previous production method. Then in 1907, the first fully automated machine was developed in the USA by Michael Owens — founder of the Owens Bottle Machine Company (later the major manufacturers Owens- Illinois) — and installed in its factory. Owens’ invention could produce an impressive 2,500 bottles per hour. Other developments followed rapidly, but it was not until the First World War, when Britain became cut off from essential glass suppliers, that glass became part of the scientific sector. Previous to this, glass had been seen as a craft rather than a precise science.

从1887年开始，玻璃制作从传统的人工吹制进化到半自动流程。当时的工厂主HM Ashley在英格兰约克郡的Castleford引进了一台每小时可以生产出200个瓶子的机器。这比之前任何生产方法都快了不止3倍。随后，1907年，美国的Michael Owens（Owens Bottle Machine Company的创始人，即后来的大型制造商Owens-Illinois）开发出第一台全自动机器，并将它安装在自己的工厂里。Owens的发明可以每小时制造出令人惊叹的2500个瓶子。其他的进展很快跟上。但直到第一次世界大战，英国失去其主要的玻璃供应商，玻璃才成为科学研究的一部分。在此之前，玻璃被当作是手工艺品，而非精确的科学。

第6段

Today, glass making is big business. It has become a modern, hi-tech industry operating in a fiercely competitive global market where quality, design and service levels are critical to maintaining market share. Modern glass plants are capable of making millions of glass containers a day in many different colours, with green, brown and clear remaining the most popular. Few of us can imagine modern life without glass. It features in almost every aspect of our lives — in our homes, our cars and whenever we sit down to eat or drink. Glass packaging is used for many products, many beverages are sold in glass, as are numerous foodstuffs, as well as medicines and cosmetics.

如今，玻璃制造是一门大生意。它已经成为竞争激烈的全球市场上一项现代高科技产业。质量，设计和服务水平对于维持市场份额至关重要。现代玻璃工厂能够在一天里制造数百万各种不同颜色的玻璃。其中绿色、棕色和透明色仍然最为流行。我们很难想象没有玻璃的现代生活。它几乎出现在我们生活的方方面面-在我们的家里，汽车里，以及任何我们想要坐下吃饭或者喝水的时候。玻璃包装被用于许多产品，很多饮料都以玻璃瓶的形式出售，同样的还有无数的食物，药品和化妆品。

第7段

Glass is an ideal material for recycling, and with growing consumer concern for green issues, glass bottles and jars are becoming ever more popular. Glass recycling is good news for the environment. It saves used glass containers being sent to landfill. As less energy is needed to melt recycled glass than to melt down raw materials, this also saves fuel and production costs. Recycling also reduces the need for raw materials to be quarried, thus saving precious resources.

玻璃是回收利用的理想材料。随着越来越多的消费者关心环境问题，玻璃瓶罐的受欢迎程度与日俱增。玻璃回收对于环境来说是条好消息。它能够留下本来要送往垃圾填埋场的玻璃容器。由于融化回收玻璃所需要的能量比融化原材料要少，这一举措也可以节省燃料和生产成本。回收也会降低开采原材料的需求，并因此节约宝贵的资源。

### [12Test8Passage2 bring back the big cats](http://www.laokaoya.com/31465.html)

第1段

There is a poem, written around 598 AD, which describes hunting a mystery animal called a llewyn. But what was it? Nothing seemed to fit, until 2006, when an animal bone, dating from around the same period, was found in the Kinsey Cave in northern England. Until this discovery, the lynx — a large spotted cat with tasselled ears — was presumed to have died out in Britain at least 6,000 years ago, before the inhabitants of these islands took up farming. But the 2006 find, together with three others in Yorkshire and Scotland, is compelling evidence that the lynx and the mysterious llewyn were in fact one and the same animal. If this is so, it would bring forward the tassel-eared cat’s estimated extinction date by roughly 5,000 years.

一首写于公元598年的诗歌描述了对一种叫做llewyn的神秘动物的围猎。但它究竟是什么？直到2006年，似乎都没有真实的动物能跟它对上号。当时，在英格兰北部的Kinsey洞穴里发现了一块可以追溯到大约同一时期的动物骨头。在这一发现之前，猞猁-一种耳朵尖端长着一撮絮状毛、皮肤上遍布斑点的猫科动物-一直被认为已经于6000多年前，英伦群岛居民尚未开始农耕时就已经在该地灭绝。但2006年的这项发现，再加上约克郡和苏格兰的其他三处发现，组成极有说服力的证据，证明猞猁和神秘的llewyn实际上是同一种动物。如果事实真的如此，那么这种絮状耳朵大猫的预估灭绝时间会再推迟大约5000年。

第2段

However, this is not quite the last glimpse of the animal in British culture. A 9th-century stone cross from the Isle of Eigg shows, alongside the deer, boar and aurochs pursued by a mounted hunter, a speckled cat with tasselled ears. Were it not for the animal’s backside having worn away with time, we could have been certain, as the lynx’s stubby tail is unmistakable. But even without this key feature, it’s hard to see what else the creature could have been. The lynx is now becoming the totemic animal of a movement that is transforming British environmentalism: rewilding.

然而，这还不是这种动物在英国文化中最后一次出现。一座来自Eigg岛的9世纪的石头十字架上显示，被一个骑在马上的猎手所追逐的猎物中，除了鹿、野猪和野牛之外，还有一只长着絮状耳朵的斑点大猫。如果不是这只动物的背部由于年深日久而显得模糊不清的话，我们本来是可以完全确定的。因为它那又短又粗的猞猁尾巴绝对错不了。然而，即使没有这个关键特征，也很难说那只动物还能是别的什么。猞猁现在正逐渐成为一场改变英国环保主义信条的运动（重归乡野）的图腾。

第3段

Rewilding means the mass restoration of damaged ecosystems. It involves letting trees return to places that have been denuded, allowing parts of the seabed to recover from trawling and dredging, permitting rivers to flow freely again. Above all, it means bringing back missing species. One of the most striking findings of modern ecology is that ecosystems without large predators behave in completely different ways from those that retain them. Some of them drive dynamic processes that resonate through the whole food chain, creating niches for hundreds of species that might otherwise struggle to survive. The killers turn out to be bringers of life.

重归乡野意味着大规模恢复遭到破坏的生态系统。这涉及让树木回到那些光秃秃的地方，使部分海床不受拖网和捕鱼船的骚扰而得以休养生息，允许河流得以重新自由地流淌。最重要的一点是，这意味着将那些消失了的物种重新带回到自然环境中。现代生态学研究最令人震惊的发现之一是，没有大型捕猎动物生活在其中的生态系统，会与保有它们的生态系统以完全不同的方式来运转。一些猎食动物驱动着能震荡整条食物链的动态进程，为成百上千个原本可能得挣扎求存的物种创造出生存的一席之地。杀手最终其实是生命的赋予者。

第4段

Such findings present a big challenge to British conservation, which has often selected arbitrary assemblages of plants and animals and sought, at great effort and expense, to prevent them from changing. It has tried to preserve the living world as if it were a jar of pickles, letting nothing in and nothing out, keeping nature in a state of arrested development. But ecosystems are not merely collections of species; they are also the dynamic and ever-shifting relationships between them. And this dynamism often depends on large predators.

这些发现为英国的物种保护工作提出了一个大大的挑战，因为这种工作到目前为止通常只是随机地选取一些植物和动物，然后再花费巨大的精力和财力去努力阻止它们发生变化。这是在尝试着将一个活生生的世界当作一罐泡菜那样储存下来，什么都不让进来，什么都不让出去。这就把自然环境保持在一种束手束脚的发展局限之内。然而，生态系统并不仅仅是物种的集合而已；它们还是物种之间动态的和不断变化的关系。而这种活力往往依赖于大型猎食动物。

第5段

At sea the potential is even greater: by protecting large areas from commercial fishing, we could once more see what 18th-century literature describes: vast shoals of fish being chased by fin and sperm whales, within sight of the English shore. This policy would also greatly boost catches in the surrounding seas; the fishing industry’s insistence on scouring every inch of seabed, leaving no breeding reserves, could not be more damaging to its own interests.

在海洋里，潜在的发展空间更为广阔：通过保护大片海域不受商业捕捞的侵扰，我们就有可能再一次见到18世纪的文学作品所描绘的景象：从英国海滩极目远眺之处，巨大的鱼群被长须鲸和抹香鲸一路追逐。这个政策还能极大地提高周边海域的捕捞量；捕鱼业目前坚持搜刮每一寸海床、不留下任何休养繁殖余地的做法不可能比任何其他举动都更加有损于其自身利益了。

第6段

Rewilding is a rare example of an environmental movement in which campaigners articulate what they are for rather than only what they are against. One of the reasons why the enthusiasm for rewilding is spreading so quickly in Britain is that it helps to create a more inspiring vision than the green movement’s usual promise of ‘Follow us and the world will be slightly less awful than it would otherwise have been’.

在整场环保运动中， “重归乡野”是一个罕有的例子，因为其推行者们明确表达了他们想要支持达成什么而不仅仅只是反对什么。人们对“重归乡野”的热情之所以在英国传播得如此迅速，原因之一在于它有助于创造出一个更加令人振奋的前景，而不是环保运动通常保证的“跟着我们走，世界就会比它本来可能成为的那副样子稍微少糟糕一点。

第7段

The lynx presents no threat to human beings: there is no known instance of one preying on people. It is a specialist predator of roe deer, a species that has exploded in Britain in recent decades, holding back, by intensive browsing, attempts to re-establish forests. It will also winkle out sika deer: an exotic species that is almost impossible for human beings to control, as it hides in impenetrable plantations of young trees. The attempt to reintroduce this predator marries well with the aim of bringing forests back to parts of our bare and barren uplands. The lynx requires deep cover, and as such presents little risk to sheep and other livestock, which are supposed, as a condition of farm subsidies, to be kept out of the woods.

猞猁对人类完全不构成威胁：没有任何已知的关于猞猁袭击人的记载。它专门捕猎孢子，而该物种近几十年来在英国的数量呈爆炸式增长。由于大量啃食植被而妨碍了人们试图重建森林的努力，猞猁也偏爱猎食梅花鹿：人类几乎完全没可能控制得住这个外来物种，因为它的藏身之处位于无法穿行的小树植被丛中。重新引人给猁这种猎食者的尝试能很好地契合于让我们的一些荒芜之地重新被森林覆盖的目标。猞猁需要地深林密的生活场所，因此对羊群和其他牲畜几乎不构成什么风险，因为后者作为农牧生产资料一般都会被限制在林地之外的场所活动。

第8段

On a recent trip to the Cairngorm Mountains, I heard several conservationists suggest that the lynx could be reintroduced there within 20 years. If trees return to the bare hills elsewhere in Britain, the big cats could soon follow. There is nothing extraordinary about these proposals, seen from the perspective of anywhere else in Europe. The lynx has now been reintroduced to the Jura Mountains, the Alps, the Vosges in eastern France and the Harz mountains in Germany, and has re-established itself in many more places. The European population has tripled since 1970 to roughly 10,000. As with wolves, bears, beavers, boar, bison, moose and many other species, the lynx has been able to spread as farming has left the hills and people discover that it is more lucrative to protect charismatic Wildlife than to hunt it, as tourists will pay for the chance to see it. Large-scale rewilding is happening almost everywhere — except Britain.

在最近去往Caimgorm山脉的一次旅途中，我听到若干位环境保护学家建议说：在20年之内猞猁就可以重新被放归到那里的野生环境中，如果树木回到了英国其他地区那些光秃秃的山上，这些大猫很快就会跟随而来。如果从任何欧洲其他地区的角度看来，这些建议都并没有什么非比寻常之处。猞猁目前已被重新放归到了Jura山脉、阿尔卑斯山脉、法国东部的Vosges 山脉和德国的Harz山脉各处，并且还在许多其他地方自行适应了环境。自1970年以来，欧洲猞猁的数量已经翻了三倍，达到了大约10000只。与狼、熊、河狸、野猪、野牛、驼鹿和许多其他物种一样，猞猁能够随着农耕活动退出山地区域而繁殖四散，并且人们也发现保护这些有魅力的野生动物要比猎捕它们更加有利可图，因为旅游观光客们会为有机会看到野生动物而付费。大规模的“重归乡野”活动正几乎无处不在地进行着-只除了在英国。

第9段

Here, attitudes are just beginning to change. Conservationists are starting to accept that the old preservation-jar model is failing, even on its own terms. Already, projects such as Trees for Life in the Highlands provide a hint of what might be coming. An organisation is being set up that will seek to catalyse the rewilding of land and sea across Britain, its aim being to reintroduce that rarest of species to British ecosystem: hope.

在这里，人们的态度才刚刚开始转变。环保学家们正开始接受和承认：原先那种老旧的储藏罐模式正在失败，即使以它自身的评判标准来看也是如此。诸如“高地上的生命之树”这样的项目预示着我们接下来有可能达成什么样的目标。已建立了一个组织来试图推进英国上下的土地和海域加快重归乡野进程，其目标在于将那个最为稀有的物种重新引入英国的生态系统中来：希望。

### [12Test8Passage3 UK companies need more effective boards of directors](http://www.laokaoya.com/31560.html)

段落A

After a number of serious failures of governance (that is, how they are managed at the highest level), companies in Britain, as well as elsewhere, should consider radical changes to their directors’ roles. It is clear that the role of a board director today is not an easy one. Following the 2008 financial meltdown, which resulted in a deeper and more prolonged period of economic downturn than anyone expected, the search for explanations in the many post-mortems of the crisis has meant blame has been spread far and wide. Governments, regulators, central banks and auditors have all been in the frame. The role of bank directors and management and their widely publicised failures have been extensively picked over and examined in reports, inquiries and commentaries.

在经历了一系列严重的管理失误（也就是说，在公司的最高管理层面上）之后，英国-以及其他各处-的公司应当考虑对其管理者们的职业角色采取一些彻底的变革了。很显然，一位公司董事的角色在今天是很不好扮演的。2008年的金融危机造成了一段比任何人预期得还要深入和更加持久的经济低迷时期，在那之后，人们在对这场金融灾难所进行的许多事后分析中寻找真正的解释，这也就意味着谴责的对象分布得既远且广，随处都是。政府、监管机构、中央银行和审计师们都在被谴责的范围之内。银行经理及其管理行为所扮演的角色和他们广为公众所关注的失职在各种各样的报道、问询和评论中都受到了广泛的挑剔和检视。

段落B

The knock-on effect of this scrutiny has been to make the governance of companies in general an issue of intense public debate and has significantly increased the pressures on, and the responsibilities of, directors. At the simplest and most practical level, the time involved in fulfilling the demands of a board directorship has increased significantly, calling into question the effectiveness of the classic model of corporate governance by part-time, independent non-executive directors. Where once a board schedule may have consisted of between eight and ten meetings a year, in many companies the number of events requiring board input and decisions has dramatically risen. Furthermore, the amount of reading and preparation required for each meeting is increasing. Agendas can become overloaded and this can mean the time for constructive debate must necessarily be restricted in favour of getting through the business.

这场检视的连锁效应也使得整体上的公司监管行为成了大众热烈讨论的问题，并极大地增加了管理者们的压力和责任。在最简单也最实用的层面上，需要花在完成董事会职位职责上所需的时间有了大幅度的增长，从而引起人们质疑先前那种由兼职的、独立非执行董事们来进行企业管理的传统模式是否真的有效，过去的董事会议程曾经也许只包含每年八到十次的会议，而当前在许多公司里，需要董事会参与探讨和决策的事件数量显著上升。此外，要参与每次会议所需完成的和准备量也在增加。日程有可能排得过满，而这则意味着进行建设性辩论的时间不得不受到限制而让位于处理预设议程条目。

段落C

Often, board business is devolved to committees in order to cope with the workload, which may be more efficient but can mean that the board as a whole is less involved in fully addressing some of the most important issues. It is not uncommon for the audit committee meeting to last longer than the main board meeting itself. Process may take the place of discussion and be at the expense of real collaboration, so that boxes are ticked rather than issues tackled.

董事会事务通常都移交给公司各执行委员会处理以应对大额的工作量，这么做也许确实更有效率，但也会意味着董事会作为整体而言在充分处理一些最重要的事务方面参与度不够。一场审计委员会议开得比主要董事会议本身更久也不是什么稀奇的事。推动会议流程有可能会代替了讨论协商，而这么做的代价就是牺牲了真正的协同合作，结果只是在一项项议程上标注了表示进行过的记号而不是真正处理解决了问题。

段落D

A radical solution, which may work for some very large companies whose businesses are extensive and complex, is the professional board, whose members would work up to three or four days a week, supported by their own dedicated staff and advisers. There are obvious risks to this and it would be important to establish clear guidelines for such a board to ensure that it did not step on the toes of management by becoming too engaged in the day-to-day running of the company. Problems of recruitment, remuneration and independence could also arise and this structure would not be appropriate for all companies. However, more professional and better-informed boards would have been particularly appropriate for banks where the executives had access to information that part-time non-executive directors lacked, leaving the latter unable to comprehend or anticipate the 2008 crash.

有这么一个激进的解决办法也许能对一些非常大型的、生意拓展得极其广泛而复杂的公司起作用，那就是组建一个专业董事会，其成员可以每周最多工作三或四天，由其自身的专职员工和顾问提供支持辅助。这么做有其显而易见的风险，一定要面向这样一个董事会建立清晰的指导原则，以确保它不会太过搀和到公司的日常运营事务之中去指手画脚，从而触犯了公司的真正经营管理。如果采用这个办法，则可能还要面临招聘、薪酬和独立性等相关问题，且这个结构未必适用于所有公司。不过，更加专业和对相关领域资讯了解更多的董事会成员对于银行机构来说将会是格外合适的，因为在这些机构里，执行者们可以获得兼职的非执行者们所缺乏的信息资源，后者正是由于不了解这些信息而导致无法去充分理解或提前预见到2008年那场经济动荡。

段落E

One of the main criticisms of boards and their directors is that they do not focus sufficiently on longer-term matters of strategy, sustainability and governance, but instead concentrate too much on short-term financial metrics. Regulatory requirements and the structure of the market encourage this behaviour. The tyranny of quarterly reporting can distort board decision-making, as directors have to ’make the numbers’ every four months to meet the insatiable appetite of the market for more data. This serves to encourage the trading methodology of a certain kind of investor who moves in and out of a stock without engaging in constructive dialogue with the company about strategy or performance, and is simply seeking a short- term financial gain. This effect has been made worse by the changing profile of investors due to the globalisation of capital and the increasing use of automated trading systems. Corporate culture adapts and management teams are largely incentivized to meet financial goals.

人们对董事会及其经理们的主要批评之一在于：他们没有将足够的注意力放在诸如企业战略、可持续发展和经营管理这样的更长远性目标上，而是相反地过度关注了短期财务指标。各项规章要求和市场结构鼓励了这种行为。季度报告好看与否凌驾于一切之上，这有可能会扭曲了董事会的决策行为，因为经理们不得不每四个月就“刷新一次数字”以应对市场对于更多数据的永不满足的胃口。这种做法助长了某一类投资者的交易方法，他们随时进出股市，从不与公司就策略或业绩表现进行任何有建设性的对话，仅仅只谋求短期的财政赢利。由于资本的全球化和自动交易系统使用频率的上升，投资者成员正在发生着变化，从而使得这种短视局面变得更为严重。企业文化不得不做出调整适应，管理团队也在很大程度上被激励去达成这种财政目标。

段落F

Compensation for chief executives has become a combat zone where pitched battles between investors, management and board members are fought, often behind closed doors but increasingly frequently in the full glare of press attention. Many would argue that this is in the interest of transparency and good governance as shareholders use their muscle in the area of pay to pressure boards to remove underperforming chief executives. Their powers to vote down executive remuneration policies increased when binding votes came into force. The chair of the remuneration committee can be an exposed and lonely role, as Alison Carnwath, chair of Barclays Bank’s remuneration committee, found when she had to resign, having been roundly criticised for trying to defend the enormous bonus to be paid to the chief executive; the irony being that she was widely understood to have spoken out against it in the privacy of the committee.

首席执行官们的薪酬也成了一个战区，投资者、管理层和董事会成员在这里激战连连，过去通常都是在关着的门后悄悄进行，但现在却越来越频繁地暴露在媒体的聚光灯之下。很多人会认为这对透明性和良好的企业经管有好处，因为股东们会利用他们在薪酬领域里的强壮肌肉（即话语权优势）来对董事会施压，要求他们换掉那些业绩不佳的首席执行官们。当有约束力投票的做法开始执行时，股东们投票削减执行官薪酬待遇的权力变得更大了。薪酬委员会主席的职位可以是全无遮蔽保护而又孤独的.Barcdays银行的薪酬委员会主席Alison Carnwath就有此体会，她因为试图去为需要付给首席执行官的巨额津贴做辩护而饱受指摘，最终不得不辞职；讽刺的是，大家都知道在委员会内部私下交流的时候，她对这种高额薪酬是持反对态度的。

段落G

The financial crisis stimulated a debate about the role and purpose of the company and a heightened awareness of corporate ethics. Trust in the corporation has been eroded and academics such as Michael Sandel, in his thoughtful and bestselling book What Money Can’t Buy, are questioning the morality of capitalism and the market economy. Boards of companies in all sectors will need to widen their perspective to encompass these issues and this may involve a realignment of corporate goals. We live in challenging times.

2008年的金融危机激起了人们对公司角色和目标的广泛辩论和对企业操守道德的更高关注。对公司企业的公众信任度由此受到了损害，而一些学者，例如Michael Sandel在他充满思考的畅销书《钱买不到什么》里所做的那样，正在质疑资本主义和市场经济的道德准则。公司所有部门的董事会都将需要拓宽视野以全面思考这些问题，这也许会牵扯到企业目标的整改。我们生活在一个充满挑战的年代。

# 十三

## 13Test1

### [13Test1Passage1 Case Study: Tourism New Zealand website](http://www.laokaoya.com/38314.html)

第1段

New Zealand is a small country of four million inhabitants, a long-haul flight from all the major tourist-generating markets of the world. Tourism currently makes up 9% of the country’s gross domestic product, and is the country’s largest export sector. Unlike other export sectors, which make products and then sell them overseas, tourism brings its customers to New Zealand. The product is the country itself – the people, the places and the experiences. In 1999, Tourism New Zealand launched a campaign to communicate a new brand position to the world. The campaign focused on New Zealand’s scenic beauty, exhilarating outdoor activities and authentic Maori culture, and it made New Zealand one of the strongest national brands in the world.

新西兰是一个拥有四百万居民的小型国家。它与世界上所有的主要游客市场都隔着一场漫长而艰苦的飞行。目前，旅游业占该国国内生产总值的9%，并且是其最大的出口行业。与其他制造产品然后卖向国外的出口行业不同，旅游业将顾客带到新西兰。其产品是国家自身-其人民，地点和相应的体验。1999年，新西兰旅游业发起了一项活动，向世界传达其崭新的品牌定位。该活动将重点放在新西兰美丽的风景，激动人心的户外活动，以及原汁原味的毛利文化上。它使得新西兰成为世界上最强有力的国家品牌之一。

第2段

A key feature of the campaign was the website www.newzealand.com, which provided potential visitors to New Zealand with a single gateway to everything the destination had to offer. The heart of the website was a database of tourism services operators, both those based in New Zealand and those based abroad which offered tourism services to the country. Any tourism-related business could be listed by filling in a simple form. This meant that even the smallest bed and breakfast address or specialist activity provider could gain a web presence with access to an audience of long-haul visitors. In addition, because participating businesses were able to update the details they gave on a regular basis, the information provided remained accurate. And to maintain and improve standards, Tourism New Zealand organised a scheme whereby organisations appearing on the website underwent an independent evaluation against a set of agreed national standards of quality. As part of this, the effect of each business on the environment was considered.

这场宣传活动的主要特征在于“新西兰旅游”网站。它为未来可能前往新西兰的旅客提供了一个一站式的接口。在这里，他们可以找到目的地所能提供的一切。该网站的核心是各种旅游服务供给商所组成的数据库。它们既包括新西兰的本土商家，也包括虽然位于国外，但提供面向该国旅游服务的商家。任何旅游相关的经营者只需填写一张简单的表格就能够出现在网站上。这意味着即便是最小型的旅馆和早餐商户，或者某项专业活动的提供者都可以在网站上获得一席之地，并接触到远方的游客。除此之外，由于参与其中的商家能够定期更新其放在网站上的各项细节，所以上面的信息一直都很准确。为了维持并提升水准，“新西兰旅游”还安排了这样一项方案，即网站上展示的组织机构都必须按照一套共同认可的国家质量标准接受独立评估。这其中就有每项商业活动对环境的影响。

第3段

To communicate the New Zealand experience, the site also carried features relating to famous people and places. One of the most popular was an interview with former New Zealand All Blacks rugby captain Tana Umaga. Another feature that attracted a lot of attention was an interactive journey through a number of the locations chosen for blockbuster films which had made use of New Zealand’s stunning scenery as a backdrop. As the site developed, additional features were added to help independent travellers devise their own customised itineraries. To make it easier to plan motoring holidays, the site catalogued the most popular driving routes in the country, highlighting different routes according to the season and indicating distances and times.

为了传播新西兰的旅游体验，网站还推出了与名人和知名地点有关的特色介绍。其中最受欢迎的内容之一是与新西兰All Blacks橄榄球队队长Tana Umaga进行的访谈。另外一个文章来自老烤鸭雅思吸引了大量关注的特色内容是一场互动式旅程。它穿越一系列将新西兰令人目眩神迷的风景选做背景的电影大片中曾经出现过的地点。随着网站的发展，其他特色被加入进来，以帮助独立的旅行者制定自己个性化的行程。为了使得规划汽车旅行更为容易，网站还分类整理了新西兰最受欢迎的自驾路线，并根据季节、所需时间和距离重点推荐不同的路线。

第4段

Later, a Travel Planner feature was added, which allowed visitors to click and ‘bookmark’ places or attractions they were interested in, and then view the results on a map. The Travel Planner offered suggested routes and public transport options between the chosen locations. There were also links to accommodation in the area. By registering with the website, users could save their Travel Plan and return to it later, or print it out to take on the visit. The website also had a ‘Your Words’ section where anyone could submit a blog of their New Zealand travels for possible inclusion on the website.

随后，网站又增加了“旅游规划助手”功能。网站访问者可以点击并收藏他们感兴趣的地方或景点，然后在地图上查看结果。“旅游规划助手”会提供往来与各个选定地点之间的推荐路线和公共交通方式，以及对应区域的住宿链接。在网站注册之后，用户可以保存他们的旅行计划，并稍后返回查看，或者将它打印出来一路携带。网站还有一个“Your Words”板块，任何人都可以把自己与新西兰旅游相关的博客提交上来，它们可能会被网站收录其中。

第5段

The Tourism New Zealand website won two Webby awards for online achievement and innovation. More importantly perhaps, the growth of tourism to New Zealand was impressive. Overall tourism expenditure increased by an average of 6.9% per year between 1999 and 2004. From Britain, visits to New Zealand grew at an average annual rate of 13% between 2002 and 2006, compared to a rate of 4% overall for British visits abroad.

新西兰旅游网站因其在线上所获得的成就和创新而赢得过两次Webby奖。也许更重要的还在于，新西兰旅游业的增长令人赞叹。整体旅游支出在1999年到2004年之间平均每年增长6.9%。仅从英国一地，从2002年到2006年，前往新西兰旅游的游客数量就平均每年增长13%。而同期英国海外旅游的整体增长率只有4%。

第6段

The website was set up to allow both individuals and travel organisations to create itineraries and travel packages to suit their own needs and interests. On the website, visitors can search for activities not solely by geographical location, but also by the particular nature of the activity. This is important as research shows that activities are the key driver of visitor satisfaction, contributing 74% to visitor satisfaction, while transport and accommodation account for the remaining 26%. The more activities that visitors undertake, the more satisfied they will be. It has also been found that visitors enjoy cultural activities most when they are interactive, such as visiting a marae (meeting ground) to learn about traditional Maori life. Many long-haul travellers enjoy such learning experiences, which provide them with stories to take home to their friends and family. In addition, it appears that visitors to New Zealand don’t want to be ‘one of the crowd’ and find activities that involve only a few people more special and meaningful.

网站设立的初衷是为了让个人和旅游机构都能够创建符合他们需求与兴趣的行程和旅行套餐。网站上，游客不仅可以根据地理位置搜寻活动，而且还能够根据它们的特定属性来进行查找。这一点十分重要，因为研究显示，各种活动项目是游客满意度的关键驱动因素，贡献了74%的游客满意度，而交通和住宿构成剩下的26%。游客参与的活动越多，他们的满意度就越高。研究还发现，游客比较喜欢具有互动性质的文化活动，比如参观“毛利会堂”以了解传统的毛利人生活。许多远道而来的游客喜欢这样的学习体验。这为他们提供了可以带回去与朋友和家人分享的故事素材。此外，来到新西兰的游客似乎不喜欢成为大众的一员，而是觉得那些只有少数人参与的活动更加特别，也更加有意义。

第7段

It could be argued that New Zealand is not a typical destination. New Zealand is a small country with a visitor economy composed mainly of small businesses. It is generally perceived as a safe English-speaking country with a reliable transport infrastructure. Because of the long-haul flight, most visitors stay for longer (average 20 days) and want to see as much of the country as possible on what is often seen as a once-in-a-lifetime visit. However, the underlying lessons apply anywhere – the effectiveness of a strong brand, a strategy based on unique experiences and a comprehensive and user-friendly website.

有人可能会认为新西兰并非典型的度假目的地。它是一个小国家，游客经济主要由小型商家所构成。人们普遍将其视为一个安全的、说英语的国家，有着可靠的交通基础设施。由于长途飞行，大多数游客都会待的更久一些（平均20天），并且要想尽可多的看看这个国家，因为他们通常将这视为一场“一生一次”的旅行。然而，其旅游业兴旺发达背后的原因却适用于任何其他地方：强有力品牌的效应，基于独特体验的战略，以及一个全面且对用户友好的网站。

### [13Test1Passage2 Why being bored is stimulating and useful too](http://www.laokaoya.com/38450.html)

段落A

We all know how it feels – it’s impossible to keep your mind on anything, time stretches out, and all the things you could do seem equally unlikely to make you feel better. But defining boredom so that it can be studied in the lab has proved difficult. For a start, it can include a lot of other mental states, such as frustration, apathy, depression and indifference. There isn’t even agreement over whether boredom is always a low-energy, flat kind of emotion or whether feeling agitated and restless counts as boredom, too. In his book, Boredom: A Lively History, Peter Toohey at the University of Calgary, Canada, compares it to disgust – an emotion that motivates us to stay away from certain situations. ‘If disgust protects humans from infection, boredom may protect them from “infectious” social situations,’ he suggests.

我们都知道这种感觉——无法集中注意力到任何事情上，时间变得格外迟缓，所有事情都似乎无法让自己感觉好受一些。但要定义厌烦这种情绪，以便它可以在实验室里接受研究，却被证明十分困难。首先，它包含许多其他精神状态，如沮丧、冷漠、压抑和漠不关心。人们甚至对于“厌烦是否总是一种低能量、平淡的情绪状态”，或者“焦躁不安、坐立不宁是否算作厌烦”都存在争议。加拿大卡尔加里大学的Peter Toohey在其著作《厌烦：一段鲜活的历史》中将它与厌恶（一种促使我们脱离特定情景的情绪）进行了比较。 他提出：“如果厌恶保护人类免受感染，那么厌烦可能保护他们远离“感染性”的社会情景。

段落B

By asking people about their experiences of boredom, Thomas Goetz and his team at the University of Konstanz in Germany have recently identified five distinct types: indifferent, calibrating, searching, reactant and apathetic. These can be plotted on two axes – one running left to right, which measures low to high arousal, and the other from top to bottom, which measures how positive or negative the feeling is. Intriguingly, Goetz has found that while people experience all kinds of boredom, they tend to specialise in one. Of the five types, the most damaging is ‘reactant’ boredom with its explosive combination of high arousal and negative emotion. The most useful is what Goetz calls ‘indifferent’ boredom: someone isn’t engaged in anything satisfying but still feels relaxed and calm. However, it remains to be seen whether there are any character traits that predict the kind of boredom each of us might be prone to.

通过询问人们厌烦的经历，德国康斯坦茨大学的Thomas Goetz及其团队最近界定出五种不同的类型：漠不关心，摇摆不定，有所期待、应激反应和无动于衷。这些类型可以被置于两条坐标轴中：一条从左到右，表示从低到高的情感激发；另一条从上到下，表示情绪的积极或消极程度。有趣的是，Goetz发现，虽然人们会体验各种各样的厌烦情绪，但他们常常集中于其中一种。在五种类型中，最具破坏性的是“应激反应型”厌烦。它综合了高应激反应和消极情绪的爆发式力量。最有用的类型是被Goetz称为“漠不关心型”的厌烦，即某人并没有从事任何让人满足的活动，但依然感到放松和平静。然而，是否存在一些可以预示我们更加倾向于哪种厌烦类型的性格特点仍然有待研究。

段落C

Psychologist Sandi Mann at the University of Central Lancashire, UK, goes further. ‘All emotions are there for a reason, including boredom,’ she says. Mann has found that being bored makes us more creative. ‘We’re all afraid of being bored but in actual fact it can lead to all kinds of amazing things,’ she says. In experiments published last year, Mann found that people who had been made to feel bored by copying numbers out of the phone book for 15 minutes came up with more creative ideas about how to use a polystyrene cup than a control group. This article is from Laokaoya website. Mann concluded that a passive, boring activity is best for creativity because it allows the mind to wander. In fact, she goes so far as to suggest that we should seek out more boredom in our lives.

英国兰卡斯特中央大学的心理学家-Sandi Mann更进一步。她说：“所有情绪的存在都有其原因，厌烦也不例外”。Mann发现，厌烦可以使我们更具创造性。“我们都害怕处于厌烦之中，但实际上，它能导向各种各样奇妙的事情”。在去年发布的实验中，Mann发现，与对照组相比，那些被要求从电话簿中连抄15分钟数字，从而感到厌烦的实验对象文章来自老烤鸭雅思在如何使用一个聚苯乙烯杯子上提出了更加有创意的想法。Mann总结到，无聊的活动最有利于创造性的发挥，因为它让思维得以发散开来。事实上，她甚至建议我们应该在生活总寻找更多的无聊。

段落D

Psychologist John Eastwood at York University in Toronto, Canada, isn’t convinced. ‘If you are in a state of mind-wandering you are not bored,’ he says. ‘In my view, by definition boredom is an undesirable state.’ That doesn’t necessarily mean that it isn’t adaptive, he adds. ‘Pain is adaptive – if we didn’t have physical pain, bad things would happen to us. Does that mean that we should actively cause pain? No. But even if boredom has evolved to help us survive, it can still be toxic if allowed to fester.’ For Eastwood, the central feature of boredom is a failure to put our ‘attention system’ into gear. This causes an inability to focus on anything, which makes time seem to go painfully slowly. What’s more, your efforts to improve the situation can end up making you feel worse. ‘People try to connect with the world and if they are not successful there’s that frustration and irritability,’ he says. Perhaps most worryingly, says Eastwood, repeatedly failing to engage attention can lead to a state where we don’t know what to do anymore, and no longer care.

加拿大多伦多约克大学的心理学家John Eastwood并没有被说服。他说，“如果你处于思维发散的状态，那么你并没有感到无聊。在我看来，无聊从定义上来讲是种不良的状态”。这并不必然意味着它无法被适应，他补充道。“痛苦能够被适应 – 如果我们感受不到身体疼痛的话，坏事就会发生。这难道意味着我们应该主动触发疼痛吗？不。但即便无聊已经进化到可以帮助我们生存，如果任由其发展的话，仍然是有害的”。对于Eastwood来说，无聊的核心特征是无法正常运转我们的注意力系统。这导致我们无法将注意力集中在任何事情上，使得时间似乎慢的让人痛苦。此外，改善该情况的努力可能反而让你感觉更差。“人们努力与世界联系，如果失败的话，就会感到沮丧和易怒”，他说。Eastwood认为，或许最让人担心的是，集中注意力反复失败会导致一种不知道该做什么，也不再关心的状态。

段落E

Eastwood’s team is now trying to explore why the attention system fails. It’s early days but they think that at least some of it comes down to personality. Boredom proneness has been linked with a variety of traits. People who are motivated by pleasure seem to suffer particularly badly. Other personality traits, such as curiosity, are associated with a high boredom threshold. More evidence that boredom has detrimental effects comes from studies of people who are more or less prone to boredom. It seems those who bore easily face poorer prospects in education, their career and even life in general. But of course, boredom itself cannot kill – it’s the things we do to deal with it that may put us in danger. What can we do to alleviate it before it comes to that? Goetz’s group has one suggestion. Working with teenagers, they found that those who ‘approach’ a boring situation-in other words, see that it’s boring and get stuck in any way -report less boredom than those who try to avoid it by using snacks, TV or social media for distraction.

Eastwood的团队如今正在努力探索为什么注意力系统会失效。虽然为时尚早，但他们认为至少部分原因可以归结为性格。无聊倾向已经与多种性格特点联系起来。受到快乐驱动的人们似乎尤其糟糕。其他性格特点，比如好奇，则不那么容易无聊。更多无聊有害的证据来自于对那些或多或少有无聊倾向的人群的研究。大体而言，似乎那些容易无聊的人在教育、职业发展、甚至生活方面的前景更差。但当然，无聊自身并没有负面影响 – 反而是那些我们为了应对它而做的事情可能将我们置于危险之中。那么在它达到这种程度之前，我们能做些什么来缓解呢？Goetz的团队给出如下建议，跟青少年待在一起。他们发现与那些利用零食、电视或社交媒体分散注意力从而努力避免无聊的人群相比，那些“接近”无聊状态的人 – 换句话说，认为其无聊，但仍然身陷其中的人 – 更少感到无聊。

段落F

Psychologist Francoise Wemelsfelder speculates that our over-connected lifestyles might even be a new source of boredom. ‘In modern human society there is a lot of overstimulation but still a lot of problems finding meaning,’ she says. So instead of seeking yet more mental stimulation, perhaps we should leave our phones alone, and use boredom to motivate us to engage with the world in a more meaningful way.

心理学家Francoise Wemelsfelder推测，我们过度连接的生活方式可能成为新的无聊来源。“现代人类社会存在许多过度刺激，但在寻找意义方面仍然有许多问题”，她说。因此，与其寻求更多的精神刺激，或许我们应该将手机放在一边，利用无聊来促使我们跟世界建立更有意义的联系。

### [13Test1Passage3 Artificial artists 人工智能艺术家](http://www.laokaoya.com/38488.html)

第1段

The Painting Fool is one of a growing number of computer programs which, so their makers claim, possess creative talents. Classical music by an artificial composer has had audiences enraptured, and even tricked them into believing a human was behind the score. Artworks painted by a robot have sold for thousands of dollars and been hung in prestigious galleries. And software has been built which creates art that could not have been imagined by the programmer.

“绘画愚人”是越来越多拥有创造性天赋的（至少它们的创造者是这么说的）计算机程序之一。人工智能作曲家所创作的古典音乐令观众陶醉其中，甚至让他们误以为这是某个人类的杰作。机器人绘画的艺术品曾卖出上千美元的高价，并被挂在著名的艺术馆中展览。还有一些软件创造出其程序员从来都不曾想象过的艺术品。

第2段

Human beings are the only species to perform sophisticated creative acts regularly. If we can break this process down into computer code, where does that leave human creativity? ‘This is a question at the very core of humanity,’ says Geraint Wiggins, a computational creativity researcher at Goldsmiths, University of London. ‘It scares a lot of people. They are worried that it is taking something special away from what it means to be human.’

人类是唯一能够经常完成复杂而又富有创造性行为的物种。如果我们将该过程分解为计算机代码，那么这将人类的创造力置于何处呢？“这是一个关乎人性最核心内容的问题”，伦敦大学史密斯学院的一位计算机创造力研究者Geraint Wiggins说到，“它吓到了许多人。他们担心这将剥夺一些人之所以为人的特殊东西”。

第3段

To some extent, we are all familiar with computerised art. The question is: where does the work of the artist stop and the creativity of the computer begin? Consider one of the oldest machine artists, Aaron, a robot that has had paintings exhibited in London’s Tate Modern and the San Francisco Museum of Modern Art. Aaron can pick up a paintbrush and paint on canvas on its own. Impressive perhaps, but it is still little more than a tool to realise the programmer’s own creative ideas.

从某种程度上来说，我们都对计算机艺术十分熟悉。问题在于，艺术家的工作止于何处，而计算机的创造力又从何处开始？想想最古老的机器艺术家之一，Aaron。其创作的画作被陈列在伦敦泰特现代美术馆和旧金山现代艺术博物馆中。Aaron能独自拿起画笔，并在帆布上作画。或许这令人惊叹，但它仍然不过是一件实现程序员自身创造性想法的工具。

第4段

Simon Colton, the designer of the Painting Fool, is keen to make sure his creation doesn’t attract the same criticism. Unlike earlier ‘artists’ such as Aaron, the Painting Fool only needs minimal direction and can come up with its own concepts by going online for material. The software runs its own web searches and trawls through social media sites. It is now beginning to display a kind of imagination too, creating pictures from scratch. One of its original works is a series of fuzzy landscapes, depicting trees and sky. While some might say they have a mechanical look, Colton argues that such reactions arise from people’s double standards towards software-produced and human-produced art. After all, he says, consider that the Painting Fool painted the landscapes without referring to a photo. ‘If a child painted a new scene from its head, you’d say it has a certain level of imagination,’ he points out. ‘The same should be true of a machine.’ Software bugs can also lead to unexpected results. Some of the Painting Fool’s paintings of a chair came out in black and white, thanks to a technical glitch. This gives the work an eerie, ghostlike quality. Human artists like the renowned Ellsworth Kelly are lauded for limiting their colour palette – so why should computers be any different?

“绘画愚人”的设计者Simon Colton渴望确保他的作品不会引来同样的批评。不像诸如Aaron这样的早期艺术家，“绘画愚人”只需要极少的指示，并且能够通过在互联网上寻找材料提出其自己的想法。该软件运行自己的网络搜索功能，浏览社交媒体的各个页面。它现在也开始展示出某种想象力，从零创作图片。其原创作品之一是一系列描绘树木和天空的朦胧风景画。虽然一些人可能会说它们看起来有些机械，但Colton认为这种反应源自人们对于软件创作和人类创作的艺术品的双重标准。毕竟，他说，要考虑到“绘画愚人”在描绘风景的时候并没有参考照片。“如果一个孩子从自己的头脑中描绘出一副崭新的景象，你会说它有一定程度的想象力”，他指出。”同样的标准也应该适用于机器“。软件错误也能造成一些出乎意料的结果。由于技术故障，一些“绘画愚人”的作品将椅子画成了黑白色。这赋予画作一种怪诞、诡异的感觉。诸如Ellsworth Kelly这样著名的人类艺术家就因为尽量少的使用颜色而受到传颂-所以为什么计算机就应该有所不同呢？

第5段

Researchers like Colton don’t believe it is right to measure machine creativity directly to that of humans who ‘have had millennia to develop our skills’. Others, though, are fascinated by the prospect that a computer might create something as original and subtle as our best artists. So far, only one has come close. Composer David Cope invented a program called Experiments in Musical Intelligence, or EMI. Not only did EMI create compositions in Cope’s style, but also that of the most revered classical composers, including Bach, Chopin and Mozart. Audiences were moved to tears, and EMI even fooled classical music experts into thinking they were hearing genuine Bach. Not everyone was impressed however. Some, such as Wiggins, have blasted Cope’s work as pseudoscience, and condemned him for his deliberately vague explanation of how the software worked. Meanwhile, Douglas Hofstadter of Indiana University said EMI created replicas which still rely completely on the original artist’s creative impulses. When audiences found out the truth they were often outraged with Cope, and one music lover even tried to punch him. Amid such controversy, Cope destroyed EMI’s vital databases.

像Colton这样的研究者认为，将机器的创造力直接与人类相比并不正确，因为人类已经用了上千年来提升我们的技巧。然而，另一些人则痴迷于这样的前景，即计算机可能创造出与我们最好的艺术家同样富有创造力、同样巧妙的作品。到目前为止，只有一位接近这一目标。作曲家David Cope发明了一个叫做“音乐智能实验”的程序，简称为EMI。EMI不仅可以创作Cope风格的乐曲，而且还能模仿最受尊崇的古典音乐作曲家的作品，包括巴赫、肖邦和莫扎特。观众被感动至流泪。EMI甚至让古典音乐专家误以为他们听到的是真正的巴赫作品。然而，并非每个人都为此惊叹。一些人，比如Wiggins，就猛烈抨击Cope的作品是伪科学，并谴责他对于该软件的工作方式故意含糊其辞。与此同时，印第安纳大学的Douglas Hofstadter认为，EMI所创作的仿制品仍然完全依赖于原本艺术家的创作冲动。当听众发现真相时，他们经常会对Cope感到异常地愤怒。一名音乐爱好者甚至想要揍他。在这些争议之中，Cope销毁了EMI至关重要的数据库。

第6段

But why did so many people love the music, yet recoil when they discovered how it was composed? A study by computer scientist David Moffat of Glasgow Caledonian University provides a clue. He asked both expert musicians and non-experts to assess six compositions. The participants weren’t told beforehand whether the tunes were composed by humans or computers, but were asked to guess, and then rate how much they liked each one. People who thought the composer was a computer tended to dislike the piece more than those who believed it was human. This was true even among the experts, who might have been expected to be more objective in their analyses.

但是，为什么会有如此多的人喜欢音乐，却在发现它的创作方式时感到厌恶呢？格拉斯哥卡利多尼亚大学的计算机科学家David Moffat所进行的一项研究为我们提供了线索。他让专业音乐家和非专业人员评估六首作品。参与者事先未被告知这些音乐是由人类所创作的还是由计算机所创作的，但被要求进行猜测，然后根据他们对每一首的喜欢程度进行分级。认为创作者是计算机的人们通常比那些认为创作者是人类的人更加不喜欢该乐曲。甚至在专家中也是如此。而人们原本期待他们的分析会更加客观。

第7段

Where does this prejudice come from? Paul Bloom of Yale University has a suggestion: he reckons part of the pleasure we get from art stems from the creative process behind the work. This can give it an ‘irresistible essence’, says Bloom. Meanwhile, experiments by Justin Kruger of New York University have shown that people’s enjoyment of an artwork increases if they think more time and effort was needed to create it. Similarly, Colton thinks that when people experience art, they wonder what the artist might have been thinking or what the artist is trying to tell them. It seems obvious, therefore, that with computers producing art, this speculation is cut short – there’s nothing to explore. But as technology becomes increasingly complex, finding those greater depths in computer art could become possible. This is precisely why Colton asks the Painting Fool to tap into online social networks for its inspiration: hopefully this way it will choose themes that will already be meaningful to us.

这种偏见来自何处呢？耶鲁大学的Paul Bloom提出如下见解：他认为我们从艺术中获得的部分乐趣来源于其背后的创作过程。这能够赋予它一种“无法抗拒的本质”，Bloom说。与此同时，纽约大学Justin Kruger所进行的实验表明，如果人们认为创作一件艺术品所需要的时间和努力更多，那么他们就会更加欣赏它。相似的，Colton认为当人们体验艺术时，他们会好奇艺术家当时在想什么，或者尝试告诉他们什么。因此，原因似乎很明显，如果是计算机所创作的艺术，这一推测过程被缩短了-没有什么东西可供探索。但随着技术变得越来越复杂，在计算机艺术品中探索更为深入的内涵也许会成为可能。这也正是Colton让“绘画愚人”搜索社交媒体以获取灵感的原因：希望通过这种方式，它可以选择那些对我们来说已经具有意义的主题。

## 13Test2

### [13Test2Passage1 Bring cinnamon to Europe 肉桂在欧洲的历史](http://www.laokaoya.com/38565.html)

第1段

Cinnamon is a sweet, fragrant spice produced from the inner bark of trees of the genus Cinnamomum, which is native to the Indian sub-continent. It was known in biblical times, and is mentioned in several books of the Bible, both as an ingredient that was mixed with oils for anointing people’s bodies, and also as a token indicating friendship among lovers and friends. In ancient Rome, mourners attending funerals burnt cinnamon to create a pleasant scent. Most often, however, the spice found its primary use as an additive to food and drink. In the Middle Ages, Europeans who could afford the spice used it to flavour food, particularly meat, and to impress those around them with their ability to purchase an expensive condiment from the ‘exotic’ East. At a banquet, a host would offer guests a plate with various spices piled upon it as a sign of the wealth at his or her disposal. Cinnamon was also reported to have health benefits, and was thought to cure various ailments, such as indigestion.

肉桂是一种带有甜味、富有芳香的香料，产自樟属树木的内层树皮，原产地为印度次大陆。它在圣经时代就广为人知，并在圣经的多个章节被提及。它即可以作为原料跟油混在一起涂抹人们的身体，也被当作爱人和朋友之间情谊的象征。在古代罗马，参加葬礼的吊唁者会焚烧肉桂以创造怡人的气味。然而，这种香料最常见的用途还是作为食物和饮料的添加剂。在中世纪，买的起香料的欧洲人用它来给食物，尤其是肉类调味，并利用它向周围的人炫耀他们能够买得起来自奇异东方的昂贵调料。在宴会中，主人会向客人提供堆满香料的盘子，作为其可支配财富的象征。肉桂还被认为有益于健康，可以治疗各种小病，比如消化不良。

第2段

Toward the end of the Middle Ages, the European middle classes began to desire the lifestyle of the elite, including their consumption of spices. This led to a growth in demand for cinnamon and other spices. At that time, cinnamon was transported by Arab merchants, who closely guarded the secret of the source of the spice from potential rivals. They took it from India, where it was grown, on camels via an overland route to the Mediterranean. Their journey ended when they reached Alexandria. European traders sailed there to purchase their supply of cinnamon, then brought it back to Venice. The spice then travelled from that great trading city to markets all around Europe. Because the overland trade route allowed for only small quantities of the spice to reach Europe, and because Venice had a virtual monopoly of the trade, the Venetians could set the price of cinnamon exorbitantly high. These prices, coupled with the increasing demand, spurred the search for new routes to Asia by Europeans eager to take part in the spice trade.

到了中世纪末期，欧洲中产阶级家庭开始渴望上层人物的生活方式，其中就包括他们对香料的消费。这导致对肉桂和其他香料需求的增长。那时，肉桂由阿拉伯商人负责运输。他们对可能的竞争者严格保守香料来源的秘密。他们将它从印度文章来自老烤鸭雅思这一生长地带走，利用骆驼经由陆路运至地中海。他们的旅程在到达亚历山大港时终止。欧洲商人会乘船到那里购买他们所提供的肉桂，然后将它带回威尼斯。之后香料再从这一大型贸易城市运往全欧洲的市场。因为陆上贸易路线只能够运输少量香料到达欧洲，同时也因为威尼斯对该贸易的实际垄断，威尼斯人可以将肉桂的价格定的十分离谱。这样的价位，再加上日益增长的需求刺激那些急于在香料贸易中分一杯羹的欧洲人寻找到达亚洲的新路线。

第3段

Seeking the high profits promised by the cinnamon market, Portuguese traders arrived on the island of Ceylon in the Indian Ocean toward the end of the 15th century. Before Europeans arrived on the island, the state had organized the cultivation of cinnamon. People belonging to the ethnic group called the Salagama would peel the bark off young shoots of the cinnamon plant in the rainy season, when the wet bark was more pliable. During the peeling process, they curled the bark into the ‘stick’ shape still associated with the spice today. The Salagama then gave the finished product to the king as a form of tribute. When the Portuguese arrived, they needed to increase production significantly, and so enslaved many other members of the Ceylonese native population, forcing them to work in cinnamon harvesting. In 1518, the Portuguese built a fort on Ceylon, which enabled them to protect the island, so helping them to develop a monopoly in the cinnamon trade and generate very high profits. In the late 16th century, for example, they enjoyed a tenfold profit when shipping cinnamon over a journey of eight days from Ceylon to India.

追逐肉桂市场所带来的高额利润，葡萄牙商人在15世纪末时来到了印度洋的锡兰岛。在欧洲人到达该岛屿之前，其统治者已经开始有组织地栽培肉桂。被称为Salagama的少数民族会在雨季期间剥掉肉桂树嫩枝的树皮。此时潮湿的树皮更为柔韧。在剥皮过程中，他们会将树皮卷成棍子的形状。这一香料形状一直延续到今天。随后，Salagama人会将制成的产品作为贡品献给国王。在葡萄牙人到达之后，他们需要大幅提升产量，因此奴役了锡兰岛上许多其他的原住民，逼迫他们从事肉桂采集的工作。1518年，葡萄牙人在锡兰岛上建造了一座堡垒，以便他们能够守卫该岛，从而帮助他们取得肉桂贸易中的垄断地位，并产生高额利润。例如，在16世纪末期，当肉桂从锡兰经过8天的旅程到达印度之后，他们可以赚取10倍的利润。

第4段

When the Dutch arrived off the coast of southern Asia at the very beginning of the 17th century, they set their sights on displacing the Portuguese as kings of cinnamon. The Dutch allied themselves with Kandy, an inland kingdom on Ceylon. In return for payments of elephants and cinnamon, they protected the native king from the Portuguese. By 1640, the Dutch broke the 150-year Portuguese monopoly when they overran and occupied their factories. By 1658, they had permanently expelled the Portuguese from the island, thereby gaining control of the lucrative cinnamon trade.

当荷兰人在17世纪之初到达南亚海岸时，他们期待取代葡萄牙人肉桂之王的地位。荷兰人与锡兰岛上的一个内陆国家Kandy结盟。作为对方支付大象和肉桂的报酬，他们保护当地国王免受葡萄牙人的侵害。到了1640年，荷兰人推翻并占领葡萄牙人的工厂，打破了其长达150年的垄断地位。到了1658年，他们永久性地将葡萄牙人驱逐出该岛，并因此控制了一本万利的肉桂贸易。

第5段

In order to protect their hold on the market, the Dutch, like the Portuguese before them, treated the native inhabitants harshly. Because of the need to boost production and satisfy Europe’s ever-increasing appetite for cinnamon, the Dutch began to alter the harvesting practices of the Ceylonese. Over time, the supply of cinnamon trees on the island became nearly exhausted, due to systematic stripping of the bark. Eventually, the Dutch began cultivating their own cinnamon trees to supplement the diminishing number of wild trees available for use.

为了保护自己对市场的掌控，荷兰人像之前的葡萄牙人一样，对待岛上居民十分严苛。为了提升产量，满足欧洲对肉桂不断增长的胃口，荷兰人开始改变锡兰人的采集方法。随着时间的推移，岛上肉桂树的供应因为该系统性的剥皮而接近枯竭。最终，荷兰人开始培育他们自己的肉桂树以弥补可供使用的野生树木数量的减少。

第6段

Then, in 1796, the English arrived on Ceylon, thereby displacing the Dutch from their control of the cinnamon monopoly. By the middle of the 19th century, production of cinnamon reached 1,000 tons a year, after a lower grade quality of the spice became acceptable to European tastes. By that time, cinnamon was being grown in other parts of the Indian Ocean region and in the West Indies, Brazil, and Guyana. Not only was a monopoly of cinnamon becoming impossible, but the spice trade overall was diminishing in economic potential, and was eventually superseded by the rise of trade in coffee, tea, chocolate, and sugar.

随后，1796年时，英国人来到了锡兰岛，就此取代荷兰人对肉桂的垄断地位。19世纪中叶，在一种品质稍低的香料得到欧洲人口味的认可之后，肉桂产量达到每年1000吨。那时，肉桂在印度洋其他地区，以及西印度群岛、巴西和圭亚那都有种植。不仅垄断肉桂成为一件不可能的事情，而且整个香料贸易的经济潜力也在缩减，最终被咖啡、茶叶、巧克力和糖的贸易增长所超越。

### [13Test2Passage2 Oxytocin 催产素](http://www.laokaoya.com/38599.html)

段落A

Oxytocin is a chemical, a hormone produced in the pituitary gland in the brain. It was through various studies focusing on animals that scientists first became aware of the influence of oxytocin. They discovered that it helps reinforce the bonds between prairie voles, which mate for life, and triggers the motherly behaviour that sheep show towards their newborn lambs. It is also released by women in childbirth, strengthening the attachment between mother and baby. Few chemicals have as positive a reputation as oxytocin, which is sometimes referred to as the ‘love hormone’. One sniff of it can, it is claimed, make a person more trusting, empathetic, generous and cooperative. It is time, however, to revise this wholly optimistic view. A new wave of studies has shown that its effects vary greatly depending on the person and the circumstances, and it can impact on our social interactions for worse as well as for better.

催产素是一种化学物质，一种由大脑中脑垂体分泌的荷尔蒙。通过对动物的各种试验，科学家首次意识到催产素的影响。他们发现，它有助于加强草原田鼠配偶之间的亲密度，激发绵羊对新出生羊羔的母性行为。女性在生产时也会分泌该物质，加强母亲和孩子之间的联系。很少有化学物质拥有像催产素这样良好的名声。它有时被称为“爱情荷尔蒙”。据称，只要轻轻嗅一口，就可以让一个人变得更加信赖别人，更有同理心，更加慷慨，也更加富有合作精神。然而，是时候修改这一全盘乐观的观点了。新一批的研究显示，其作用会根据个人和环境的不同而出现很大差异。它可以影响我们的社交互动，即能让它变得更差，也能让它变得更好。

段落B

Oxytocin’s role in human behaviour first emerged in 2005. In a groundbreaking experiment, Markus Heinrichs and his colleagues at the University of Freiburg, Germany, asked volunteers to do an activity in which they could invest money with an anonymous person who was not guaranteed to be honest. The team found that participants who had sniffed oxytocin via a nasal spray beforehand invested more money than those who received a placebo instead. The study was the start of research into the effects of oxytocin on human interactions. ‘For eight years, it was quite a lonesome field,’ Heinrichs recalls. ‘Now, everyone is interested.’ These follow-up studies have shown that after a sniff of the hormone, people become more charitable, better at reading emotions on others’ faces and at communicating constructively in arguments. Together, the results fuelled the view that oxytocin universally enhanced the positive aspects of our social nature.

2005年，催产素在人类行为中的作用首次被发现。在一次开创性的实验中，德国弗莱堡大学的Markus Heinrichs和他的同事邀请志愿者进行一项活动。在该活动中，他们可以对一个并不保证诚信的匿名人物进行投资。该团队发现，相比于那些吸入安慰剂的人来说，那些事先通过喷鼻剂吸入催产素的参与者投的钱更多。该研究开启了对催产素如何影响人类互动的探索。“8年来，它一直都是一个无人问津的领域”，Heinrichs回忆到，“现在，每个人都兴趣盎然”。随后的研究显示，在吸入荷尔蒙之后，人们变得更加宽厚，更能从他人的面部读取情绪，更能在争论中建设性地交流意见。加在一起，这些结果催生出这样一种观念，即催产素全面加强了我们社交属性中的积极方面。

段落C

Then, after a few years, contrasting findings began to emerge. Simone Shamay-Tsoory at the University of Haifa, Israel, found that when volunteers played a competitive game, those who inhaled the hormone showed more pleasure when they beat other players, and felt more envy when others won. What’s more, administering oxytocin also has sharply contrasting outcomes depending on a person’s disposition. Jennifer Bartz from Mount Sinai School of Medicine, New York, found that it improves people’s ability to read emotions, but only if they are not very socially adept to begin with. Her research also shows that oxytocin in fact reduces cooperation in subjects who are particularly anxious or sensitive to rejection.

几年后，相反的研究结果开始出现。以色列海法大学的Simone Shamay-Tsoory发现，当志愿者进行竞争性游戏时，那些吸入荷尔蒙的人会在击败其他玩家时表现出更多的愉悦，而在其他人文章来自老烤鸭雅思获胜时则会更加嫉妒。此外，使用催产素也会因为个人性格而出现截然不同的结果。纽约西奈山医学院的Jennifer Bartz发现，它确实能够提升人们情绪的能力，但这一点只有在他们本来不怎么擅长社交的情况下才成立。她的研究还显示，催产素事实上减少了那些对拒绝特别紧张或者敏感的实验对象之间的合作。

段落D

Another discovery is that oxytocin’s effects vary depending on who we are interacting with. Studies conducted by Carolyn DeClerck of the University of Antwerp, Belgium, revealed that people who had received a dose of oxytocin actually became less cooperative when dealing with complete strangers. Meanwhile, Carsten De Dreu at the University of Amsterdam in the Netherlands discovered that volunteers given oxytocin showed favouritism: Dutch men became quicker to associate positive words with Dutch names than with foreign ones, for example. According to De Dreu, oxytocin drives people to care for those in their social circles and defend them from outside dangers. So, it appears that oxytocin strengthens biases, rather than promoting general goodwill, as was previously thought.

另外一项发现是，催产素的效果也会因我们进行互动的人的不同而出现差异。比利时安特卫普大学Carolyn DeClerck所进行的研究表明，摄入催产素的人在与完全陌生的人打交道时变得不那么配合。与此同时，荷兰阿姆斯特丹大学的Carsten De Dreu发现，被给予催产素的实验者展现出偏好行为，例如，荷兰男性会更快的将积极词汇与荷兰姓名而非外国姓名联系在一起。根据De Dreu的研究，催产素驱使人们关心那些处于他们社交圈中的人，并保护他们远离外部危险。所以，催产素似乎强化了偏见，而不是像之前所认为的那样，整体提升人们的善念。

段落E

There were signs of these subtleties from the start. Bartz has recently shown that in almost half of the existing research results, oxytocin influenced only certain individuals or in certain circumstances. Where once researchers took no notice of such findings, now a more nuanced understanding of oxytocin’s effects is propelling investigations down new lines. To Bartz, the key to understanding what the hormone does lies in pinpointing its core function rather than in cataloguing its seemingly endless effects. There are several hypotheses which are not mutually exclusive. Oxytocin could help to reduce anxiety and fear. Or it could simply motivate people to seek out social connections. She believes that oxytocin acts as a chemical spotlight that shines on social clues – a shift in posture, a flicker of the eyes, a dip in the voice – making people more attuned to their social environment. This would explain why it makes us more likely to look others in the eye and improves our ability to identify emotions. But it could also make things worse for people who are overly sensitive or prone to interpreting social cues in the worst light.

从一开始就有这些微妙之处的迹象。Bartz最近指出，在将近一半的现有研究结果中，催产素只影响了特定的个体或者只在特定的环境中发挥作用。研究者曾一度忽视了这些发现，而现在对催产素作用更为细致的理解正推动调查研究沿着一条新的路径前进。对于Bartz来说，理解荷尔蒙作用的关键在于确定其核心功能，而非归纳整理其似乎无穷无尽的影响。现在有几种并不完全互相排斥的理论假设。催产素能够帮助缓解紧张和恐惧。或者，它只是简单的推动人们去寻找社交联系。她认为，催产素就像照耀社交提示（姿势的改变，眼睛的眨动，嗓音变低）的聚光灯一样，使得人们更加适应他们的社交环境。这解释了为什么它让我们更有可能去注视别人的眼睛，提升我们识别情绪的能力。但它对于那些过度敏感，或者倾向于用最坏的方式解读社交线索的人来说，则会使情况变得更加糟糕。

段落F

Perhaps we should not be surprised that the oxytocin story has become more perplexing. The hormone is found in everything from octopuses to sheep, and its evolutionary roots stretch back half a billion years. ‘It’s a very simple and ancient molecule that has been co-opted for many different functions,’ says Sue Carter at the University of Illinois, Chicago, USA. ‘It affects primitive parts of the brain like the amygdala, so it’s going to have many effects on just about everything.’ Bartz agrees. ‘Oxytocin probably does some very basic things, but once you add our higher-order thinking and social situations, these basic processes could manifest in different ways depending on individual differences and context.’

或许，我们并不应该为催产素的故事变得更加复杂而感到吃惊。从章鱼到绵羊的万事万物中都能找到荷尔蒙的存在，它的进化源头可以追溯到50亿年前。“它是一种十分简单又古老的分子，整合了许多不同的功能”，美国芝加哥伊利诺伊大学的Sue Carter说，“它影响着像杏仁体这样大脑中最为基本的部分，所以它会对几乎所有事情产生许多影响”。Bartz同意这种说法。“催产素可能起着一些十分基本的作用，不过一旦你加入我们更为高阶的思考和社交情景，这些基本过程就会因个体差异和背景而以不同的方式显现出来”。

### [13Test2Passage3 Making the most of trends 潮流对商业策略的影响](http://www.laokaoya.com/38630.html)

第1段

Most managers can identify the major trends of the day. But in the course of conducting research in a number of industries and working directly with companies, we have discovered that managers often fail to recognize the less obvious but profound ways these trends are influencing consumers’ aspirations, attitudes, and behaviors. This is especially true of trends that managers view as peripheral to their core markets.

大多数经理人都能够识别当下的主要潮流。但是，在对一些行业进行研究和与各种公司直接合作的过程中，我们发现经理人往往无法意识到这些潮流正在以不那么明显但却意义深远的方式影响着消费者的需求，态度和行为。这对于那些经理人认为处于他们核心市场边缘的潮流来说，尤其如此。

第2段

Many ignore trends in their innovation strategies or adopt a wait-and-see approach and let competitors take the lead. At a minimum, such responses mean missed profit opportunities. At the extreme, they can jeopardize a company by ceding to rivals the opportunity to transform the industry. The purpose of this article is twofold: to spur managers to think more expansively about how trends could engender new value propositions in their core markets, and to provide some high-level advice on how to make market research and product development personnel more adept at analyzing and exploiting trends.

许多人在他们的创新战略中忽视潮流因素，或者采用一种“等等看”的策略，结果让竞争对手拔得头筹。最低限度来讲，这些应对意味着错过盈利的机会。最严重的情况下，他们将改变整个行业的机会拱手让给竞争对手，从而危及自己的公司。这篇文章带有双重目的：刺激经理人以一种更为宽泛的方式思考潮流如何在他们的核心市场中创造新的价值增长点，以及针对如何进行市场研究并使得产品开发人员更加擅长分析和利用潮流提出一些高水平的意见。

第3段

One strategy, known as ‘infuse and augment’, is to design a product or service that retains most of the attributes and functions of existing products in the category but adds others that address the needs and desires unleashed by a major trend. A case in point is the Poppy range of handbags, which the firm Coach created in response to the economic downturn of 2008. The Coach brand had been a symbol of opulence and luxury for nearly 70 years, and the most obvious reaction to the downturn would have been to lower prices. However, that would have risked cheapening the brand’s image. Instead, they initiated a consumer-research project which revealed that customers were eager to lift themselves and the country out of tough times. Using these insights, Coach launched the lower-priced Poppy handbags, which were in vibrant colors, and looked more youthful and playful than conventional Coach products. Creating the sub-brand allowed Coach to avert an across-the-board price cut. In contrast to the many companies that responded to the recession by cutting prices, Coach saw the new consumer mindset as an opportunity for innovation and renewal.

一种被称为“渗透与扩充”的战略是设计一种产品或服务。它保留同类现存产品大部分的特征与功能，但同时添加一些其他东西来满足主流趋势所释放出来的需求与渴望。这一战略的一个案例是Poppy系列手袋。它由蔻驰公司推出以应对2008年的经济衰退。在将近70年的时间里，蔻驰品牌一直都是财富与奢侈的象征，而应对经济衰退最显而易见的反应本应是降低价格。但是，那将冒着使品牌形象贬值的风险。因此，取而代之的是，他们发起了一项消费者调查项目，发现消费者十分渴望将自己和国家带出这段艰难的时期。利用这些发现，蔻驰推出低价的Poppy手袋。它们颜色鲜艳，相比于传统的蔻驰产品看起来更加年轻化和有趣。创造这一子品牌使得蔻驰可以免于降低全线产品的价格。与许多公司通过降价来应对衰退的方式相比，蔻驰将新的消费者观念看作是创新和自我更新的机遇。

第4段

A further example of this strategy was supermarket Tesco’s response to consumers’ growing concerns about the environment. With that in mind, Tesco, one of the world’s top five retailers, introduced its Greener Living program, which demonstrates the company’s commitment to protecting the environment by involving consumers in ways that produce tangible results. For example, Tesco customers can accumulate points for such activities as reusing bags, recycling cans and printer cartridges, and buying home-insulation materials. Like points earned on regular purchases, these green points can be redeemed for cash. Tesco has not abandoned its traditional retail offerings but augmented its business with these innovations, thereby infusing its value proposition with a green streak.

这一战略的另一个例子是Tesco超市面对消费者越来越关心环境所做出的应对。了解到这一情况后，Tesco，世界五大零售商之一，推出了它的“绿色生活项目”，通过一些让消费者参与其中并产生实际效果的方式，展示该公司对环境保护的承诺。例如，Tesco的顾客可以通过反复使用购物袋，回收易拉罐和打印机墨盒，购买家居隔热材料等活动来积分。跟日常购物行为所获取的积分一样，这些绿色积分可以兑换现金。Tesco并没有放弃其传统的零售服务，而是利用这些创新扩充了自己的业务，并凭此在它的价值定位中注入了一抹环保色彩。

第5段

A more radical strategy is ‘combine and transcend’. This entails combining aspects of the product’s existing value proposition with attributes addressing changes arising from a trend, to create a novel experience – one that may land the company in an entirely new market space. At first glance, spending resources to incorporate elements of a seemingly irrelevant trend into one’s core offerings sounds like it’s hardly worthwhile. But consider Nike’s move to integrate the digital revolution into its reputation for high-performance athletic footwear. In 2006, they teamed up with technology company Apple to launch Nike+, a digital sports kit comprising a sensor that attaches to the running shoe and a wireless receiver that connects to the user’s iPod. By combining Nike’s original value proposition for amateur athletes with one for digital consumers, the Nike+ sports kit and web interface moved the company from a focus on athletic apparel to a new plane of engagement with its customers.

一种更为激进的战略是“融合与超越”。这涉及将产品现存的价值定位与针对潮流中所产生变化的新特征结合在一起，从而创造出新奇的体验。这可能将公司文章来自老烤鸭雅思带入全新的市场领域。乍看起来，耗费资源将看似不相关的潮流元素融入一家公司的核心产品好像不太值得。但想想耐克的举动。它将数字革命融入到自己高性能运动鞋的声誉之中。2006年，他们与科技公司苹果合作推出了耐克+，一款数码运动设备，包括一个附加在跑鞋上的传感器和一个连接到用户iPod的无线接收装置。通过结合耐克原本针对业余运动爱好者的价值定位与针对数码消费者的价值定位，耐克+运动设备与网络界面将该公司从专注运动服饰带向了一个吸引消费者的新平台。

第6段

A third approach, known as ‘counteract and reaffirm’, involves developing products or services that stress the values traditionally associated with the category in ways that allow consumers to oppose – or at least temporarily escape from – the aspects of trends they view as undesirable. A product that accomplished this is the ME2, a video game created by Canada’s iToys. By reaffirming the toy category’s association with physical play, the ME2 counteracted some of the widely perceived negative impacts of digital gaming devices. Like other handheld games, the device featured a host of exciting interactive games, a full-color LCD screen, and advanced 3D graphics. What set it apart was that it incorporated the traditional physical component of children’s play: it contained a pedometer, which tracked and awarded points for physical activity (walking, running, biking, skateboarding, climbing stairs). The child could use the points to enhance various virtual skills needed for the video game. The ME2, introduced in mid- 2008, catered to kids’ huge desire to play video games while countering the negatives, such as associations with lack of exercise and obesity.

第三种策略被称为“抵制与重申”，即以一种允许消费者反对，或者至少暂时逃离潮流中他们所不喜欢方面的方式，开发产品与服务来强调传统上与该类别联系在一起的价值体系。实现这一策略的一个产品是ME2，一款由加拿大iToys公司所推出的电子游戏。通过重申玩具品类与体育锻炼之间的联系，ME2得以抵制一些大众普遍认可的数码游戏设备的负面影响。正如其他手持游戏一样，该设备配备全色彩液晶显示屏和先进的立体画面，以一系列令人兴奋的互动游戏为特征。与众不同的地方在于，它结合了儿童游戏的传统运动因素，内置计步器，可以记录体育活动（徒步，跑步，骑行，滑板和爬楼梯）并奖励积分。孩子可以使用积分来强化游戏所需要的各种虚拟技能。2008年年中推出的ME2既照顾到孩子玩游戏的巨大渴望，也抵制了一些负面看法，例如游戏与缺乏运动和肥胖之间的联系。

第7段

Once you have gained perspective on how trend-related changes in consumer opinions and behaviors impact on your category, you can determine which of our three innovation strategies to pursue. When your category’s basic value proposition continues to be meaningful for consumers influenced by the trend, the infuse-and-augment strategy will allow you to reinvigorate the category. If analysis reveals an increasing disparity between your category and consumers’ new focus, your innovations need to transcend the category to integrate the two worlds. Finally, if aspects of the category clash with undesired outcomes of a trend, such as associations with unhealthy lifestyles, there is an opportunity to counteract those changes by reaffirming the core values of your category.

一旦你了解到消费者观念和行为方面与潮流相关的变化如何影响你的产品序列，那么你就可以决定采用我们三项创新策略中的哪一项。当你的产品的基本价值定位对受到潮流影响的消费者仍有意义时，“渗透与扩充”战略可以使产品复兴。如果分析显示，你的产品和消费者新的关注点之间的分歧越来越大，那么创新就需要超越该品类来融合两个不同的世界。最后，如果产品的某些方面正好与潮流中令人不悦的地方相冲突，比如与不健康的生活方式发生了关联，那么有机会通过重申品类的核心价值来抵制这些变化。

第8段

Trends – technological, economic, environmental, social, or political – that affect how people perceive the world around them and shape what they expect from products and services present firms with unique opportunities for growth.

那些影响人们如何看待周围世界，并塑造他们对产品和服务具体期待的潮流-无论是技术的、经济的、环境的、社会的、还是政治的-都为公司提供增长的独特机遇。

## 13Test3

### [13Test3Passage1 The coconut palm 椰子树](http://www.laokaoya.com/38662.html)

第1段

For millennia, the coconut has been central to the lives of Polynesian and Asian peoples. In the western world, on the other hand, coconuts have always been exotic and unusual, sometimes rare. The Italian merchant traveller Marco Polo apparently saw coconuts in South Asia in the late 13th century, and among the mid-14th-century travel writings of Sir John Mandeville there is mention of ‘great Notes of Ynde’ (great Nuts of India). Today, images of palm-fringed tropical beaches are cliches in the west to sell holidays, chocolate bars, fizzy drinks and even romance.

一千年来，椰子一直都是波利尼西亚人和亚洲人生活的中心。但在西方世界，椰子一直都是一种外来的、不同寻常的物种，有时十分罕见。意大利商人旅行家马可波罗在13世纪末期的时候显然在南亚见过椰子。在14世纪中期John Mandeville的游记中也提到“印度的巨大坚果”。如今，棕榈点缀的热带沙滩的形象已经成为西方售卖假期、巧克力棒、气泡饮料、甚至爱情故事的固定手法。

第2段

Typically, we envisage coconuts as brown cannonballs that, when opened, provide sweet white flesh. But we see only part of the fruit and none of the plant from which they come. The coconut palm has a smooth, slender, grey trunk, up to 30 metres tall. This is an important source of timber for building houses, and is increasingly being used as a replacement for endangered hardwoods in the furniture construction industry. The trunk is surmounted by a rosette of leaves, each of which may be up to six metres long. The leaves have hard veins in their centres which, in many parts of the world, are used as brushes after the green part of the leaf has been stripped away. Immature coconut flowers are tightly clustered together among the leaves at the top of the trunk. The flower stems may be tapped for their sap to produce a drink, and the sap can also be reduced by boiling to produce a type of sugar used for cooking.

通常来说，我们想象中的椰子是棕色的炮弹形状，打开的时候会有香甜的白色果肉。但我们只看到这种水果的一部分，并没有看到结出它们的植物。椰子树有着光滑细长的灰色树干，可以长到30米高。它是建造房屋的重要木材来源，并越来越多的被用作家具建造行业频临灭绝的硬木的替代品。树干被莲座状的叶子包裹，每一片最长可以达到6米。叶子中心有着坚硬的脉络。在世界许多地方，当叶子的绿色部分被剥离之后，它们被当作刷子使用。尚未成熟的椰子花紧紧的聚集在树干顶部的叶子中。敲打花茎得到的汁液可以用来生产饮料，也可以通过煮沸浓缩来生产用于烹饪的某种糖。

第3段

Coconut palms produce as many as seventy fruits per year, weighing more than a kilogram each. The wall of the fruit has three layers: a waterproof outer layer, a fibrous middle layer and a hard, inner layer. The thick fibrous middle layer produces coconut fibre, ‘coir’, which has numerous uses and is particularly important in manufacturing ropes. The woody innermost layer, the shell, with its three prominent ‘eyes’, surrounds the seed. An important product obtained from the shell is charcoal, which is widely used in various industries as well as in the home as a cooking fuel. When broken in half, the shells are also used as bowls in many parts of Asia.

椰子每年可以生产70颗果实，每个重量超过1公斤。果实的外壁有三层：起防水作用的外层，纤维状的中层，以及坚硬的内层。厚实的纤维状中层出产椰子纤维，“coir”。它拥有广泛的用途，在绳索制造业尤其重要。带有三个突出的“眼睛”的木制最内层椰壳包裹着种子。从椰壳中获得的一项重要产品是木炭。它被广泛应用于各种产业，也可以作为烹饪燃料用于家中。在亚洲的许多地方，椰壳也被一分为二，当作碗来使用。

第4段

Inside the shell are the nutrients (endosperm) needed by the developing seed. Initially, the endosperm is a sweetish liquid, coconut water, which is enjoyed as a drink, but also provides the hormones which encourage other plants to grow more rapidly and produce higher yields. As the fruit matures, the coconut water gradually solidifies to form the brilliant white, fat-rich, edible flesh or meat. Dried coconut flesh, ‘copra’, is made into coconut oil and coconut milk, which are widely used in cooking in different parts of the world, as well as in cosmetics. A derivative of coconut fat, glycerine, acquired strategic importance in a quite different sphere, as Alfred Nobel introduced the world to his nitroglycerine-based invention: dynamite.

椰壳内部是发育中的种子所需要的营养物质（胚乳）。起初，胚乳是香甜的液体，即椰汁。它虽然被当作饮品享用，但也提供促进其他植物快速生长和产量提升的荷尔蒙。随着果实的成熟，椰汁逐渐凝固，形成亮白、富含脂肪、可食用的果肉。干椰子肉-“copra”-被制成椰油和椰奶。它们被广泛用于世界各地的烹饪，并添加到化妆品中。随着阿尔弗雷德·诺贝尔为世界带来其基于硝化甘油的发明-炸药，椰脂的衍生物-丙三醇-在不同领域取得战略性的重要地位。

第5段

Their biology would appear to make coconuts the great maritime voyagers and coastal colonizers of the plant world. The large, energy-rich fruits are able to float in water and tolerate salt, but cannot remain viable indefinitely; studies suggest after about 110 days at sea they are no longer able to germinate. Literally cast onto desert island shores, with little more than sand to grow in and exposed to the full glare of the tropical sun, coconut seeds are able to germinate and root. The air pocket in the seed, created as the endosperm solidifies, protects the embryo. In addition, the fibrous fruit wall that helped it to float during the voyage stores moisture that can be taken up by the roots of the coconut seedling as it starts to grow.

椰子的生物特性似乎使其成为植物世界伟大的航海者和海岸的殖民者。富含能量的巨大果实可以漂浮在水中，并且不受盐的影响。不过它并不能无限存活。研究发现，在海水中漂浮大约110天之后，它们就不再能发芽。即便被抛到荒岛，只有沙地可以生长，并暴露在威力全开的热带阳光之下，椰子种子依然可以生根发芽。种子中由于胚乳凝固而形成的气穴可以保护胚芽。此外，在航行过程中帮助它漂浮的纤维状果实壁储存了水分。这些水分可以在椰子幼苗开始生长时被根系所吸收。

第6段

There have been centuries of academic debate over the origins of the coconut. There were no coconut palms in West Africa, the Caribbean or the east coast of the Americas before the voyages of the European explorers Vasco da Gama and Columbus in the late 15th and early 16th centuries. 16th century trade and human migration patterns reveal that Arab traders and European sailors are likely to have moved coconuts from South and Southeast Asia to Africa and then across the Atlantic to the east coast of America. But the origin of coconuts discovered along the west coast of America by 16th century sailors has been the subject of centuries of discussion. Two diametrically opposed origins have been proposed: that they came from Asia, or that they were native to America. Both suggestions have problems. In Asia, there is a large degree of coconut diversity and evidence of millennia of human use – but there are no relatives growing in the wild. In America, there are close coconut relatives, but no evidence that coconuts are indigenous. These problems have led to the intriguing suggestion that coconuts originated on coral islands in the Pacific and were dispersed from there.

关于椰子起源的学术争论已经进行了几个世纪。在15世纪末和16世纪初欧洲探险者达·伽马和哥伦布航行之前，非洲西部，加勒比海或者美洲东岸都没有椰子树的痕迹。16世纪的贸易和人类迁徙模式表明，很有可能是阿拉伯商人和欧洲水手将椰子从南亚和东南亚带往非洲，然后穿过大西洋达到美洲的东海岸。但是，16世纪水手们沿着美洲西岸发现的椰子源自何处成为几个世纪以来讨论的主题。人们提出两个截然相反的起源地：它们要么来自亚洲，要么是美洲的本土植物。两种说法都有问题。在亚洲，椰子的多样性程度很高，并且有数千年人类使用的证据-但并没有野生的亲缘植物。在美洲，有跟叶子十分亲近的亲缘植物，但没有证据表明椰子是本土生长的。这些问题催生出一种有趣的推断，椰子源于太平洋中的珊瑚岛，从那里散播开来。

### [13Test3Passage2 How baby talk gives infant brans a boost 儿语在婴儿大脑发育中的作用](http://www.laokaoya.com/38683.html)

段落A

The typical way of talking to a baby – High-pitched, exaggerated and repetitious – is a source of fascination for linguists who hope to understand how ‘baby talk’ impacts on learning, Most babies start developing their hearing while still in the womb, prompting some hopeful parents to play classical music to their pregnant bellies. Some research even suggests that infants are listening to adult speech as early as 10 weeks before being born, gathering the basic building blocks of their family’s native tongue.

高音调，夸张和重复-这种对婴儿说话的典型方式对那些希望理解儿语如何影响学习的语言学家来说充满了吸引力。大多数婴儿还在母亲子宫里的时候就发育出听觉。这促使一些满怀希望的家长对着他们怀孕的腹部播放古典音乐。一些研究甚至建议婴儿在出生前10周就开始听成人说话，收集获取其家庭自身语言的基本构成要素。

段落B

Early language exposure seems to have benefits to the brain – for instance, studies suggest that babies raised in bilingual homes are better at learning how to mentally prioritize information. So how does the sweet if sometimes absurd sound of infant-directed speech influence a baby’s development? Here are some recent studies that explore the science behind baby talk.

语言的早期接触似乎对大脑有好处-例如，研究表明，双语家庭中长大的孩子在学习如何优先处理信息方面表现的更好。所以，甜蜜语言，或者说有时以婴儿为导向、毫无意义的话语如何影响婴儿的发育呢？以下是最近一些探索儿语背后科学原理的研究。

段落C

Fathers don’t use baby talk as often or in the same ways as mothers – and that’s perfectly OK, according to a new study. Mark VanDam of Washington State University at Spokane and colleagues equipped parents with recording devices and speech-recognition software to study the way they interacted with their youngsters during a normal day. ‘We found that moms do exactly what you’d expect and what’s been described many times over,’ VanDam explains. ‘But we found that dads aren’t doing the same thing. Dads didn’t raise their pitch or fundamental frequency when they talked to kids.’ Their role may be rooted in what is called the bridge hypothesis, which dates back to 1975. It suggests that fathers use less familial language to provide their children with a bridge to the kind of speech they’ll hear in public. ‘The idea is that a kid gets to practice a certain kind of speech with mom and another kind of speech with dad, so the kid then has a wider repertoire of kinds of speech to practice,’ says VanDam.

父亲并不像母亲那样经常使用儿语，其方式也有所不同。根据一项最新的研究，这完全没问题。斯波坎华盛顿州立大学的Mark Vandam和其同事为父母佩戴录音装置和语音识别软件，以研究他们日常生活中与孩子的互动方式。“我们发现，母亲的做法与你所期待的和之前已经描述过很多次的完全一致”，VanDam解释到。“但我们发现父亲并没有做相同的事情。当对孩子说话时，父亲没有提高他们的音调或基础频率”。他们的角色或许根植于所谓的“桥梁假设”。该理论可以追溯到1975年。它认为，父亲使用不那么家庭化的语言为他们的孩子提供一座桥梁，方便孩子过渡到他们在公共场所会听到的语言。“该观点认为孩子需要与母亲练习一种特定的语言，并且跟父亲练习另外一种语言，以便孩子随后可以对更广泛的说话方式进行练习”，Vandam说。

段落D

Scientists from the University of Washington and the University of Connecticut collected thousands of 30-second conversations between parents and their babies, fitting 26 children with audio-recording vests that captured language and sound during a typical eight-hour day. The study found that the more baby talk parents used, the more their youngsters began to babble. And when researchers saw the same babies at age two, they found that frequent baby talk had dramatically boosted vocabulary, regardless of socioeconomic status. ‘Those children who listened to a lot of baby talk were talking more than the babies that listened to more adult talk or standard speech,’ says Nairán Ramírez-Esparza of the University of Connecticut. ‘We also found that it really matters whether you use baby talk in a one-on-one context,’ she adds. The more parents use baby talk one-on-one, the more babies babble, and the more they babble, the more words they produce later in life.’

华盛顿大学和康涅狄格大学的科学家通过给26个孩子配备可以在一天8小时中捕捉语言和声音的录音背心，收集了数千份父母和孩子之间长度为30秒的对话。研究发现，父母文章来自老烤鸭雅思使用的儿语越多，他们的孩子咿呀学语的时间也会更多。当研究者将目光聚焦到两岁的儿童身上时，他们发现无论社会经济地位如何，频繁的儿语明显促进了词汇量的增长。“相比于那些听了更多成人谈话或者标准话语的孩子来说，那些听了许多儿语的孩子说话更多”，康涅狄格大学的Nairan Ramirez-Esparza说到。“我们还发现，是否在一对一的情况下使用儿语同样重要”，她补充到。父母在跟孩子进行一对一交流时使用的儿语越多，孩子咿呀学语的也越多。而孩子咿呀学语的越多，他们在日后的生活中使用的词汇也越多”。

段落E

Another study suggests that parents might want to pair their youngsters up so they can babble more with their own kind. Researchers from McGill University and Université du Quebec a Montreal found that babies seem to like listening to each other rather than to adults – which may be why baby talk is such a universal tool among parents. They played repeating vowel sounds made by a special synthesizing device that mimicked sounds made by either an adult woman or another baby. This way, only the impact of the auditory cues was observed. The team then measured how long each type of sound held the infants’ attention. They found that the ‘infant’ sounds held babies’ attention nearly 40 percent longer. The baby noises also induced more reactions in the listening infants, like smiling or lip moving, which approximates sound making. The team theorizes that this attraction to other infant sounds could help launch the learning process that leads to speech. ‘It may be some property of the sound that is just drawing their attention,’ says study co-author Linda Polka. ‘Or maybe they are really interested in that particular type of sound because they are starting to focus on their own ability to make sounds. We are speculating here but it might catch their attention because they recognize it as a sound they could possibly make.’

另外一项研究表明，父母可能想要让他们的孩子与同伴待在一起，以便他们可以试着说更多自己的语言。麦吉儿大学和魁北克蒙特利尔大学的研究者发现，婴儿似乎更喜欢倾听彼此而非成人的话语。这或许解释了为什么儿语是父母普遍使用的工具。他们播放由一种特殊的合成设备制作的重复元音，模仿成年女性或者另一个婴儿的声音。这样一来，被观测的就只有听觉信号的影响。团队随后测量每种声音能够吸引孩子的注意力多长时间。他们发现，婴儿的声音可以让孩子保持关注的时间长出将近40%。婴儿的声音也可以引发正在倾听的孩子们的更多反应，比如微笑或者唇动。这都近似于发声的动作。该团队推断这种被其他婴儿的声音所吸引的现象能够帮助开启通向说话的学习过程。“可能是声音的某种特质吸引了他们的注意力”，研究的合著者Linda Polka说到。“或者也有可能是它们真的对特定类型的声音感兴趣，因为他们开始关注自身的发声能力。我们在此只是推测，但这种声音可以吸引他们的注意力或许是因为他们将它当作自己也有可能发出的声响”。

段落F

In a study published in Proceedings of the National Academy of Sciences, a total of 57 babies from two slightly different age groups – seven months and eleven and a half months – were played a number of syllables from both their native language (English) and a non-native tongue (Spanish). The infants were placed in a brain-activation scanner that recorded activity in a brain region known to guide the motor movements that produce speech. The results suggest that listening to baby talk prompts infant brains to start practicing their language skills. ‘Finding activation in motor areas of the brain when infants are simply listening is significant, because it means the baby brain is engaged in trying to talk back right from the start, and suggests that seven-month-olds’ brains are already trying to figure out how to make the right movements that will produce words,’ says co-author Patricia Kuhl. Another interesting finding was that while the seven-month-olds responded to all speech sounds regardless of language, the brains of the older infants worked harder at the motor activations of non-native sounds compared to native sounds. The study may have also uncovered a process by which babies recognize differences between their native language and other tongues.

《美国科学院论文集》发表的一项研究中，研究者给来自两个不同年龄组的（7个月以及11个半月）57名婴儿播放一些来自他们母语（英语）和非母语（西班牙语）的音节。这些婴儿佩戴了脑部激活扫描仪，记录引导运动神经产生语言的大脑区域的活动。研究结果表明，听儿语会促进婴儿大脑开始练习他们的语言技能。“当婴儿仅仅在倾听的时候，发现大脑运动区域被激活十分重要，因为这意味着婴儿大脑从一开始就努力尝试做出回应，并表明七个月大的婴儿的大脑已经在尝试弄清楚如何做出产生话语的正确动作”，合著者Patricia Kuhl说到。另外一项有趣的发现是，虽然7个月大的婴儿会对所有声音做出反应，无论其属于何种语言，但相比于母语来说，年龄较大的婴儿听到非母语声音时大脑运动区域被激活的更加剧烈。该研究或许同样揭示了婴儿辨别母语和其他语言差异的过程。

### [13Test3Passage3 Whatever happened to the Harappan Civilisation 哈拉帕文明的衰落](http://www.laokaoya.com/38719.html)

段落A

The Harappan Civilisation of ancient Pakistan and India flourished 5,000 years ago, but a thousand years later their cities were abandoned. The Harappan Civilisation was a sophisticated Bronze Age society who built ‘megacities’ and traded internationally in luxury craft products, and yet seemed to have left almost no depictions of themselves. But their lack of self-imagery – at a time when the Egyptians were carving and painting representations of themselves all over their temples – is only part of the mystery.

古巴基斯坦和印度的哈拉帕文明曾在5000年前十分繁荣，但1000年之后，他们的城市便被遗弃。哈拉帕文明是一个先进的青铜时代社会。它建造起大型城市，并进行奢华工艺品的国际贸易，然而它似乎并未留下什么有关自身的描述。但这一自我形象描绘的缺失-同一时代中，埃及人在他们的庙宇各处雕刻和绘制自身的象征-仅仅是谜团的一部分。

段落B

‘There is plenty of archaeological evidence to tell us about the rise of the Harappan Civilisation, but relatively little about its fall,’ explains archaeologist Dr Cameron Petrie of the University of Cambridge. ‘As populations increased, cities were built that had great baths, craft workshops, palaces and halls laid out in distinct sectors. Houses were arranged in blocks, with wide main streets and narrow alleyways, and many had their own wells and drainage systems. It was very much a “thriving” civilisation”. Then around 2100 BC, a transformation began. Streets went uncleaned, buildings started to be abandoned, and ritual structures fell out of use. After their final demise, a millennium passed before really large-scale cities appeared once more in South Asia.

“有充足的考古证据告诉我们哈拉帕文明的崛起，但相比之下，很少有关于其衰落的证据”，剑桥大学考古学家Cameron Petrie博士解释到。“随着人口增长，他们建造起大型浴池、手工艺品作坊、宫殿和会堂分布于不同区域的城市。房屋按照街区布置，配备宽阔的主干道和狭窄的小巷。许多有着自己的水井和排水系统。它是一个十分繁荣的文明。随后，在公元前2100年左右，情况开始发生变化。街道不再干净，建筑物开始被遗弃，仪式建筑不再被使用。在它们最终衰落之后，过了一千年才有真正的大型城市再次出现在南亚地区。

段落C

Some have claimed that major glacier-fed rivers changed their course, dramatically affecting the water supply and agriculture; or that the cities could not cope with an increasing population, they exhausted their resource base, the trading economy broke down or they succumbed to invasion and conflict; and yet others that climate change caused an environmental change that affected food and water provision. ‘It is unlikely that there was a single cause for the decline of the civilisation. But the fact is, until now, we have had little solid evidence from the area for most of the key elements,’ said Petrie. ‘A lot of the archaeological debate has really only been well-argued speculation.’

一些人认为，巨大的冰川河流改变河道，对其供水和农业产生显著影响；或者城市无法应对日益增长的人口。他们耗尽资源储备，贸易经济体系崩溃，或者屈从于入侵和战争。然而，其他人认为（其衰落的原因在于）气候变化引发的环境改变影响了食物和水资源的供应。“不太可能是单一的因素引发该文明的衰落。但事实是，直到现在，我们在这一地区对一些关键要素没有什么确凿的证据”，Petrie说。“许多考古争论仅仅一些论证充分的推测而已”。

段落D

A research team led by Petrie, together with Dr Ravindanath Singh of Banaras Hindu University in India, found early in their investigations that many of the archaeological sites were not where they were supposed to be, completely altering understanding of the way that this region was inhabited in the past. When they carried out a survey of how the larger area was settled in relation to sources of water, they found inaccuracies in the published geographic locations of ancient settlements ranging from several hundred metres to many kilometres. They realised that any attempts to use the existing data were likely to be fundamentally flawed. Over the course of several seasons of fieldwork they carried out new surveys, finding an astonishing 198 settlement sites that were previously unknown.

Petrie领导的研究团队，与印度贝拿勒斯印度教大学的Ravindanath Singh一起，在他们调查的早期发现许多考古遗址并不位于他们应该在的地方。这完全文章来自老烤鸭雅思改变了人们对于该区域曾经聚居方式的理解。当他们调查完更大区域与水资源的关系之后，他们发现已经发布的古老定居点的位置存在着几百米到几千米不等的误差。他们意识到，任何使用现存数据的尝试可能从根本上就是存在缺陷的。在几个季度的实地考察中，他们进行了新的调查，令人惊讶地发现了198个之前不为人知的聚居地。

段落E

Now, research published by Dr Yama Dixit and Professor David Hodell, both from Cambridge’s Department of Earth Sciences, has provided the first definitive evidence for climate change affecting the plains of north-western India, where hundreds of Harappan sites are known to have been situated. The researchers gathered shells of Melanoides tuberculata snails from the sediments of an ancient lake and used geochemical analysis as a means of tracing the climate history of the region. ‘As today, the major source of water into the lake is likely to have been the summer monsoon,’ says Dixit. ‘But we have observed that there was an abrupt change about 4,100 years ago, when the amount of evaporation from the lake exceeded the rainfall – indicative of a drought.’ Hodell adds: ‘We estimate that the weakening of the Indian summer monsoon climate lasted about 200 years before recovering to the previous conditions, which we still see today.’

如今，一项由剑桥大学地球科学系的Yama Dixit博士和Divid Hodell教授发布的研究提供了气候变化影响西北部印度平原的切实证据。那里曾经是数百个哈拉帕定居点的所在地。研究者们在一个古代湖泊的沉积物中发现了瘤拟黑螺的贝壳，并使用地球化学的分析方法来追溯该地区的气候历史。“正如今天一样，涌入湖泊的水源似乎主要来自夏季季风”，Dixit说。“但我们观察到，4100年前曾有过一次突然的变化。当时湖泊的蒸发量超过了降水量。这预示着干旱的发生”。Hodell补充到：“我们估计，印度夏季季风气候的减弱持续了大约200年，随后才恢复到之前的、我们如今仍能看到的状况。

段落F

It has long been thought that other great Bronze Age civilisations also declined at a similar time, with a global-scale climate event being seen as the cause. While it is possible that these local-scale processes were linked, the real archaeological interest lies in understanding the impact of these larger-scale events on different environments and different populations. ‘Considering the vast area of the Harappan Civilisation with its variable weather systems,’ explains Singh, ‘it is essential that we obtain more climate data from areas close to the two great cities at Mohenjodaro and Harappa and also from the Indian Punjab.’

长久以来，人们认为其他伟大的青铜时代文明也在相似的时间里出现衰落，而全球范围的气候变化被视为罪魁祸首。虽然这些地区规模的事件可能存在联系，但真正的考古兴趣在于理解这些大规模事件对不同环境和不同人口的影响。”考虑到哈拉帕文明广大的地域，以及其多变的天气系统”，Singh解释到，“我们从摩亨佐达罗和哈拉帕这两座大型城市以及印度旁遮普周围的地区获取更多气候数据是十分必要的”。

段落G

Petrie and Singh’s team is now examining archaeological records and trying to understand details of how people led their lives in the region five millennia ago. They are analysing grains cultivated at the time, and trying to work out whether they were grown under extreme conditions of water stress, and whether they were adjusting the combinations of crops they were growing for different weather systems. They are also looking at whether the types of pottery used, and other aspects of their material culture, were distinctive to specific regions or were more similar across larger areas. This gives us insight into the types of interactive networks that the population was involved in, and whether those changed.

Petrie和Singh的团队现在正在研究考古记录，试图理解5千年前人们在该区域生活的具体细节。他们分析当时培育的谷物，尝试弄清楚它们是否生长在极端的水压情况下，以及人们是否根据不同的天气系统调整种植谷物的组合方式。他们同样研究人们所使用的陶器种类，以及其他方面的物质文化，判断它们是特定区域所独有的，还是在更大范围的区域中都十分相似。这使得我们可以深入理解人们之间的互动模式，以及它们是否发生过变化。

段落H

Petrie believes that archaeologists are in a unique position to investigate how past societies responded to environmental and climatic change. ‘By investigating responses to environmental pressures and threats, we can learn from the past to engage with the public, and the relevant governmental and administrative bodies, to be more proactive in issues such as the management and administration of water supply, the balance of urban and rural development, and the importance of preserving cultural heritage in the future.’

Petrie认为，考古学家在调查古代社会如何应对环境与气候变化方面处于独特的位置。“通过调查对环境压力和威胁的应对方式，我们可以向过去的人们学习，从而与公众、相关政府部门以及行政机关沟通，在水资源管理、城乡平衡发展、以及文化遗产保护的重要性等问题上变得更加主动。

## 13Test4

### [13Test4Passage1 Cutty Sark: the fastest sailing ship of all time 卡蒂萨克号帆船](http://www.laokaoya.com/38761.html)

第1段

The nineteenth century was a period of great technological development in Britain, and for shipping the major changes were from wind to steam power, and from wood to iron and steel.

英国在19世纪经历了巨大的技术发展。对于航运行业而言，最主要的改变是从利用风能变成了利用蒸汽能，从木材作为原材料转向使用钢铁。

第2段

The fastest commercial sailing vessels of all time were clippers, three-masted ships built to transport goods around the world, although some also took passengers. From the 1840s until 1869, when the Suez Canal opened and steam propulsion was replacing sail, clippers dominated world trade. Although many were built, only one has survived more or less intact: Cutty Sark, now on display in Greenwich, southeast London.

史上最快的商业帆船是快速帆船。这种三桅杆的船舶被建造出来在世界各地运送货物，虽然有时候也搭载乘客。从19世纪40年代到1869年（该年苏伊士运河开通，蒸汽动力取代风帆），快速帆船一直主导着世界贸易。虽然人们建造了许多船只，但只有一艘或多或少完整的保存了下来：卡蒂萨克号。它如今被陈列在伦敦东南部的格林威治。

第3段

Cutty Sark’s unusual name comes from the poem Tam O’Shanter by the Scottish poet Robert Bums. Tam, a farmer, is chased by a witch called Nannie, who is wearing a ‘cutty sark’ – an old Scottish name for a short nightdress. The witch is depicted in Cutty Sark’s figurehead – the carving of a woman typically at the front of old sailing ships. In legend, and in Bums’s poem, witches cannot cross water, so this was a rather strange choice of name for a ship.

卡蒂萨克号这一不同寻常的名字来自于苏格兰诗人Robert Bums的诗歌Tam O’Shanter。Tam是一个农夫，被一名叫做Nannie的女巫追逐。女巫穿着“卡蒂萨克”，一种古老的苏格兰短款睡衣的名字。女巫的形象被用于卡蒂萨克号的船首雕像中-帆船前面通常都使用女性雕像。传说中，以及Bums的诗歌中，女巫无法穿过水域，因此对于船只来说，选择这一名字十分奇怪。

第4段

Cutty Sark was built in Dumbarton, Scotland, in 1869, for a shipping company owned by John Willis. To carry out construction, Willis chose a new shipbuilding firm, Scott & Linton, and ensured that the contract with them put him in a very strong position. In the end, the firm was forced out of business, and the ship was finished by a competitor.

卡蒂萨克号于1869年在苏格兰的登巴顿为一家属于John Willis的航运公司建造。为了完成建造工作，Willis选择了一家新的造船厂，Scott & Linton，并确保在于他们的合同中处于优势地位。最终，这家工厂被迫破产，船只最终由其竞争者完成。

第5段

Willis’s company was active in the tea trade between China and Britain, where speed could bring shipowners both profits and prestige, so Cutty Sark was designed to make the journey more quickly than any other ship. On her maiden voyage, in 1870, she set sail from London, carrying large amounts of goods to China. She returned laden with tea, making the journey back to London in four months. However, Cutty Sark never lived up to the high expectations of her owner, as a result of bad winds and various misfortunes. On one occasion, in 1872, the ship and a rival clipper, Thermopylae, left port in China on the same day. Crossing the Indian Ocean, Cutty Sark gained a lead of over 400 miles, but then her rudder was severely damaged in stormy seas, making her impossible to steer. The ship’s crew had the daunting task of repairing the rudder at sea, and only succeeded at the second attempt. Cutty Sark reached London a week after Thermopylae.

Willis的公司在中国与英国的茶叶贸易中十分活跃。在这种贸易中，速度会给船主带来利润和声望，因此卡蒂萨克号被设计出来就是为了使其航程比其他任何船只都快。她于1870年首航，从英国出发，带着大量的物品前往中国。然后转载茶叶返航，在4个月内回到伦敦。然而，由于糟糕的风向和各种不幸，卡蒂萨克号从来都没有达到过其主人的预期。1872年，有一次卡蒂萨克号和另一艘帆船Thermopylae在同一天离开中国港口。在穿过印度洋的过程中，卡蒂萨克号领先400多英里，但随后她的船舵在波涛汹涌的大海中严重损害，使其无法操控。船员不得不在海上进行修理船舵这一令人气馁的工作，并在第二次尝试中才成功。卡蒂萨克号于Thermopylae一周后到达伦敦。

第6段

Steam ships posed a growing threat to clippers, as their speed and cargo capacity increased. In addition, the opening of the Suez Canal in 1869, the same year that Cutty Sark was launched, had a serious impact. While steam ships could make use of the quick, direct route between the Mediterranean and the Red Sea, the canal was of no use to sailing ships, which needed the much stronger winds of the oceans, and so had to sail a far greater distance. Steam ships reduced the journey time between Britain and China by approximately two months.

随着蒸汽船速度和运载量的提升，它对快速帆船的威胁越来越大。此外，1869年（卡蒂萨克号在同一年下水）苏伊士运河的开通也有很大的影响。蒸汽船可以利用这一地中海和红海之间快速直接的通道，但运河对于帆船来说却毫无用处。帆船需要大海更强的风力，因此不得不航行更远的距离。蒸汽船将英国和中国之间的航程缩短了将近两个月。

第7段

By 1878, tea traders weren’t interested in Cutty Sark, and instead, she took on the much less prestigious work of carrying any cargo between any two ports in the world. In 1880, violence aboard the ship led ultimately to the replacement of the captain with an incompetent drunkard who stole the crew’s wages. He was suspended from service, and a new captain appointed. This marked a turnaround and the beginning of the most successful period in Cutty Sark’s working life, transporting wool from Australia to Britain. One such journey took just under 12 weeks, beating every other ship sailing that year by around a month.

到了1878年，卡蒂萨克号不再受到茶叶贸易者的青睐。相反，她承担起一些不那么重要的工作，在世界任意两个港口间运送各种货物。1880年，船只上发生的暴力冲突最终导致船长被更换。他是一名能力不足，并且偷窃船员工资的醉汉。他被吊销工作，并任命了一位新船长。这意味着转机的到来。卡蒂萨克号开启了服役以来最为成功的一段时期，将羊毛从澳大利亚运送到英国。一次这样的航行只需要不到12周的时间，比当年任何其他船只都要快上大约一个月。

第8段

The ship’s next captain, Richard Woodget, was an excellent navigator, who got the best out of both his ship and his crew. As a sailing ship, Cutty Sark depended on the strong trade winds of the southern hemisphere, and Woodget took her further south than any previous captain, bringing her dangerously close to icebergs off the southern tip of South America. His gamble paid off, though, and the ship was the fastest vessel in the wool trade for ten years.

船只的下一任船长Richard Woodget是一名出色的领航员，将船舶和船员最好的潜力都激发了出来。作为一艘帆船，卡蒂萨克号文章来自老烤鸭雅思依赖南半球强烈的季风，而Woodget则将它带到了比之前任何船长都更南的地方，接近南美洲南段危险的冰川。然而，他的冒险得到了回报，在十年的时间里，卡蒂萨克号是羊毛贸易中最快的船只。

第9段

As competition from steam ships increased in the 1890s, and Cutty Sark approached the end of her life expectancy, she became less profitable. She was sold to a Portuguese firm, which renamed her Ferreira. For the next 25 years, she again carried miscellaneous cargoes around the world.

由于19世纪90年代来自蒸汽船竞争的加剧，再加上卡蒂萨克号接近其寿命的末期，她不再有那么强的盈利能力。她被卖给一家葡萄牙公司，并被重新命名为Ferreira。在接下来的25年里，她再次在世界各地运送各种各样的货物。

第10段

Badly damaged in a gale in 1922, she was put into Falmouth harbour in southwest England, for repairs. Wilfred Dowman, a retired sea captain who owned a training vessel, recognised her and tried to buy her, but without success. She returned to Portugal and was sold to another Portuguese company. Dowman was determined, however, and offered a high price: this was accepted, and the ship returned to Falmouth the following year and had her original name restored.

她在1922年的一场大风中受到严重损坏，被送到英格兰西南部的法尔茅斯港进行修理。Wilfred Dowman，一名拥有一艘训练船只的退休船长认出了她，并尝试买下来，但没有成功。她回到葡萄牙，被卖给了另外一家葡萄牙公司。然而，Dowman决心已定，并给了高价。价格被对方接受。一年后，船只回到法尔茅斯并恢复使用她最初的名字。

第11段

Dowman used Cutty Sark as a training ship, and she continued in this role after his death. When she was no longer required, in 1954, she was transferred to dry dock at Greenwich to go on public display. The ship suffered from fire in 2007, and again, less seriously, in 2014, but now Cutty Sark attracts a quarter of a million visitors a year.

Dowman将Cutty Sark当作训练船使用。而她在他死后依然扮演着这样的角色。但她在1954年不再被需要之后，她被转移到格林威治的干船坞用于公众展览。2007年，这艘船遭遇火灾，并在2014年的时候再次经历了一场不太严重的火灾。如今她每年都吸引25万游客去参观。

### [13Test4Passage2 Saving the soil 拯救土壤](http://www.laokaoya.com/38785.html)

A部分

More than a third of the world’s soil is endangered, according to a recent UN report. If we don’t slow the decline, all farmable soil could be gone in 60 years. Since soil grows 95% of our food, and sustains human life in other more surprising ways, that is a huge problem.

根据一份近期的联合国报告，世界上有超过三分之一的土壤正在遭到破坏。如果我们不能减缓这一衰退的趋势，所有可供耕种的土壤会在60年内消失。由于土壤出产95%的食物，并以其他更让人惊讶的方式维系着人们的生活，所以这是个很大的问题。

B部分

Peter Groffman, from the Cary Institute of Ecosystem Studies in New York, points out that soil scientists have been warning about the degradation of the world’s soil for decades. At the same time, our understanding of its importance to humans has grown. A single gram of healthy soil might contain 100 million bacteria, as well as other microorganisms such as viruses and fungi, living amid decomposing plants and various minerals.

来自纽约卡里生态系统研究所的Peter Groffman指出，土壤科学家在过去数十年间一直在对世界土壤的退化发出警告。与此同时，我们关于土壤对人类重要性的理解也在增加。仅仅一克健康的土壤就可能包含1个亿的细菌和其他微生物，比如病毒和真菌。它们存在于腐烂的植物和各种矿物质中。

That means soils do not just grow our food, but are the source of nearly all our existing antibiotics, and could be our best hope in the fight against antibiotic-resistant bacteria. Soil is also an ally against climate change: as microorganisms within soil digest dead animals and plants, they lock in their carbon content, holding three times the amount of carbon as does the entire atmosphere. Soils also store water, preventing flood damage: in the UK, damage to buildings, roads and bridges from floods caused by soil degradation costs ￡233 million every year.

这意味着土壤不仅仅出产我们的食物，它还是几乎所有现存抗生素的来源，并且是我们对抗耐药性细菌的最大希望。土壤也是我们对抗气候变化的盟友。由于土壤中的微生物会消化死去的动物和植物，它们可以锁住动植物体内的碳成分，储存相当于整个大气层三倍的碳含量。土壤也可以储存水分，防止洪水的破坏。在英国，由于土壤退化而引发的洪水，对建筑物、道路和桥梁每年造成2330万英镑的损失。

C部分

If the soil loses its ability to perform these functions, the human race could be in big trouble. The danger is not that the soil will disappear completely, but that the microorganisms that give it its special properties will be lost. And once this has happened, it may take the soil thousands of years to recover.

如果土壤失去发挥这些功能的能力，人们会陷入巨大的麻烦中。这种危险不在于土壤会彻底消失，而是赋予它特殊性质的微生物会消失不见。一旦这种情况发生，土壤可能需要上千年的时间才能恢复。

Agriculture is by far the biggest problem. In the wild, when plants grow they remove nutrients from the soil, but then when the plants die and decay these nutrients are returned directly to the soil. Humans tend not to return unused parts of harvested crops directly to the soil to enrich it, meaning that the soil gradually becomes less fertile. In the past we developed strategies to get around the problem, such as regularly varying the types of crops grown, or leaving fields uncultivated for a season.

到目前为止，农业是最大的问题。野外环境中，植物生长时会吸收土壤中的营养物质，但随后当植物死去腐烂，这些营养物质会直接回到土壤中。人类往往不会将收获庄稼的未使用部分直接返还给土壤来使其更加肥沃。这意味这土壤会逐渐变得贫瘠。过去，我们使用一些方法来规避这一问题，比如经常更换种植庄稼的种类，或者在一个季度中不对田地进行耕作。

D部分

But these practices became inconvenient as populations grew and agriculture had to be run on more commercial lines. A solution came in the early 20th century with the Haber-Bosch process for manufacturing ammonium nitrate. Farmers have been putting this synthetic fertiliser on their fields ever since.

但随着人口增长和农业变得更加商业化，这些操作不再可行。20世纪初期，随着制作硝铵酸的哈布二氏法的出现，人们找到了一种解决办法。自此之后，农民将这种合成化肥用于自己的田地中。

But over the past few decades, it has become clear this wasn’t such a bright idea. Chemical fertilisers can release polluting nitrous oxide into the atmosphere and excess is often washed away with the rain, releasing nitrogen into rivers. More recently, we have found that indiscriminate use of fertilisers hurts the soil itself, turning it acidic and salty, and degrading the soil they are supposed to nourish.

但在过去几十年里，人们发现这并不是一个聪明的主意。化学肥料会向大气中释放污染性的一氧化二氮。与此同时，其过量部分经常被雨水冲走，将氮元素文章来自老烤鸭雅思带入河流。最近我们发现，不加区别的使用肥料会伤害土壤自身，使其变成酸性或者含盐度过高，让那些本来应该被滋养的土壤退化。

E部分

One of the people looking for a solution to this problem is Pius Floris, who started out running a tree-care business in the Netherlands, and now advises some of the world’s top soil scientists. He came to realise that the best way to ensure his trees flourished was to take care of the soil, and has developed a cocktail of beneficial bacteria, fungi and humus [Humus: the part of the soil formed from dead plant material] to do this. Researchers at the University of Valladolid in Spain recently used this cocktail on soils destroyed by years of fertiliser overuse. When they applied Floris’s mix to the desert-like test plots, a good crop of plants emerged that were not just healthy at the surface, but had roots strong enough to pierce dirt as hard as rock. The few plants that grew in the control plots, fed with traditional fertilisers, were small and weak.

Pius Floris在荷兰经营者一家树木护理公司，他是寻求这一问题解决办法的人之一，并为一些世界顶级的土壤科学家提供建议。他意识到，确保其树木旺盛生长的最好办法是照顾好土壤。他开发了一种有益细菌、真菌和腐殖质的混合物来实现这一目的。西班牙巴利亚多利德大学的研究者们最近给一些因常年过度使用化肥而遭到破坏的土壤使用了这种混合物。当他们将Floris的混合物用在沙漠般的实验区域时，长出的植物不仅表面健康，而且还有足以穿透岩石版坚硬的泥土强壮根系。而种植在控制区域、施以传统化肥的少量植物则细小而脆弱。

F部分

However, measures like this are not enough to solve the global soil degradation problem. To assess our options on a global scale we first need an accurate picture of what types of soil are out there, and the problems they face. That’s not easy. For one thing, there is no agreed international system for classifying soil. In an attempt to unify the different approaches, the UN has created the Global Soil Map project. Researchers from nine countries are working together to create a map linked to a database that can be fed measurements from field surveys, drone surveys, satellite imagery, lab analyses and so on to provide real-time data on the state of the soil. Within the next four years, they aim to have mapped soils worldwide to a depth of 100 metres, with the results freely accessible to all.

然而，诸如此类的措施不足以解决全球性的土壤退化问题。要评估我们在全球范围内可以采取的措施，我们首先需要各种土壤类型以及它们所面临问题的准确图像。这不简单。首先，对于土壤分类而言，并没有统一的国际体系。为了整合不同的方法，联合国建立了全球土壤地图项目。来自九个国家的研究者互相合作，建立一张与数据库相连接的地图。它可以获得来自实地考察、无人机调查、卫星图像、实验室分析等方式的测量数据，以提供有关土壤状态的实时数据。在接下来的四年里，他们的目标是绘制世界范围深度在100米以内的土壤地图。所有人都可以免费使用其成果。

G部分

But this is only a first step. We need ways of presenting the problem that bring it home to governments and the wider public, says Pamela Chasek at the International Institute for Sustainable Development, in Winnipeg, Canada. ‘Most scientists don’t speak language that policy-makers can understand, and vice versa.’ Chasek and her colleagues have proposed a goal of ‘zero net land degradation’. Like the idea of carbon neutrality, it is an easily understood target that can help shape expectations and encourage action.

但这仅仅是第一步。我们需要能让政府和更广大的公众意识到这一问题的呈现方法，来自加拿大温尼伯国际可持续发展研究所的Pamela Chasek说。“大多数科学家所使用的语言并不能为政策制定者所理解，反过来也是如此”。Chasek和她的同事提出“净土地退化为零”的目标。就像碳平衡的理念一样，它是一个非常容易被理解的目标，能够帮助塑造人们的期待，并鼓励具体行动。

For soils on the brink, that may be too late. Several researchers are agitating for the immediate creation of protected zones for endangered soils. One difficulty here is defining what these areas should conserve: areas where the greatest soil diversity is present? Or areas of unspoilt soils that could act as a future benchmark of quality?

对于处在衰退边缘的土壤来说，这可能为时已晚。数名研究者呼吁立即为受损害的土壤建立保护区。其难点在于定义这些区域应该保护什么：是哪些目前呈现出最高土壤多样性的地区？还是那些尚未遭到破坏，可以作为未来质量标准的地区呢？

Whatever we do, if we want our soils to survive, we need to take action now.

无论我们做什么，如果我们想要土壤继续存活下去的话，我们需要立刻开始行动。

### [13Test4Passage3 Book Review 图书评论](http://www.laokaoya.com/38913.html)

第1段

‘Happiness is the ultimate goal because it is self-evidently good. If we are asked why happiness matters we can give no further external reason. It just obviously does matter.’ This pronouncement by Richard Layard, an economist and advocate of ‘positive psychology’, summarises the beliefs of many people today. For Layard and others like him, it is obvious that the purpose of government is to promote a state of collective well-being. The only question is how to achieve it, and here positive psychology – a supposed science that not only identifies what makes people happy but also allows their happiness to be measured – can show the way. Equipped with this science, they say, governments can secure happiness in society in a way they never could in the past.

“幸福是最终目标，因为它不证自明就是好的。如果我们被问到为什么幸福重要，我们并不需要给出更进一步的外部理由。很明显，它就是很重要“。作为经济学家和积极心理学的倡导者，Richard Layard的这一言论概括了许多当代人的想法。对于Layard和其他像他一样的人来说，很明显，政府的目的是促进一种共同幸福的状态。唯一的问题是如何实现它。而积极心理学则提供了路径。这门所谓的科学不仅界定什么会让人们感到幸福，而且还让他们的幸福可以被衡量。他们说，有了这门科学之后，政府就能够以一种前所未有的方式来确保社会幸福感。

第2段

It is an astonishingly crude and simple-minded way of thinking, and for that very reason increasingly popular. Those who think in this way are oblivious to the vast philosophical literature in which the meaning and value of happiness have been explored and questioned, and write as if nothing of any importance had been thought on the subject until it came to their attention. It was the philosopher Jeremy Bentham (1748-1832) who was more than anyone else responsible for the development of this way of thinking. For Bentham it was obvious that the human good consists of pleasure and the absence of pain. The Greek philosopher Aristotle may have identified happiness with self-realisation in the 4th century BC, and thinkers throughout the ages may have struggled to reconcile the pursuit of happiness with other human values, but for Bentham all this was mere metaphysics or fiction. Without knowing anything much of him or the school of moral theory he established – since they are by education and intellectual conviction illiterate in the history of ideas – our advocates of positive psychology follow in his tracks in rejecting as outmoded and irrelevant pretty much the entirety of ethical reflection on human happiness to date.

这种粗糙而简单的思考方式令人震惊。但正是因为这一原因，它越来越流行。那些以这种方式思考的人对丰富的哲学文献（在其中幸福的含义和价值已经被探索和拷问）视而不见，并且以一种在他们注意到该问题之前，其重要性从未被思考过的方式进行写作。哲学家Jeremy Bentham（1748-1832）比其他任何人都更应该为这种思考方式的发展负责。对于Bentham来说，很明显，人类的幸福包含愉悦以及痛苦的缺失。在公元前4世纪的时候，希腊哲学家亚里士多德或许认为幸福与自我实现有关。在其之后年代的哲学家似乎努力协调追求幸福与其他人类价值之间的关系。但对于Bentham来说，所有这些都是玄学或者虚构的东西。尽管对他自身以及他所建立的道德理论学派不甚了解（他们受到教育和确定信念的影响，对思想史一无所知），积极心理学的倡导者追随他的足迹，认为到目前为止对人类幸福的所有道德反思都都已经过时并且毫不相关。

第3段

But as William Davies notes in his recent book The Happiness Industry, the view that happiness is the only self-evident good is actually a way of limiting moral inquiry. One of the virtues of this rich, lucid and arresting book is that it places the current cult of happiness in a well-defined historical framework. Rightly, Davies begins his story with Bentham, noting that he was far more than a philosopher. Davies writes, ‘Bentham’s activities were those which we might now associate with a public sector management consultant’. In the 1790s, he wrote to the Home Office suggesting that the departments of government be linked together through a set of ‘conversation tubes’, and to the Bank of England with a design for a printing device that could produce unforgeable banknotes. He drew up plans for a ‘frigidarium’ to keep provisions such as meat, fish, fruit and vegetables fresh. His celebrated design for a prison to be known as a ‘Panopticon’, in which prisoners would be kept in solitary confinement while being visible at all times to the guards, was very nearly adopted. (Surprisingly, Davies does not discuss the fact that Bentham meant his Panopticon not just as a model prison but also as an instrument of control that could be applied to schools and factories.)

但正如Williams Davies在他最近的《幸福产业》一书中指出的那样，认为幸福是种不证自明的善实际上是一种限制道德追问的方式。这本书内容丰富，观点清晰文章来自老烤鸭雅思且非常有趣。它的优点之一在于它将当下对幸福的狂热放入定义清晰的历史框架中。Davies恰如其分的以Bentham开始他的故事，指出他不仅仅是个哲学家。Davies写到：“我们现在或许会将Bentham的行为与一名公共部门管理顾问联系在一起。”。他在18世纪90年代给内政部写信，建议政府部门通过一组“对话管道”联系在一起。他还给英格兰银行写信，附带一份印刷装置的设计。该装置可以生产无法被伪造的纸币。他起草了“冷藏室”计划，以便保持肉类、鱼类、水果和蔬菜等饮食供应的新鲜。他设计的“圆形监狱”差一点就被采纳。在这里，犯人被囚禁在单独的牢房中，并一直可以被守卫看到（令人惊艳的是，Davies并没有讨论如下事实。Bentham认为他的圆形监狱不仅可以被当作监狱的模板，而且可以作为管控工具用于学校和工厂）。

第4段

Bentham was also a pioneer of the ‘science of happiness’. If happiness is to be regarded as a science, it has to be measured, and Bentham suggested two ways in which this might be done. Viewing happiness as a complex of pleasurable sensations, he suggested that it might be quantified by measuring the human pulse rate. Alternatively, money could be used as the standard for quantification: if two different goods have the same price, it can be claimed that they produce the same quantity of pleasure in the consumer. Bentham was more attracted by the latter measure. By associating money so closely to inner experience, Davies writes, Bentham ‘set the stage for the entangling of psychological research and capitalism that would shape the business practices of the twentieth century’.

Bentham也是幸福科学的首创者。如果幸福要被当作一门科学，它就必须可以被测量。Bentham提出两种可能的测量方式。将幸福看作一系列愉悦情绪的组合，他认为它或许可以通过测量人们的脉搏来进行量化。此外，金钱可以被当作量化的标准：如果两种物品价格相同，就可以说他们为顾客带来同等数量的快乐。Bentham更喜欢后一种测量方式。Davies写到，通过将金钱与内在体验紧紧的联系在一起，Bentham“为心理研究和资本主义的结合搭建舞台。而它们将塑造整个20世纪的商业实践”。

第5段

The Happiness Industry describes how the project of a science of happiness has become integral to capitalism. We learn much that is interesting about how economic problems are being redefined and treated as psychological maladies. In addition, Davies shows how the belief that inner states of pleasure and displeasure can be objectively measured has informed management studies and advertising. The tendency of thinkers such as J B Watson, the founder of behaviourism, was that human beings could be shaped, or manipulated, by policymakers and managers. Watson had no factual basis for his view of human action. When he became president of the American Psychological Association in 1915, he ‘had never even studied a single human being’: his research had been confined to experiments on white rats. Yet Watson’s reductive model is now widely applied, with ‘behaviour change’ becoming the goal of governments: in Britain, a ‘Behaviour Insights Team’ has been established by the government to study how people can be encouraged, at minimum cost to the public purse, to live in what are considered to be socially desirable ways.

《幸福产业》描述了辛福科学如何成为资本主义不可或缺的一部分。我们会了解到许多关于经济问题如何被重新定义为心理问题并进行处理的有趣现象。此外，Dvaies还展示了愉悦或者不愉悦的内心状态可以被客观测量的想法是如何影响管理研究和广告的。诸如行为主义的创始人J B Watson这样的思想家认为，政策制定者或者管理者可以塑造或操控人类。Watson有关人类行为的观点并没有任何事实依据。当他在1915年成为美国心理协会主席的时候，他“从来都没有研究过任何一个人类个体”。他的研究局限于小白鼠实验。然而，随着“行为改变”成为政府的目标，Watson的简化模型现在被广泛使用。在英国，政府建立“行为透视团队”来研究如何用最少的公共资金来鼓励人们以一种社会认可的方式生活。

第6段

Modem industrial societies appear to need the possibility of ever-increasing happiness to motivate them in their labours. But whatever its intellectual pedigree, the idea that governments should be responsible for promoting happiness is always a threat to human freedom.

现代工业社会似乎需要幸福不断增长的可能性来激励其员工。但无论知识流派如何，政府应该负责推进幸福的观点总是构成对人类自由的威胁。

# 十四

## 14Test1

### [14Test1Passage1 The Importance of Children’s Play 孩子玩耍的重要性](http://www.laokaoya.com/38960.html)

第1段

Brick by brick, six-year-old Alice is building a magical kingdom. Imagining fairy-tale turrets and fire-breathing dragons, wicked witches and gallant heroes, she’s creating an enchanting world. Although she isn’t aware of it, this fantasy is helping her take her first steps towards her capacity for creativity and so it will have important repercussions in her adult life.

一块积木又一块积木，六岁的Alice正在建造一个魔法王国。想象着童话故事中的塔楼和会喷火的巨龙，邪恶的巫师和勇敢的英雄。她正创建一个魅力十足的世界。虽然她自己并没有意识到，但这种幻想正帮助她向着创造力迈出最初的几步，从而对她成年之后的生活产生重要影响。

第2段

Minutes later, Alice has abandoned the kingdom in favour of playing schools with her younger brother. When she bosses him around as his ‘teacher’, she’s practising how to regulate her emotions through pretence. Later on, when they tire of this and settle down with a board game, she’s learning about the need to follow rules and take turns with a partner.

几分钟后，Alice放弃了她的王国，开始跟她的弟弟玩假装上学的游戏。当她扮演老师，指挥她的弟弟团团转的时候，她在通过这种行为锻炼如何管理她的情绪。随后，他们玩腻了角色扮演，开始坐下来玩桌游。这时候，她在了解遵守规则以及与同伴轮流出手的需要。

第3段

‘Play in all its rich variety is one of the highest achievements of the human species,’ says Dr David Whitebread from the Faculty of Education at the University of Cambridge, UK. ‘It underpins how we develop as intellectual, problem-solving adults and is crucial to our success as a highly adaptable species.’

“形式极其丰富的游戏是人类最伟大的成就之一”，英国剑桥大学教育学院的David Whitebread博士说。“它为我们成长为有智慧，具备问题解决能力的成年人奠定基础，也对我们作为一个具备高度适应能力的物种的成功至关重要”。

第4段

Recognising the importance of play is not new: over two millennia ago, the Greek philosopher Plato extolled its virtues as a means of developing skills for adult life, and ideas about play-based learning have been developing since the 19th century.

认识到游戏的重要性并不是什么新鲜事：两千多年前，希腊哲学家文章来自老烤鸭雅思柏拉图就赞美它的好处，认为它是为成年生活开发各项技能的手段。而寓教于乐的观念从19世纪就开始出现。

第5段

But we live in changing times, and Whitebread is mindful of a worldwide decline in play, pointing out that over half the people in the world now live in cities. ‘The opportunities for free play, which I experienced almost every day of my childhood, are becoming increasingly scarce,’ he says. Outdoor play is curtailed by perceptions of risk to do with traffic, as well as parents’ increased wish to protect their children from being the victims of crime, and by the emphasis on ‘earlier is better’ which is leading to greater competition in academic learning and schools.

但我们生活在充满变化的时代。Whitebread注意到世界范围内游戏重要性的下降，指出世界上有超过一半的人口如今生活在城市之中。“自由玩耍的机会正变得越来越稀少，而我的童年则几乎每天都可以体验”，他说。户外嬉戏由于以下原因受到抑制：人们对交通风险的担忧，父母逐渐攀升、保护孩子不受犯罪侵害的希望，以及对越早越好观念的强调（这导致学术学习和学校中出现更为激烈的竞争）。

第6段

International bodies like the United Nations and the European Union have begun to develop policies concerned with children’s right to play, and to consider implications for leisure facilities and educational programmes. But what they often lack is the evidence to base policies on.

联合国与欧盟等国际机构已经开始着手制定一些关注儿童游戏权利的政策，并且考虑这对休闲设施和教育项目的影响。但他们所欠缺的是制定政策的依据。

第7段

‘The type of play we are interested in is child-initiated, spontaneous and unpredictable – but, as soon as you ask a five-year-old “to play”, then you as the researcher have intervened,’ explains Dr Sara Baker. ‘And we want to know what the long-term impact of play is. It’s a real challenge.’

“我们感兴趣的游戏类型是儿童自己创造的、自发进行的和不可预测的-但是，只要你让一个5岁的孩子玩耍，那么你作为研究人员就已经介入其中”，Sara Baker博士解释道。“我们想要了解的是玩耍的长期影响。这才是真正的挑战”。

第8段

Dr Jenny Gibson agrees, pointing out that although some of the steps in the puzzle of how and why play is important have been looked at, there is very little data on the impact it has on the child’s later life.

Jenny Gibson博士同意以上观点并指出，虽然在游戏有多么重要重要、以及为什么如此重要的这个谜题中，有一些阶段已经得到了研究，但在它对孩子日后生活的影响上，数据仍然十分稀少。

第9段

Now, thanks to the university’s new Centre for Research on Play in Education, Development and Learning (PEDAL), Whitebread, Baker, Gibson and a team of researchers hope to provide evidence on the role played by play in how a child develops.

现在，由于这所大学新成立了“教育发展学习型游戏研究中心，Whitebread, Baker, Gibson这些人和一支研究团队希望能够为游戏在儿童发展过程中所扮演的角色提供相关证据。

第10段

‘A strong possibility is that play supports the early development of children’s self-control,’ explains Baker. ‘This is our ability to develop awareness of our own thinking processes — it influences how effectively we go about undertaking challenging activities.’

“很有可能，游戏推动了儿童自我控制能力的早期发展”，Baker解释道。“这种能力使我们意识到自身的思考过程 – 它影响着我们从事有挑战活动的效果”。

第11段

In a study carried out by Baker with toddlers and young pre-schoolers, she found that children with greater self-control solved problems more quickly when exploring an unfamiliar set-up requiring scientific reasoning. ‘This sort of evidence makes us think that giving children the chance to play will make them more successful problem-solvers in the long run.’

Baker在一项针对幼儿和学龄前儿童的研究中发现，具有更强自控能力的儿童在探索需要科学分析的陌生领域时，能够更加快速的解决问题。“此类证据让我们认为，从长远来看，给予儿童玩耍的机会会让他们成为更加成功的问题解决者”。

第12段

If playful experiences do facilitate this aspect of development, say the researchers, it could be extremely significant for educational practices, because the ability to self-regulate has been shown to be a key predictor of academic performance.

研究者们认为，如果玩耍经历确实能够促进这方面的发展，那么它对于教育实践就至关重要，因为已有证据证明，自控能力是学习成绩好坏的关键因素。

第13段

Gibson adds: ‘Playful behaviour is also an important indicator of healthy social and emotional development. In my previous research, I investigated how observing children at play can give us important clues about their well-being and can even be useful in the diagnosis of neurodevelopmental disorders like autism.’

Gibson补充到：“玩耍行为也是社交和情感能力正常发展的重要指示。在之前的研究中，我曾调查过，观察玩耍中的儿童可以为我们提供他们健康状况的重要线索，甚至对诊断诸如自闭症这样的神经发展紊乱有所帮助”。

第14段

Whitebread’s recent research has involved developing a play-based approach to supporting children’s writing. ‘Many primary school children find writing difficult, but we showed in a previous study that a playful stimulus was far more effective than an instructional one.’ Children wrote longer and better-structured stories when they first played with dolls representing characters in the story. In the latest study, children first created their story with Lego\*, with similar results. ‘Many teachers commented that they had always previously had children saying they didn’t know what to write about. With the Lego building, however, not a single child said this through the whole year of the project.’

Whitebread最近的研究包括开发一种基于玩耍的方法来促进儿童写作能力的提升。“许多小学生觉得写作很难，但我们之前的一项研究显示，游戏性的刺激要比教育性的刺激有效很多”。当孩子第一次跟代表故事中角色的玩偶玩耍时，他们就能写出更长、结构更好的故事来。在最新的研究中，首次利用乐高玩具创作故事的儿童也展现出相同的结果。“许多老师表示，他们之前总是有孩子说自己不知道该写什么。但用了搭建乐高积木的方法之后，整整一年都没有任何一个孩子再这么说过了”。

第15段

Whitebread, who directs PEDAL, trained as a primary school teacher in the early 1970s, when, as he describes, ‘the teaching of young children was largely a quiet backwater, untroubled by any serious intellectual debate or controversy.’ Now, the landscape is very different, with hotly debated topics such as school starting age.

PEDAL中心的主任Whitebread在20世纪70年代早期接受过小学教师的培训。他这样描述当时的情况：“幼儿教育如同一潭死水一般， 不会受到任何严肃学术讨论或者争议的影响”。现在的情况完全不同，出现了诸如上学年龄这样备受争论的问题。

第16段

‘Somehow the importance of play has been lost in recent decades. It’s regarded as something trivial, or even as something negative that contrasts with “work”. Let’s not lose sight of its benefits, and the fundamental contributions it makes to human achievements in the arts, sciences and technology. Let’s make sure children have a rich diet of play experiences.’

“不知为何，游戏玩耍在最近几十年变得不再重要。它被当成无关紧要的事情，或者与‘努力’相反的负面行为。但我们不可忽视其有益的地方。它对人类在艺术、科学和技术方面所取得的成就有着重要贡献。让我们确保孩子拥有丰富的玩耍体验大餐吧”。

### [14Test1Passage2 The growth of bike-sharing schemes around the world 共享单车](http://www.laokaoya.com/39016.html)

段落A

The original idea for an urban bike-sharing scheme dates back to a summer’s day in Amsterdam in 1965. Provo, the organisation that came up with the idea, was a group of Dutch activists who wanted to change society. They believed the scheme, which was known as the Witte Fietsenplan, was an answer to the perceived threats of air pollution and consumerism. In the centre of Amsterdam, they painted a small number of used bikes white. They also distributed leaflets describing the dangers of cars and inviting people to use the white bikes. The bikes were then left unlocked at various locations around the city, to be used by anyone in need of transport.

城市共享单车计划的最初想法可以追溯到1965年阿姆斯特丹的某个夏日。提出该想法的组织，Provo，是一群想要改变社会的荷兰积极行动分子。他们认为，被称作“Witte Fietsenplan”的计划是应对空气污染和消费主义威胁的答案。在阿姆斯特丹市中心，他们将一些旧自行车喷成白色。他们还分发小册子，描绘汽车的危害，并邀请人们使用白色自行车。随后，没有上锁的自行车被留在城市中的各个地点，可以被任何需要交通工具的人使用。

段落B

Luud Schimmelpennink, a Dutch industrial engineer who still lives and cycles in Amsterdam, was heavily involved in the original scheme. He recalls how the scheme succeeded in attracting a great deal of attention – particularly when it came to publicising Provo’s aims – but struggled to get off the ground. The police were opposed to Provo’s initiatives and almost as soon as the white bikes were distributed around the city, they removed them. However, for Schimmelpennink and for bike-sharing schemes in general, this was just the beginning. ‘The first Witte Fietsenplan was just a symbolic thing,’ he says. ‘We painted a few bikes white, that was all. Things got more serious when I became a member of the Amsterdam city council two years later.’

Luud Schimmelpennink，一名仍然居住在阿姆斯特丹并经常骑行的荷兰工业工程师，曾紧密参与到最初的计划中。他回忆起这项计划如何成功吸引到大量的注意力 – 尤其是在宣传Provo的目的方面- 但未能真正起飞。警察反对Provo的方案。白色自行车刚被放在城市各处，他们就会把车清走。然而，对于Schimmelpennink和广义上的共享单车计划而言，这还仅仅是个开始。“第一次的Witte Fietsenplan仅仅是象征意义的事情”，他说。“我们将一些自行车喷成白色，仅此而已。两年后，当我成为阿姆斯特丹市议会成员时，事情才变得更加认真起来”。

段落C

Schimmelpennink seized this opportunity to present a more elaborate Witte Fietsenplan to the city council. ‘My idea was that the municipality of Amsterdam would distribute 10,000 white bikes over the city, for everyone to use,’ he explains. ‘I made serious calculations. It turned out that a white bicycle – per person, per kilometre – would cost the municipality only 10% of what it contributed to public transport per person per kilometre.’ Nevertheless, the council unanimously rejected the plan. ‘They said that the bicycle belongs to the past. They saw a glorious future for the car,’ says Schimmelpennink. But he was not in the least discouraged.

Schimmelpennink抓住这次机会向市议会提交了一份更为详细周密的Witte Fietsenplan计划。“我的想法是，在阿姆斯特丹市内投放10000辆白色自行车供所有人使用”，他解释到。“我进行了严密的计算。结果显示，一辆白色自行车 – 每人，每公里 – 仅仅需要当局投入它在每人每公里公共交通上花费的10%”。然而，议会一致否决了这一计划。“他们说，自行车属于过去，他们看到汽车光辉灿烂的未来”，Schimmelpennink说。但他没有丝毫气馁。

段落D

Schimmelpennink never stopped believing in bike-sharing, and in the mid-90s, two Danes asked for his help to set up a system in Copenhagen. The result was the world’s first large-scale bike-share programme. It worked on a deposit: ‘You dropped a coin in the bike and when you returned it, you got your money back.’ After setting up the Danish system, Schimmelpennink decided to try his luck again in the Netherlands – and this time he succeeded in arousing the interest of the Dutch Ministry of Transport. ‘Times had changed,’ he recalls. ‘People had become more environmentally conscious, and the Danish experiment had proved that bike-sharing was a real possibility.’ A new Witte Fietsenplan was launched in 1999 in Amsterdam. However, riding a white bike was no longer free; it cost one guilder per trip and payment was made with a chip card developed by the Dutch bank Postbank. Schimmelpennink designed conspicuous, sturdy white bikes locked in special racks which could be opened with the chip card – the plan started with 250 bikes, distributed over five stations.

Schimmelpennink从未放弃过对共享单车的信念。90年代中期，两个丹麦人请求他帮忙在哥本哈根建立一个这样的系统。结果出现了世界上第一个大型的共享单车项目。它采用押金的方式运行：“你向自行车投入一枚硬币，归还的时候把钱拿回来”。在建立丹麦系统之后，Schimmelpennink决定再在荷兰试试自己的运气。这一次，他成功引起了荷兰交通运输部的兴趣。“时代变了”，他回忆到。“人们对环境更加关心，并且丹麦的实验也证明共享单车计划确实可行”。1999年，一项新的Witte Fietsenplan在阿姆斯特丹推行。然而，骑行白色自行车不再是免费的了。每次旅程的费用为一盾，通过荷兰银行Postbank开发的芯片卡付费。Schimmelpennink设计醒目坚固的白色自行车。它们锁在用芯片卡可以打开的，特殊的车架上 – 计划开始时有250辆自行车，分布在5个站点。

段落E

Theo Molenaar, who was a system designer for the project, worked alongside Schimmelpennink. ‘I remember when we were testing the bike racks, he announced that he had already designed better ones. But of course, we had to go through with the ones we had.’ The system, however, was prone to vandalism and theft. ‘After every weekend there would always be a couple of bikes missing,’ Molenaar says. ‘I really have no idea what people did with them, because they could instantly be recognised as white bikes.’ But the biggest blow came when Postbank decided to abolish the chip card, because it wasn’t profitable. ‘That chip card was pivotal to the system,’ Molenaar says. ‘To continue the project we would have needed to set up another system, but the business partner had lost interest.’

Theo Molenaar，该项目的系统设计师，与Schimmelpennink并肩工作。“我记得我们在测试车架的时候，他宣布他已经设计出更好的产品。但当然，我们不得不继续使用已有的那些”。然而，该系统很容易受到破坏并被偷窃。“每个周末过后，总是会有几辆自行车丢失”，Molenaar说。“我实在想不通人们拿它们做什么，因为它们立刻就会被认出是白色自行车啊”。但最大的打击是Postbank决定放弃芯片卡，因为它无法盈利。“芯片卡是该系统的核心”，Molenaar说。“要想把项目继续下去，我们就需要设立另一套系统，但商业伙伴已经失去了兴趣”。

段落F

Schimmelpennink was disappointed, but – characteristically – not for long. In 2002 he got a call from the French advertising corporation JC Decaux, who wanted to set up his bike-sharing scheme in Vienna. ‘That went really well. After Vienna, they set up a system in Lyon. Then in 2007, Paris followed. That was a decisive moment in the history of bike-sharing.’ The huge and unexpected success of the Parisian bike-sharing programme, which now boasts more than 20,000 bicycles, inspired cities all over the world to set up their own schemes, all modelled on Schimmelpennink’s. ‘It’s wonderful that this happened,’ he says. ‘But financially I didn’t really benefit from it, because I never filed for a patent.’

Schimmelpennik很失望，但性格决定了这种失望并没有持续很长时间。2002年，他接到法国广告公司JC Decaux的电话。该公司文章来自老烤鸭雅思想要在维也纳设立一套他的共享单车系统。“该项目运行的十分顺利。维也纳之后，他们又在里昂建了了一套系统。随后，2007年，巴黎跟进。这在共享单车的历史上是决定性的一刻”。巴黎共享单车项目现在拥有20000多辆自行车。其巨大而又出人意料的成功激发全世界的城市纷纷建立他们自己的项目。而所有这些项目都以Schimmelpennink的为模板。“发生这一切真的太好了”，他说。“但从经济角度来说，我并没有从中获益，因为我一直都没有申请专利”。

段落G

In Amsterdam today, 38% of all trips are made by bike and, along with Copenhagen, it is regarded as one of the two most cycle-friendly capitals in the world – but the city never got another Witte Fietsenplan. Molenaar believes this may be because everybody in Amsterdam already has a bike. Schimmelpennink, however, cannot see that this changes Amsterdam’s need for a bike-sharing scheme. ‘People who travel on the underground don’t carry their bikes around. But often they need additional transport to reach their final destination.’ Although he thinks it is strange that a city like Amsterdam does not have a successful bike-sharing scheme, he is optimistic about the future. ‘In the ’60s we didn’t stand a chance because people were prepared to give their lives to keep cars in the city. But that mentality has totally changed. Today everybody longs for cities that are not dominated by cars.’

如今阿姆斯特丹有38%的旅程都是通过自行车完成的。与哥本哈根一起，它被认为是世界上对骑行最为友好的两个首都之一 – 但该城市再未设立过另一个Witte Flietsenpan项目。Molenaar认为，这可能是因为阿姆斯特丹的每个居民都已经拥有自己的自行车。然而，Schimmelpennink并不认为这改变了阿姆斯特丹对共享单车项目的需求。“乘地铁出行的人无法抗着自己的自行车走来走去。但他们往往需要额外的交通工具才能抵达自己最终的目的地”。虽然他认为像阿姆斯特丹这样的城市没有成功的共享单车项目很奇怪，但他对未来十分乐观。“60年代的时候，我们没有丝毫机会，因为人们下定决心要在城市中保留汽车。但那种想法已经完全改变。今天每个人都期望城市不再被汽车所主宰”。

### [14Test1Passage3 Motivational factors and the hospitality industry](http://www.laokaoya.com/39046.html)

第1段

A critical ingredient in the success of hotels is developing and maintaining superior performance from their employees. How is that accomplished? What Human Resource Management (HRM) practices should organizations invest in to acquire and retain great employees?

酒店要想获得成功，一个至关重要的因素在于提升并维持其员工的卓越表现。要如何才能达成这一目标呢？组织机构应该在人力资源管理方面投入些什么才能招到并留住优秀的员工呢？

第2段

Some hotels aim to provide superior working conditions for their employees. The idea originated from workplaces – usually in the non-service sector — that emphasized fun and enjoyment as part of work-life balance. By contrast, the service sector, and more specifically hotels, has traditionally not extended these practices to address basic employee needs, such as good working conditions.

一些酒店试图为其员工提供更好的工作条件。这一想法源自一些强调乐趣与享受以保持工作和生活平衡的工作场所。它们通常都位于非服务行业。相比之下，服务行业，更确切的说是酒店，传统上并没有将这些做法进行延伸以满足员工的基本需求，例如良好的工作条件。

第3段

Pfeffer (1994) emphasizes that in order to succeed in a global business environment, organizations must make investment in Human Resource Management (HRM) to allow them to acquire employees who possess better skills and capabilities than their competitors. This investment will be to their competitive advantage. Despite this recognition of the importance of employee development, the hospitality industry has historically been dominated by underdeveloped HR practices (Lucas, 2002).

Pfeffer（1994）强调，为了在全球商业环境中取得成功，组织机构必须在人力资源方面进行投资，从而招到比他们竞争对手拥有更好技能和能力的员工。这项投资会成为他们的竞争优势。尽管意识到员工提升的重要性，但不尽如人意的人力资源实践一直都是酒店行业的主流（Lucas 2002）。

第4段

Lucas also points out that ‘the substance of HRM practices does not appear to be designed to foster constructive relations with employees or to represent a managerial approach that enables developing and drawing out the full potential of people, even though employees may be broadly satisfied with many aspects of their work’ (Lucas, 2002). In addition, or maybe as a result, high employee turnover has been a recurring problem throughout the hospitality industry. Among the many cited reasons are low compensation, inadequate benefits, poor working conditions and compromised employee morale and attitudes (Maroudas et al., 2008).

Lucas同时指出，“人力资源管理实践的内容被设计出来似乎并不是为了培养员工之间建设性的关系，或者呈现一种能够提升并挖掘人们所有潜能的管理方法，即使大体上来看，员工已经对工作的许多方面表示满意”（Lucas, 2002)。此外，或许正因如此，较高的员工流动率一直都是整个酒店行业反复出现的问题。之前被提及的许多原因包括：低薪酬，少福利，恶劣的工作环境，折衷的员工士气与态度（Maroudas et al., 2008）。

第5段

Ng and Sorensen (2008) demonstrated that when managers provide recognition to employees, motivate employees to work together, and remove obstacles preventing effective performance, employees feel more obligated to stay with the company. This was succinctly summarized by Michel et al. (2013): ‘[P]roviding support to employees gives them the confidence to perform their jobs better and the motivation to stay with the organization.’ Hospitality organizations can therefore enhance employee motivation and retention through the development and improvement of their working conditions. These conditions are inherently linked to the working environment.

Ng与Sorensen（2008）证实，当管理者认可员工，动员员工互相合作，并移除阻碍高效工作的障碍时，员工会感到更有义务留在这家公司。这一点由Michel et al. (2013)言简意赅的总结出来：“为员工提供支持给予了他们更好履行工作的自信以及留在该组织机构的动力”。因此，酒店行业可以通过提升改善员工的工作条件来加强他们的工作动力和稳定性。这些条件天然的与工作环境联系在一起。

第6段

While it seems likely that employees’ reactions to their job characteristics could be affected by a predisposition to view their work environment negatively, no evidence exists to support this hypothesis (Spector et al., 2000). However, given the opportunity, many people will find something to complain about in relation to their workplace (Poulston, 2009). There is a strong link between the perceptions of employees and particular factors of their work environment that are separate from the work itself, including company policies, salary and vacations.

虽然似乎员工对他们工作特点的反应会受到以消极态度看待自己工作环境的倾向的影响，但并没有证据支持这种假设（Spector et al., 2000）。然而，只要有机会，许多人都能找到工作环境的某些方面进行抱怨（Poulston, 2009）。在员工感受与其工作内容本身之外的工作条件（尤其是公司政策，薪水和休假）之间存在着很强的相关性。

第7段

Such conditions are particularly troubling for the luxury hotel market, where high-quality service, requiring a sophisticated approach to HRM, is recognized as a critical source of competitive advantage (Maroudas et al., 2008). In a real sense, the services of hotel employees represent their industry (Schneider and Bowen, 1993). This representation has commonly been limited to guest experiences. This suggests that there has been a dichotomy between the guest environment provided in luxury hotels and the working conditions of their employees.

这样的情况对于高端酒店市场来说尤其麻烦。在这个领域中，需要借助一套成熟完善的HRM方法来实现的高品质服务，被认为是竞争优势的一个核心来源（Maroudas et al., 2008）。从真正意义上来讲，酒店员工的服务就代表着他们的行业（Scheneider and Bowen, 1993）。这种代表性通常仅限于顾客体验。这意味着高端酒店所提供的顾客环境与他们员工的工作环境之间存在着天壤之别。

第8段

It is therefore essential for hotel management to develop HRM practices that enable them to inspire and retain competent employees. This requires an understanding of what motivates employees at different levels of management and different stages of their careers (Enz and Siguaw, 2000). This implies that it is beneficial for hotel managers to understand what practices are most favorable to increase employee satisfaction and retention.

因此，酒店管理人员提升人力资源操作从而激励并留住高水平的员工十分有必要。这就需要理解在不同的管理层级与不同的职业发展阶段哪些东西能够激励员工（Enz and Siguaw, 2000）。这意味着，对于酒店管理人员来说，了解哪些操作能够最有效地提升员工的满意度和留职率很有好处。

第9段

Herzberg (1966) proposes that people have two major types of needs, the first being extrinsic motivation factors relating to the context in which work is performed, rather than the work itself. These include working conditions and job security. When these factors are unfavorable, job dissatisfaction may result. Significantly, though, just fulfilling these needs does not result in satisfaction, but only in the reduction of dissatisfaction (Maroudas et al., 2008).

Herzberg（1996）提出，人们有两大类别的需求，第一种是与工作环境相关，而非与工作自身相关的外在激励因素。这包括工作条件与职业安全感。当这些因素不利时，可能会导致人们对工作不满。但是，仅仅满足这些需要并不会导致对工作满意，而是只能减少对工作的不满。

第10段

Employees also have intrinsic motivation needs or motivators, which include such factors as achievement and recognition. Unlike extrinsic factors, motivator factors may ideally result in job satisfaction (Maroudas et al., 2008). Herzberg’s (1966) theory discusses the need for a ‘balance’ of these two types of needs.

员工也有内在的激励需求或者驱动力。这包括成就和认同等因素。不像外在因素，激励因素文章来自老烤鸭雅思可能能够完美地提升工作满意度（Maroundas et al., 2008）。Herzberg（1966）的理论探讨了在这两种需求之间寻找平衡的必要性。

第11段

The impact of fun as a motivating factor at work has also been explored. For example, Tews, Michel and Stafford (2013) conducted a study focusing on staff from a chain of themed restaurants in the United States, It was found that fun activities had a favorable impact on performance and manager support for fun had a favorable impact in reducing turnover. Their findings support the view that fun may indeed have a beneficial effect, but the framing of that fun must be carefully aligned with both organizational goals and employee characteristics. ‘Managers must learn how to achieve the delicate balance of allowing employees the freedom to enjoy themselves at work while simultaneously maintaining high levels of performance’ (Tews et al., 2013).

有趣作为激励因素对工作的影响也已经有人探索过。例如，Tews, Michel和Stafford（2013）开展过一项研究，专门关注美国一个连锁主题餐厅中的员工。结果发现，有趣的活动对员工表现有着积极的影响，管理人员对趣味的支持对减少流动率也有着积极的影响。他们的发现支持了如下观点：有趣可能确实拥有有益的影响，但必须认真设计趣味的边际框架，以与组织机构的目标和员工的特点相一致。“管理人员必须学会如何在给予员工一定的自由让他们可以在工作中好好享受，同时又让他们能够保持高水平的表现之间取得平衡”。

第12段

Deery (2008) has recommended several actions that can be adopted at the organizational level to retain good staff as well as assist in balancing work and family life. Those particularly appropriate to the hospitality industry include allowing adequate breaks during the working day, staff functions that involve families, and providing health and well-being opportunities.

Deery（2008）推荐了几种能够在组织机构层面采取的措施，以留住优秀员工并帮助实现工作与家庭生活之间的平衡。那些尤其适合酒店行业的措施包括：工作日期间允许适当的休息，让家人也参与到员工活动中，以及提供体检的机会。

## 14Test2

### [14Test2Passage1 Alexander Henderson (1831-1913)](http://www.laokaoya.com/39078.html)

第1段

Alexander Henderson was born in Scotland in 1831 and was the son of a successful merchant. His grandfather, also called Alexander, had founded the family business, and later became the first chairman of the National Bank of Scotland. The family had extensive landholdings in Scotland. Besides its residence in Edinburgh, it owned Press Estate, 650 acres of farmland about 35 miles southeast of the city. The family often stayed at Press Castle, the large mansion on the northern edge of the property, and Alexander spent much of his childhood in the area, playing on the beach near Eyemouth or fishing in the streams nearby.

Alexander Henderson于1831年在苏格兰出生，是一位成功商人的儿子。他的祖父，也叫做Alexander，开创了家族企业，后来成为苏格兰国家银行的首任主席。其家庭在苏格兰拥有大量的土地。除了位于爱丁堡的住宅之外，它还拥有Press Estate，一块城市东南部大约35英里处，占地650公顷的农场。一家人经常待在位于土地北部边缘的巨大住宅Press城堡。Alexander 在这里度过了其大部分的童年时光，要么在Eyemouth附近的海滩上玩耍，要么在附近的溪流中钓鱼。

第2段

Even after he went to school at Murcheston Academy on the outskirts of Edinburgh, Henderson returned to Press at weekends. In 1849 he began a three-year apprenticeship to become an accountant. Although he never liked the prospect of a business career, he stayed with it to please his family. In October 1855, however, he emigrated to Canada with his wife Agnes Elder Robertson and they settled in Montreal.

即便在他前往爱丁堡郊区的Murcheston Academy读书之后，Henderson仍然会在周末回到Press。1849年，他开始为期三年的学徒生涯以成为一名会计。虽然他从未喜欢过这一商业职业的前景，但他为了让家人开心还是一直做着。然而，1855年10月，他与妻子 Agnes Elder Robertson移民到了加拿大，并在蒙特利尔安顿下来。

第3段

Henderson learned photography in Montreal around the year 1857 and quickly took it up as a serious amateur. He became a personal friend and colleague of the Scottish-Canadian photographer William Notman. The two men made a photographic excursion to Niagara Falls in 1860 and they cooperated on experiments with magnesium flares as a source of artificial light in 1865. They belonged to the same societies and were among the founding members of the Art Association of Montreal. Henderson acted as chairman of the association’s first meeting, which was held in Notman’s studio on 11 January 1860.

Henderson于1857年左右在蒙特利尔学习摄影，并迅速将它培养成一项认真的业余爱好。他成为苏格兰裔加拿大摄影师William Notman的私人好友与同事。这两个人在1860年的时候进行了一次前往尼亚加拉大瀑布的摄影之旅，在1865年的时候一起实验利用镁的燃烧作为自然光源。他们属于同一个社团，并且是蒙特利尔艺术协会的创始成员。Henderson还作为主席主持了该歇会的第一次会议。它于1860年1月11日在Notman工作室中举办。

第4段

In spite of their friendship, their styles of photography were quite different. While Notman’s landscapes were noted for their bold realism, Henderson for the first 20 years of his career produced romantic images, showing the strong influence of the British landscape tradition. His artistic and technical progress was rapid and in 1865 he published his first major collection of landscape photographs. The publication had limited circulation (only seven copies have ever been found), and was called Canadian Views and Studies. The contents of each copy vary significantly and have proved a useful source for evaluating Henderson’s early work.

尽管两人友谊甚笃，但他们的摄影风格差别很大。虽然Notman的风景照因为其大胆直白的现实主义而闻名，但Henderson在其职业生涯的前20年拍的却是浪漫主义照片，展现出英国风景画传统的浓厚影响。他在艺术和技术方面进步很快。1865年，他出版了自己第一套风景照片大合集。这套册子的流通十分有限（目前只发现了7本），取名为《加拿大风景与研究》。每一本的内容差别很大，成为评估Henderson早期作品的一个重要资源。

第5段

In 1866, he gave up his business to open a photographic studio, advertising himself as a portrait and landscape photographer. From about 1870 he dropped portraiture to specialize in landscape photography and other views. His numerous photographs of city life revealed in street scenes, houses, and markets are alive with human activity, and although his favourite subject was landscape he usually composed his scenes around such human pursuits as farming the land, cutting ice on a river, or sailing down a woodland stream. There was sufficient demand for these types of scenes and others he took depicting the lumber trade, steamboats and waterfalls to enable him to make a living. There was little competing hobby or amateur photography before the late 1880s because of the time-consuming techniques involved and the weight of the equipment. People wanted to buy photographs as souvenirs of a trip or as gifts, and catering to this market, Henderson had stock photographs on display at his studio for mounting, framing, or inclusion in albums.

1866年，他放弃自己的生意，开设了一家摄影工作室，将自己宣传成一位人像与风景摄影师。从1870年左右开始，他舍弃人像，专注于拍摄风景照和其他景象照。他拍下数不胜数的城市生活照片。这些街道景象、房屋和市场因为有了芸芸众生的活动而显得充满生机。虽然他最喜欢的题材是风景，但他经常将风景围绕人类活动进行构图，比如耕种田地，河流取冰，或者沿林中溪水顺流而下。对这种类型的景象和其他他拍摄的描绘木材贸易，蒸汽船与瀑布的照片有很大需求，足以他以此谋生。在19世纪80年代末期之前，因为费时的技术以及设备的重量，几乎没有其他爱好或者业余摄影与他竞争。人们想要购买照片作为旅行的纪念品或者礼物。为了迎合这一市场需求，Henderson在自己的工作室展出大量的储备照片，以供镶嵌，加框或者收录集结成册。

第6段

Henderson frequently exhibited his photographs in Montreal and abroad, in London, Edinburgh, Dublin, Paris, New York, and Philadelphia. He met with greater success in 1877 and 1878 in New York when he won first prizes in the exhibition held by E and H T Anthony and Company for landscapes using the Lambertype process. In 1878 his work won second prize at the world exhibition in Paris.

Henderson在蒙特利尔和诸如伦敦、爱丁堡、都柏林、巴黎、纽约以及费城等国外地区频繁展出自己的照片。他于1877年和1878年在纽约获得更大的成功，当时他因为使用漫反射的处理手法拍摄风景而赢得由E and H T Anthony and Company举办的摄影展的头奖。1878年，他的作品在巴黎世界博览会上赢得二等奖。

第7段

In the 1870s and 1880s Henderson travelled widely throughout Quebec and Ontario, in Canada, documenting the major cities of the two provinces and many of the villages in Quebec. He was especially fond of the wilderness and often travelled by canoe on the Blanche, du Lievre, and other noted eastern rivers. He went on several occasions to the Maritimes and in 1872 he sailed by yacht along the lower north shore of the St Lawrence River. That same year, while in the lower St Lawrence River region, he took some photographs of the construction of the Intercolonial Railway. This undertaking led in 1875 to a commission from the railway to record the principal structures along the almost-completed line connecting Montreal to Halifax. Commissions from other railways followed. In 1876 he photographed bridges on the Quebec, Montreal, Ottawa and Occidental Railway between Montreal and Ottawa. In 1885 he went west along the Canadian Pacific Railway (CPR) as far as Rogers Pass in British Columbia, where he took photographs of the mountains and the progress of construction.

19世纪70年代和80年代，Henderson广泛游历了加拿大的魁北克和安大略地区，用影像记录下这两个省份中的主要城市和魁北克地区的许多村庄。他尤其喜欢旷野景象，并且经常乘独木舟沿Blanche, du Lievre和其他著名的东部河流旅行。他去过几次Maritimes。1872年，他乘坐帆船文章来自老烤鸭雅思走遍了St Lawrence河沿岸的北部低地地区。同一年在St Lawrence低地地区时，他拍摄了一些正在建设的殖民地之间铁路的照片。这一举动在1875年促成那家铁路公司委托他拍摄记录当时快要竣工的、连接蒙特利尔和哈利法克斯铁路沿线的主要建筑。来自其他铁路公司的委托接踵而至。1876年，他拍摄了魁北克线、蒙特利尔线、渥太华线以及蒙特利尔和渥太华之间的西洋铁路上的各种桥梁。1885年，他沿着加拿大太平洋铁路一直向西，最远到达过不列颠属哥伦比亚的Rogers Pass。在那里，他拍摄了群山和正在进行中的建筑工程。

第8段

In 1892 Henderson accepted a full-time position with the CPR as manager of a photographic department which he was to set up and administer. His duties included spending four months in the field each year. That summer he made his second trip west, photographing extensively along the railway line as far as Victoria. He continued in this post until 1897, when he retired completely from photography.

1892年，Henderson接受CPR提供的一份全职工作，成为他即将设立并负责的摄影部门的经理。他的工作内容包括每年在户外待上4个月。那年夏天，他第二次向西旅行，沿着铁路线拍下大量的照片，最远到达过维多利亚。他在这一岗位上一直干到1897年从摄影业彻底退休。

第9段

When Henderson died in 1913, his huge collection of glass negatives was stored in the basement of his house. Today collections of his work are held at the National Archives of Canada, Ottawa, and the McCord Museum of Canadian History, Montreal.

当Henderson于1913年去世时，他海量的玻璃底片被储存在自己家的地下室里。如今，他的作品被收藏在位于渥太华的加拿大国家档案馆以及位于蒙特利尔的麦考得加拿大历史博物馆中。

### [14Test2Passage2 Back to the future of skyscraper design 摩天大楼设计](http://www.laokaoya.com/39180.html)

A部分

The Recovery of Natural Environments in Architecture by Professor Alan Short is the culmination of 30 years of research and award-winning green building design by Short and colleagues in Architecture, Engineering, Applied Maths and Earth Sciences at the University of Cambridge.

Alan Short教授所著的《自然环境在建筑中的复苏》是三十年研究的集大成之作，也是Short及其剑桥大学建筑学、工程学、应用数学和地球科学领域内的同事们共同完成的荣获大奖的环保建筑设计。

‘The crisis in building design is already here,’ said Short. ‘Policy makers think you can solve energy and building problems with gadgets. You can’t. As global temperatures continue to rise, we are going to continue to squander more and more energy on keeping our buildings mechanically cool until we have run out of capacity.’

“建筑设计中的危机已经显现， ” Short这样说。“政策制定者们以为用小零件小设备就能解决能源和建筑问题。其实并不能。随着全球温度持续上升，我们将继续用机械方法挥霍越来越多的能量， 使建筑物内保持凉爽，直到我们再也无能为力为止。

B部分

Short is calling for a sweeping reinvention of how skyscrapers and major public buildings are designed – to end the reliance on sealed buildings which exist solely via the life support’ system of vast air conditioning units.

Short正在呼吁对摩天大楼和大型公共建筑的设计方式进行一场彻底的重塑 – 来结束对封闭式建筑的依赖，它们的存在完全是依靠大型空调设备来提供“生命支持”的。

Instead, he shows it is entirely possible to accommodate natural ventilation and cooling in large buildings by looking into the past, before the widespread introduction of air conditioning systems, which were ‘relentlessly and aggressively marketed’ by their inventors.

与之相反，他证明了：完全有可能在大型建筑中容纳天然的通风和冷却系统，办法就是回溯到过去那个还没有大规模引人空调系统的时代，这些空调系统就是其发明者所“毫不留情、大刀阔斧地”大肆进行宣传推广的。

C部分

Short points out that to make most contemporary buildings habitable, they have to be sealed and air conditioned. The energy use and carbon emissions this generates is spectacular and largely unnecessary. Buildings in the West account for 40-50% of electricity usage, generating substantial carbon emissions, and the rest of the world is catching up at a frightening rate. Short regards glass, steel and air-conditioned skyscrapers as symbols of status, rather than practical ways of meeting our requirements.

Short指出：要让大多数当代建筑里可以住人，它们必须封闭起来、进行空气调控。这种做法所造成的能源消耗和碳排放是极为壮观的，在很大程度上并没有必要。西方建筑物要占用电量的40—50%，产生了巨量的碳排放，而世界上的其他地方正以一种令人惊恐的速度追赶上来。Short认为，由玻璃，钢铁和空调组成的摩天大楼是社会地位的象征，而不是满足我们需要的实用方式。

D部分

Short’s book highlights a developing and sophisticated art and science of ventilating buildings through the 19th and earlier-20th centuries, including the design of ingeniously ventilated hospitals. Of particular interest were those built to the designs of John Shaw Billings, including the first Johns Hopkins Hospital in the US city of Baltimore (1873-1889).

Short的书重点阐述了在19世纪和20世纪初期这个阶段里，为建筑物通风的艺术与科学一直在发展进步、日趋复杂完善，这其中包括通风系统设计精妙的医院。格外引人注目的是那些依照John Shaw Billings的设计搭建而成的建筑，包括位于美国巴尔的摩市的第一家约翰霍普金斯医院（1873—1889）。

‘We spent three years digitally modelling Billings’ final designs,’ says Short. ‘We put pathogens\* in the airstreams, modelled for someone with tuberculosis (TB) coughing in the wards and we found the ventilation systems in the room would have kept other patients safe from harm.

“我们花了三年的时间用数字化模拟修建了Billins最后的那些设计方案，” Short这样说。“我们在气流中放入了病原体，以此模仿病房中正在咳嗽的肺结核病患，结果我们发现：房间里的通风系统能保护其他病人不受侵害。”

E部分

‘We discovered that 19th-century hospital wards could generate up to 24 air changes an hour – that’s similar to the performance of a modern-day, computer-controlled operating theatre. We believe you could build wards based on these principles now.

“我们发现19世纪的医院病房在1小时内能够制造多达24次的空气交换 – 类似于一家现代化的、由电脑中控的手术室可达成的效果。我们相信你现在完全可以基于这些原理来建造病房。

Single rooms are not appropriate for all patients. Communal wards appropriate for certain patients – older people with dementia, for example – would work just as well in today’s hospitals, at a fraction of the energy cost.’

单人间并非适合于所有的病人。对某些病患比较合适的公共病房 – 例如患痴呆的较年长病人 – 在今天的医院里也同样适用，所消耗的能量却只有一丁点儿。”

Professor Short contends the mindset and skill-sets behind these designs have been completely lost, lamenting the disappearance of expertly designed theatres, opera houses, and other buildings where up to half the volume of the building was given over to ensuring everyone got fresh air.

Short 教授感到这些设计背后的思维理念和精巧技艺已经完全丢失了，他痛惜那些消失了的、经由专家精心设计建造的手术室、歌剧院和其他同类建筑，这些建筑中多达一半的空间都用于确保每个人都能获得新鲜空气。

F部分

Much of the ingenuity present in 19th-century hospital and building design was driven by a panicked public clamouring for buildings that could protect against what was thought to be the lethal threat of miasmas – toxic air that spread disease. Miasmas were feared as the principal agents of disease and epidemics for centuries, and were used to explain the spread of infection from the Middle Ages right through to the cholera outbreaks in London and Paris during the 1850s. Foul air, rather than germs, was believed to be the main driver of ‘hospital fever’, leading to disease and frequent death. The prosperous steered clear of hospitals.

存在于19世纪的医院和其他建筑中的那种精巧设计在很大程度上是被恐慌的公众所催生的，这些人大声疾呼，要求建筑物能给他们提供保护，使自己不受当时被认为是致命威胁的瘴气 – 会传播疾病的有毒气体 – 所侵袭。几个世纪以来，瘴气一直被看作疾病和传染病的主要致病源而深受畏俱，从中世纪以来直到19世纪50年代爆发在伦敦和巴黎的大霍乱，人们都用瘴气来解释感染的传播原因。污秽的空气，而非病菌，被认为是“医院热病”的主要元凶，引发了疾病与频繁的死亡。富人都对医院唯恐避之不及。

While miasma theory has been long since disproved, Short has for the last 30 years advocated a return to some of the building design principles produced in its wake.

虽然瘴气理论很久以前就被证明了是错的，但Short在过去三十年间一直在支持重拾一些建筑设计原理，而这些原理正是在这一错误理论的催生下才发展起来的。

G部分

Today, huge amounts of a building’s space and construction cost are given over to air conditioning. ‘But I have designed and built a series of buildings over the past three decades which have tried to reinvent some of these ideas and then measure what happens.

今天，一栋建筑的大量空间和建造费用都奉献给了空调系统。“但是我在过去三十年间设计和主持建成了一系列楼宇，尝试重新用上我所说的这些理念，然后测试了接下来的效果”。

‘To go forward into our new low-energy, low-carbon future, we would be well advised to look back at design before our high-energy, high-carbon present appeared. What is surprising is what a rich legacy we have abandoned.’

“要向前去到我们全新的低能源、低碳排的未来，一个非常明智的做法就是回首过去，向我们高能源、 高碳排的当下出现之前的那个时代去学习。令人惊异的是我们抛弃了一份多么丰厚的遗产”。

H部分

Successful examples of Short’s approach include the Queen’s Building at De Montfort University in Leicester. Containing as many as 2,000 staff and students, the entire building is naturally ventilated, passively cooled and naturally lit, including the two largest auditoria, each seating more than 150 people. The award-winning building uses a fraction of the electricity of comparable buildings in the UK.

Short所倡导的方法的成功案例之一是位于莱斯特的德蒙特福德大学的女王大楼。 楼内能容纳2000名员工和学生，整栋建筑都依靠自然通风、非人工手段制冷和天然照明，其中两座分别能坐下150多人的最大的礼堂也不例外。这座曾经获奖的建筑所使用的电量与英国其他同类建筑的用电量相比只是九牛一毛。

Short contends that glass skyscrapers in London and around the world will become a liability over the next 20 or 30 years if climate modelling predictions and energy price rises come to pass as expected.

Short认为，如果气候模型预测的情况和能源价格上涨真的如人们所预期的那样到来了的话，那么在接下来的二十或三十年间，伦敦乃至全球的玻璃摩天高楼都将会成为沉重的累赘。

I部分

He is convinced that sufficiently cooled skyscrapers using the natural environment can be produced in almost any climate. He and his team have worked on hybrid buildings in the harsh climates of Beijing and Chicago – built with natural ventilation assisted by back-up air conditioning – which, surprisingly perhaps, can be switched off more than half the time on milder days and during the spring and autumn.

他坚信：利用自然环境而进行充足制冷的高楼大厦在几乎任何气候里都是可以建成并运转的。他和他的团队在北京和芝加哥的严酷气候里在各种各样的建筑上都进行过试验 – 这些建筑里设立了天然通风系统，同时辅以备用空调设备 – 也许会令人大吃一惊的是，在比较温和的日子里以及在春秋季节，这些空调有一半以上的时间都可以关闭不用。

Short looks at how we might reimagine the cities, offices and homes of the future. Maybe it’s time we changed our outlook.

Short所着眼的是我们也许可以重新设计未来的城市、办公室和家庭。也许是时候改变我们的看法了。

### [14Test2Passage3 why companies should welcome disorder](http://www.laokaoya.com/39225.html)

A部分

Organisation is big business. Whether it is of our lives – all those inboxes and calendars – or how companies are structured, a multi-billion dollar industry helps to meet this need.

组织规划是一门大生意。无论是我们自己的生活中 – 所有那些收件箱与日历 – 还是公司的架构中，都有一项数十亿美元的产业帮助满足这一需求。

We have more strategies for time management, project management and self-organisation than at any other time in human history. We are told that we ought to organise our company, our home life, our week, our day and even our sleep, all as a means to becoming more productive. Every week, countless seminars and workshops take place around the world to tell a paying public that they ought to structure their lives in order to achieve this.

相比于人类历史上的任何其他时期，我们在时间管理、项目管理和自我组织管理方面都有更多的策略。我们被告知应该安排好我们的公司、我们的家庭生活、我们的每一周，每一天，甚至是我们的睡眠。所有这些都是变得更加高产的方法。每一周，世界各地都举办无数的研讨会和讲习班，告诉付费而来的公众，他们应该精心安排自己的生活以达成这一目标。

This rhetoric has also crept into the thinking of business leaders and entrepreneurs, much to the delight of self-proclaimed perfectionists with the need to get everything right. The number of business schools and graduates has massively increased over the past 50 years, essentially teaching people how to organise well.

这种说法也悄然进入商业领袖和创业者的头脑中。这让那些自封的完美主义者十分愉悦。他们文章来自老烤鸭雅思需要将每件事情都弄得井井有条。在过去50年里，商学院和商科专业的毕业生大量增加。他们本质上是在教授人们如何安排好各项事务。

B部分

Ironically, however, the number of businesses that fail has also steadily increased. Work-related stress has increased. A large proportion of workers from all demographics claim to be dissatisfied with the way their work is structured and the way they are managed.

然而，讽刺的是，失败企业的数量也在稳定增加。与工作相关的压力同样在上升。从所有的人口统计数据来看，大量的员工表示对他们工作的组织方式和自己被管理的方式感到不满。

This begs the question: what has gone wrong? Why is it that on paper the drive for organisation seems a sure shot for increasing productivity, but in reality falls well short of what is expected?

这就催生出以下问题：究竟是哪里出错了？为什么从纸面上来看，对组织安排的追求是提升生产力的捷径，但现实中却远远达不到预期呢？

C部分

This has been a problem for a while now. Frederick Taylor was one of the forefathers of scientific management. Writing in the first half of the 20th century, he designed a number of principles to improve the efficiency of the work process, which have since become widespread in modern companies. So the approach has been around for a while.

这个问题已经存在了一段时间。Frederick Taylor是科学管理的创始人之一。在20世纪前半叶的著作中，他设计出一系列提升工作流程效率的原则。这些原则后来在现代企业中广泛传播。所以这种方法已经存在了不少时日。

D部分

New research suggests that this obsession with efficiency is misguided. The problem is not necessarily the management theories or strategies we use to organise our work; it’s the basic assumptions we hold in approaching how we work. Here it’s the assumption that order is a necessary condition for productivity. This assumption has also fostered the idea that disorder must be detrimental to organisational productivity. The result is that businesses and people spend time and money organising themselves for the sake of organising, rather than actually looking at the end goal and usefulness of such an effort.

新的研究表明，对效率的痴迷存在误导性。问题并不一定在于我们用来组织安排工作的管理理论或者策略，而是在于我们在分析工作方式时所秉持的基本假设。这种假设是，秩序是生产效率的必要条件。该假设同时也助长了以下观念：无序一定对组织的生产力有害。这就造成企业和人们花费时间和金钱为了组织安排而进行组织安排，而不是关注最终目标以及这种努力是否有用。

E部分

What’s more, recent studies show that order actually has diminishing returns. Order does increase productivity to a certain extent, but eventually the usefulness of the process of organisation, and the benefit it yields, reduce until the point where any further increase in order reduces productivity. Some argue that in a business, if the cost of formally structuring something outweighs the benefit of doing it, then that thing ought not to be formally structured. Instead, the resources involved can be better used elsewhere.

此外，最近的研究表明秩序的效用实际上是边际递减的。秩序确实可以将生产力提升到一定的程度，但组织过程的效用以及它产生的收益会逐步减弱到某个临界点。过了这个临界点之后，秩序方面任何进一步的提升反而会降低生产力。一些人认为，在企业中，如果正式组织架构某件事情的成本超过了这样做的收益，那么这件事就不应该被正式地组织架构。相反，其中所牵扯到的资源可以被更好地用在其他地方。

F部分

In fact, research shows that, when innovating, the best approach is to create an environment devoid of structure and hierarchy and enable everyone involved to engage as one organic group. These environments can lead to new solutions that, under conventionally structured environments (filled with bottlenecks in terms of information flow, power structures, rules, and routines) would never be reached.

事实上，研究显示，在进行创新的时候，最好的方法是创造一个没有组织结构和层级的环境，从而让每个人都能参与进来形成有机的团体。这种环境能够催生出传统井井有条的环境下（在信息流动，权利结构，规章制度与常规操作方面充满各种障碍）无法实现的新的解决方案。

G部分

In recent times companies have slowly started to embrace this disorganisation. Many of them embrace it in terms of perception (embracing the idea of disorder, as opposed to fearing it) and in terms of process (putting mechanisms in place to reduce structure).

最近一段时间，企业已经开始慢慢接受这种去组织化的趋势。许多企业不仅在观念上接纳它（拥抱无序的概念，而不是畏惧它），而且在流程上也采用它（设立一些机制来削弱固有机构）。

For example, Oticon, a large Danish manufacturer of hearing aids, used what it called a ‘ spaghetti ’ structure in order to reduce the organisation’s rigid hierarchies. This involved scrapping formal job titles and giving staff huge amounts of ownership over their own time and projects. This approach proved to be highly successful initially, with clear improvements in worker productivity in all facets of the business.

例如，Octicon，一家生产助听器的丹麦企业，使用了一种它称为“spaghetti”的结构来削弱组织机构内部僵化的层级。这包括去除正式的工作头衔，赋予员工大量的自主权来安排自己的时间和项目。这种方法从一开始就大获成功。在企业各个方面，工人的生产力都有大幅提升。

In similar fashion, the former chairman of General Electric embraced disorganisation, putting forward the idea of the ‘boundaryless’ organisation. Again, it involves breaking down the barriers between different parts of a company and encouraging virtual collaboration and flexible working. Google and a number of other tech companies have embraced (at least in part) these kinds of flexible structures, facilitated by technology and strong company values which glue people together.

通用电气前任主席也以类似的方式接纳去组织化，提出“无界”组织的理念。它同样涉及打破公司内部不同部分之间的壁垒，鼓励具有实质意义的合作，以及灵活的工作方式。谷歌和其他一些科技公司也已接受（至少部分如此）这种灵活的结构，由技术和能把人们团结在一起的强大的企业价值观来推动。

H部分

A word of warning to others thinking of jumping on this bandwagon: the evidence so far suggests disorder, much like order, also seems to have diminishing utility, and can also have detrimental effects on performance if overused. Like order, disorder should be embraced only so far as it is useful. But we should not fear it – nor venerate one over the other. This research also shows that we should continually question whether or not our existing assumptions work.

总给那些想要追随这一潮流的其他人一句警告：到目前为止的证据表明，无序与秩序一样，似乎同样存在边际效用递减的问题，如果过度使用的话，还可能对各方面表现产生不利影响。与秩序相同，无序只应该在有用的时候被采纳。但我们不应该畏惧它，也不应该重此轻彼。这一研究同样表明，我们应该持续追问现存的假设是否有用。

## 14Test3

### [14Test3Passage1 The concept of intelligence 智力的概念](http://www.laokaoya.com/39269.html)

段落A

Looked at in one way, everyone knows what intelligence is; looked at in another way, no one does. In other words, people all have unconscious notions – known as ‘implicit theories’- of intelligence, but no one knows for certain what it actually is. This chapter addresses how people conceptualize intelligence, whatever it may actually be.

从某种方式来看，每个人都知道智力是什么；但换种方式看的话，就没有人知道了。换句话说，人们对智力都有一种下意识的概念。这被称作内隐理论。但没有人确切的知道它究竟是什么。这一章会解决无论知识是什么，人类如何将它概念化的问题

But why should we even care what people think intelligence is, as opposed only to valuing whatever it actually is? There are at least four reasons people’s conceptions of intelligence matter.

但是，我们为什么应该关心人们如何看待智力，而不是仅仅评估它确实是什么？至少有四个原因可以说明人们对智力的理解十分重要。

段落B

First, implicit theories of intelligence drive the way in which people perceive and evaluate their own intelligence and that of others. To better understand the judgments people make about their own and others’ abilities, it is useful to learn about people’s implicit theories. For example, parents’ implicit theories of their children’s language development will determine at what ages they will be willing to make various corrections in their children’s speech. More generally, parents’ implicit theories of intelligence will determine at what ages they believe their children are ready to perform various cognitive tasks. Job interviewers will make hiring decisions on the basis of their implicit theories of intelligence. People will decide who to be friends with on the basis of such theories. In sum, knowledge about implicit theories of intelligence is important because this knowledge is so often used by people to make judgments in the course of their everyday lives.

首先，智力的内隐理论决定人们看待和评估他们自己与他人智力的方式。为了更好地理解人们对于自身以及他人能力所做出的判断，了解人们的内隐理论十分重要。例如，父母关于他们孩子语言发展的内隐理论会决定他们愿意在什么时候对孩子的语言进行各种纠正。更普遍地来说，父母关于智力的内隐理论会决定他们什么时候相信孩子已经为进行各种认知任务做好了准备。面试官会基于他们自己的智力内隐理论做出招聘决定。人们会基于这样的理论决定跟谁交朋友。总的来说，关于智力内隐理论的知识很重要，因为在日常生活中，这种知识经常被人们用于做判断。

段落C

Second, the implicit theories of scientific investigators ultimately give rise to their explicit theories. Thus it is useful to find out what these implicit theories are. Implicit theories provide a framework that is useful in defining the general scope of a phenomenon – especially a not-well-understood phenomenon. These implicit theories can suggest what aspects of the phenomenon have been more or less attended to in previous investigations.

第二，对内隐理论进行科学研究最终会导致外显理论的出现。因此，研究这些内隐理论是什么十分有用。内隐理论所提供的框架结构在定义某一现象的广义范畴时十分有用，尤其是对于那些尚未被充分理解的现象来说。这些内隐理论可以提示该现象的哪些方面在之前的研究中或多或少被关注过。

段落D

Third, implicit theories can be useful when an investigator suspects that existing explicit theories are wrong or misleading. If an investigation of implicit theories reveals little correspondence between the extant implicit and explicit theories, the implicit theories may be wrong. But the possibility also needs to be taken into account that the explicit theories are wrong and in need of correction or supplementation. For example, some implicit theories of intelligence suggest the need for expansion of some of our explicit theories of the construct.

第三，内隐理论在研究者怀疑现存外显理论存在错误或误导时十分有用。如果对内隐理论的研究发现现存内隐理论与外显理论之间缺乏相关性，那么内隐理论就可能是错误的。但也需要考虑外显理论错误并需要纠正或补充的可能性。例如，一些有关智力的内隐理论表明需要对外显理论的架构进行扩展。

段落E

Finally, understanding implicit theories of intelligence can help elucidate developmental and cross-cultural differences. As mentioned earlier, people have expectations for intellectual performances that differ for children of different ages. How these expectations differ is in part a function of culture. For example, expectations for children who participate in Western-style schooling are almost certain to be different from those for children who do not participate in such schooling.

最终，理解智力的内隐理论有助于说明发展差异与跨文化差异。正如之前提到的那样，人们对于智力表现的预期因儿童年龄的不同而不同。这种预期上的差异一定程度上是由文化造成的。例如，对接受西式教育的儿童的期待几乎肯定不同于那些没有接受此类教育的儿童。

段落F

I have suggested that there are three major implicit theories of how intelligence relates to society as a whole (Sternberg, 1997). These might be called Hamiltonian, Jeffersonian, and Jacksonian. These views are not based strictly, but rather, loosely, on the philosophies of Alexander Hamilton, Thomas Jefferson, and Andrew Jackson, three great statesmen in the history of the United States.

我曾指出，存在三种主要的内隐理论，解释智力如何与整体社会文章来自老烤鸭雅思相联系（Sternberg, 1997）。它们可以被称作汉密尔顿型，杰弗逊型，以及杰克逊型。这些理论并非严格基于亚历山大·汉密尔顿，托马斯·杰弗逊，以及安德鲁·杰克逊这三位美国历史上伟大政治家的哲学，但一定程度上与他们相关。

段落G

The Hamiltonian view, which is similar to the Platonic view, is that people are born with different levels of intelligence and that those who are less intelligent need the good offices of the more intelligent to keep them in line, whether they are called government officials or, in Plato’s term, philosopher-kings. Herrnstein and Murray (1994) seem to have shared this belief when they wrote about the emergence of a cognitive (high-IQ) elite, which eventually would have to take responsibility for the largely irresponsible masses of non-elite (low-IQ) people who cannot take care of themselves. Left to themselves, the unintelligent would create, as they always have created, a kind of chaos.

汉密尔顿的观点与柏拉图的观点相似，认为人们生而具有不同水平的智力。智力较低的人需要智力较高的人的统治（无论他们被称为政府官员，还是用柏拉图的词语“哲学王”）以确保秩序。Herrnstein和Murray（1994）在写到有关认知精英（高智商）的出现时，似乎认同这种观念。他们认为该群体最终不得不承担大多数不负责任的非精英群体（低智商）的责任。这些人无法照顾好他们自己。如果让他们自生自灭的话，智力较低的人会产生混乱，正如他们一直以来的那样。

段落H

The Jeffersonian view is that people should have equal opportunities, but they do not necessarily avail themselves equally of these opportunities and are not necessarily equally rewarded for their accomplishments. People are rewarded for what they accomplish, if given equal opportunity. Low achievers are not rewarded to the same extent as high achievers. In the Jeffersonian view, the goal of education is not to favor or foster an elite, as in the Hamiltonian tradition, but rather to allow children the opportunities to make full use of the skills they have. My own views are similar to these (Sternberg, 1997).

杰弗逊的观点认为，人们应该拥有同等的机会，但他们并不一定平等地受益于这些机会，也不一定因自己的成就获得同等的回报。在机遇相同的情况下，人们凭借自己的成就获得回报。低成就者的回报不会与高成就者相同。在杰弗逊看来，教育的目的不是像汉密尔顿的传统那样为了帮助或培养精英，而是让孩子有机会充分利用他们所拥有的技能。我自己的观点与此类似（Sternberg, 1997）。

段落I

The Jacksonian view is that all people are equal, not only as human beings but in terms of their competencies – that one person would serve as well as another in government or on a jury or in almost any position of responsibility. In this view of democracy, people are essentially intersubstitutable except for specialized skills, all of which can be learned. In this view, we do not need or want any institutions that might lead to favoring one group over another.

杰克逊的观点是人人平等，不仅作为人类如此，而且能力方面也一样。在政府或陪审团，或者在任何需要承担责任的岗位上，一个人能跟其他人一样同样出色的完成任务。在这种民主的观念下，人们除了可以被学习的专业技能之外，本质上是可以互相取代的。这一观点认为，我们不需要也不想要任何偏袒某一类人群的机构。

段落J

Implicit theories of intelligence and of the relationship of intelligence to society perhaps need to be considered more carefully than they have been because they often serve as underlying presuppositions for explicit theories and even experimental designs that are then taken as scientific contributions. Until scholars are able to discuss their implicit theories and thus their assumptions, they are likely to miss the point of what others are saying when discussing their explicit theories and their data.

智力的内隐理论以及智力与社会的关系或许需要比现在更加仔细的考量，因为它们经常作为外显理论，甚至是随后被当作科学贡献的实验设计的潜在假设。直到学者能够讨论他们的内隐理论，以及因之而来的假设，他们才不会再其他人讨论他们的外显理论与数据时显得毫无头绪。

### [14Test3Passage2 Saving bugs to find new drugs 利用昆虫开发药物](http://www.laokaoya.com/39316.html)

段落A

More drugs than you might think are derived from, or inspired by, compounds found in living things. Looking to nature for the soothing and curing of our ailments is nothing new – we have been doing it for tens of thousands of years. You only have to look at other primates – such as the capuchin monkeys who rub themselves with toxin-oozing millipedes to deter mosquitoes, or the chimpanzees who use noxious forest plants to rid themselves of intestinal parasites – to realise that our ancient ancestors too probably had a basic grasp of medicine.

提取自生物中的化合物，或者受其启发而制成的药物可能比你想象的要多得多。向自然界寻求缓解或者治疗我们疾病的方法并不是什么新鲜事 – 我们已经这样做了成千上万年。只用看看其他灵长类动物 – 比如卷尾猴会用带有毒素的千足虫涂抹自身来驱走蚊子，而大猩猩则会使用有毒的森林植物来摆脱肠内寄生虫 – 你就会意识到，我们的祖先或许也掌握了一些药物的基本知识。

段落B

Pharmaceutical science and chemistry built on these ancient foundations and perfected the extraction, characterisation, modification and testing of these natural products. Then, for a while, modern pharmaceutical science moved its focus away from nature and into the laboratory, designing chemical compounds from scratch. The main cause of this shift is that although there are plenty of promising chemical compounds in nature, finding them is far from easy. Securing sufficient numbers of the organism in question, isolating and characterising the compounds of interest, and producing large quantities of these compounds are all significant hurdles.

药物科学和化学建立在这些古老基础之上，并完善对这些自然产物的提取、鉴定、改良与测试。然后，有那么一段时间，现代药物科学将关注点从自然移到了实验室中，从零开始设计化合物。这一转变的原因在于，虽然自然界中有充足的、充满前景的化合物，但找到它们却并非易事。收集足够的相关生物，分离并鉴定人们感兴趣的化合物，最后再大量生产这些化合物，所有过程都存在巨大困难。

段落C

Laboratory-based drug discovery has achieved varying levels of success, something which has now prompted the development of new approaches focusing once again on natural products. With the ability to mine genomes for useful compounds, it is now evident that we have barely scratched the surface of nature’s molecular diversity. This realisation, together with several looming health crises, such as antibiotic resistance, has put bioprospecting – the search for useful compounds in nature – firmly back on the map.

以实验室为基础的药物开发取得了不同程度的成功，这使得新的研究方法再次聚焦到自然产物上。有了挖掘实用化合物基因组的能力，很明显我们目前才仅仅接触到自然分子多样新的表面而已。这一认识，再加上诸如耐药性等潜在健康危机的存在，使得生物探索（在自然界中寻找有用的化合物）再次坚定地回到人们的视野中。

段落D

Insects are the undisputed masters of the terrestrial domain, where they occupy every possible niche. Consequently, they have a bewildering array of interactions with other organisms, something which has driven the evolution of an enormous range of very interesting compounds for defensive and offensive purposes. Their remarkable diversity exceeds that of every other group of animals on the planet combined. Yet even though insects are far and away the most diverse animals in existence, their potential as sources of therapeutic compounds is yet to be realised.

昆虫是陆地上毫无争议的主宰，占据每一寸可能的地方。因此，它们与其他生物之间存在大量复杂的互动。这促使它们进化出许多各种各样有趣的化合物用于防御或者进攻。它们非凡的多样性超过地球上所有其他动物的总和。然而，即便昆虫是现存最为多样化的动物，它们作为治疗性化合物来源的潜力尚未被意识到。

段落E

From the tiny proportion of insects that have been investigated, several promising compounds have been identified. For example, alloferon, an compound produced by blow fly larvae, is used as an antiviral and antitumor agent in South Korea and Russia. The larvae of a few other insect species are being investigated for the potent antimicrobial compounds they produce. Meanwhile, a compound from the venom of the wasp Polybia paulista has potential in cancer treatment.

从极少部分已经被研究的昆虫中，人们找到几种很有潜力的化合物。例如，alloferon，一种绿头苍蝇幼虫产生的抗菌剂，在韩国和俄罗斯被当作抗病毒剂和抗癌剂使用。其他昆虫的幼虫也正在被研究，以寻找它们产生的有效抗菌成分。与此同时，黄蜂毒液中的化合物Polybia paulista在癌症治疗方面也有潜在的效用。

段落F

Why is it that insects have received relatively little attention in bioprospecting? Firstly, there are so many insects that, without some manner of targeted approach, investigating this huge variety of species is a daunting task. Secondly, insects are generally very small, and the glands inside them that secrete potentially useful compounds are smaller still. This can make it difficult to obtain sufficient quantities of the compound for subsequent testing. Thirdly, although we consider insects to be everywhere, the reality of this ubiquity is vast numbers of a few extremely common species. Many insect species are infrequently encountered and very difficult to rear in captivity, which, again, can leave us with insufficient material to work with.

为什么昆虫在生物探索中很少受到关注呢？首先，昆虫种类太多，在没有目标方法的情况下，研究如此多样的物种是一项很容易让人气馁的任务。其次，昆虫的体型普遍偏小，它们体内分泌潜在有用化合物的腺体更小。这使得获取足够的化合物以用于后续测试十分困难。第三，虽然我们认为昆虫文章来自老烤鸭雅思到处都是，但现实情况是一些非常常见的物种数量巨大。许多昆虫很少遇到，并且很难在圈禁的情况下培养。这再一次使得我们没有充足的材料进行研究。

段落G

My colleagues and I at Aberystwyth University in the UK have developed an approach in which we use our knowledge of ecology as a guide to target our efforts. The creatures that particularly interest us are the many insects that secrete powerful poison for subduing prey and keeping it fresh for future consumption. There are even more insects that are masters of exploiting filthy habitats, such as faeces and carcasses, where they are regularly challenged by thousands of microorganisms. These insects have many antimicrobial compounds for dealing with pathogenic bacteria and fungi, suggesting that there is certainly potential to find many compounds that can serve as or inspire new antibiotics.

我和英国阿伯里斯特威斯大学的同事研究出一种方法，利用我们生态学的知识指导工作。让我们尤其感兴趣的生物是一些昆虫。它们分泌强力的毒药来捕杀猎物，并使其保持新鲜以供未来食用。甚至还有更多的昆虫擅长利用肮脏的栖息地，比如粪便和尸体。在这些地方，它们经常受到上千种微生物的威胁。这些昆虫具备许多应对致病细菌和真菌的化合物。这意味着我们一定有可能找到许多化合物作为新的抗生素使用，或者启发我们开发新的抗生素。

段落H

Although natural history knowledge points us in the right direction, it doesn’t solve the problems associated with obtaining useful compounds from insects. Fortunately, it is now possible to snip out the stretches of the insect’s DNA that carry the codes for the interesting compounds and insert them into cell lines that allow larger quantities to be produced. And although the road from isolating and characterising compounds with desirable qualities to developing a commercial product is very long and full of pitfalls, the variety of successful animal-derived pharmaceuticals on the market demonstrates there is a precedent here that is worth exploring.

虽然自然历史知识为我们指出正确的方向，但它并没有解决从昆虫中获取有用化合物的相关问题。幸运的是，我们如今可以裁剪昆虫基因中携带我们关注的化合物的编码片段，将它们植入到细胞系中，从而使大量生产成为可能。虽然从分离鉴定带有可取性质的化合物到开发出商业产品仍然有很长的路要走，并且途中充满困难，但市场上多种成功的动物提取药物证明，这方面已有先例值得探索。

段落I

With every bit of wilderness that disappears, we deprive ourselves of potential medicines. As much as I’d love to help develop a groundbreaking insect-derived medicine, my main motivation for looking at insects in this way is conservation. I sincerely believe that all species, however small and seemingly insignificant, have a right to exist for their own sake. If we can shine a light on the darker recesses of nature’s medicine cabinet, exploring the useful chemistry of the most diverse animals on the planet, I believe we can make people think differently about the value of nature.

每一片荒野的消失都使得我们失去许多潜在的药品。尽管我十分想要帮助开发一种突破性的昆虫提取药品，但我以这种方式研究昆虫的主要动力是为了保护它们。我真心相信，所有物种，无论多么微小，看起来多么微不足道，都有生存的权利。如果我们照亮自然药橱更为黑暗的深处，探索地球上最为多样的动物体内有用的化学物质，我相信我们能够改变人们关于自然价值的看法。

### [14Test3Passage3 The power of play 玩耍的作用](http://www.laokaoya.com/39360.html)

第1段

Virtually every child, the world over, plays. The drive to play is so intense that children will do so in any circumstances, for instance when they have no real toys, or when parents do not actively encourage the behavior. In the eyes of a young child, running, pretending, and building are fun. Researchers and educators know that these playful activities benefit the development of the whole child across social, cognitive, physical, and emotional domains. Indeed, play is such an instrumental component to healthy child development that the United Nations High Commission on Human Rights (1989) recognized play as a fundamental right of every child.

世界上几乎每个孩子都会玩耍嬉戏。玩耍的动力是如此强烈以至于孩子会在任何情况下这样做，即便他们没有真正的玩具，或者他们的父母并不主动鼓励这种行为。在小孩的眼里，奔跑、假扮和搭建都充满乐趣。研究者和教育家知道，这些玩耍活动对于孩子在社交、认知、身体和情感等领域的发展都有好处。事实上，玩耍对于孩子的健康发展是如此重要，以至于联合国人权高级委员会（1989）认为玩耍是每个孩子的基本权利。

第2段

Yet, while experts continue to expound a powerful argument for the importance of play in children’s lives, the actual time children spend playing continues to decrease. Today, children play eight hours less each week than their counterparts did two decades ago (Elkind 2008). Under pressure of rising academic standards, play is being replaced by test preparation in kindergartens and grade schools, and parents who aim to give their preschoolers a leg up are led to believe that flashcards and educational ‘toys’ are the path to success. Our society has created a false dichotomy between play and learning.

然而，尽管专家不停地极力阐释玩耍在孩子生活中的重要性，但孩子实际用于玩耍的时间却在持续减少。如今，孩子每周用于玩耍的时间要比20年前少8个小时（Elkind 2008）。在不断提高的学业标准的压力之下，玩耍在幼儿园和小学正被准备考试所取代。那些希望助自己学龄前孩子一臂之力的家长们被引导相信，单词卡和具有教育意义的“玩具”才是通向成功的路径。我们的社会在玩耍与学习之间创造出一种错误的对立关系。

第3段

Through play, children learn to regulate their behavior, lay the foundations for later learning in science and mathematics, figure out the complex negotiations of social relationships, build a repertoire of creative problem-solving skills, and so much more. There is also an important role for adults in guiding children through playful learning opportunities.

通过玩耍，孩子学着管理自己的行为，为日后科学与数学方面的学习打下基础，学会处理社交关系中复杂的沟通，积累创造性解决问题的技能，并获取许多其他好处。通过游戏化的学习机会，成人同样在引导孩子方面扮演着重要角色。

第4段

Full consensus on a formal definition of play continues to elude the researchers and theorists who study it. Definitions range from discrete descriptions of various types of play such as physical, construction, language, or symbolic play (Miller & Almon 2009), to lists of broad criteria, based on observations and attitudes, that are meant to capture the essence of all play behaviors (e.g. Rubin et al. 1983).

研究玩耍的学者和理论家仍然没能就玩耍的正式定义达成一致。这些定义从对各种游戏松散的描述，比如身体的，搭建的，语言的或者象征性的游戏（Miller & Almon 2009），到基于观察与态度的一系列广泛标准。它们想要抓住所有玩耍行为的本质（如Rubin et al. 1983）。

第5段

A majority of the contemporary definitions of play focus on several key criteria. The founder of the National Institute for Play, Stuart Brown, has described play as ‘anything that spontaneously is done for its own sake’. More specifically, he says it ‘appears purposeless, produces pleasure and joy, [and] leads one to the next stage of mastery’ (as quoted in Tippett 2008). Similarly, Miller and Almon (2009) say that play includes ‘activities that are freely chosen and directed by children and arise from intrinsic motivation’. Often, play is defined along a continuum as more or less playful using the following set of behavioral and dispositional criteria (e.g. Rubin et al. 1983):

当代大多数关于玩耍的定义都聚焦于几个核心标准上。国家玩耍协会的创始人，Stuart Brown，将玩耍描述为“任何因其自身原因，自发性的行为”。更确切的说，他认为玩耍“似乎没有目的，产生快乐与愉悦，并通向自身掌控的下一阶段”（引用自Tippett 2008）。相似地，Miller与Almon（2009）认为玩耍包括“由孩子自由选择并进行的活动。这些活动源自他们自身内在的动力”。通常来说，玩耍根据下列行为与意向的标准，沿着按照好玩程度构成的连续体进行定义。

Play is pleasurable: Children must enjoy the activity or it is not play. It is intrinsically motivated: Children engage in play simply for the satisfaction the behavior itself brings. It has no extrinsically motivated function or goal. Play is process oriented: When children play, the means are more important than the ends. It is freely chosen, spontaneous and voluntary. If a child is pressured, they will likely not think of the activity as play. Play is actively engaged: Players must be physically and/or mentally involved in the activity. Play is non-literal. It involves make-believe.

玩耍是愉快的：孩子必须享受该活动，否则的话，它就不是玩耍。它受内在驱动：孩子进行玩耍仅仅是为了这种行为自身带来的满足感。它没有外部驱动的作用或者目标。玩耍是过程导向的：当孩子玩耍时，方式比结果更重要。它是自由选择的、自发的、并且是自愿的。如果孩子受到压力，那么他们就不太可能认为该活动是玩耍。玩耍是主动参与的：玩家必须在身体上和/或精神上参与到该活动中。玩耍是非字面的。它包含想象。

第6段

According to this view, children’s playful behaviors can range in degree from 0% to 100% playful. Rubin and colleagues did not assign greater weight to any one dimension in determining playfulness; however, other researchers have suggested that process orientation and a lack of obvious functional purpose may be the most important aspects of play (e.g. Pellegrini 2009).

根据这种观点，孩子的玩耍行为按照从0%到100%的好玩程度分布。Rubin和同事们在定义好玩性的时候并没有赋予任一维度更高的权重。然而，其他研究者认为，过程导向和缺乏明显的功能目标可能是玩耍最为重要的方面。

第7段

From the perspective of a continuum, play can thus blend with other motives and attitudes that are less playful, such as work. Unlike play, work is typically not viewed as enjoyable and it is extrinsically motivated (i.e. it is goal oriented). Researcher Joan Goodman (1994) suggested that hybrid forms of work and play are not a detriment to learning; rather, they can provide optimal contexts for learning. For example, a child may be engaged in a difficult, goal-directed activity set up by their teacher, but they may still be actively engaged and intrinsically motivated. At this mid-point between play and work, the child’s motivation, coupled with guidance from an adult, can create robust opportunities for playful learning.

从连续体的角度来看，玩耍可以与其他不那么好玩的动机和态度混合在一起，比如工作。不像玩耍，工作通常被认为是无趣的，并且由外在动机驱动（即目标导向）。研究者Joan Goodman（1994）认为，工作与玩耍的混合形式对学习没有损害。相反，他们能够文章来自老烤鸭雅思提供学习的最佳环境。例如，孩子可能参与到由老师设置的、具备一定难度的、并且是目标导向的某项活动，但他们仍然可能主动参与并且受内在动机驱使。在玩耍与工作的中间点，孩子的动机，再加上成人的指导，能够创造出游戏化学习的良好机会。

第8段

Critically, recent research supports the idea that adults can facilitate children’s learning while maintaining a playful approach in interactions known as ‘guided play’ (Fisher et al. 2011). The adult’s role in play varies as a function of their educational goals and the child’s developmental level (Hirsch-Pasek et al. 2009).

重要的是，最近的研究支持以下观点，即成人可以在维持玩耍路径的同时帮助孩子学习。这种互动被称为“引导式玩耍”（Fisher et al. 2011）。成人在玩耍中的角色根据他们教育目的功能的不同以及孩子发展阶段的不同而不同。

第9段

Guided play takes two forms. At a very basic level, adults can enrich the child’s environment by providing objects or experiences that promote aspects of a curriculum. In the more direct form of guided play, parents or other adults can support children’s play by joining in the fun as a co-player, raising thoughtful questions, commenting on children’s discoveries, or encouraging further exploration or new facets to the child’s activity. Although playful learning can be somewhat structured, it must also be child-centered (Nicolopolou et al. 2006). Play should stem from the child’s own desire.

引导式玩耍有两种形式。在十分基础的层面，成人可以通过提供促进课程某方面的物品或经历来丰富儿童的环境。在引导式玩耍更为直接的形式中，父母或其他成人可以作为玩家融入其中来支持孩子的游戏。他们可以提出引人思考的问题，评论孩子的发现，或者在孩子活动中鼓励进一步的探索或添加新的部分。虽然引导式学习可以稍微结构化，但它必须以孩子为中心（Nicolopolou et al. 2006）。玩耍必须源自孩子自身的意愿。

第10段

Both free and guided play are essential elements in a child-centered approach to playful learning. Intrinsically motivated free play provides the child with true autonomy, while guided play is an avenue through which parents and educators can provide more targeted learning experiences. In either case, play should be actively engaged, it should be predominantly child-directed, and it must be fun.

自由式玩耍和引导式玩耍在以孩子为中心的游戏化学习中都是必不可少的元素。内在驱动的自由玩耍为孩子提供真正的自主权，而引导式玩耍则是一种路径。在其中，父母和教育者可以提供目的性更强的学习体验。无论在哪种情况下，玩耍都应该是主动参与的，以儿童为中心的，并且必须是有趣的。

## 14Test4

### [14Test4Passage1 the secret of staying young 年轻的秘密](http://www.laokaoya.com/39460.html)

第1段

Pheidole dentata, a native ant of the south-eastern U.S., isn’t immortal. But scientists have found that it doesn’t seem to show any signs of aging. Old worker ants can do everything just as well as the youngsters, and their brains appear just as sharp. ‘We get a picture that these ants really don’t decline,’ says Ysabel Giraldo, who studied the ants for her doctoral thesis at Boston University.

Pheidole dentata是美国东南部的一种本地蚂蚁，并非永生不死。但科学家发现它似乎不会展现出任何衰老的迹象。年迈的工蚁可以跟年幼的工蚁一样很好的完成所有的事情，而且它们的头脑也同样敏锐。“我们了解到，这些蚂蚁真的不会衰老”，Ysabel Giraldo说。她在波士顿大学所做的博士论文就是关于蚂蚁的。

第2段

Such age-defying feats are rare in the animal kingdom. Naked mole rats can live for almost 30 years and stay fit for nearly their entire lives. They can still reproduce even when old, and they never get cancer. But the vast majority of animals deteriorate with age just like people do. Like the naked mole rat, ants are social creatures that usually live in highly organised colonies. ‘It’s this social complexity that makes P. dentata useful for studying aging in people,’ says Giraldo, now at the California Institute of Technology. Humans are also highly social, a trait that has been connected to healthier aging. By contrast, most animal studies of aging use mice, worms or fruit flies, which all lead much more isolated lives.

这种抗衰老的能力在动物王国十分稀有。裸鼢鼠可以活将近30年的时间，并在一生中保持健康。他们甚至在年迈的时候依然可以繁殖，并且从来都不会得癌症。但是，绝大多数动物跟人类一样，会随着年龄增长而衰退。与裸鼢鼠类似，蚂蚁是社会型动物，通常生活在具有高度组织的种群中。“正是这种社会复杂性使得Pheidole dentata对研究人类老化十分有用”，加州理工学院的Giraldo说。人类同样是高度社会化的。这一特点与健康的老去紧密相关。相比之下，大多数研究老化的动物实验使用老鼠、蠕虫或者果蝇。所有这些动物的生活都更加孤立。

第3段

In the lab, P. dentata worker ants typically live for around 140 days. Giraldo focused on ants at four age ranges: 20 to 22 days, 45 to 47 days, 95 to 97 days and 120 to 122 days. Unlike all previous studies, which only estimated how old the ants were, her work tracked the ants from the time the pupae became adults, so she knew their exact ages. Then she put them through a range of tests.

实验室中，P. dentata的工蚁一般可以存活140天左右。Giraldo将注意力放在四个年龄段的蚂蚁身上：20到22天，45到47天，95到97天，以及120-122天。与之前那些只评估蚂蚁年龄的研究不同，她从蛹变成成虫时就开始追踪这些蚂蚁，因此她知道他们的准确年龄。然后，她对他们进行了一系列的测试。

第4段

Giraldo watched how well the ants took care of the young of the colony, recording how often each ant attended to, carried and fed them. She compared how well 20-day-old and 95-day-old ants followed the telltale scent that the insects usually leave to mark a trail to food. She tested how ants responded to light and also measured how active they were by counting how often ants in a small dish walked across a line. And she experimented with how ants react to live prey: a tethered fruit fly. Giraldo expected the older ants to perform poorly in all these tasks. But the elderly insects were all good caretakers and trail-followers—the 95-day-old ants could track the scent even longer than their younger counterparts. They all responded to light well, and the older ants were more active. And when it came to reacting to prey, the older ants attacked the poor fruit fly just as aggressively as the young ones did, flaring their mandibles or pulling at the fly’s legs.

Giraldo观察蚂蚁照顾种群中年幼个体的好坏，记录每只蚂蚁照顾、转移和喂养它们的频率。她比较了20天大的蚂蚁和95天大的蚂蚁追踪气味的能力。昆虫一般使用这种气味来标记通往食物的路径。她测试了蚂蚁对光线的反应，并通过记录蚂蚁在小碟子中穿过某条线的频率来衡量他们的活跃程度。她还测试了蚂蚁对活着的猎物的反应：一只被拴着的果蝇。Giraldo预计年老的蚂蚁在所有这些任务中都会表现的更差。但年龄更大的昆虫在照顾幼虫和痕迹追踪方面做的都很好 – 95天的蚂蚁甚至能够比较为年幼的蚂蚁追踪更远距离的气味。它们对光线的反应都十分良好，并且年老的蚂蚁更加活跃。至于对猎物的反应，年老的蚂蚁在袭击可怜的果蝇方面跟年幼的蚂蚁一样富有侵略性，张开下颌骨或者撕扯果蝇的腿部。

第5段

Then Giraldo compared the brains of 20-day-old and 95-day-old ants, identifying any cells that were close to death. She saw no major differences with age, nor was there any difference in the location of the dying cells, showing that age didn’t seem to affect specific brain functions. Ants and other insects have structures in their brains called mushroom bodies, which are important for processing information, learning and memory. She also wanted to see if aging affects the density of synaptic complexes within these structures—regions where neurons come together. Again, the answer was no. What was more, the old ants didn’t experience any drop in the levels of either serotonin or dopamine—brain chemicals whose decline often coincides with aging. In humans, for example, a decrease in serotonin has been linked to Alzheimer’s disease.

随后，Giraldo比较了20天蚂蚁和95天蚂蚁的大脑，寻找任何接近死亡的细胞。她没有发现与年龄相关的巨大差异，正在死去的细胞的位置也没有什么区别。这说明年龄文章来自老烤鸭雅思似乎没有影响具体的大脑功能。蚂蚁和其他昆虫的大脑中有被称为蕈形体的结构。该结构对于处理信息，学习和记忆都很重要。她同样希望知道老化是否影响这些结构中突触复合体的密度，即神经聚集的区域。答案同样是否定的。此外，老年蚂蚁在五羟色胺或多巴胺的水平上也没有任何下降。这两种大脑化学物质的下降通常伴随着衰老。例如，人类中，五羟色胺的下降与阿兹海默症有关。

第6段

‘This is the first time anyone has looked at both behavioral and neural changes in these ants so thoroughly,’ says Giraldo, who recently published the findings in the Proceedings of the Royal Society B. Scientists have looked at some similar aspects in bees, but the results of recent bee studies were mixed—some studies showed age-related declines, which biologists call senescence, and others didn’t. ‘For now, the study raises more questions than it answers,’ Giraldo says, ‘including how P. dentata stays in such good shape.’

“这是首次有人如此彻底地观察这些蚂蚁行为和神经上的变化”，Giraldo说。她最近在Proceedings of the Royal Society B上发表了自己的发现。科学家也研究了蜜蜂中一些类似的方面，但最近蜜蜂研究的结果十分混杂：一些研究显示出与年龄相关的衰退，生物学家将其称之为senescence，而其他则没有。“目前来说，该研究所提出的问题比它解答的更多”，Giraldo说，“这其中就包括P. dentata如何保持这样良好的状态”。

第7段

Also, if the ants don’t deteriorate with age, why do they die at all? Out in the wild, the ants probably don’t live for a full 140 days thanks to predators, disease and just being in an environment that’s much harsher than the comforts of the lab. ‘The lucky ants that do live into old age may suffer a steep decline just before dying,’ Giraldo says, but she can’t say for sure because her study wasn’t designed to follow an ant’s final moments.

与此同时，如果蚂蚁不会随着年龄而衰退，那么它们为什么还会死去？在自然界中，由于捕食者、疾病、以及与实验室舒适条件相比要恶劣的多的环境，蚂蚁可能活不到140天。“这些确实活到老年时期的幸运蚂蚁可能会在死前经历急剧的衰退”，Giraldo说。但她并不能肯定，因为她的研究设计并没有追踪一只蚂蚁的临终时刻。

第8段

‘It will be important to extend these findings to other species of social insects,’ says Gene E. Robinson, an entomologist at the University of Illinois at Urbana-Champaign. This ant might be unique, or it might represent a broader pattern among other social bugs with possible clues to the science of aging in larger animals. Either way, it seems that for these ants, age really doesn’t matter.

“将这些发现扩展到其他社会性昆虫十分重要”，伊利诺伊大学厄巴纳香槟分校的昆虫学家Gene E. Robinson说。这种蚂蚁可能是独一无二的。它也可能代表着其他社会性昆虫中一种更为广泛的模式，为大型动物中的老化研究提供可能存在的线索。无论如何，对于这些蚂蚁来说，年龄似乎真的无关紧要。

### [14Test4Passage2 Why zoos are good 动物园的好处](http://www.laokaoya.com/39466.html)

段落A

In my view, it is perfectly possible for many species of animals living in zoos or wildlife parks to have a quality of life as high as, or higher than, in the wild. Animals in good zoos get a varied and high-quality diet with all the supplements required, and any illnesses they might have will be treated. Their movement might be somewhat restricted, but they have a safe environment in which to live, and they are spared bullying and social ostracism by others of their kind. They do not suffer from the threat or stress of predators, or the irritation and pain of parasites or injuries. The average captive animal will have a greater life expectancy compared with its wild counterpart, and will not die of drought, of starvation or in the jaws of a predator. A lot of very nasty things happen to truly ‘wild’ animals that simply don’t happen in good zoos, and to view a life that is ‘free’ as one that is automatically ‘good’ is, I think, an error. Furthermore, zoos serve several key purposes.

在我看来，许多生活在动物园或者野生动物园的动物完全有可能拥有跟生活在野外一样高、甚至更高的生活质量。优秀动物园里，动物的饮食多样，品质上乘，包含所有他们需要的补充剂，并且它们可能染上的任何疾病都会得到治疗。它们的活动或许会在某种程度上受限，但他们拥有安全的生活环境，免受物种中其他个体的欺凌和排斥。它们不用承受捕食者的威胁和压力，也远离寄生虫或受伤带来的刺激和痛苦。与生活在野外的同伴相比，圈养动物的平均寿命更长，不会死于干旱、饥饿或者捕食者的嘴下。许多真正“野生”动物身上发生的痛苦的事情并不会出现在优秀的动物园里。我认为，将“自由”的生活当作自然而然的“善”是种错误。此外，动物园还服务于几个关键目标。

段落B

Firstly, zoos aid conservation. Colossal numbers of species are becoming extinct across the world, and many more are increasingly threatened and therefore risk extinction. Moreover, some of these collapses have been sudden, dramatic and unexpected, or were simply discovered very late in the day. A species protected in captivity can be bred up to provide a reservoir population against a population crash or extinction in the wild. A good number of species only exist in captivity, with many of these living in zoos. Still more only exist in the wild because they have been reintroduced from zoos, or have wild populations that have been boosted by captive bred animals. Without these efforts there would be fewer species alive today. Although reintroduction successes are few and far between, the numbers are increasing, and the very fact that species have been saved or reintroduced as a result of captive breeding proves the value of such initiatives.

首先，动物园有利于动物保护。世界上大量的物种正在灭绝。更多的物种受到日益严重的威胁，并且因此面临着灭绝的风险。此外，一些灭绝发生的十分突然、剧烈并且出乎意料，或者只是到很晚的时候才被发现。圈养中受到保护的动物可以繁衍后代提供储备种群，以对抗野外中的数量骤降或者灭绝。许多物种都只存在于圈养状态，其中不少都生活在动物园里。更多的物种依然存在于野外只是因为它们从动物园里被放归回去，或者圈养繁育的动物提升了野生的数量。没有这些努力的话，如今现存的物种会更少。虽然放归成功的案例很少，但其数量正在增加。并且物种通过圈养哺育得到拯救或者被放归野外的事实本身就证明了这种措施的价值。

段落C

Zoos also provide education. Many children and adults, especially those in cities, will never see a wild animal beyond a fox or pigeon. While it is true that television documentaries are becoming ever more detailed and impressive, and many natural history specimens are on display in museums, there really is nothing to compare with seeing a living creature in the flesh, hearing it, smelling it, watching what it does and having the time to absorb details. That alone will bring a greater understanding and perspective to many, and hopefully give them a greater appreciation for wildlife, conservation efforts and how they can contribute.

动物园同样提供教育机会。许多孩子和成人，尤其是那些生活在城市里的，除了狐狸和鸽子之外根本见不到野生动物。虽然电视纪录片确实变得越来越细致、越来越令人赞叹，并且许多自然历史标本也在博物馆中展出，但没有任何东西文章来自老烤鸭雅思能真正比得上看到活生生的动物，听到它的声音，闻到它的气味，观察它的动作，以及花时间了解细节。单单这样就能让许多人增进对它们的理解，并有希望让他们更加欣赏野生动物，知道为保护它们所做的努力，明白自己能够如何做出贡献。

段落D

In addition to this, there is also the education that can take place in zoos through signs, talks and presentations which directly communicate information to visitors about the animals they are seeing and their place in the world. This was an area where zoos used to be lacking, but they are now increasingly sophisticated in their communication and outreach work. Many zoos also work directly to educate conservation workers in other countries, or send their animal keepers abroad to contribute their knowledge and skills to those working in zoos and reserves, thereby helping to improve conditions and reintroductions all over the world.

除此之外，动物园还可以通过标识、谈话和讲演提供教育。这些方法可以直接向游客传递关于他们正在观赏的动物的信息，以及它们在世界上的位置。在这方面，动物园之前做的不够，但它们如今在沟通和推广上愈发精细。许多动物园也直接为其他国家的动物保护工作者提供培训，或者将它们的动物饲养员送到国外，用他们的知识和技能帮助正在那些动物园或者保护区里工作的人，从而帮助提升全世界的条件和放归工作。

段落E

Zoos also play a key role in research. If we are to save wild species and restore and repair ecosystems we need to know about how key species live, act and react. Being able to undertake research on animals in zoos where there is less risk and fewer variables means real changes can be effected on wild populations. Finding out about, for example, the oestrus cycle of an animal or its breeding rate helps us manage wild populations. Procedures such as capturing and moving at-risk or dangerous individuals are bolstered by knowledge gained in zoos about doses for anaesthetics, and by experience in handling and transporting animals. This can make a real difference to conservation efforts and to the reduction of human-animal conflicts, and can provide a knowledge base for helping with the increasing threats of habitat destruction and other problems.

动物园在研究方面也起着关键作用。如果我们打算拯救野生动物，重建和修复生态系统，我们需要知道关键物种如何生存、活动以及回应。能够在动物园这样一个风险较低，变量较少的地方对动物展开研究，意味着我们可以对野生族群产生真正的改变。例如，查明动物的发情周期或者它的繁殖率有助于我们管理野生族群的数量。诸如捕捉并转移处于风险之中或者存在危险的个体这样的操作，就通过在动物园获取的、关于麻醉剂量的知识，以及处理和运输动物的经验得到了改善。这真正改变了保护工作，减少了人类和动物之间的冲突，并为解决栖息地日益遭到破坏威胁以及其他问题提供了知识基础。

段落F

In conclusion, considering the many ongoing global threats to the environment, it is hard for me to see zoos as anything other than essential to the long-term survival of numerous species. They are vital not just in terms of protecting animals, but as a means of learning about them to aid those still in the wild, as well as educating and informing the general population about these animals and their world so that they can assist or at least accept the need to be more environmentally conscious. Without them, the world would be, and would increasingly become, a much poorer place.

总的来说，考虑到许多正在发生的全球性环境威胁，我认为动物园对于大量物种的长期生存至关重要。它们不仅在动物保护方面十分关键，而且也是了解它们以帮助那些仍然生活在野外的动物的一种方式。它们同时还可以教授大众关于这些动物和它们世界的知识，以便他们能够帮助、或者至少是接受需要更强的环境意识这一观念。如果没有它们的话，世界会变的越来越贫乏。

### [14Test4Passage3 Chelsea Rochman 海洋废弃物](http://www.laokaoya.com/39472.html)

第1段

Chelsea Rochman, an ecologist at the University of California, Davis, has been trying to answer a dismal question: Is everything terrible, or are things just very, very bad?

加利福尼亚大学戴维斯分校的生态学家Chelsea Rochman一直在努力回答一个令人沮丧的问题：万事万物都很糟糕吗？还是事情仅仅是非常、非常坏而已？

第2段

Rochman is a member of the National Center for Ecological Analysis and Synthesis marine-debris working group, a collection of scientists who study, among other things, the growing problem of marine debris, also known as ocean trash. Plenty of studies have sounded alarm bells about the state of marine debris; in a recent paper published in the journal Ecology, Rochman and her colleagues set out to determine how many of those perceived risks are real.

Rochman是国家生态分析与整合中心海洋废弃物工作组的成员之一。组成该工作组的科学家们在众多问题之中研究海洋废弃物，也就是海洋垃圾日益增长的问题。大量研究对海洋垃圾的状态发出警报。在最近一篇发表于《生态学》杂志的论文中，Rochman和她的同事着手确定那些认知中的风险有多少是真实存在的。

第3段

Often, Rochman says, scientists will end a paper by speculating about the broader impacts of what they’ve found. For example, a study could show that certain seabirds eat plastic bags, and go on to warn that whole bird populations are at risk of dying out. ‘But the truth was that nobody had yet tested those perceived threats,’ Rochman says. ‘There wasn’t a lot of information.’

Rochman说，科学家经常会在论文结尾推测他们所做发现的更广阔影响。例如，一项研究可能显示特定的海鸟会吃塑料袋，进而警告整个鸟群都存在灭绝的风险。“但事实是，没有人检测过那些认知中的威胁”，Rochman说，“这方面并没有很多的信息”。

第4段

Rochman and her colleagues examined more than a hundred papers on the impacts of marine debris that were published through 2013. Within each paper, they asked what threats scientists had studied -366 perceived threats in all – and what they’d actually found.

Rochman和她的同事检验了2013年全年发表的有关海洋垃圾影响的一百多篇论文。每篇文章中，他们探询科学家研究的威胁是什么 – 共有366种威胁被注意到 – 以及他们实际发现了什么。

第5段

In 83 percent of cases, the perceived dangers of ocean trash were proven true. In the remaining cases, the working group found the studies had weaknesses in design and content which affected the validity of their conclusions – they lacked a control group, for example, or used faulty statistics.

83%的案例中，海洋垃圾的潜在威胁被证明是真实存在的。在剩下的案例中，工作组发现这些研究的设计和内容存在缺陷，会影响结论的有效性。例如，它们缺乏控制组，或使用存在错误的统计数据。

第6段

Strikingly, Rochman says, only one well-designed study failed to find the effect it was looking for, an investigation of mussels ingesting microscopic plastic bits. The plastic moved from the mussels’ stomachs to their bloodstreams, scientists found, and stayed there for weeks – but didn’t seem to stress out the shellfish.

Rochman说，令人震惊的是，只有一项设计良好的研究没能发现它想要发现的影响。它是一项有关贻贝摄入微小塑料片的调查。 科学家发现，塑料从贻贝的胃部移动到血液中，并在那里停留数周的时间，但这似乎没有使该甲壳生物感到什么压力。

第7段

While mussels may be fine eating trash, though, the analysis also gave a clearer picture of the many ways that ocean debris is bothersome.

虽然贻贝吃垃圾可能没有什么问题，但分析还是明确指出海洋垃圾令人烦恼的许多方面。

第8段

Within the studies they looked at, most of the proven threats came from plastic debris, rather than other materials like metal or wood. Most of the dangers also involved large pieces of debris – animals getting entangled in trash, for example, or eating it and severely injuring themselves.

在他们检验的研究中，大多数被证实的威胁来自塑料废弃物，而不是诸如金属或者木头等其他材料。大部分危险同时也包括大件垃圾 – 例如，动物可能被垃圾缠住，或者误食之后给自己造成严重伤害。

第9段

But a lot of ocean debris is ‘microplastic’, or pieces smaller than five millimeters. These may be ingredients used in cosmetics and toiletries, fibers shed by synthetic clothing in the wash, or eroded remnants of larger debris. Compared to the number of studies investigating large-scale debris, Rochman’s group found little research on the effects of these tiny bits. ‘There are a lot of open questions still for microplastic,’ Rochman says, though she notes that more papers on the subject have been published since 2013, the cutoff point for the group’s analysis.

但许多海洋垃圾都是微型塑料，或者小于5厘米的碎片。这些可能是化妆品或者洗漱用品的原料，合成衣物洗涤过程中脱落的纤维，或者更大一些垃圾文章来自老烤鸭雅思被腐蚀之后的残留。Rochaman的团队发现，与调查大规模垃圾的研究数量相比，对这些微小垃圾影响的研究很少。“针对微小塑料，仍然有许多等待解答的问题”，Rochman说，尽管她注意到从2013年开始（其团队分析的截止点），有更多关于该主题的论文被发表出来。

第10段

There are also, she adds, a lot of open questions about the ways that ocean debris can lead to sea-creature death. Many studies have looked at how plastic affects an individual animal, or that animal’s tissues or cells, rather than whole populations. And in the lab, scientists often use higher concentrations of plastic than what’s really in the ocean. None of that tells us how many birds or fish or sea turtles could die from plastic pollution – or how deaths in one species could affect that animal’s predators, or the rest of the ecosystem.

她补充到，在海洋垃圾如何导致海洋生物死亡方面也有许多等待回答的问题。许多研究关注塑料如何影响个体动物，或者该动物的组织或细胞，而不是整个群体。实验室中，科学家经常使用比海洋真实情况聚集程度更高的塑料。所有这些都不能告诉我们有多少鸟类、鱼类或者海龟死于塑料污染 – 或者某一物种的死亡如何影响该动物的捕食者，或者生态系统中的其他物种。

第11段

‘We need to be asking more ecologically relevant questions,’ Rochman says. Usually, scientists don’t know exactly how disasters such as a tanker accidentally spilling its whole cargo of oil and polluting huge areas of the ocean will affect the environment until after they’ve happened. ‘We don’t ask the right questions early enough,’ she says. But if ecologists can understand how the slow-moving effect of ocean trash is damaging ecosystems, they might be able to prevent things from getting worse.

“我们需要提出更多与生态学相关的问题”，Rochman说。对于油轮意外泄露整船石油并污染大面积海洋这种灾难来说，科学家直到发生之后才能确切的知道它们对环境的影响。“我们没能及早提出正确的问题”，她说。但如果生态学家能够理解海洋垃圾的影响如何正在缓慢地破坏生态系统，他们可能能够阻止事情变得更坏。

第12段

Asking the right questions can help policy makers, and the public, figure out where to focus their attention. The problems that look or sound most dramatic may not be the best places to start. For example, the name of the ‘Great Pacific Garbage Patch’ – a collection of marine debris in the northern Pacific Ocean – might conjure up a vast, floating trash island. In reality though, much of the debris is tiny or below the surface; a person could sail through the area without seeing any trash at all. A Dutch group called ‘The Ocean Cleanup’ is currently working on plans to put mechanical devices in the Pacific Garbage Patch and similar areas to suck up plastic. But a recent paper used simulations to show that strategically positioning the cleanup devices closer to shore would more effectively reduce pollution over the long term.

提出正确的问题可以帮助政策制定者和公众弄清楚应该将自己的注意力放在哪里。看起来或者听起来最严重的问题可能并不是最佳的着手指出。例如，“太平洋大垃圾带”这样的名字 – 太平洋北部的一批垃圾 – 可能让人想起巨大的、漂浮着的垃圾岛屿。但实际上，这些垃圾中的大部分都很微小或者位于海洋表面之下。一个人可以乘船穿过该区域而看不到任何垃圾。一个叫做“海洋清理”的荷兰团体目前正在制定计划。他们打算在太平洋垃圾带和类似的区域中放置机械装置以吸附塑料。但近期的一篇论文通过模拟表明，长期来看，有策略地将清洁装置放在靠近海岸的地方可以更加有效的减少污染。

第13段

‘I think clearing up some of these misperceptions is really important,’ Rochman says. Among scientists as well as in the media, she says, ‘A lot of the images about strandings and entanglement and all of that cause the perception that plastic debris is killing everything in the ocean.’ Interrogating the existing scientific literature can help ecologists figure out which problems really need addressing, and which ones they’d be better off – like the mussels – absorbing and ignoring.

“我认为清理这些错误的认知十分重要”，Rochman说。在科学家和媒体之中，她说，“大量关于搁浅和被困的图片造成塑料垃圾正在杀死海洋中一些生物的看法”。审视现存的科学文献能够帮助生态学家搞明白哪些问题真的需要解决，而哪些问题（比如贻贝）他们最好了解和忽略。

# 十五

## 15Test1

### [15Test1Passage1 Nutmeg – a valuable spice 肉豆蔻](http://www.laokaoya.com/39499.html)

第1段

The nutmeg tree, Myristica fragrans, is a large evergreen tree native to Southeast Asia. Until the late 18th century, it only grew in one place in the world: a small group of islands in the Banda Sea, part of the Moluccas – or Spice Islands – in northeastern Indonesia. The tree is thickly branched with dense foliage of tough, dark green oval leaves, and produces small, yellow, bell-shaped flowers and pale yellow pear-shaped fruits. The fruit is encased in a fleshy husk. When the fruit is ripe, this husk splits into two halves along a ridge running the length of the fruit. Inside is a purple-brown shiny seed, 2-3 cm long by about 2cm across, surrounded by a lacy red or crimson covering called an ‘aril’. These are the sources of the two spices nutmeg and mace, the former being produced from the dried seed and the latter from the aril.

肉豆蔻树，也被称作Myristica fragrans，是一种东南亚本土的大型常绿树木。直到18世纪末，它在世界上都只生长于一个地方：印度尼西亚东北部班达海域的小型群岛，即马鲁古群岛或香料群岛的一部分。这种树木枝干繁密，覆盖着厚厚一层坚硬的墨绿色椭圆形树叶，开出小小的、黄色的铃铛形花朵，并结出浅黄色的梨形果实。果实被包裹在肉质外壳里。当果实成熟时，外壳会沿着果实较长一边的凸起分成两半。里面是一颗紫褐色的光洁种子，长2到3厘米，宽约2厘米，包裹着一层被称为“子衣”的红色或者深红色外皮。这些正是肉豆蔻和肉豆蔻种衣这两种香料的来源。前者产自干燥后的种子，而后者则产自子衣。

第2段

Nutmeg was a highly prized and costly ingredient in European cuisine in the Middle Ages, and was used as a flavouring, medicinal, and preservative agent. Throughout this period, the Arabs were the exclusive importers of the spice to Europe. They sold nutmeg for high prices to merchants based in Venice, but they never revealed the exact location of the source of this extremely valuable commodity. The Arab-Venetian dominance of the trade finally ended in 1512, when the Portuguese reached the Banda Islands and began exploiting its precious resources.

中世纪时，肉豆蔻是欧洲饮食中一种备受珍视、价格昂贵的原料，被当作调味料、药品和防腐剂使用。在这一时期，阿拉伯人是将这种香料带到欧洲的唯一进口商。他们将肉豆蔻高价卖给驻扎在威尼斯的商人，但从来都没有透漏过这一价值极高的商品的准确来源。阿拉伯人和威尼斯人对该贸易的垄断最终于1512年结束。当时，葡萄牙人抵达班达群岛并开始开发其宝贵的资源。

第3段

Always in danger of competition from neighbouring Spain, the Portuguese began subcontracting their spice distribution to Dutch traders. Profits began to flow into the Netherlands, and the Dutch commercial fleet swiftly grew into one of the largest in the world. The Dutch quietly gained control of most of the shipping and trading of spices in Northern Europe. Then, in 1580, Portugal fell under Spanish rule, and by the end of the 16th century the Dutch found themselves locked out of the market. As prices for pepper, nutmeg, and other spices soared across Europe, they decided to fight back.

一直处于邻国西班牙的竞争威胁之下，葡萄牙人开始将香料的经销分包给荷兰商人。利润开始流向荷兰，荷兰商用舰队很快成长为世界上最大的舰队之一。荷兰人悄悄控制了欧洲北部大部分香料的运输和贸易。随后，1580年，葡萄牙陷入西班牙的统治。到16世纪末期，荷兰人发现自己被隔绝在市场之外。由于欧洲各地胡椒、肉豆蔻和其他香料的价格急剧上涨，他们决定还击。

第4段

In 1602, Dutch merchants founded the VOC, a trading corporation better known as the Dutch East India Company. By 1617, the VOC was the richest commercial operation in the world. The company had 50,000 employees worldwide, with a private army of 30,000 men and a fleet of 200 ships. At the same time, thousands of people across Europe were dying of the plague, a highly contagious and deadly disease. Doctors were desperate for a way to stop the spread of this disease, and they decided nutmeg held the cure. Everybody wanted nutmeg, and many were willing to spare no expense to have it. Nutmeg bought for a few pennies in Indonesia could be sold for 68,000 times its original cost on the streets of London. The only problem was the short supply. And that’s where the Dutch found their opportunity.

1602年，荷兰商人成立了VOC贸易公司。它更广为人知的名字是荷兰东印度公司。到了1617年时，VOC已经是世界上最富有的商业机构。公司在全球范围内拥有50000名员工，还配备一只由30000人组成的私人军队和一支由200艘船只组成的舰队。同时，欧洲各地正有数千人死于瘟疫，一种具有极高传染性和致死率的疾病。医生迫切寻找一种能够阻止该疾病扩散的方法，而他们认为肉豆蔻中藏有解药。每个人都想要肉豆蔻，许多人愿意倾家荡产得到它。在印度尼西亚只用几便士就可以买到的肉豆蔻在伦敦街头可以被卖到初始价格的68000倍。唯一的问题就是供应短缺，而荷兰人正是在这里找到了他们的机会。

第5段

The Banda Islands were ruled by local sultans who insisted on maintaining a neutral trading policy towards foreign powers. This allowed them to avoid the presence of Portuguese or Spanish troops on their soil, but it also left them unprotected from other invaders. In 1621, the Dutch arrived and took over. Once securely in control of the Bandas, the Dutch went to work protecting their new investment. They concentrated all nutmeg production into a few easily guarded areas, uprooting and destroying any trees outside the plantation zones. Anyone caught growing a nutmeg seedling or carrying seeds without the proper authority was severely punished. In addition, all exported nutmeg was covered with lime to make sure there was no chance a fertile seed which could be grown elsewhere would leave the islands. There was only one obstacle to Dutch domination. One of the Banda Islands, a sliver of land called Run, only 3 km long by less than 1 km wide, was under the control of the British. After decades of fighting for control of this tiny island, the Dutch and British arrived at a compromise settlement, the Treaty of Breda, in 1667. Intent on securing their hold over every nutmeg-producing island, the Dutch offered a trade: if the British would give them the island of Run, they would in turn give Britain a distant and much less valuable island in North America. The British agreed. That other island was Manhattan, which is how New Amsterdam became New York. The Dutch now had a monopoly over the nutmeg trade which would last for another century.

当时班达群岛处于本地苏丹人的统治之下。他们对外国势力秉持中立的贸易政策。 这使得他们可以避免葡萄牙或西班牙军队踏上其土地，但这也让他们不受保护的暴露于其他入侵者面前。1621年，荷兰人来到这里，进行接管。牢牢控制住班达群岛之后，荷兰人文章来自老烤鸭雅思立刻开始着手保护他们的最新投资。他们将所有的肉豆蔻生产集中在少数几个容易守卫的区域，将种植区外的树木连根拔起并摧毁。任何未经许可种植肉豆蔻幼苗或携带种子的人被发现之后都会受到严厉的惩罚。除此之外，所有出口的肉豆蔻都被撒上石灰，以确保离开岛屿的种子没有任何机会在其他地方生根发芽。荷兰人的统治只有一个障碍。班达群岛中一座被称为Run的狭长岛屿位于英国人的控制之下。它只有3公里长，不到1公里宽。在数十年为争夺该弹丸小岛控制权的斗争之后，荷兰人和英国人达成妥协，于1667年签订Breda协议。为了确保自己对每一个生长肉豆蔻岛屿的控制，荷兰人提出以下交易：如果英国人让出Run岛，那么他们会在遥远的北美给予英国人一座价值远不及Run岛的岛屿。英国人同意了。那个另外的岛屿是曼哈顿，新阿姆斯特丹就这样变成了纽约。荷兰人现在垄断了肉豆蔻贸易，这种垄断地位还会继续延续一个世纪。

第6段

Then, in 1770, a Frenchman named Pierre Poivre successfully smuggled nutmeg plants to safety in Mauritius, an island off the coast of Africa. Some of these were later exported to the Caribbean where they thrived, especially on the island of Grenada. Next, in 1778, a volcanic eruption in the Banda region caused a tsunami that wiped out half the nutmeg groves. Finally, in 1809, the British returned to Indonesia and seized the Banda Islands by force. They returned the islands to the Dutch in 1817, but not before transplanting hundreds of nutmeg seedlings to plantations in several locations across southern Asia. The Dutch nutmeg monopoly was over.

1770年，一名叫做Perre Poivre的法国人成功将肉豆蔻植株走私到毛里求斯的安全地带。那是一座位于非洲海岸线外的岛屿。其中一些随后被出口到加勒比地区。它们在那里茁壮成长，尤其是在格林纳达岛上。随后，1778年，班达地区的火山爆发引起海啸，毁掉了那里一半的肉豆蔻植株。最终，1809年，英国人回到印度尼西亚，用武力控制了班达群岛。他们在1817年将岛屿还给荷兰人，但在此之前已经将上百株肉豆蔻幼苗转移到了散布在东南亚的几个种植园中。荷兰人对肉豆蔻的垄断自此结束。

第7段

Today, nutmeg is grown in Indonesia, the Caribbean, India, Malaysia, Papua New Guinea and Sri Lanka, and world nutmeg production is estimated to average between 10,000 and 12,000 tonnes per year.

如今，肉豆蔻被广泛种植在印度尼西亚，加勒比，印度，马拉西亚，巴布亚新几内亚和斯里兰卡。每年全世界的肉豆蔻产量平均在10000吨到12000吨之间。

### [15Test1Passage2 driverless cars 无人驾驶](http://www.laokaoya.com/39536.html)

A部分

The automotive sector is well used to adapting to automation in manufacturing. The implementation of robotic car manufacture from the 1970s onwards led to significant cost savings and improvements in the reliability and flexibility of vehicle mass production. A new challenge to vehicle production is now on the horizon and, again, it comes from automation. However, this time it is not to do with the manufacturing process, but with the vehicles themselves.

汽车部门早就很好的适应了生产过程中的自动化。自20世纪70年代采用机器人制造汽车以来，汽车大规模生产成本大幅下降，并且可靠性与灵活性有所提升。现在，汽车生产又出现新的挑战，而且它仍然来自自动化。然而，这一次它与制造过程无关，而是关于汽车自身。

Research projects on vehicle automation are not new. Vehicles with limited self-driving capabilities have been around for more than 50 years, resulting in significant contributions towards driver assistance systems. But since Google announced in 2010 that it had been trialling self-driving cars on the streets of California, progress in this field has quickly gathered pace.

汽车自动化方面的研究项目并不是什么新鲜事。带有有限自动驾驶功能的汽车已经出现了50多年，为驾驶辅助系统做出重大贡献。但自从谷歌于2010年宣布，它正在加利福尼亚的街头测试自动驾驶汽车，该领域的进展速度明显加快。

B部分

There are many reasons why technology is advancing so fast. One frequently cited motive is safety; indeed, research at the UK’s Transport Research Laboratory has demonstrated that more than 90 percent of road collisions involve human error as a contributory factor, and it is the primary cause in the vast majority. Automation may help to reduce the incidence of this.

有很多原因可以解释为什么科技进步如此之快。一项经常被提及的动机是安全。确实，英国交通研究实验室的研究已经证明，90%以上的道路碰撞事故都涉及人为错误，而且它还是绝大多数事故的主要原因。自动化或许可以帮助减少此类事情的发生。

Another aim is to free the time people spend driving for other purposes. If the vehicle can do some or all of the driving, it may be possible to be productive, to socialise or simply to relax while automation systems have responsibility for safe control of the vehicle. If the vehicle can do the driving, those who are challenged by existing mobility models – such as older or disabled travellers – may be able to enjoy significantly greater travel autonomy.

另外一项目的是将人类用于驾驶的时间解放出来以投入其他目标。如果汽车能够进行部分或者所有的驾驶工作，那么在自动驾驶系统为安全操控负责时，人们就可以进行工作、社交或者仅仅是放松一下。如果汽车能够自动驾驶，那么那些受困于现有移动模式的人-比如老年人或者残疾人-就可以享受更大程度的出行自由。

C部分

Beyond these direct benefits, we can consider the wider implications for transport and society, and how manufacturing processes might need to respond as a result. At present, the average car spends more than 90 percent of its life parked. Automation means that initiatives for car-sharing become much more viable, particularly in urban areas with significant travel demand. If a significant proportion of the population choose to use shared automated vehicles, mobility demand can be met by far fewer vehicles.

除了这些直接的好处，我们还可以设想这一变革给交通和社会带来的更广泛的影响，以及制造过程可能因此需要做出怎样的应对。目前，平均一辆车有90%以上的时间都停泊不动。自动化意味着汽车共享的提议变得更加可行，尤其是在拥有大量出行需求的城市地区。如果大部分人口选择使用共享汽车，那么极少量汽车就可以满足移动需求。

D部分

The Massachusetts Institute of Technology investigated automated mobility in Singapore, finding that fewer than 30 percent of the vehicles currently used would be required if fully automated car sharing could be implemented. If this is the case, it might mean that we need to manufacture far fewer vehicles to meet demand.

麻省理工学院在新加坡研究自动化的出行方案，发现如果实行全自动汽车共享的话，只需要当前汽车使用量的不到30%即可。如果事实真的如此，这可能意味着我们只需要生产远少于现在的汽车就能够满足需求。

However, the number of trips being taken would probably increase, partly because empty vehicles would have to be moved from one customer to the next.

然而，旅程次数可能会有所上升，部分原因在于空置车辆需要从一位顾客前往下一位顾客那里。

Modelling work by the University of Michigan Transportation Research Institute suggests automated vehicles might reduce vehicle ownership by 43 percent, but that vehicles’ average annual mileage would double as a result. As a consequence, each vehicle would be used more intensively, and might need replacing sooner. This faster rate of turnover may mean that vehicle production will not necessarily decrease.

密歇根大学交通研究院所搭建的模型显示，自动化汽车也许会将汽车保有量降低43%，但结果是汽车的平均年行驶里程会翻倍。这样一来，每辆车的使用会更加频繁，并需要更快的进行更换。这一更快的置换率可能意味着汽车生产未必会下降。

E部分

Automation may prompt other changes in vehicle manufacture. If we move to a model where consumers are tending not to own a single vehicle but to purchase access to a range of vehicles through a mobility provider, drivers will have the freedom to select one that best suits their needs for a particular journey, rather than making a compromise across all their requirements.

自动化可能会推动汽车制造领域的其他变化。如果我们切换成这样一种模式：消费者不再想要拥有自己的车辆，而是通过某个移动交通工具供应商购买一系列汽车的使用权，那么司机将可以自由选择最能满足他们特定旅程需要的汽车，而不是通盘考虑所有需求进行妥协。

Since, for most of the time, most of the seats in most cars are unoccupied, this may boost production of a smaller, more efficient range of vehicles that suit the needs of individuals. Specialised vehicles may then be available for exceptional journeys, such as going on a family camping trip or helping a son or daughter move to university.

由于大部分汽车的大部分座位在大多数时间都是空置的，这可能会推动生产一系列更小、更加高效的车辆以满足个人需求。到那时可能会出现为独特旅程定制的车辆，如家庭野营之旅或者送子女去上大学。

F部分

There are a number of hurdles to overcome in delivering automated vehicles to our roads. These include the technical difficulties in ensuring that the vehicle works reliably in the infinite range of traffic, weather and road situations it might encounter; the regulatory challenges in understanding how liability and enforcement might change when drivers are no longer essential for vehicle operation; and the societal changes that may be required for communities to trust and accept automated vehicles as being a valuable part of the mobility landscape.

在自动化汽车上路之前，还有许多困难需要克服。它们包括确保汽车能够在各种可能遇到的交通、天气和道路状况下可靠行驶的技术困难；当司机不再是汽车运行的必要元素时，如何理解责任和义务相应变化的规则挑战，以及民众信任和接受自动化汽车作为出行图景中颇具价值的组成部分所需要的社会转变。

G部分

It’s clear that there are many challenges that need to be addressed but, through robust and targeted research, these can most probably be conquered within the next 10 years. Mobility will change in such potentially significant ways and in association with so many other technological developments, such as telepresence and virtual reality, that it is hard to make concrete predictions about the future. However, one thing is certain: change is coming, and the need to be flexible in response to this will be vital for those involved in manufacturing the vehicles that will deliver future mobility.

显然，仍然有许多挑战等待解决，但通过富有活力并且目标明确的研究，这些问题很有可能在接下来的10年里得以克服。出行方式将会发生意义深远的变化，再加上如此多的其他技术的发展（比如远程呈现以及虚拟现实），我们很难对未来做出具体的预测。然而，有一点是肯定的：变化即将到来。在应对这一变化时保持灵活，对于那些牵扯到汽车制造，并为未来提供交通工具的各方团体来说至关重要。

### [15Test1Passage3 What is exploration 探索是什么](http://www.laokaoya.com/39600.html)

第1段

We are all explorers. Our desire to discover, and then share that new-found knowledge, is part of what makes us human 一 indeed, this has played an important part in our success as a species. Long before the first caveman slumped down beside the fire and grunted news that there were plenty of wildebeest over yonder, our ancestors had learnt the value of sending out scouts to investigate the unknown. This questing nature of ours undoubtedly helped our species spread around the globe, just as it nowadays no doubt helps the last nomadic Penan maintain their existence in the depleted forests of Borneo, and a visitor negotiate the subways of New York.

我们都是探索者。我们对发现以及随后分享新发现知识的渴望是我们之所以成为人类的部分原因 – 确实，这一特质在我们作为一个物种所取得的成功中扮演着重要角色。早在第一个洞穴人卧倒在篝火旁，嘟囔地说着那边有很多野兽的消息之前，我们的祖先已经了解到派遣侦查员探索未知区域的价值。我们这一探索追寻的本质无疑帮助我们的族群在全球扩散开来，正如它仍然毫无疑问地帮助着最后一只Penan游牧部落在Borneo荒芜的森林中维持生存，以及一名游客在纽约地铁中摸索方向。

第2段

Over the years, we’ve come to think of explorers as a peculiar breed – different from the rest of us, different from those of us who are merely ‘well travelled’, even; and perhaps there is a type of person more suited to seeking out the new, a type of caveman more inclined to risk venturing out. That, however, doesn’t take away from the fact that we all have this enquiring instinct, even today; and that in all sorts of professions 一 whether artist, marine biologist or astronomer 一 borders of the unknown are being tested each day.

最近几年，我们将探索者看成一种独特的物种 – 与我们其他人不同，甚至与我们之中那些仅仅是去过许多地方的人不同。或许有一类人更适合探索新鲜事物，有一类洞穴人更加倾向于冒险外出。然而，即便是现在，这也并未改变我们都有这一探索追寻的本能的事实。在所有职业中 – 无论是艺术家、生物学家还是天文学家 – 未知的边界每天都在经受测试。

第3段

Thomas Hardy set some of his novels in Egdon Heath, a fictional area of uncultivated land, and used the landscape to suggest the desires and fears of his characters. He is delving into matters we all recognise because they are common to humanity. This is surely an act of exploration, and into a world as remote as the author chooses. Explorer and travel writer Peter Fleming talks of the moment when the explorer returns to the existence he has left behind with his loved ones. The traveller ‘who has for weeks or months seen himself only as a puny and irrelevant alien crawling laboriously over a country in which he has no roots and no background, suddenly encounters his other self, a relatively solid figure, with a place in the minds of certain people’.

Thomas Hardy将其小说的背景设定在Egdon Heath，一块尚未开发的虚构疆域，并且利用风景暗示其人物的渴望与恐惧。他所挖掘的事物我们都能识别出来，因为它们是我们人类所共有的。这当然是一种探索行为，而且是对一个作者所选择的遥远世界的探索。探险家与旅行作家Peter Fleming谈到这样的时刻：探险家回到他之前与所爱的人一起抛之身后的存在。旅行者“在几周或几个月的时间里将自己看作是一个微不足道的、毫不相干的外乡人，费劲全力缓慢行走在一片他既没有根基也没有背景的异域大陆上，突然之间，他遇到另一个自我，一个相对更加坚固的身份，在特定人群的心中占有了一席之地”。

第4段

In this book about the exploration of the earth’s surface, I have confined myself to those whose travels were real and who also aimed at more than personal discovery. But that still left me with another problem: the word ‘explorer’ has become associated with a past era. We think back to a golden age, as if exploration peaked somehow in the 19th century 一 as if the process of discovery is now on the decline, though the truth is that we have named only one and a half million of this planet’s species, and there may be more than 10 million 一 and that’s not including bacteria. We have studied only 5 per cent of the species we know. We have scarcely mapped the ocean floors, and know even less about ourselves; we fully understand the workings of only 10 per cent of our brains.

在这本关于探索地球表面的书籍中，我将自己的目光限定在那些进行过真正的旅行，并且目标不仅仅是自我发现的人群身上。但这仍然给我造成另一个问题：“探索者”一词已经与过去的时代文章来自老烤鸭雅思相关联。我们会回想某个黄金时代，好像探索莫名地在19世纪达到顶峰 – 好像发现的过程如今已在衰退，虽然事实是我们才仅仅命名了这座行星上150万个物种而已，而全部的物种可能超过1000万，并且这还不包括细菌。我们只研究了已知物种的5%。我们尚未绘制海洋底部的地图，对我们自身更是知之甚少；我们只对大脑10%的区域的工作原理有充分了解。

第5段

Here is how some of today’s ‘explorers’ define the word. Ran Fiennes, dubbed the ‘greatest living explorer’, said, ‘An explorer is someone who has done something that no human has done before – and also done something scientifically useful.’ Chris Bonington, a leading mountaineer, felt exploration was to be found in the act of physically touching the unknown: ‘You have to have gone somewhere new.’ Then Robin Hanbury-Tenison, a campaigner on behalf of remote so-called ‘tribal’ peoples, said, ‘A traveller simply records information about some far-off world, and reports back; but an explorer changes the world.’ Wilfred Thesiger, who crossed Arabia’s Empty Quarter in 1946, and belongs to an era of unmechanised travel now lost to the rest of us, told me, ‘If I’d gone across by camel when I could have gone by car, it would have been a stunt.’ To him, exploration meant bringing back information from a remote place regardless of any great self-discovery.

如下是一些今天的“探索者”对这个词的定义。被称为“现存的最伟大的探索者”的Ran Fiennes说：“探索者是一位完成了之前没有人完成过的事情的人 – 并且这件事情也对科学有益”。Chris Bonington，一位顶尖的登山专家，认为探索在于用实际行为触碰未知领域：“你必须得去一些全新的地方”。Robin Hanbury-Tenison， 一位代表偏远地区所谓“部落”群体的活动家，说：“旅行者仅仅记录关于遥远世界的信息，然后报道回来；但探索者则会改变世界”。Wilfred Thesiger于1946年穿越阿拉伯的空域沙漠，属于那个我们已经无法触及的不借助机械设备出行的年代。他告诉我，“如果我在能够使用汽车的时候选择乘坐骆驼进行穿越，那么这一切就成了噱头”。对他而言，探索意味着将信息从遥远的地方带回来，至于任何探索者自身伟大的自我发现则无关紧要“。

第6段

Each definition is slightly different – and tends to reflect the field of endeavour of each pioneer. It was the same whoever I asked: the prominent historian would say exploration was a thing of the past, the cutting-edge scientist would say it was of the present. And so on. They each set their own particular criteria; the common factor in their approach being that they all had, unlike many of us who simply enjoy travel or discovering new things, both a very definite objective from the outset and also a desire to record their findings.

每种定义都稍有不同 – 并且倾向于反映每位先驱者各自付出努力的领域。无论我问的是谁，结果都一样：杰出的历史学家会说探索是过去的事情，前沿科学家会说探索是现在的事情。等等等等。他们每个人都设立了自己独特的标准。但他们的看法中有一个共同点：不像我们许多人那样只是享受旅行或者发现新鲜事物，他们所有人一开始都有着十分明确的目标，并且想要记录自己的发现。

第7段

I’d best declare my own bias. As a writer, I’m interested in the exploration of ideas. I’ve done a great many expeditions and each one was unique. I’ve lived for months alone with isolated groups of people all around the world, even two ‘uncontacted tribes’. But none of these things is of the slightest interest to anyone unless, through my books, I’ve found a new slant, explored a new idea. Why? Because the world has moved on. The time has long passed for the great continental voyages – another walk to the poles, another crossing of the Empty Quarter. We know how the land surface of our planet lies; exploration of it is now down to the details 一 the habits of microbes, say, or the grazing behaviour of buffalo. Aside from the deep sea and deep underground, it’s the era of specialists. However, this is to disregard the role the human mind has in conveying remote places; and this is what interests me: how a fresh interpretation, even of a well-travelled route, can give its readers new insights.

我最好坦白一下我自己的偏颇。作为作家，我对探索观念很感兴趣。我进行过许多次考察，每一次都十分独特。我曾孤身一人和世界上与世隔绝的人群一起生活过几个月，其中甚至包括两个“从未与外界接触的部落”。但所有这些事情都无法引起其他人的丝毫兴趣，除非我通过自己的书籍找到新的切入点，探索新的观念。为什么？因为世界已经向前发展。伟大的洲际旅行的时光早已过去 – 比如再次徒步前往极地，比如再次穿过空域沙漠。我们知道地球表面是什么样子。对它的探索现在集中于细节 – 比如微生物的习性或者水牛的进食行为。除了深海和地底深处之外，如今已经是专业人员的时代。然而，这忽视了人类思想在传播遥远地域信息中的作用。而这也是我的兴趣所在：一种新的解释，甚至是一条熟悉的旅途，如何能赋予其读者全新的想法。

## 15Test2

### [15Test2Passage1 Could urban engineers learn from dance 舞蹈对城市交通设计的启示](http://www.laokaoya.com/39907.html)

段落A

The way we travel around cities has a major impact on whether they are sustainable. Transportation is estimated to account for 30% of energy consumption in most of the world’s most developed nations, so lowering the need for energy-using vehicles is essential for decreasing the environmental impact of mobility. But as more and more people move to cities, it is important to think about other kinds of sustainable travel too. The ways we travel affect our physical and mental health, our social lives, our access to work and culture, and the air we breathe. Engineers are tasked with changing how we travel round cities through urban design, but the engineering industry still works on the assumptions that led to the creation of the energy-consuming transport systems we have now: the emphasis placed solely on efficiency, speed, and quantitative data. We need radical changes, to make it healthier, more enjoyable, and less environmentally damaging to travel around cities.

我们在城市中的出行方式对城市的可持续性有着重大影响。据估计，在世界上大多数最为发达的国家中，交通运输占到能源消耗的30%，所以降低对耗能车辆的需求对于减轻出行的环境影响来说至关重要。但是，随着越来越多的人移居到城市，思考其他可持续的出行方式同样重要。我们的出行方式影响着我们的身心健康，社会生活，工作方式，文化体验，以及我们所呼吸的空气。工程师面临着通过城市设计改变我们出行方式的任务，然而工程行业仍然基于之前的理念运转，而正是这些理念催生出我们如今所拥有的消耗能源的交通运输系统。其重点完全放在效率、速度以及量化数据上。我们需要彻底的改变，让城市内的出行变得更加健康，更加惬意，同时对环境的破坏更小。

段落B

Dance might hold some of the answers. That is not to suggest everyone should dance their way to work, however healthy and happy it might make us, but rather that the techniques used by choreographers to experiment with and design movement in dance could provide engineers with tools to stimulate new ideas in city-making. Richard Sennett, an influential urbanist and sociologist who has transformed ideas about the way cities are made, argues that urban design has suffered from a separation between mind and body since the introduction of the architectural blueprint.

舞蹈也许能提供部分答案。这并不是说每个人应该跳着舞去上班 – 无论这样能让我们多么健康快乐 – 而是说编舞者在实验和设计舞蹈动作中所使用的技术能够为工程师提供激发城市设计新想法的工具。Richard Sennett，一位颇具影响力的城市学者和社会学家，改变了城市建造方式的相关理念。他认为自从引入设计蓝图以来，城市设计就一直饱受思想与身体分离的痛苦。

段落C

Whereas medieval builders improvised and adapted construction through their intimate knowledge of materials and personal experience of the conditions on a site, building designs are now conceived and stored in media technologies that detach the designer from the physical and social realities they are creating. While the design practices created by these new technologies are essential for managing the technical complexity of the modern city, they have the drawback of simplifying reality in the process.

中世纪的建筑师通过他们对材料的亲密认知和对建筑地点各方面条件的私人体验来即兴创作或者修改建筑设计，而如今的建筑设计则利用多媒体技术进行构想和存储，将设计师从他们正在创作的物理与社会现实中分割开来。虽然这些新技术所带来的设计方法对于管理现代城市的技术难题而言十分必要，但它们在此过程中却存在着简化事实的缺陷。

段落D

To illustrate, Sennett discusses the Peachtree Center in Atlanta, USA, a development typical of the modernist approach to urban planning prevalent in the 1970s. Peachtree created a grid of streets and towers intended as a new pedestrian-friendly downtown for Atlanta. According to Sennett, this failed because its designers had invested too much faith in computer-aided design to tell them how it would operate. They failed to take into account that purpose-built street cafes could not operate in the hot sun without the protective awnings common in older buildings, and would need energy-consuming air conditioning instead, or that its giant car park would feel so unwelcoming that it would put people off getting out of their cars. What seems entirely predictable and controllable on screen has unexpected results when translated into reality.

为了说明这一问题，Sennett探讨了美国亚特兰大市的Peachtree Center。它是20世纪70年代流行的现代主义城市设计方法所催生出来的典型作品。Peachtree创造出由街道和高楼构成的网格，想要为亚特兰大打造一个崭新的对行人友好的市中心。根据Sennett的说法，这一方案失败的原因在于，它的设计者们过于相信计算机辅助软件所告诉他们的运行方式。他们没能考虑到，没有了老式建筑中十分常见的遮阳蓬的保护，刻意建造在街边的咖啡店无法在灼热的阳光下正常运营，必须得有消耗能源的空调系统才可以。他们也没能考虑到，巨大的停车场让人感到如此不方便，以至于人们甚至不愿意下车。屏幕上看起来似乎完全可预料、可控制的东西，一旦变为现实就会产生出人意料的结果。

段落E

The same is true in transport engineering, which uses models to predict and shape the way people move through the city. Again, these models are necessary, but they are built on specific world views in which certain forms of efficiency and safety are considered and other experiences of the city ignored. Designs that seem logical in models appear counter-intuitive in the actual experience of their users. The guard rails that will be familiar to anyone who has attempted to cross a British road, for example, were an engineering solution to pedestrian safety based on models that prioritise the smooth flow of traffic. On wide major roads, they often guide pedestrians to specific crossing points and slow down their progress across the road by using staggered access points to divide the crossing into two – one for each carriageway. In doing so they make crossings feel longer, introducing psychological barriers greatly impacting those that are the least mobile, and encouraging others to make dangerous crossings to get around the guard rails. These barriers don’t just make it harder to cross the road: they divide communities and decrease opportunities for healthy transport. As a result, many are now being removed, causing disruption, cost, and waste.

同样的问题也出现在交通工程中。它使用模型来预测并塑造人们在城市中的出行方式。重申一下，这些模型是必要的，但它们所基于的世界观会考虑特定形式的效率与安全，并忽视城市生活中的其他体验。模型中看似符合逻辑的设计会在使用者的实际体验中显得反直觉。例如，安全护栏对于任何想要横穿英国道路的人来说都很熟悉。它作为行人安全的工程解决方案，却是建立在优先车辆顺畅流动的模型之上。在主干道上，它们往往引导行人前往特定的过马路地点，并使用错开的入口将路径一分为二来减缓过马路的过程 – 一次只过一条车道。这样的设计使得过马路的过程显得更加漫长，给那些不方便移动的人带来极大的心理障碍，并鼓励其他人绕开这些安全护栏进行危险的穿越。这些障碍不仅仅使得过马路更加困难。它们还将不同人群分割开来，降低健康出行的机会。其结果是，许多护栏如今已被拆除，造成干扰、支出和浪费。

段落F

If their designers had had the tools to think with their bodies – like dancers – and imagine how these barriers would feel, there might have been a better solution. In order to bring about fundamental changes to the ways we use our cities, engineering will need to develop a richer understanding of why people move in certain ways, and how this movement affects them. Choreography may not seem an obvious choice for tackling this problem. Yet it shares with engineering the aim of designing patterns of movement within limitations of space. It is an art form developed almost entirely by trying out ideas with the body, and gaining instant feedback on how the results feel. Choreographers have deep understanding of the psychological, aesthetic, and physical implications of different ways of moving.

如果它们的设计者采用身体力行的思考方式 – 就如舞蹈者一样 – 去想象这些障碍感受如何，那么可能就会有更好的解决方案。为了给我们使用城市的方式带来彻底的改变，工程学需要更加深入地理解人们为什么以特定的方式出行，以及这种出行方式如何影响他们。舞蹈动作设计也许看起来并不像是解决这一问题的明显选择，但它跟工程学有着相同的目标：在有限的空间内设计移动模式。这种艺术形式几乎完全依靠身体来尝试各种理念，并通过对结果的感受获取即时反馈。编舞者对不同移动方式在心理、审美和物理上的含义有着深刻的理解。

段落G

Observing the choreographer Wayne McGregor, cognitive scientist David Kirsh described how he ‘thinks with the body’. Kirsh argues that by using the body to simulate outcomes, McGregor is able to imagine solutions that would not be possible using purely abstract thought. This kind of physical knowledge is valued in many areas of expertise, but currently has no place in formal engineering design processes. A suggested method for transport engineers is to improvise design solutions and get instant feedback about how they would work from their own experience of them, or model designs at full scale in the way choreographers experiment with groups of dancers. Above all, perhaps, they might learn to design for emotional as well as functional effects.

通过观察编舞家Wayne McGregor，认知科学家David Kirsh描述前者是如何“利用身体进行思考的”。Kirsh认为，通过利用身体模拟结果，Mcgregor能够想象出利用抽象思维所无法得到的解决方案。这种肢体上的知识在许多专业领域都受到高度重视，但在如今的正式工程设计中却没有一席之地。建议交通工程师使用如下方法：即兴给出设计方案，然后利用自己的亲身经历获取有关它们如何运行的即时反馈，或者像编舞人员使用一群舞蹈者进行实验一样，全方位地对设计方案进行模拟。或许最重要的是，他们可能学会如何在设计中既考虑到功能性效果，也照顾到情绪感受。

### [15Test2Passage2 Should we try to bring extinct species back to life 复活已灭绝的物种](http://www.laokaoya.com/39937.html)

段落A

The passenger pigeon was a legendary species. Flying in vast numbers across North America, with potentially many millions within a single flock, their migration was once one of nature’s great spectacles. Sadly, the passenger pigeon’s existence came to an end on 1 September 1914, when the last living specimen died at Cincinnati Zoo. Geneticist Ben Novak is lead researcher on an ambitious project which now aims to bring the bird back to life through a process known as ‘de-extinction’. The basic premise involves using cloning technology to turn the DNA of extinct animals into a fertilised embryo, which is carried by the nearest relative still in existence – in this case, the abundant band-tailed pigeon – before being born as a living, breathing animal. Passenger pigeons are one of the pioneering species in this field, but they are far from the only ones on which this cutting-edge technology is being trialled.

候鸽是一种传奇物种。它们的迁徙曾经是自然界最为壮观的景象之一。大量的候鸽飞越北美上空，仅仅一群鸽子里可能就有数百万只。令人悲伤的是，1914年9月1日，最后一只活着的候鸽在辛辛那提动物园死去，该物种也随之灭绝。基因学家Ben Novak是一个宏伟项目的首席研究员。该项目如今致力于通过一种叫做“逆转灭绝”的过程复活这种鸟类。其基本操作为利用克隆技术将已灭绝动物的DNA放入一颗受过精的胚胎中。然后由其仍然存活着的、血缘上最为亲近的物种 – 这一案例中使用的是数量丰富的斑尾鸽 – 孕育出活生生的、能够呼吸的动物。

段落B

In Australia, the thylacine, more commonly known as the Tasmanian tiger, is another extinct creature which genetic scientists are striving to bring back to life. ‘There is no carnivore now in Tasmania that fills the niche which thylacines once occupied,’ explains Michael Archer of the University of New South Wales. He points out that in the decades since the thylacine went extinct, there has been a spread in a ‘dangerously debilitating’ facial tumour syndrome which threatens the existence of the Tasmanian devils, the island’s other notorious resident. Thylacines would have prevented this spread because they would have killed significant numbers of Tasmanian devils. ‘If that contagious cancer had popped up previously, it would have burned out in whatever region it started. The return of thylacines to Tasmania could help to ensure that devils are never again subjected to risks of this kind.’

在澳大利亚，袋狼是另外一种科学家正在努力复活的已灭绝物种。它更广为认知的名字是塔斯马尼亚虎。“塔斯马尼亚如今没有任何一种物种能够填补袋狼曾经的位置”，新南威尔士大学的Michael Archer解释到。他指出，在袋狼灭绝后的这几十年里，一种十分危险的面部肿瘤症状传播开来，威胁到该岛屿上另外一种臭名昭著的原住民 – 袋獾 – 的生存。袋狼本可以阻止这场传播，因为它们文章来自老烤鸭雅思会捕杀大量的塔斯马尼亚袋獾。“如果这种传染性的癌症之前爆发出来，无论它从哪个区域开始，其苗头很快就会熄灭。袋狼在塔斯马尼亚的回归有助于确保袋獾永远不再遭受这类风险的影响”。

段落C

If extinct species can be brought back to life, can humanity begin to correct the damage it has caused to the natural world over the past few millennia? ‘The idea of de-extinction is that we can reverse this process, bringing species that no longer exist back to life,’ says Beth Shapiro of University of California Santa Cruz’s Genomics Institute. ‘I don’t think that we can do this. There is no way to bring back something that is 100 per cent identical to a species that went extinct a long time ago.’ A more practical approach for long-extinct species is to take the DNA of existing species as a template, ready for the insertion of strands of extinct animal DNA to create something new; a hybrid, based on the living species, but which looks and/or acts like the animal which died out.

如果已灭绝的物种能够重现于世的话，人类能开始修复它在过去几千年里给自然界造成的破坏吗？“逆转灭绝的想法在于我们可以扭转这一过程，复活那些已经不再存在的物种”，加利福尼亚大学圣克鲁兹分校基因组学研究所的Beth Shapiro这样说道。“我不认为我们可以达成这一目标。复活之后的东西不可能与很久以前已经灭绝的物种百分百一致”。对于灭绝已久的物种来说，更为实际的方法是将现存物种的DNA当作底板，在其中插入已灭绝动物的DNA片段，从而创造出崭新的物种 – 一种基于现存物种的杂交种，然而看起来或者行动起来却类似已灭绝的动物。

段落D

This complicated process and questionable outcome begs the question: what is the actual point of this technology? ‘For us, the goal has always been replacing the extinct species with a suitable replacement,’ explains Novak. ‘When it comes to breeding, band-tailed pigeons scatter and make maybe one or two nests per hectare, whereas passenger pigeons were very social and would make 10,000 or more nests in one hectare.’ Since the disappearance of this key species, ecosystems in the eastern US have suffered, as the lack of disturbance caused by thousands of passenger pigeons wrecking trees and branches means there has been minimal need for regrowth. This has left forests stagnant and therefore unwelcoming to the plants and animals which evolved to help regenerate the forest after a disturbance. According to Novak, a hybridised band-tailed pigeon, with the added nesting habits of a passenger pigeon, could, in theory, re-establish that forest disturbance, thereby creating a habitat necessary for a great many other native species to thrive.

这一复杂的过程和充满疑问的结果引发如下的问题：这一技术的实际意义何在？“对于我们来说，其目标一直都是利用合适的替代品来取代已灭绝的物种”，Novak解释道。“在繁殖方面，斑尾鸽四散开来，每公顷可能只筑一两个巢，而候鸽则具有较强的社会性，会在一公顷内筑上10000多个巢”。自从这一关键物种消失以来，美国东部的生态系统一直饱受其害。数以千计的候鸽不再破坏树木和枝干，这就意味着它们没有了再次生长的需要，导致森林死气沉沉，不再适合那些进化出来就是为了帮助森林在遭到破坏之后崇焕生机的植物和动物。据Novak说，杂交之后的斑尾鸽融入了候鸽的筑巢习惯，理论上能够重现对森林的破坏，由此为许多其他本土物种创造出兴旺繁衍所必须的栖息地。

段落E

Another popular candidate for this technology is the woolly mammoth. George Church, professor at Harvard Medical School and leader of the Woolly Mammoth Revival Project, has been focusing on cold resistance, the main way in which the extinct woolly mammoth and its nearest living relative, the Asian elephant, differ. By pinpointing which genetic traits made it possible for mammoths to survive the icy climate of the tundra, the project’s goal is to return mammoths, or a mammoth-like species, to the area. ‘My highest priority would be preserving the endangered Asian elephant,’ says Church, ‘expanding their range to the huge ecosystem of the tundra. Necessary adaptations would include smaller ears, thicker hair, and extra insulating fat, all for the purpose of reducing heat loss in the tundra, and all traits found in the now extinct woolly mammoth.’ This repopulation of the tundra and boreal forests of Eurasia and North America with large mammals could also be a useful factor in reducing carbon emissions – elephants punch holes through snow and knock down trees, which encourages grass growth. This grass growth would reduce temperatures, and mitigate emissions from melting permafrost.

这一技术另外一个呼声很高的备选是猛犸象。哈佛医学院教授，同时也是猛犸象复活项目的负责人George Church一直关注防寒抗冻。这是已灭绝的猛犸象和它亲缘最近的现存物种-亚洲象之间的主要差别。通过定位使猛犸象能够在冻土寒冷气候中存活下来的基因特质，该项目的目标是让猛犸象，或者类似猛犸象的物种重新回到该区域。“我的最高优先目标是保护濒临灭绝的亚洲象”，Church说，“将它们的活动范围扩展到冻原巨大的生态系统中。必要的调整包括更小的耳朵，更厚的毛发，以及额外的保温脂肪层。所有这些都是为了减少冻土上的热量流失，而所有这些特质都能够在如今已经灭绝的猛犸象身上找到“。这一向欧亚大陆和北美洲的冻土与北部森林重新输送大型哺乳动物的计划也有助于减少碳排放 -大象会在雪地上踩出洞来，还会撞倒树木，从而刺激草皮生长。而草皮的生长会降低温度，缓解永冻层融化的相应排放。

段落F

While the prospect of bringing extinct animals back to life might capture imaginations, it is, of course, far easier to try to save an existing species which is merely threatened with extinction. ‘Many of the technologies that people have in mind when they think about de-extinction can be used as a form of “genetic rescue”,’ explains Shapiro. She prefers to focus the debate on how this emerging technology could be used to fully understand why various species went extinct in the first place, and therefore how we could use it to make genetic modifications which could prevent mass extinctions in the future. ‘I would also say there’s an incredible moral hazard to not do anything at all,’ she continues. “We know that what we are doing today is not enough, and we have to be willing to take some calculated and measured risks.’

虽然复活灭绝动物的前景可能会捕获人们的想象力，但努力拯救那些只是受到灭绝威胁的现存物种无疑要容易得多。“当人们想到逆转灭绝时脑海中出现的许多技术都可以作为某种形式的‘基因救援’”，Shapiro解释道。她更喜欢关注如下争论，即如何利用这一新兴技术来全面理解各类物种当初为什么会灭绝，以及我们能如何运用它来进行基因修饰，以阻止未来的大规模灭绝。“我还要说，如果什么都不做的话，会有巨大的道德风险”，她补充到。“我们知道自己今天做的还不够，我们必须愿意去承担一些经过仔细计算和衡量的风险”。

### [15Test2Passage3 having a laugh 笑一笑](http://www.laokaoya.com/39946.html)

第1段

Humans start developing a sense of humour as early as six weeks old, when babies begin to laugh and smile in response to stimuli. Laughter is universal across all human cultures and even exists in some form in rats, chimps, and bonobos. Like other human emotions and expressions, laughter and humour provide psychological scientists with rich resources for studying human psychology, ranging from the development of language to the neuroscience of social perception.

人类在6周大的时候就开始出现幽默感。这个时候，婴儿会开始使用大笑和微笑来回应外界刺激。笑是所有人类文化所共有的，它甚至以某种形式存在于老鼠、黑猩猩和倭黑猩猩中。正如人类其他情绪和表情一样，笑和幽默为心理学家提供了研究人类心理的丰富资源，从语言的发展到社会认知的神经科学等等。

第2段

Theories focusing on the evolution of laughter point to it as an important adaptation for social communication. Take, for example, the recorded laughter in TV comedy shows. Back in 1950, US sound engineer Charley Douglass hated dealing with the unpredictable laughter of live audiences, so started recording his own ‘laugh tracks’. These were intended to help people at home feel like they were in a social situation, such as a crowded theatre. Douglass even recorded various types of laughter, as well as mixtures of laughter from men, women, and children. In doing so, he picked up on a quality of laughter that is now interesting researchers: a simple ‘haha’ communicates a remarkable amount of socially relevant information.

关注笑容进化的理论指出，它是对社会交流的重要适应。以电视喜剧中事先录好的笑声为例。1950年，美国声音工程师Charley Douglass厌倦了处理现场观众无法预测的笑声，因此开始录制他自己的“笑声轨道”。这些音轨原本是为了让那些待在家里的人感觉自己仿佛处于社交场合之中，比如拥挤的剧院。Douglass甚至录制了不同类型的笑声，还将男人，女人和孩子的笑声混合在一起。在这样做的过程中，他注意到笑声一个如今仍然让研究者十分感兴趣的特点：仅仅是简单的“哈哈”就能传达出数量惊人的社交信息。

第3段

In one study conducted in 2016, samples of laughter from pairs of English-speaking students were recorded at the University of California, Santa Cruz. A team made up of more than 30 psychological scientists, anthropologists, and biologists then played these recordings to listeners from 24 diverse societies, from indigenous tribes in New Guinea to city-dwellers in India and Europe. Participants were asked whether they thought the people laughing were friends or strangers. On average, the results were remarkably consistent: worldwide, people’s guesses were correct approximately 60% of the time.

在2016年进行的一项研究中，加利福尼亚大学圣克鲁兹分校几对母语为英语的学生的笑声样本被记录下来。由超过30名心理学家、人类学家和生物学家组成的团队随后将这些录音播放给来自24个不同社会的听众。它们既包括新几内亚的原住民部落，也包括印度和欧洲的城市居民。参与者被询问他们觉得正在大笑的人是朋友还是陌生人。平均来看，这些结果惊人地一致：世界范围内，人们的猜测在大约60%的时候都是正确的。

第4段

Researchers have also found that different types of laughter serve as codes to complex human social hierarchies. A team led by Christopher Oveis from the University of California, San Diego, found that high-status individuals had different laughs from low-status individuals, and that strangers’ judgements of an individual’s social status were influenced by the dominant or submissive quality of their laughter. In their study, 48 male college students were randomly assigned to groups of four, with each group composed of two low-status members, who had just joined their college fraternity group, and two high-status members, older students who had been active in the fraternity for at least two years. Laughter was recorded as each student took a turn at being teased by the others, involving the use of mildly insulting nicknames. Analysis revealed that, as expected, high-status individuals produced more dominant laughs and fewer submissive laughs relative to the low-status individuals. Meanwhile, low-status individuals were more likely to change their laughter based on their position of power; that is, the newcomers produced more dominant laughs when they were in the ‘powerful’ role of teasers. Dominant laughter was higher in pitch, louder, and more variable in tone than submissive laughter.

研究者们还发现：不同类型的笑声能够作为人类社会复杂层级的暗码使用。由加利福尼亚大学圣地亚哥分校的Christopher Oveis领导的研究团队发现，社会地位高的个体与社会地位低的个体拥有不同的笑法，而陌生人对一个人社会地位的判断会受到他们笑声中支配性或服从性特质的影响。在他们的研究中，48名男性大学生被随机分为四人小组。每一组包含两名社会地位较低的成员（刚刚加入大学兄弟会）和两名社会地位较高的成员（至少已经在兄弟会中活跃两年的年长学生）。每位学生轮流被他人揶揄，具体手段包括使用有着轻微冒犯意味的外号，并记录他们的笑声。分析发现，正如事先预料的那样，与社会地位较低的个体相比，社会地位较高的人会发出更多支配性的笑声和更少服从性的笑声。与此同时，社会地位较低的个体更有可能根据他们的权力地位改变自己的笑声。也就是说，当新人处于揶揄者这一“掌权”地位时，他们会发出更多支配性的笑声。相比于服从性的笑声而言，支配性的笑声音调更高，声音更大，语调变化更为多样。

第5段

A random group of volunteers then listened to an equal number of dominant and submissive laughs from both the high- and low-status individuals, and were asked to estimate the social status of the laugher. In line with predictions, laughers producing dominant laughs were perceived to be significantly higher in status than laughers producing submissive laughs. ‘This was particularly true for low-status individuals, who were rated as significantly higher in status when displaying a dominant versus submissive laugh, ‘ Oveis and colleagues note. ‘Thus, by strategically displaying more dominant laughter when the context allows, low-status individuals may achieve higher status in the eyes of others.’ However, high-status individuals were rated as high-status whether they produced their natural dominant laugh or tried to do a submissive one.

随后，一组随机选取的志愿者会聆听来自高低社会地位个体的同等数量的支配性笑声和服从性笑声，并被要求评估发出笑声的人的社会地位。与预测一致，发出支配性笑声的人被认为社会地位远高于那些发出服从性笑声的人。“这对于社会地位较低的人来说尤其如此，与发出服从性笑声相比，他们在发出支配性笑声的时候，获得的社会地位评定明显更高”，Oveis和他的同事注意到。“因此，在环境允许的情况下，通过有策略地展示更多支配性的笑声，社会地位较低的个体文章来自老烤鸭雅思也许能够在别人眼中获得更高的地位”。然而，社会地位较高的个体无论是在发出自然的、支配性笑声时，还是在尝试发出服从性笑声时，都会被人们评定为高地位者。

第6段

Another study, conducted by David Cheng and Lu Wang of Australian National University, was based on the hypothesis that humour might provide a respite from tedious situations in the workplace. This ‘mental break’ might facilitate the replenishment of mental resources. To test this theory, the researchers recruited 74 business students, ostensibly for an experiment on perception. First, the students performed a tedious task in which they had to cross out every instance of the letter ‘e’ over two pages of text. The students then were randomly assigned to watch a video clip eliciting either humour, contentment, or neutral feelings. Some watched a clip of the BBC comedy Mr. Bean, others a relaxing scene with dolphins swimming in the ocean, and others a factual video about the management profession.

另一项由澳大利亚国立大学的David Cheng和Lu Wang所进行的研究则建立在这样的假设之上：幽默也许能让人从工作场所无聊乏味的环境中暂时解脱出来。这种“精神休息”也许能够帮助补充精力。为了测试这一理论，研究者以进行认知实验为名，招募了74名商学院的学生。首先，学生要完成一项无聊的任务。他们必须划掉长达两页的文本中所有的字母“e”。然后学生被随机安排观看一段视频，刺激或者幽默、或者满足、或者中立的情感。一些人观看BBC喜剧《憨豆先生》中的片段，另一些人观看海豚在海洋中畅游的轻松景象，还有一些人则观看有关管理学专业的一部纪实影片。

第7段

The students then completed a task requiring persistence in which they were asked to guess the potential performance of employees based on provided profiles, and were told that making 10 correct assessments in a row would lead to a win. However, the software was programmed such that it was nearly impossible to achieve 10 consecutive correct answers. Participants were allowed to quit the task at any point. Students who had watched the Mr. Bean video ended up spending significantly more time working on the task, making twice as many predictions as the other two groups.

这些学生随后完成一项需要毅力的任务。他们被要求根据所提供的资料猜测员工的潜在表现，并被告知连续进行10次正确的评估会赢得胜利。然而，软件的编程方式使其几乎不可能连续10次获得正确答案。参与者可以在任何时间退出任务。观看《憨豆先生》的学生最终在这项任务上投入的时间明显更多，所做预测是其他两组人的两倍。

第8段

Cheng and Wang then replicated these results in a second study, during which they had participants complete long multiplication questions by hand. Again, participants who watched the humorous video spent significantly more time working on this tedious task and completed more questions correctly than did the students in either of the other groups.

Cheng和Wang在第二项研究中重现了这些结果。他们要求参与者用手完成漫长的乘法计算。再一次的，与其他两组学生相比，观看幽默视频的参与者在这项枯燥的任务中投入的时间明显更多，回答对的问题也更多。

第9段

‘Although humour has been found to help relieve stress and facilitate social relationships, the traditional view of task performance implies that individuals should avoid things such as humour that may distract them from the accomplishment of task goals,’ Cheng and Wang conclude. ‘We suggest that humour is not only enjoyable but more importantly, energizing.’

“虽然早已发现幽默有助于缓解压力和促进社会关系，但有关任务表现的传统观点认为，个人应该避免诸如幽默这样会分散他们注意力、干扰完成任务目标的事情”，Cheng和Wang总结道，“我们认为幽默不仅让人愉悦，而且更重要的是，它还能给人增添精力”。

## 15Test3

### [15Test3Passage1 Henry Moore  亨利·摩尔](http://www.laokaoya.com/39976.html)

第1段

Henry Moore was born in Castleford, a small town near Leeds in the north of England. He was the seventh child of Raymond Moore and his wife Mary Baker. He studied at Castleford Grammar School from 1909 to 1915, where his early interest in art was encouraged by his teacher Alice Gostick. After leaving school, Moore hoped to become a sculptor, but instead he complied with his father’s wish that he train as a schoolteacher. He had to abandon his training in 1917 when he was sent to France to fight in the First World War.

亨利·摩尔出生在英格兰北部利兹附近的一座叫作卡斯尔福德的小镇里。他是雷蒙德·摩尔与其妻子玛丽·贝克的第7个孩子。他于1909年到1915年期间在卡斯尔福德的文法学校学习。在那里，他对艺术的早期兴趣得到其老师Alice Gostick的鼓励。离开学校之后，摩尔希望成为一名雕塑家，但他还是遵从他父亲的希望，接受成为一名学校老师的培训。1917年，因被派往法国参加第一次世界大战，他不得不放弃了自己的培训。

第2段

After the war, Moore enrolled at the Leeds School of Art, where he studied for two years. In his first year, he spent most of his time drawing. Although he wanted to study sculpture, no teacher was appointed until his second year. At the end of that year, he passed the sculpture examination and was awarded a scholarship to the Royal College of Art in London. In September 1921, he moved to London and began three years of advanced study in sculpture.

战后，摩尔进入利兹艺术学院，并在那里学习了两年的时间。第一年里，他将大部分时间都用在绘画上。虽然他想要学习雕塑，但直到第二年学校才给他安排老师。在那年结束的时候，他通过雕塑考试，并且获得伦敦皇家艺术学院的奖学金。1921年9月，他搬到伦敦，开始了雕塑方面为期三年的进一步学习。

第3段

Alongside the instruction he received at the Royal College, Moore visited many of the London museums, particularly the British Museum, which had a wide-ranging collection of ancient sculpture. During these visits, he discovered the power and beauty of ancient Egyptian and African sculpture. As he became increasingly interested in these ‘primitive’ forms of art, he turned away from European sculptural traditions.

在皇家艺术学院接受指导期间，摩尔参观了许多伦敦的博物馆，尤其是大英博物馆。那里收藏着大量的古代雕塑。在这些参观中，他体会到古埃及和非洲雕塑的力量与美感。随着他对这些原始形态的艺术愈发感兴趣，他逐渐背离了欧洲雕塑的传统。

第4段

After graduating, Moore spent the first six months of 1925 travelling in France. When he visited the Trocadero Museum in Paris, he was impressed by a cast of a Mayan sculpture of the rain spirit. It was a male reclining figure with its knees drawn up together, and its head at a right angle to its body. Moore became fascinated with this stone sculpture, which he thought had a power and originality that no other stone sculpture possessed. He himself started carving a variety of subjects in stone, including depictions of reclining women, mother-and-child groups, and masks.

毕业之后，摩尔将1925年的上半年都用于在法国旅行。当他参观巴黎特罗卡德罗博物馆时，玛雅雨神雕塑的造型给他留下了深刻的印象。那是一名斜倚着的男性，膝盖并拢，头与身体成直角。摩尔迷上了这座石像。他认为它拥有其他石像文章来自老烤鸭雅思所没有的力量与独创性。他自己也开始用石头雕刻各种形象，包括斜躺着的女性，母子群，以及面具。

第5段

Moore’s exceptional talent soon gained recognition, and in 1926 he started work as a sculpture instructor at the Royal College. In 1933, he became a member of a group of young artists called Unit One. The aim of the group was to convince the English public of the merits of the emerging international movement in modern art and architecture.

摩尔非凡的天赋很快得到认可。1926年他开始担任皇家艺术学院的雕塑老师。1933年，他成为一个名为“Unit One”的青年艺术家团体的成员。该团体旨在让英国公众接受现代艺术与建筑领域新兴国际运动的优点。

第6段

Around this time, Moore moved away from the human figure to experiment with abstract shapes. In 1931, he held an exhibition at the Leicester Galleries in London. His work was enthusiastically welcomed by fellow sculptors, but the reviews in the press were extremely negative and turned Moore into a notorious figure. There were calls for his resignation from the Royal College, and the following year, when his contract expired, he left to start a sculpture department at the Chelsea School of Art in London.

在这个时期，摩尔开始从人像转为实验抽象的形状。1931年，他在伦敦莱彻斯特美术馆举办了一场展览。其作品受到雕塑家同行的热情欢迎，但媒体的评价却极为负面，这使得摩尔声名狼藉。有人要求他从皇家艺术学院辞职。第二年，当他合同到期时，他离开这所学校，在伦敦切尔西艺术学院成立了雕塑系。

第7段

Throughout the 1930s, Moore did not show any inclination to please the British public. He became interested in the paintings of the Spanish artist Pablo Picasso, whose work inspired him to distort the human body in a radical way. At times, he seemed to abandon the human figure altogether. The pages of his sketchbooks from this period show his ideas for abstract sculptures that bore little resemblance to the human form.

整个20世纪30年代，摩尔没有展现出任何取悦英国公众的倾向。他对西班牙艺术家巴勃罗·毕加索的画作产生兴趣。其作品启发他以一种激进的方式扭曲人类形体。有时，他甚至似乎完全放弃了人类的形象。他这一时期的速写本显示，他对于抽象雕塑的想法与人类形态几乎没有什么相似之处。

第8段

In 1940, during the Second World War, Moore stopped teaching at the Chelsea School and moved to a farmhouse about 20 miles north of London. A shortage of materials forced him to focus on drawing. He did numerous small sketches of Londoners, later turning these ideas into large coloured drawings in his studio. In 1942, he returned to Castleford to make a series of sketches of the miners who worked there.

1940年，第二次世界大战期间，摩尔停止了自己在切尔西学院的教学工作，搬到伦敦北部大约20英里处的一座农场。材料的缺乏迫使他将注意力放在绘画上。他画了大量的、有关伦敦居民的小幅素描，并随后在其工作室里将这些想法变为大型彩色画作。1942年，他回到卡斯尔福德，为在那里工作的旷工创作了一系列素描。

第9段

In 1944, Harlow, a town near London, offered Moore a commission for a sculpture depicting a family. The resulting work signifies a dramatic change in Moore’s style, away from the experimentation of the 1930s towards a more natural and humanistic subject matter. He did dozens of studies in clay for the sculpture, and these were cast in bronze and issued in editions of seven to nine copies each. In this way, Moore’s work became available to collectors all over the world. The boost to his income enabled him to take on ambitious projects and start working on the scale he felt his sculpture demanded.

1944年，伦敦附近的一座城镇-哈洛-委托摩尔创作一座描绘家庭的雕塑。最终的作品标志着摩尔风格的剧烈变化，从20世纪30年代的实验性质转变为一种更加自然、更加带有人文特质的主题。他对雕塑所需的粘土进行了数十次研究。它们被塑造成青铜色，每个版本拥有7-9个副本。以这种方式，全世界的收藏者都可以接触到摩尔的作品。收入的增加使他能够从事更为宏大的项目，并开始按照他认为雕塑所需要的大小进行创作。

第10段

Critics who had begun to think that Moore had become less revolutionary were proven wrong by the appearance, in 1950, of the first of Moore’s series of standing figures in bronze, with their harsh and angular pierced forms and distinct impression of menace. Moore also varied his subject matter in the 1950s with such works as Warrior with Shield and Falling Warrior. These were rare examples of Moore’s use of the male figure and owe something to his visit to Greece in 1951, when he had the opportunity to study ancient works of art.

1950年，随着摩尔第一批青铜站立人像的出现，那些认为摩尔不再具备革命性的批评家被证明是错误的。这些雕像有着粗糙、棱角分明的尖刺造型，给人留下明显的危险印象。摩尔在20世纪50年代创作出诸如《带盾勇士》和《坠落的勇士》等作品来丰富自己的主题。这些是摩尔使用男性形象的罕见例子，其原因可以归为他在1951年前往希腊的访问，当时他有机会去研究古代艺术作品。

第11段

In his final years, Moore created the Henry Moore Foundation to promote art appreciation and to display his work. Moore was the first modern English sculptor to achieve international critical acclaim and he is still regarded as one of the most important sculptors of the 20th century.

在他生命的最后几年里，摩尔创立了亨利·摩尔基金会来推进艺术欣赏并展示他的作品。摩尔是首位获得国际赞誉的现代英国雕塑家。他如今仍然被认为是20世纪最为重要的雕塑家之一。

### [15Test3Passage2 The Desolenator: producing clean water 净水设备](http://www.laokaoya.com/39986.html)

A部分

Travelling around Thailand in the 1990s, William Janssen was impressed with the basic rooftop solar heating systems that were on many homes, where energy from the sun was absorbed by a plate and then used to heat water for domestic use. Two decades later Janssen developed that basic idea he saw in Southeast Asia into a portable device that uses the power from the sun to purify water.

20世纪90年代在泰国旅行的时候，WIliam Janseen对许多人家屋顶上的太阳能加热系统印象深刻。来自太阳的能量被平板吸收，随后被用于加热家庭用水。20年后，Janssen将他在东南亚看到的原本想法变为一种可以利用太阳能来净化水的便携设备。

B部分

The Desolenator operates as a mobile desalination unit that can take water from different places, such as the sea, rivers, boreholes and rain, and purify it for human consumption. It is particularly valuable in regions where natural groundwater reserves have been polluted, or where seawater is the only water source available.

Desolenator是一种可移动的海水净化设备，能够净化取自不同地方的水（如大海，河流，钻井和雨水等）供人类使用。它在自然地下水遭到污染，或者海水是唯一可用的水源的地区显得尤其宝贵。

Janssen saw that there was a need for a sustainable way to clean water in both the developing and the developed countries when he moved to the United Arab Emirates and saw large-scale water processing. ‘I was confronted with the enormous carbon footprint that the Gulf nations have because of all of the desalination that they do,’ he says.

当Janssen移居阿联酋并看到对水进行大规模的处理时，他意识到无论是发展中国家还是发达国家，都需要一种可持续的净水方法。“我面临着海湾国家因为进行海水淡化而产生的巨量碳排放”。

C部分

The Desolenator can produce 15 litres of drinking water per day, enough to sustain a family for cooking and drinking. Its main selling point is that unlike standard desalination techniques, it doesn’t require a generated power supply: just sunlight. It measures 120 cm by 90 cm, and is easy to transport, thanks to its two wheels. Water enters through a pipe, and flows as a thin film between a sheet of double glazing and the surface of a solar panel, where it is heated by the sun. The warm water flows into a small boiler (heated by a solar-powered battery) where it is converted to steam. When the steam cools, it becomes distilled water. The device has a very simple filter to trap particles, and this can easily be shaken to remove them. There are two tubes for liquid coming out: one for the waste – salt from seawater, fluoride, etc. – and another for the distilled water. The performance of the unit is shown on an LCD screen and transmitted to the company which provides servicing when necessary.

Desolenator每天可以产生15升的饮用水，足够一个家庭做饭和饮用。它的主要卖点在于，不像标准的海水淡化设备，它不需要电力供应，只要阳光就好。它长120厘米，宽90厘米，由于配备了两个轮子，十分方便运输。水从管道进入，在双层玻璃片和太阳能电池板之间以薄膜的形式流动。在这里水被阳光加热。温暖的水流入一个小锅炉（由太阳能电池负责加热）转变为蒸汽。当蒸汽冷却后就变成了蒸馏水。该装置有一个十分简单的过滤器用来过滤微粒，只需晃动就可去除它们。有两条管道供液体流出：一条排出废物 – 来自海水的盐，氟化物等 – 一条排出蒸馏水。这套设备的运行过程会显示在LCD屏幕上，并在必要的时候传输给提供服务的公司。

D部分

A recent analysis found that at least two-thirds of the world’s population lives with severe water scarcity for at least a month every year. Janssen says that by 2030 half of the world’s population will be living with water stress – where the demand exceeds the supply over a certain period of time. ‘It is really important that a sustainable solution is brought to the market that is able to help these people’, he says. Many countries ‘don’t have the money for desalination plants, which are very expensive to build. They don’t have the money to operate them, they are very maintenance intensive, and they don’t have the money to buy the diesel to run the desalination plants, so it is a really bad situation.’

一项最近的分析发现，世界上至少有三分之二的人每年至少有一个月的时间生活在极度缺水的状态中。Janssen说，到2030年时，世界上将会有一半的人口文章来自老烤鸭雅思面临用水压力 – 在特定的时间里需求超过供给。 “为市场提供能够帮助到这些人的可持续解决方案真的很重要”，他说，许多国家“没有钱建造十分昂贵的海水淡化工厂，他们没有钱去运营这些维护工作十分繁重的厂房，他们也没有钱购买柴油来维持这些工厂的运转，所以情况真的很差”。

E部分

The device is aimed at a wide variety of users – from homeowners in the developing world who do not have a constant supply of water to people living off the grid in rural parts of the US. The first commercial versions of the Desolenator are expected to be in operation in India early next year, after field tests are carried out. The market for the self-sufficient devices in developing countries is twofold – those who cannot afford the money for the device outright and pay through microfinance, and middle-income homes that can lease their own equipment. ‘People in India don’t pay for a fridge outright; they pay for it over six months. They would put the Desolenator on their roof and hook it up to their municipal supply and they would get very reliable drinking water on a daily basis,’ Janssen says. In the developed world, it is aimed at niche markets where tap water is unavailable – for camping, on boats, or for the military, for instance.

该设备的目标客户范围很广 – 从发展中国家里没有持续水供应的房主，到美国农村地区远离人烟的居民。Desolenator的第一个商用版本预计将在进行实地测试后，于明年初在印度投入运营。这一自给自足的设备在发展中国家有两重市场：一重是那些没有钱直接购买设备而通过小额信贷支付的人，另一重是那些能够出租他们自己设备的中等收入家庭。“印度居民不会为冰箱付全款，他们会用六个月的时间进行分期。他们会把Desolenator放在房顶上，并把它与他们的市政供水系统将挂钩，从而每天获得非常可靠的饮用水，”Janssen说。在发达国家，它瞄准无法获得自来水的细分市场 – 例如露营地、船舶或者军事用途。

F部分

Prices will vary according to where it is bought. In the developing world, the price will depend on what deal aid organisations can negotiate. In developed countries, it is likely to come in at $1,000 (￡685) a unit, said Janssen. ‘We are a venture with a social mission. We are aware that the product we have envisioned is mainly finding application in the developing world and humanitarian sector and that this is the way we will proceed. We do realise, though, that to be a viable company there is a bottom line to keep in mind,’ he says.

设备价格会根据购买地的不同而不同。在发展中国家，其价格取决于援助组织的商谈结果。在发达国家，其价格则可能为每台1000美元（合685英镑），Janssen说。“我们是一家肩负社会使命的企业。我们意识到我们所发明的产品主要用于发展中国家和人道主义部门。这也是我们将要采取的方式。虽然我们确实意识到，要成为一家有独立发展能力的公司，脑子里必须得有（价格）底线才行”，他说。

G部分

The company itself is based at Imperial College London, although Janssen, its chief executive, still lives in the UAE. It has raised ￡340,000 in funding so far. Within two years, he says, the company aims to be selling 1,000 units a month, mainly in the humanitarian field. They are expected to be sold in areas such as Australia, northern Chile, Peru, Texas and California.

公司总部位于伦敦帝国理工学院，虽然它的首席执行官Janssen仍然生活在阿联酋。它目前已经募集了340000英镑的资金。他说，两年内，公司的销量将达到每月1000台，主要用于人道主义领域。它们预计将在澳大利亚，智利北部，秘鲁，德克萨斯和加利福尼亚等地售卖。

### [15Test3Passage3 Why fairy tales are really scary tales 为什么童话是真正可怕的故事](http://www.laokaoya.com/40014.html)

第1段

People of every culture tell each other fairy tales but the same story often takes a variety of forms in different parts of the world. In the story of Little Red Riding Hood that European children are familiar with, a young girl on the way to see her grandmother meets a wolf and tells him where she is going. The wolf runs on ahead and disposes of the grandmother, then gets into bed dressed in the grandmother’s clothes to wait for Little Red Riding Hood. You may think you know the story – but which version? In some versions, the wolf swallows up the grandmother, while in others it locks her in a cupboard. In some stories Red Riding Hood gets the better of the wolf on her own, while in others a hunter or a woodcutter hears her cries and comes to her rescue.

每一种文化的人都会向彼此讲述童话故事，但相同的故事在世界上不同的地方却往往采取不同的形式。在欧洲儿童所熟悉的《小红帽》这一故事里，一名小女孩在前去探望奶奶的路上遇到了一只狼，并且告诉他她要去哪里。狼跑到前面，解决掉了奶奶，然后穿着奶奶的衣服躺到床上等待小红帽的到来。你可能觉得你知道这个故事。但究竟是哪个版本呢？在一些版本里，狼吃掉了奶奶，而在另外一些版本里，它将她锁在衣柜里。在一些故事中，小红帽独自战胜了狼，而在另外一些故事中，一名猎人或者伐木工听到了她的哭喊，赶来救援。

第2段

The universal appeal of these tales is frequently attributed to the idea that they contain cautionary messages: in the case of Little Red Riding Hood, to listen to your mother, and avoid talking to strangers. ‘It might be what we find interesting about this story is that it’s got this survival relevant information in it,’ says anthropologist Jamie Tehrani at Durham University in the UK. But his research suggests otherwise. ‘We have this huge gap in our knowledge about the history and prehistory of storytelling, despite the fact that we know this genre is an incredibly ancient one,’ he says. That hasn’t stopped anthropologists, folklorists and other academics devising theories to explain the importance of fairy tales in human society. Now Tehrani has found a way to test these ideas, borrowing a technique from evolutionary biologists.

这些童话故事普世的吸引力通常被归功于他们所包含的警戒信息：以《小红帽》为例，就是要听妈妈的话，不要跟陌生人说话。“我们之所以觉得这个故事有趣，可能是因为它在其中包含了与生存相关的信息”，英国杜伦大学人类学家Jamie Tehrani说。但他的研究却表明并非如此。“我们对故事讲述的历史以及史前史的认知存在着巨大的空白，尽管我们知道这一体裁十分古老”，他说。但这并没有阻止人类学家，民俗学家和其他学者构建理论来解释童话故事在人类社会中的重要性。如今，Tehrani借用进化生物学家的方法，发现了一种测试这些观点是否正确的方式。

第3段

To work out the evolutionary history, development and relationships among groups of organisms, biologists compare the characteristics of living species in a process called ‘phylogenetic analysis’. Tehrani has used the same approach to compare related versions of fairy tales to discover how they have evolved and which elements have survived longest.

为了弄清楚生物群体的进化历史，发展历程与相互关系，生物学家通过一种叫作“系统进化分析法”的方式来比较物种特征。Tehrani利用相同方式来比较童话故事的关联版本，从而探询它们是如何演变的，以及那些元素存留的时间最长。

第4段

Tehrani’s analysis focused on Little Red Riding Hood in its many forms, which include another Western fairy tale known as The Wolf and the Kids. Checking for variants of these two tales and similar stories from Africa, East Asia and other regions, he ended up with 58 stories recorded from oral traditions. Once his phylogenetic analysis had established that they were indeed related, he used the same methods to explore how they have developed and altered over time.

Tehrani的分析主要集中在《小红帽》的多个版本上。这其中就包括另一个西方故事《狼与孩子》。在非洲、东亚和其他地区检索了这两个故事以及相似故事的变种后，他最终从口述传统中记录下来58个故事。一旦系统进化分析法证实它们确实彼此相关，他就利用同样的方法探索它们是如何随着时间的推移而发展改变的。

第5段

First he tested some assumptions about which aspects of the story alter least as it evolves, indicating their importance. Folklorists believe that what happens in a story is more central to the story than the characters in it – that visiting a relative, only to be met by a scary animal in disguise, is more fundamental than whether the visitor is a little girl or three siblings, or the animal is a tiger instead of a wolf.

首先，他测试了一些假设：故事在演化过程中哪些方面改变最少（这表明它们的重要性）。民俗学家认为，与角色相比，故事情节对于故事而言更为核心。即拜访亲戚，偶然遇到带有伪装的可怕动物，比拜访者究竟是一名小女孩还是三兄妹，又或者动物是狮子而不是狼更为重要。

第6段

However, Tehrani found no significant difference in the rate of evolution of incidents compared with that of characters. ‘Certain episodes are very stable because they are crucial to the story, but there are lots of other details that can evolve quite freely, ‘ he says. Neither did his analysis support the theory that the central section of a story is the most conserved part. He found no significant difference in the flexibility of events there compared with the beginning or the end.

然而，Tehrani发现事件的演变速度与角色相比并没有什么太大的区别。“由于特定的情节对故事至关重要，因而它们十分稳定，但也有许多其他细节可以十分自由地演变”，他说。他的分析也不支持以下理论，即故事的核心部分是留存最多的部分。他发现，与开头或结尾相比，该部分的事件灵活性并没有显著差异。

第7段

But the really big surprise came when he looked at the cautionary elements of the story. ‘Studies on hunter-gatherer folk tales suggest that these narratives include really important information about the environment and the possible dangers that may be faced there – stuff that’s relevant to survival,’ he says. Yet in his analysis such elements were just as flexible as seemingly trivial details. What, then, is important enough to be reproduced from generation to generation?

但他在研究该故事的警示元素时，真正令人吃惊的事情发生了。“对狩猎采集者的民间故事的研究表明，这些叙事中包含着有关环境以及那里可能存在的危险的重要信息 – 与生存相关的事项”，他说。然而，在他的分析中，这些元素文章来自老烤鸭雅思与那些看似无关紧要的细节同样灵活多变。那么，究竟是什么东西重要到在一代又一代人中不断再现呢？

第8段

The answer, it would appear, is fear – blood-thirsty and gruesome aspects of the story, such as the eating of the grandmother by the wolf turned out to be the best preserved of all. Why are these details retained by generations of storytellers, when other features are not? Tehrani has an idea: ‘In an oral context, a story won’t survive because of one great teller. It also needs to be interesting when it’s told by someone who’s not necessarily a great storyteller.’ Maybe being swallowed whole by a wolf, then cut out of its stomach alive is so gripping that it helps the story remain popular, no matter how badly it’s told.

答案似乎是恐惧，即故事中嗜血与可怕的部分（例如奶奶被狼吃掉）是所有内容中被保留的最好的。为什么这些细节能够在一代又一代的故事讲述者中留存下来，而故事的其他特征却没有呢？Tehrani有一个想法：“在口述情况下，故事不会因为一名伟大的讲述者而留存下来。当它由一个不一定伟大的讲述者说出来的时候，它还得有趣才行”。或许被一头狼整个吞下，然后切开胃部活着出来，这一情节如此扣人心弦，以至于无论讲的有多么糟糕，它都能保持流行。

第9段

Jack Zipes at the University of Minnesota, Minneapolis, is unconvinced by Tehrani’s views on fairy tales. ‘Even if they’re gruesome, they won’t stick unless they matter,’ he says. He believes the perennial theme of women as victims in stories like Little Red Riding Hood explains why they continue to feel relevant. But Tehrani points out that although this is often the case in Western versions, it is not always true elsewhere. In Chinese and Japanese versions, often known as The Tiger Grandmother, the villain is a woman, and in both Iran and Nigeria, the victim is a boy.

明尼阿波利斯明尼苏达大学的Jack Zipes不认同Tehrani有关童话的观点。“即使这些情节很可怕，除非它们确实重要，否则也不会保留下来”，他说。他认为，在诸如《小红帽》这样的故事中，女性作为受害者这一反复出现的主题解释了它们为什么让人觉得与自己休戚相关。但Tehrani指出，虽然在西方故事中确实经常如此，但在别的地方却并不总是这样。在中国和日本通常被称为《虎外婆》的版本中，反派角色是名女性。而在伊朗和尼日利亚的版本中，受害者是名男孩。

第10段

Mathias Clasen at Aarhus University in Denmark isn’t surprised by Tehrani’s findings. ‘Habits and morals change, but the things that scare us, and the fact that we seek out entertainment that’s designed to scare us – those are constant,’ he says. Clasen believes that scary stories teach us what it feels like to be afraid without having to experience real danger, and so build up resistance to negative emotions.

丹麦奥尔胡斯大学的Mathias Clasen并不吃惊于Tehrani的发现。“习惯与道德会发生改变，但让我们恐惧的事情，以及我们寻求设计出来让我们感到恐惧的娱乐这一事实是永恒的”，他说。Clasen认为，恐怖故事让我们可以体会害怕的感觉而无需经历真正的危险，从而加强我们对负面情绪的抵抗力。

## 15Test4

### [15Test4Passage1 The return of the huarango Huarango树的回归](http://www.laokaoya.com/40076.html)

第1段

The south coast of Peru is a narrow, 2,000-kilometre-long strip of desert squeezed between the Andes and the Pacific Ocean. It is also one of the most fragile ecosystems on Earth. It hardly ever rains there, and the only year-round source of water is located tens of metres below the surface. This is why the huarango tree is so suited to life there: it has the longest roots of any tree in the world. They stretch down 50-80 metres and, as well as sucking up water for the tree, they bring it into the higher subsoil, creating a water source for other plant life.

夹在安第斯山脉和太平洋之间的秘鲁南岸，是一条绵延2000公里的狭长沙漠地带。它也是地球上最为脆弱的生态系统之一。那里几乎从不下雨。全年唯一可用的水源位于地表数十米之下。这就是huarango如此适合在那里生存的原因：它拥有世界上所有树木中最长的根系。它们向下延伸50到80米，为树木吸收水分的同时，他们还将水分带到更高的底土中，为其他植物的生存创造水源。

第2段

Dr David Beresford-Jones, archaeobotanist at Cambridge University, has been studying the role of the huarango tree in landscape change in the Lower lea Valley in southern Peru. He believes the huarango was key to the ancient people’s diet and, because it could reach deep water sources, it allowed local people to withstand years of drought when their other crops failed. But over the centuries huarango trees were gradually replaced with crops. Cutting down native woodland leads to erosion, as there is nothing to keep the soil in place. So when the huarangos go, the land turns into a desert. Nothing grows at all in the Lower lea Valley now.

剑桥大学考古植物学家David Bereford-Jones博士，一直在研究huarango树在秘鲁南部Lower lea Valley的景色变化中所起的作用。他认为huarango对古代居民的饮食十分重要。因为它能够到达深层水源，让当地居民可以在其他作物歉收的时候忍受数年的干旱。但几个世纪以来，huarango逐渐被粮食作物所取代。对当地林地的砍伐导致水土流失，因为没有任何东西能够固定住土壤。所以，当huarango消失时，土地就变为沙漠。如今没有任何东西能够在Lower lea Valley生长。

第3段

For centuries the huarango tree was vital to the people of the neighbouring Middle lea Valley too. They grew vegetables under it and ate products made from its seed pods. Its leaves and bark were used for herbal remedies, while its branches were used for charcoal for cooking and heating, and its trunk was used to build houses. But now it is disappearing rapidly. The majority of the huarango forests in the valley have already been cleared for fuel and agriculture – initially, these were smallholdings, but now they’re huge farms producing crops for the international market.

几个世纪以来，huarango树对隔壁Middle lea Valley的居民也同样重要。他们在它下面种植蔬菜，食用其种荚制成的产品。它的叶子和树皮被当作草药使用，枝干作为木炭文章来自老烤鸭雅思用于做饭和加热，而树干则用于建造房屋。但它如今也在快速消失。山谷中大部分huarango森林已经被清理出来，要么当作燃料使用，要么为农业腾出地方。一开始，这些只是小块的耕地，但现在它们已经变成为国际市场生产粮食的巨大农场。

第4段

‘Of the forests that were here 1,000 years ago, 99 per cent have already gone,’ says botanist Oliver Whaley from Kew Gardens in London, who, together with ethnobotanist Dr William Milliken, is running a pioneering project to protect and restore the rapidly disappearing habitat. In order to succeed, Whaley needs to get the local people on board, and that has meant overcoming local prejudices. ‘Increasingly aspirational communities think that if you plant food trees in your home or street, it shows you are poor, and still need to grow your own food,’ he says. In order to stop the Middle lea Valley going the same way as the Lower lea Valley, Whaley is encouraging locals to love the huarangos again. ‘It’s a process of cultural resuscitation,’ he says. He has already set up a huarango festival to reinstate a sense of pride in their eco-heritage, and has helped local schoolchildren plant thousands of trees.

“一千年前这里存在的森林中，99%都已经消失了”，伦敦皇家植物园的植物学家Oliver Whaley说。他与民族植物学家William Milliken博士一起，正在运作一个开创性的项目，以保护和修复这一正在快速消失的栖息地。为了取得成功，Whaley需要得到当地居民的支持，而这意味着要克服当地人的偏见。“越来越多渴望成功的社区认为，如果你在家里或者街道上种植可食用的树木，这就表明你很穷，仍然需要种植自己吃的东西”，他说。为了避免Middle lea Valley走上Lower lea Valley同样的道路，Whaley正鼓励当地人再次喜欢上huarangos。“这是一个文化复兴的过程”，他说。他设立了huarango节来恢复人们对他们生态遗产的自豪感，并已经帮助当地在校儿童种植了数千颗树木。

第5段

‘In order to get people interested in habitat restoration, you need to plant a tree that is useful to them,’ says Whaley. So, he has been working with local families to attempt to create a sustainable income from the huarangos by turning their products into foodstuffs. ‘Boil up the beans and you get this thick brown syrup like molasses. You can also use it in drinks, soups or stews. ‘ The pods can be ground into flour to make cakes, and the seeds roasted into a sweet, chocolatey ‘coffee’. ‘It’s packed full of vitamins and minerals, ‘ Whaley says.

“为了让人们对栖息地的重建产生兴趣，你得种植一种对他们有用的树木”，Whaley说。因此，他一直在与当地家庭合作，尝试通过将huarango的产品制成食物来创造一条可持续的收入来源。“把豆子煮开，你就会得到这种粘稠的棕色糖浆。你也可以在饮料、汤或者炖菜中使用它”。种荚可以被碾成粉制作蛋糕，种子可以烘培成香甜的、巧克力味“咖啡”。“它富含维生素和矿物质”，Whaley说。

第6段

And some farmers are already planting huarangos. Alberto Benevides, owner of lea Valley’s only certified organic farm, which Whaley helped set up, has been planting the tree for 13 years. He produces syrup and flour, and sells these products at an organic farmers’ market in Lima. His farm is relatively small and doesn’t yet provide him with enough to live on, but he hopes this will change. ‘The organic market is growing rapidly in Peru, ‘ Benevides says. ‘I am investing in the future.

一些农民已经开始种植huarangos。Alberto Benevides，lea Valley中唯一一个经过认证的有机农场的主人（该农场正式Whaley帮忙建造的），种植这种树木已经13年了。他生产糖浆和面粉，并在利马的一个有机农贸市场里销售这些产品。他的农场规模相对较小，无法满足他的生活需要，但他希望这在未来会有所改变。“有机市场在秘鲁发展很快”，Benevides说，“我是在投资未来”。

第7段

But even if Whaley can convince the local people to fall in love with the huarango again, there is still the threat of the larger farms. Some of these cut across the forests and break up the corridors that allow the essential movement of mammals, birds and pollen up and down the narrow forest strip. In the hope of counteracting this, he’s persuading farmers to let him plant forest corridors on their land. He believes the extra woodland will also benefit the farms by reducing their water usage through a lowering of evaporation and providing a refuge for bio-control insects.

但即使Whaley能够说服当地居民再次爱上Huarango，大型农场的威胁也仍然存在。其中一些砍伐森林，破坏让哺乳动物、鸟类和花粉得以在狭长森林地带移动的关键走廊。为了消除这一影响，他正在劝说农民让他在他们的土地上种植森林走廊。他认为，通过减少蒸发降低水资源的使用，以及为生物防治的昆虫提供栖息地，额外的林地也可以让农民受益。

第8段

‘If we can record biodiversity and see how it all works, then we’re in a good position to move on from there. Desert habitats can reduce down to very little, ‘ Whaley explains. ‘It’s not like a rainforest that needs to have this huge expanse. Life has always been confined to corridors and islands here. If you just have a few trees left, the population can grow up quickly because it’s used to exploiting water when it arrives.’ He sees his project as a model that has the potential to be rolled out across other arid areas around the world. ‘If we can do it here, in the most fragile system on Earth, then that’s a real message of hope for lots of places, including Africa, where there is drought and they just can’t afford to wait for rain.’

“如果我们能够记录生物多样性，并看到它是如何运作的，那么我们就有了一个从这里继续前进的优秀起点。沙漠栖息地的面积可以缩减的非常小”，Whaley解释道，“它不像雨林那样需要极大的面积。生命一直都只存在于这里的走廊和岛屿。如果你只剩下几棵树木，其数量也会在水到来时迅速生长，因为它们习惯于充分利用水源”。他将他的项目视为一个有潜力推广到世界其他干旱地区的样板。“如果我们能够在这里-世界上生态系统最为脆弱的地方-做到这一点，那么它对于包括非洲在内的许多地方都是一条充满希望的信息。那些地方干旱横行，而他们已经无法承担等候雨水来临的代价”。

### [15Test4Passage2 Silbo Gomero – the whistle language of the Canary Islands 加那利群岛的口哨语言](http://www.laokaoya.com/40081.html)

第1段

La Gomera is one of the Canary Islands situated in the Atlantic Ocean off the northwest coast of Africa. This small volcanic island is mountainous, with steep rocky slopes and deep, wooded ravines, rising to 1,487 metres at its highest peak. It is also home to the best known of the world’s whistle ‘languages’, a means of transmitting information over long distances which is perfectly adapted to the extreme terrain of the island.

戈梅拉岛是加纳利群岛中的一座岛屿，位于靠近非洲西北岸的大西洋上。这座小型火山岛上山峰众多，有着陡峭的岩石斜坡和丛林密布的、深邃的溪谷，最高处可达1487米。它也是世界上最著名的口哨语言的故乡，一种完美地适应了该岛屿极端地形的、远距离传播信息的方式。

第2段

This ‘language’, known as ‘Silbo’ or ‘Silbo Gomero’ – from the Spanish word for ‘whistle’- is now shedding light on the language-processing abilities of the human brain, according to scientists. Researchers say that Silbo activates parts of the brain normally associated with spoken language, suggesting that the brain is remarkably flexible in its ability to interpret sounds as language.

据科学家说，这一被称为“Silbo”或“Silbo Gemero”的语言 – 该名称来自西班牙语，意思是“口哨” – 如今正在揭示人类大脑处理语言的能力。研究者说，Silbo激活大脑中通常与口头语言联系在一起的部分，表明大脑在将声音解析成语言的能力方面具有很高的灵活性。

第3段

‘Science has developed the idea of brain areas that are dedicated to language, and we are starting to understand the scope of signals that can be recognised as language,’ says David Corina, co-author of a recent study and associate professor of psychology at the University of Washington in Seattle.

“科学研究中已有这样的观念，即特定的大脑区域专门负责语言功能。我们也开始理解能够被识别为语言的信号范围”，最近一项研究的合作作者、西雅图华盛顿大学的心理学教授David Corina说。

第4段

Silbo is a substitute for Spanish, with individual words recoded into whistles which have high- and low-frequency tones. A whistler – or silbador – puts a finger in his or her mouth to increase the whistle’s pitch, while the other hand can be cupped to adjust the direction of the sound. ‘There is much more ambiguity in the whistled signal than in the spoken signal’, explains lead researcher Manuel Carreiras, psychology professor at the University of La Laguna on the Canary island of Tenerife. Because whistled ‘words’ can be hard to distinguish, silbadores rely on repetition, as well as awareness of context, to make themselves understood.

Silbo是西班牙语的替代品，每个单词被重新编码为高低频率不同的口哨声。吹哨人（也被叫做silbador）将手指放进嘴里提升口哨的音高，另一只手掌则可以模拟杯子的形状以调整声音的方向。“与说话信号相比，口哨信号要模糊许多”，位于加那利群岛特内里费岛拉拉古纳大学的心理学教授、首席研究员Manuel Carreiras解释道。由于口哨词汇很难分辨，所以吹哨人依赖重复，以及对语境的意识来表达自己的意思。

第5段

The silbadores of Gomera are traditionally shepherds and other isolated mountain folk, and their novel means of staying in touch allows them to communicate over distances of up to 10 kilometres. Carreiras explains that silbadores are able to pass a surprising amount of information via their whistles. ‘In daily life they use whistles to communicate short commands, but any Spanish sentence could be whistled.’ Silbo has proved particularly useful when fires have occurred on the island and rapid communication across large areas has been vital.

戈梅拉岛的传统吹哨人多为牧羊人和其他与世隔绝的山区居民。他们保持联系的新奇方式让他们可以在最多相隔10公里的情况下互相交流。Carreiras解释说，吹哨人能够通过口哨传递惊人数量的信息。“在日常生活中，他们使用口哨来传递简短的命令，但任何西班牙句子都能够被吹出来”。当岛上发生火灾，大面积区域的信息迅速传递至关重要时，Silbo被证明特别有用。

第6段

The study team used neuroimaging equipment to contrast the brain activity of silbadores while listening to whistled and spoken Spanish. Results showed the left temporal lobe of the brain, which is usually associated with spoken language, was engaged during the processing of Silbo. The researchers found that other key regions in the brain’s frontal lobe also responded to the whistles, including those activated in response to sign language among deaf people. When the experiments were repeated with non-whistlers, however, activation was observed in all areas of the brain.

研究团队使用神经成像设备对比了吹哨人听到吹出来和说出来的西班牙语时大脑活动的不同。结果表明，大脑左侧颞叶（通常与口头语言相关）在处理Silbo的时候被激活。研究者发现，大脑额叶的其他关键区域也会对哨声产生反应，包括那些应对盲人手语时会被激活的区域。然而，当对非吹哨人进行重复实验室，大脑所有区域都可以观察到激活反应。

第7段

‘Our results provide more evidence about the flexibility of human capacity for language in a variety of forms,’ Corina says. ‘These data suggest that left-hemisphere language regions are uniquely adapted for communicative purposes, independent of the modality of signal. The non- Silbo speakers were not recognising Silbo as a language. They had nothing to grab onto, so multiple areas of their brains were activated.’

“我们的研究结果提供了更多的证据，证明人类在处理各种形式的语言上具有灵活性”，Corina说，“这些数据表明，左半球的语言区域出于交流目的进行了独特的更改，不受信号形式的影响。非哨语使用者不会将Silbo当作一种语言。他们没有可供抓取的信号，所以他们大脑的多个区域都被激活了”。

第8段

Carreiras says the origins of Silbo Gomero remain obscure, but that indigenous Canary Islanders, who were of North African origin, already had a whistled language when Spain conquered the volcanic islands in the 15th century. Whistled languages survive today in Papua New Guinea, Mexico, Vietnam, Guyana, China, Nepal, Senegal, and a few mountainous pockets in southern Europe. There are thought to be as many as 70 whistled languages still in use, though only 12 have been described and studied scientifically. This form of communication is an adaptation found among cultures where people are often isolated from each other, according to Julien Meyer, a researcher at the Institute of Human Sciences in Lyon, France. ‘They are mostly used in mountains or dense forests, ‘ he says. ‘Whistled languages are quite clearly defined and represent an original adaptation of the spoken language for the needs of isolated human groups.”

Carreiras说，Silbo Gomero的起源仍属未知，但源于非洲北部的加纳里群岛的本土居民，在西班牙人于15世纪征服这些火山岛的时候，就已经拥有了一门口哨语言。口哨语言如今仍然存在于巴布新几内亚、墨西哥、越南、圭亚那、中国、尼泊尔、塞内加尔，以及欧洲南部的一些地区。据认为，目前仍在使用的口哨语言多达70种，虽然其中只有12种被科学地描述和研究过。法国里昂人类科学研究所的研究员Julien Meyer表示，这种形式的交流是对人们互相隔绝的文化的一种适应。“它们大多在山区和茂密的森林中使用”，他说，“口哨语言定义清晰，代表着为满足孤立的人类群体的需求而对口头语言的一种原始改编”。

第9段

But with modern communication technology now widely available, researchers say whistled languages like Silbo are threatened with extinction. With dwindling numbers of Gomera islanders still fluent in the language, Canaries’ authorities are taking steps to try to ensure its survival. Since 1999, Silbo Gomero has been taught in all of the island’s elementary schools. In addition, locals are seeking assistance from the United Nations Educational, Scientific and Cultural Organization (UNESCO). ‘The local authorities are trying to get an award from the organisation to declare [Silbo Gomero] as something that should be preserved for humanity,’ Carreiras adds.

不过，如今随着现代通信技术的广泛应用，研究者表示，诸如Silbo这样的口哨语言面临着灭绝的危险。随着戈梅拉岛上仍然能够熟练使用该语言的人越来越少，加那利政府当局正采取措施努力保证它的延续。1999年以来，该岛屿上的所有小学都开设了Silbo Gomero这门语言课。除此之外，当地人还寻求联合国教科文组织的帮助。“当地政府正试图从该组织获得认证，以宣布Silbo Gemero是某种出于人类整体利益应该被保护的东西”，Carreiras补充到。

### [15Test4Passage3 Environmental practices of big business 大企业的环保实践](http://www.laokaoya.com/40107.html)

第1段

The environmental practices of big businesses are shaped by a fundamental fact that for many of us offends our sense of justice. Depending on the circumstances, a business may maximize the amount of money it makes, at least in the short term, by damaging the environment and hurting people. That is still the case today for fishermen in an unmanaged fishery without quotas, and for international logging companies with short-term leases on tropical rainforest land in places with corrupt officials and unsophisticated landowners. When government regulation is effective, and when the public is environmentally aware, environmentally clean big businesses may out-compete dirty ones, but the reverse is likely to be true if government regulation is ineffective and if the public doesn’t care.

大企业的环保行为受一项基本事实的影响。而对于我们大多数人来说，该事实则冒犯到我们对公平正义的认知。根据具体环境的不同，一家企业可能会通过破坏环境和伤害人民的方式来使其利润最大化，至少在短期内如此。如今当渔民在不受管理、没有配额的渔场捕鱼时，当拥有短期租约的伐木公司在官员腐败、土地所有者缺乏经验的热带雨林中砍伐时，这种情况仍然会发生。当政府管理有效，公众具有环保意识时，不会造成环境污染的大企业可能会战胜污染严重的企业。但如果政府管理不善，而且公众不在乎的话，相反的情况也有可能发生。

第2段

It is easy for the rest of us to blame a business for helping itself by hurting other people. But blaming alone is unlikely to produce change. It ignores the fact that businesses are not charities but profit-making companies, and that publicly owned companies with shareholders are under obligation to those shareholders to maximize profits, provided that they do so by legal means. US laws make a company’s directors legally liable for something termed ‘breach of fiduciary responsibility’ if they knowingly manage a company in a way that reduces profits. The car manufacturer Henry Ford was in fact successfully sued by shareholders in 1919 for raising the minimum wage of his workers to $5 per day: the courts declared that, while Ford’s humanitarian sentiments about his employees were nice, his business existed to make profits for its stockholders.

对于我们来说，指责一家公司损人利己是件很容易的事情。但指责本身不会产生改变。它忽视了如下事实：企业不是慈善机构而是赚取利润的公司，而拥有股东的上市公司有义务在法律许可的范围内为股东实现利润最大化。美国法律规定，如果一家公司的董事在管理公司期间故意降低公司利润，那么他们就需要为所谓的“违反受托责任”承担法律责任。事实上，汽车制造商亨利·福特就曾在1919年因将工人的最低工资提升至每天5美元而被股东成功起诉。法庭宣布，虽然福特对其员工的人文关怀是好的，但其公司存在的意义就是为了给股东赚取利润。

第3段

Our blaming of businesses also ignores the ultimate responsibility of the public for creating the conditions that let a business profit through destructive environmental policies. In the long run, it is the public, either directly or through its politicians, that has the power to make such destructive policies unprofitable and illegal, and to make sustainable environmental policies profitable.

我们对企业的指责也忽视了公众的最终责任，是他们创造出相应的条件，让企业可以通过破坏环境的政策来赚取利润。长期来看，无论是直接参与也好，通过政客也好，只有公众才有权力让这些破坏性的政策变得无利可图或者违背法律，让可持续的环保政策能够盈利。

第4段

The public can do that by suing businesses for harming them, as happened after the Exxon Valdez disaster, in which over 40,000 m3 of oil were spilled off the coast of Alaska. The public may also make their opinion felt by preferring to buy sustainably harvested products; by making employees of companies with poor track records feel ashamed of their company and complain to their own management; by preferring their governments to award valuable contracts to businesses with a good environmental track record; and by pressing their governments to pass and enforce laws and regulations requiring good environmental practices.

公众可以通过起诉企业伤害他们来实现这一点，正如埃克森·瓦尔迪兹灾难发生之后那样。当时超过40000立方的石油在阿拉斯加海岸泄漏。公众也可以通过以下方式让自己的意见被听到，如更加倾向于购买可持续收获的产品；让那些拥有不良记录的公司员工为他们的公司感到羞愧并向他们的管理层抱怨；推动政府将价值连城的合同奖励给那些环境保护记录良好的公司；以及迫使政府通过并执行要求良好环保实践的法律和规定。

第5段

In turn, big businesses can exert powerful pressure on any suppliers that might ignore public or government pressure. For instance, after the US public became concerned about the spread of a disease known as BSE, which was transmitted to humans through infected meat, the US government’s Food and Drug Administration introduced rules demanding that the meat industry abandon practices associated with the risk of the disease spreading. But for five years the meat packers refused to follow these, claiming that they would be too expensive to obey. However, when a major fast-food company then made the same demands after customer purchases of its hamburgers plummeted, the meat industry complied within weeks. The public’s task is therefore to identify which links in the supply chain are sensitive to public pressure: for instance, fast-food chains or jewelry stores, but not meat packers or gold miners.

反过来说，大企业可以对任何忽视公众或政府要求的供应商施加强大的压力。例如，在美国公众开始关心一种名为BSE的疾病的传播之后（它通过受感染的肉类传递给人类），美国政府食品和药品管理局就出台规定，要求肉制品行业放弃可能涉及疾病传播风险的做法。但是，有5年的时间，肉类加工商拒绝遵守这些规定，声称遵守规定的成本太高。然而，当一家大型快餐公司在消费者对其汉堡包的购买量大幅下降之后也提出相应的要求时，肉制品行业在几周的时间里就屈从了。因此，公众的任务是找出供应链的哪部分对公众压力敏感：例如快餐连锁店或者珠宝店，而非肉类加工商或金矿主。

第6段

Some readers may be disappointed or outraged that I place the ultimate responsibility for business practices harming the public on the public itself. I also believe that the public must accept the necessity for higher prices for products to cover the added costs, if any, of sound environmental practices. My views may seem to ignore the belief that businesses should act in accordance with moral principles even if this leads to a reduction in their profits. But I think we have to recognize that, throughout human history, in all politically complex human societies, government regulation has arisen precisely because it was found that not only did moral principles need to be made explicit, they also needed to be enforced.

一些读者可能对我将企业实践伤害公众的最终责任置于公众自身感到失望或者愤怒。我也认为公众必须接受提高产品价格的必要性，以弥补健全环保实践所带来的额外成本（如果有的话）。我的观点可能忽视了如下信念，即企业应该按照道德原则运营，即便这会导致利润下降。但我认为，我们必须意识到，纵观人类历史，在所有政治复杂的人类社会中，政府各项规章制度诞生的确切原因就在于，人们发现道德原则不仅要清晰明了，而且还需要强制执行。

第7段

To me, the conclusion that the public has the ultimate responsibility for the behavior of even the biggest businesses is empowering and hopeful, rather than disappointing. My conclusion is not a moralistic one about who is right or wrong, admirable or selfish, a good guy or a bad guy. In the past, businesses have changed when the public came to expect and require different behavior, to reward businesses for behavior that the public wanted, and to make things difficult for businesses practicing behaviors that the public didn’t want. I predict that in the future, just as in the past, changes in public attitudes will be essential for changes in businesses’ environmental practices.

对我来说，公众对大型企业的行为负有最终责任这一结论充满希望并给人以力量，而不是让人感到失望。我的结论与谁对谁错，谁值得敬佩谁自私，谁是好人谁是坏人等道德判断无关。过去，在公众期望并要求不同行为时，企业会进行改变。这些要求会奖励那些采取公众想要行为的公司，并给采取公众不想要行为的公司造成困难。我预测，未来就跟过去一样，公众态度的改变对于企业环保行为的变化至关重要。

# 十六

## 16Test1

### [16Test1Passage1 Why we need to protect polar bears 我们为什么要保护北极熊](http://www.laokaoya.com/42698.html)

第1段

Polar bears are being increasingly threatened by the effects of climate change, but their disappearance could have far-reaching consequences. They are uniquely adapted to the extreme conditions of the Arctic Circle, where temperatures can reach-40°C. One reason for this is that they have up to 11 centimetres of fat underneath their skin. Humans with comparative levels of adipose tissue would be considered obese and would be likely to suffer from diabetes and heart disease. Yet the polar bear experiences no such consequences.

北极熊正日益受到气候变化的威胁，它们的消失可能产生影响深远的结果。它们十分适应北极圈的极端条件。那里的温度可以达到零下40度。其原因之一是，它们皮肤之下有着厚达11厘米的脂肪层。拥有类似脂肪组织的人类会被认为是过度肥胖，并可能遭受糖尿病和心脏病的折磨。然而，北极熊身上并没有出现以上情况。

第2段

A 2014 study by Shi Ping Liu and colleagues sheds light on this mystery. They compared the genetic structure of polar bears with that of their closest relatives from a warmer climate, the brown bears. This allowed them to determine the genes that have allowed polar bears to survive in one of the toughest environments on Earth. Liu and his colleagues found the polar bears had a gene known as APoB, which reduces levels of low-density lipoproteins (LDLs) – a form of ‘bad’ cholesterol. In humans, mutations of this gene are associated with increased risk of heart disease. Polar bears may therefore be an important study model to understand heart disease in humans.

Shi Ping Liu及其同事在2014年进行的一项研究帮助解答了这一谜题。他们比较了北极熊和棕熊（生活在温暖气候中的北极熊的近亲）的基因。这让他们得以确定究竟是哪个基因片段让北极熊能够在地球上最严酷的环境条件下生存。Liu和他的同事发现，北极熊有着被称为APoB的基因段。它可以减少低密度脂肪蛋白的水平（一种有害的胆固醇）。人类中，这一基因的变异会提升患上心脏病的危险。因此，北极熊可能对于理解人类心脏病有着重要意义。

第3段

The genome of the polar bear may also provide the solution for another condition, one that particularly affects our older generation: osteoporosis. This is a disease where bones show reduced density, usually caused by insufficient exercise, reduced calcium intake or food starvation. Bone tissue is constantly being remodelled, meaning that bone is added or removed, depending on nutrient availability and the stress that the bone is under. This article is from Laokaoya website. Female polar bears, however, undergo extreme conditions during every pregnancy. Once autumn comes around, these females will dig maternity dens in the snow and will remain there throughout the winter, both before and after the birth of their cubs. This process results in about six months of fasting, where the female bears have to keep themselves and their cubs alive, depleting their own calcium and calorie reserves. Despite this, their bones remain strong and dense.

北极熊的基因图谱也可能包含着另一项严重影响着老年人的疾病-骨质疏松-的解决方案。这是一种骨头密度变低的疾病，通常由锻炼不足，钙摄入量减少或者食物缺乏造成。骨骼组织不断重塑，要么增加要么减少，具体取决于人们的营养状况以及骨头所承担的压力。然而，雌性北极熊每次怀孕的时候都会经历极端状况。一旦秋天来临，这些雌性文章来自老烤鸭雅思会在积雪中挖出供怀孕时使用的洞穴，整个冬天都待在里面，无论是产崽前还是产崽后。这一过程会导致长达六个月的禁食，而雌性北极熊必须保证自己和幼崽的存活，不断消耗自己的钙和能量储备。尽管如此，它们的骨骼依然强壮紧密。

第4段

Physiologists Alanda Lennox and Allen Goodship found an explanation for this paradox in 2008. They discovered that pregnant bears were able to increase the density of their bones before they started to build their dens. In addition, six months later, when they finally emerged from the den with their cubs, there was no evidence of significant loss of bone density. Hibernating brown bears do not have this capacity and must therefore resort to major bone reformation in the following spring. If the mechanism of bone remodelling in polar bears can be understood, many bedridden humans, and even astronauts, could potentially benefit.

生理学家Alanda Lennox和Allen Goodship于2008年解释了这一矛盾现象。他们发现怀孕的北极熊能够在开始建造兽穴之前提升自己的骨骼密度。此外，六个月后，当它们带着幼崽一起从洞穴中出来的时候，没有任何证据表明，他们的骨骼密度有明显下降。冬眠的棕熊并不具备这种能力，因此他们必须在接下来的春天进行大量的骨骼重塑。如果我们能够理解北极熊骨骼重塑的机制，许多卧床不起的人类，甚至是宇航员，都能够从中受益。

第5段

The medical benefits of the polar bear for humanity certainly have their importance in our conservation efforts, but these should not be the only factors taken into consideration. We tend to want to protect animals we think are intelligent and possess emotions, such as elephants and primates. Bears, on the other hand, seem to be perceived as stupid and in many cases violent. And yet anecdotal evidence from the field challenges those assumptions, suggesting for example that polar bears have good problem-solving abilities. A male bear called GoGo in Tennoji Zoo, Osaka, has even been observed making use of a tool to manipulate his environment. The bear used a tree branch on multiple occasions to dislodge a piece of meat hung out of his reach. Problem-solving ability has also been witnessed in wild polar bears, although not as obviously as with GoGo. A calculated move by a male bear involved running and jumping onto barrels in an attempt to get to a photographer standing on a platform four metres high.

北极熊对于人类医疗的积极影响当然是我们采取保护行动的重要原因，但这不应该是唯一的因素。我们总是倾向于保护我们认为聪明或者拥有情感的动物，如大象和灵长类动物。相比之下，熊在很多情况下被认为是愚蠢的，甚至是危险的。然而，这一领域的传闻对这些假设提出挑战，证明北极熊拥有很好的解决问题的能力。大阪Tennoji动物园一只叫做GoGo的雄性北极熊被观察到利用工具操控自己的环境。他在多个场合利用树枝取下挂在自己够不着的地方的肉。问题解决能力也能够在野生北极熊身上观察到，虽然不像GoGo那么明显。一只雄性北极熊仔细规划自己的策略，助跑跳上油桶，尝试接近站在四米高的平台上的摄影师。

第6段

In other studies, such as one by Alison Ames in 2008, polar bears showed deliberate and focussed manipulation. For example, Ames observed bears putting objects in piles and then knocking them over in what appeared to be a game. The study demonstrates that bears are capable of agile and thought-out behaviours. These examples suggest bears have greater creativity and problem-solving abilities than previously thought.

在其他研究中，如Alison Ames在2008年所做的研究，北极熊展现出目的性和有意的操控。例如，Ames观察到，北极熊将物品堆叠起来，然后再弄翻它们，似乎是在进行游戏。这项研究证明，北极熊能够做出经过思考的行为。这些例子表明，熊拥有比人们之前认为的更强的创造力和问题解决能力。

第7段

As for emotions, while the evidence is once again anecdotal, many bears have been seen to hit out at ice and snow – seemingly out of frustration – when they have just missed out on a kill. Moreover, polar bears can form unusual relationships with other species, including playing with the dogs used to pull sleds in the Arctic. Remarkably, one hand-raised polar bear called Agee has formed a close relationship with her owner Mark Dumas to the point where they even swim together. This is even more astonishing since polar bears are known to actively hunt humans in the wild.

至于情感，虽然证据再一次只是传闻性质的，但当它们错过捕杀机会的时候，许多熊都被看到过出于沮丧而击打冰面或者雪地。此外，北极熊能够与其他物种形成非同寻常的关系，包括与在北极的雪橇犬玩耍。出乎意料的是，一头由人类养大的、被叫做Agee的北极熊与其主人Mark Dumas的关系是如此亲密，以至于他们可以一起游泳。这一点更让人震惊，因为北极熊会在荒野中袭击人类是出了名的。

第8段

If climate change were to lead to their extinction, this would mean not only the loss of potential breakthroughs in human medicine, but more importantly, the disappearance of an intelligent, majestic animal.

如果气候变化导致北极熊灭绝，这不仅意味着人类医疗可能性的突破彻底消失，而且更重要的是，我们将失去一种智慧、威严的动物。

### [16Test1Passage2 The Step Pyramid of Djoser 乔塞尔阶梯金字塔](http://www.laokaoya.com/42726.html)

段落A

The pyramids are the most famous monuments of ancient Egypt and still hold enormous interest for people in the present day. These grand, impressive tributes to the memory of the Egyptian kings have become linked with the country even though other cultures, such as the Chinese and Mayan, also built pyramids. The evolution of the pyramid form has been written and argued about for centuries. However, there is no question that, as far as Egypt is concerned, it began with one monument to one king designed by one brilliant architect: the Step Pyramid of Djoser at Saqqara.

金字塔是古埃及最出名的建筑物，如今仍然引发人们的巨大兴趣。这些用来纪念埃及国王的宏伟建筑已经与这一国家联系在一起，尽管如中国和玛雅之类的其他文明也修建了金字塔。关于金字塔规格的争论已经进行了几个世纪。然而，毫无疑问的是，只要与埃及相关，所有的记录和争论都从某位杰出建筑师为国王设计的纪念建筑开始：位于塞加拉的乔塞尔阶梯金字塔。

段落B

Djoser was the first king of the Third Dynasty of Egypt and the first to build in stone. Prior to Djoser’s reign, tombs were rectangular monuments made of dried clay brick, which covered underground passages where the deceased person was buried. For reasons which remain unclear, Djoser’s main official, whose name was Imhotep, conceived of building a taller, more impressive tomb for his king by stacking stone slabs on top of one another, progressively making them smaller, to form the shape now known as the Step Pyramid. Djoser is thought to have reigned for 19 years, but some historians and scholars attribute a much longer time for his rule, owing to the number and size of the monuments he built.

乔塞尔是埃及第三王朝的首位国王，也是第一个用石头修建金字塔的国王。在乔塞尔统治之前，法老陵墓都是由干燥陶土砖所修建的矩形建筑，其下是埋葬着尸体的通道。出于尚不清楚的原因，乔塞尔的主要幕僚（Imhotep）提出为他的国王建造更高、令人印象更加深刻的坟墓。这一点通过堆叠逐渐变小的条石，形成我们如今所知道的阶梯金字塔来实现。乔塞尔的统治持续了19年，但一些历史学家和学者考虑到他所修建的建筑物的数量和规模，认为他的统治时间要更长一些。

段落C

The Step Pyramid has been thoroughly examined and investigated over the last century, and it is now known that the building process went through many different stages. Historian Marc Van de Mieroop comments on this, writing ‘Much experimentation was involved, which is especially clear in the construction of the pyramid in the center of the complex. It had several plans …before it became the first Step Pyramid in history, piling six levels on top of one another…The weight of the enormous mass was a challenge for the builders, who placed the stones at an inward incline in order to prevent the monument breaking up.’

阶梯金字塔在上个世纪已经经过彻底的检验和调查。我们如今知道其建造过程要经过许多不同的阶段。历史学家Marc Van de Mieroop对此评论道：“其中涉及许多实验。这一点在作为建筑群核心的金字塔的建造过程中尤为明显。在它真正成为历史上的阶梯金字塔之前，存在好几种方案，堆叠起六层的高度。大型石块的重量给建造者提出挑战。他们将石块向内倾斜，以防止建筑物分崩离析”。

段落D

When finally completed, the Step Pyramid rose 62 meters high and was the tallest structure of its time. The complex in which it was built was the size of a city in ancient Egypt and included a temple, courtyards, shrines, and living quarters for the priests. It covered a region of 16 hectares and was surrounded by a wall 10.5 meters high. The wall had 13 false doors cut into it with only one true entrance cut into the south-east corner; the entire wall was then ringed by a trench 750 meters long and 40 meters wide. The false doors and the trench were incorporated into the complex to discourage unwanted visitors. If someone wished to enter, he or she would have needed to know in advance how to find the location of the true opening in the wall. Djoser was so proud of his accomplishment that he broke the tradition of having only his own name on the monument and had Imhotep’s name carved on it as well.

最终完成之后，阶梯金字塔达到62米的高度，是当时最高的建筑。其所在的建筑群的规模相当于古埃及一座城市的大小，包括一座寺庙、庭院、神庙、以及僧侣的居住区域。它占地面积16公顷，周围是高达10.5米的围墙。围墙有13座假门，只有一座真门位于东南角。围墙外还环绕着长750米，宽40米的壕沟。假门与壕沟被放入建筑群中以阻止不受欢迎的访客。如果一个人想要进来的话，他或她必须提前知道如何在围墙上找到正确的开门地方。乔塞尔文章来自老烤鸭雅思为他的成就感到如此骄傲，以至于他打破了纪念建筑上只能有他一人名字的传统，将Imhotep的名字也雕刻在上面。

段落E

The burial chamber of the tomb, where the king’s body was laid to rest, was dug beneath the base of the pyramid, surrounded by a vast maze of long tunnels that had rooms off them to discourage robbers. One of the most mysterious discoveries found inside the pyramid was a large number of stone vessels. Over 40,000 of these vessels, of various forms and shapes, were discovered in storerooms off the pyramid’s underground passages. This article is from Laokaoya website. They are inscribed with the names of rulers from the First and Second Dynasties of Egypt and made from different kinds of stone. There is no agreement among scholars and archaeologists on why the vessels were placed in the tomb of Djoser or what they were supposed to represent. The archaeologist Jean-Philippe Lauer, who excavated most of the pyramid and complex, believes they were originally stored and then given a ‘proper burial’ by Djoser in his pyramid to honor his predecessors. There are other historians, however, who claim the vessels were dumped into the shafts as yet another attempt to prevent grave robbers from getting to the king’s burial chamber.

坟墓中的墓室，也就是安放国王遗体的地方，位于金字塔地基之下，环绕着由漫长甬道所组成的迷宫，以阻止盗墓贼。金字塔内最让人不解的发现之一是大量的石制器具。金字塔地下通道外的储藏室里发现了超过40000个各式各样的容器。它们上面刻着埃及第一王朝和第二王朝统治者的名字，并且用不同的石头制成。学者和考古学家针对为什么这些容器被放在乔塞尔的坟墓里，以及它们究竟代表什么东西尚未达成共识。发掘了大部分金字塔与建筑群的考古学家Jean-Philippe Lauer认为，它们被乔塞尔储藏在自己的金字塔中，并给予恰当的葬礼，以显示对其前任的尊敬。然而，也有其他历史学家认为，这些容器被丢到通道中，作为阻止盗墓贼接近国王墓室的另一种尝试。

段落F

Unfortunately, all of the precautions and intricate design of the underground network did not prevent ancient robbers from finding a way in. Djoser’s grave goods, and even his body, were stolen at some point in the past and all archaeologists found were a small number of his valuables overlooked by the thieves. There was enough left throughout the pyramid and its complex, however, to astonish and amaze the archaeologists who excavated it.

不幸的是，所有这些地下网络的预防措施和精巧设计都没能阻止古代盗贼找到进入的路径。乔塞尔的陪葬品，甚至他的身体都在过去某个时间点遭到偷盗。考古学家发现的仅仅是一小部分盗墓贼看不上的物品。然而，金字塔和建筑群中仍然留下了足够的东西，让发掘它的考古学家感到震惊和惊喜。

段落G

Egyptologist Miroslav Verner writes, ‘Few monuments hold a place in human history as significant as that of the Step Pyramid in Saqqara …It can be said without exaggeration that this pyramid complex constitutes a milestone in the evolution of monumental stone architecture in Egypt and in the world as a whole.’ The Step Pyramid was a revolutionary advance in architecture and became the archetype which all the other great pyramid builders of Egypt would follow.

埃及学家Miroslav Verner写到，“人类历史上很少有建筑物像塞加拉的阶梯金字塔那么重要。毫不夸张的说，金字塔建筑群是埃及、乃至整个世界重要石制建筑物进化史上的里程碑”。阶梯金字塔是建筑学革命性的突破，成为埃及所有其他金字塔建造者仿效的典范。

### [16Test1Passage3 The future of work 未来工作展望](http://www.laokaoya.com/42751.html)

**第1段**

According to a leading business consultancy, 3-14% of the global workforce will need to switch to a different occupation within the next 10-15 years, and all workers will need to adapt as their occupations evolve alongside increasingly capable machines. Automation – or ’embodied artificial intelligence’ (AI) – is one aspect of the disruptive effects of technology on the labour market.’Disembodied AI’, like the algorithms running in our smartphones, is another.

根据一家一流商业咨询机构的预测，全球3%到15%的劳动力需要在10到15年内更换自己的工作。所有劳动者都需要适应由越来越先进的机器所带来的工作内容的变化。自动化，或者“看得见的人工智能”，是技术对劳动力市场破坏性影响的一个方面。而“看不见的人工智能”，如我们手机中运行的算法，是其影响的另一方面。

**第2段**

Dr Stella Pachidi from Cambridge Judge Business School believes that some of the most fundamental changes are happening as a result of the ‘algorithmication’ of jobs that are dependent on data rather than on production – the so-called knowledge economy. Algorithms are capable of learning from data to undertake tasks that previously needed human judgement, such as reading legal contracts, analysing medical scans and gathering market intelligence.

剑桥大学贾吉商学院Stella Pachidi博士认为一些最根本的改变是工作内容“算法化”的结果，即工作依赖于数据而非生产-所谓的知识经济。算法可以从数据中学习，进而执行之前需要人类判断的任务，比如法律合同，分析医疗检查结果，并收集市场情报。

**第3段**

‘In many cases, they can outperform humans,’ says Pachidi, ‘Organisations are attracted to using algorithms because they want to make choices based on what they consider is “perfect information”, as well as to reduce costs and enhance productivity.’

“许多情况下，它们的表现都超过人类”，Pachidi说，“组织机构倾向于使用算法，因为他们想要将决策建立在他们所认为的‘完全信息’上，减少成本，并提升生产效率”。

**第4段**

‘But these enhancements are not without consequences,’ says Pachidi. ‘If routine cognitive tasks are taken over by AI, how do professions develop their future experts?’ she asks. ‘One way of learning about a job is “legitimate peripheral participation” – a novice stands next to experts and learns by observation. If this isn’t happening, then you need to find new ways to learn.’

“但是，这些提升并非没有代价”，Pachidi说，“如果日常认知任务都由人工智能进行，那么各行各业如何培养自己未来的专家？”她问道。“了解某项工作的一种方法是‘合法的边缘性参与’，即新手站在专家旁，通过观察学习。如果这种方式消失了的话，那么你就得寻找新的学习方法”。

**第5段**

Another issue is the extent to which the technology influences or even controls the workforce. For over two years, Pachidi monitored a telecommunications company. ‘The way telecoms salespeople work is through personal and frequent contact with clients, this article is from Laokaoya website. using the benefit of experience to assess a situation and reach a decision. However, the company had started using a[n]…algorithm that defined when account managers should contact certain customers about which kinds of campaigns and what to offer them.’

另外一项问题是，技术在多大程度上影响甚至控制员工。Pachidi观察一家电信公司两年多的时间。“电信公司销售人员的工作通过与客户私下而频繁的接触展开，利用他们的经验优势评估状况并促成决定。然而，公司已经开始使用算法决定客户经理应该在什么时候、就哪种活动与产品联系特定的顾客”。

**第6段**

The algorithm – usually built by external designers – often becomes the keeper of knowledge, she explains. In cases like this, Pachidi believes, a short-sighted view begins to creep into working practices whereby workers learn through the ‘algorithm’s eyes’ and become dependent on its instructions. Alternative explorations – where experimentation and human instinct lead to progress and new ideas -are effectively discouraged.

她解释道，这种通常由外部设计师搭建的算法成为知识的保管员。Pachidi认为，在诸如此类的情况下，一种较为短视的看法开始影响工作实践。员工通过算法的视角进行学习，并依赖于它的指示。替代性探索，即实验与人类直觉催生进步和新观点，遭到打击。

**第7段**

Pachidi and colleagues even observed people developing strategies to make the algorithm work to their own advantage.’We are seeing cases where workers feed the algorithm with false data to reach their targets,’ she reports.

Pachidi和她的同事甚至观察到，人们开发出相应的策略，让算法为满足他们自己的利益而工作。“我们观察到如下案例，员工将错误的数据提供给算法以达到自己的目的”，她指出。

**第8段**

It’s scenarios like these that many researchers are working to avoid. Their objective is to make AI technologies more trustworthy and transparent, so that organisations and individuals understand how AI decisions are made. In the meantime, says Pachidi,’ We need to make sure we fully understand the dilemmas that this new world raises regarding expertise, occupational boundaries and control.’

这正是许多研究者努力避免的情景。他们的目标是让人工智能技术变得更加可信、更加透明，以便组织机构和个人文章来自老烤鸭雅思能够理解人工智能如何做出决策。与此同时，Pachidi说道，“我们需要确保自己充分理解这一新世界在专业技能、职业边界和控制方面发引发的困境”。

**第9段**

Economist Professor Hamish Low believes that the future of work will involve major transitions across the whole life course for everyone: ‘The traditional trajectory of full-time education followed by full-time work followed by a pensioned retirement is a thing of the past,’ says Low. Instead, he envisages a multistage employment life: one where retraining happens across the life course, and where multiple jobs and no job happen by choice at different stages.

经济学教授Hamish Low认为，未来的工作会给所有人生活的方方面面带来重大转变。“传统的接受全日制教育之后从事全日制工作，随后再领取津贴退休的路径已经是过去时”。他反而展望一种多阶段的职业生活：整个生命过程中都会进行再培训，不同阶段选择从事多种工作或者不工作。

**第10段**

On the subject of job losses, Low believes the predictions are founded on a fallacy: “It assumes that the number of jobs is fixed. If in 30 years, half of 100 jobs are being carried out by robots, that doesn’t mean we are left with just 50 jobs for humans. The number of jobs will increase: we would expect there to be 150 jobs.’

至于工作流失的问题，Low认为这一预测建立在谬误之上：“它假定工作的数量是固定的。如果在未来30年里，100个工作岗位中有一半由机器人承担，这并不意味着只剩下50个岗位给人类。工作数量会上升。我们能够期望会有150个工作机会”。

**第11段**

Dr Ewan McGaughey, at Cambridge’s Centre for Business Research and King’s College London, agrees that ‘apocalyptic’ views about the future of work are misguided. ‘It’s the laws that restrict the supply of capital to the job market, not the advent of new technologies that causes unemployment.

剑桥大学商业研究中心与伦敦国王学院的Ewan McGaughey博士同样认为有关未来工作的“末日论”充满误导。“限制求职市场资本供给的法律才是引发失业的原因，而非新技术的出现”。

**第12段**

His recently published research answers the question of whether automation, AI and robotics will mean a ‘jobless future’ by looking at the causes of unemployment. ‘History is clear that change can mean redundancies. But social policies can tackle this through retraining and redeployment.’

他最近发表的研究通过探询失业的起因回答了自动化，人工智能以及机器人是否会引发“无工作的未来”这一问题。“历史表明，改变可能意味着裁员。但社会政策能够通过再培训以及再分配解决这一问题”。

**第13段**

He adds: ‘If there is going to be change to jobs as a result of AI and robotics then I’d like to see governments seizing the opportunity to improve policy to enforce good job security. We can “reprogramme” the law to prepare for a fairer future of work and leisure.’ McGaughey’s findings are a call to arms to leaders of organisations, governments and banks to pre-empt the coming changes with bold new policies that guarantee full employment, fair incomes and a thriving economic democracy.

他补充到：“如果人工智能和机器人引发工作上的改变，那么我想看到政府抓住机会提升政策以确保良好的工作安全。我们可以重新编排法律以迎接工作和休闲更为公平的未来”。McGaughey的发现呼吁组织机构、政府和银行的领导制定大胆的新政策，以提前应对即将到来的改变，确保就业率、公平收入、以及繁荣的经济民主。

**第14段**

‘The promises of these new technologies are astounding. They deliver humankind the capacity to live in a way that nobody could have once imagined,’ he adds. ‘Just as the industrial revolution brought people past subsistence agriculture, and the corporate revolution enabled mass production, a third revolution has been pronounced. But it will not only be one of technology. The next revolution will be social.’

“这些新技术带来的前景让人震惊。他们赋予人类以一种前人无法想象的方式生活的能力”，他补充到，“正如工业革命让人们脱离勉强糊口的农业生活，企业革命让大规模生产成为可能，第三次革命已经出现。但它绝不仅仅是技术革命。下一次革命一定是社会性的”。

## 16Test2

### [16Test2Passage1 The White Horse of Uffington 阿芬顿的白马](http://www.laokaoya.com/42780.html)

第1段

The cutting of huge figures or ‘geoglyphs’ into the earth of English hillsides has taken place for more than 3,000 years. There are 56 hill figures scattered around England, with the vast majority on the chalk downlands of the country’s southern counties. The figures include giants, horses, crosses and regimental badges. Although the majority of these geoglyphs date within the last 300 years or so, there are one or two that are much older.

在英格兰山坡上雕刻巨大的图形（地雕）已经有超过3000年的历史。如今英格兰各地分布着56幅山地图形，大多数都位于该国南部的白垩丘陵地带。这些图形包括巨人，马，十字，以及团队徽章。虽然这些地雕大多数都是在近300年里造就的，但也有那么一两个的历史要久远许多。

第2段

The most famous of these figures is perhaps also the most mysterious – the Uffington White Horse in Oxfordshire. The White Horse has recently been re-dated and shown to be even older than its previously assigned ancient pre-Roman Iron Age date. More controversial is the date of the enigmatic Long Man of Wilmington in Sussex. While many historians are convinced the figure is prehistoric, others believe that it was the work of an artistic monk from a nearby priory and was created between the 11th and 15th centuries.

这些图形中最著名、或许也是最具有神秘色彩的是位于牛津郡的阿芬顿白马。白马最近被重新测定了年代，结果表明它的历史比之前认为的古代前罗马铁器时代还要久远。更加具有争议的创作时间是位于苏赛克斯的威明顿巨人。虽然许多历史学家认为该图形出现于有文字记载之前，但其他人认为它是附近修道院一名艺术僧侣的作品，大约创作于11世纪到15世纪之间。

第3段

The method of cutting these huge figures was simply to remove the overlying grass to reveal the gleaming white chalk below. However, the grass would soon grow over the geoglyph again unless it was regularly cleaned or scoured by a fairly large team of people. One reason that the vast majority of hill figures have disappeared is that when the traditions associated with the figures faded, people no longer bothered or remembered to clear away the grass to expose the chalk outline. Furthermore, over hundreds of years the outlines would sometimes change due to people not always cutting in exactly the same place, thus creating a different shape to the original geoglyph. The fact that any ancient hill figures survive at all in England today is testament to the strength and continuity of local customs and beliefs which, in one case at least, must stretch back over millennia.

切割这些巨型图形的方法十分简单，只用移除表面覆盖的植被，显露下面的白垩石就好。然而，除非有相对大型的团队进行周期性清理或者冲刷，杂草很快就会再长出来遮盖住地雕。大多数山地图形消失的原因就在于，当与其相关的传统逐渐没落时，人们不再想费力或者不再记得清除杂草以显露出白垩轮廓。此外，在几百年的时间里，其轮廓有时会因为人们并不总是在相同的地方进行清理而发生变化，由此造成与最初地雕不同的形状。英格兰地区任何存留至今的古代山地图形都展示了当地习俗与信仰的力量和连续性。至少在某一副地雕中，这些习俗和信仰可以追溯到1000多年前。

第4段

The Uffington White Horse is a unique, stylised representation of a horse consisting of a long, sleek back, thin disjointed legs, a streaming tail, and a bird-like beaked head. The elegant creature almost melts into the landscape. The horse is situated 2.5 km from Uffington village on a steep slope close to the Late Bronze Age (c. 7th century BCE) hillfort of Uffington Castle and below the Ridgeway, a long-distance Neolithic track.

阿芬顿白马是一副独特的、非写实的作品，包括线条流畅的长脊背、纤细分离的马腿、飘逸的尾巴、以及如同鸟儿一般有喙的头部。这一优雅的生物几乎融入到景色之中。马儿距阿芬顿2.5公里远，位于陡峭的山坡上，靠近青铜时代晚期的阿芬顿hillfort，在一条悠长的新石器时代小径（Ridgeway）之下。

第5段

The Uffington Horse is also surrounded by Bronze Age burial mounds. It is not far from the Bronze Age cemetery of Lambourn Seven Barrows, which consists of more than 30 well-preserved burial mounds. The carving has been placed in such a way as to make it extremely difficult to see from close quarters, and like many geoglyphs is best appreciated from the air. This article is from Laokaoya website. Nevertheless, there are certain areas of the Vale of the White Horse, the valley containing and named after the enigmatic creature, from which an adequate impression may be gained. Indeed on a clear day the carving can be seen from up to 30 km away.

阿芬顿白马被大量青铜时代的墓穴环绕着。它离Lambourn Seven Barrows的青铜时代墓地不远。该墓地包括30多个保存完好的坟丘。该图形的陈列方式文章来自老烤鸭雅思让它很难在近处看到，跟许多地雕一样，最好是从空中欣赏。然而，白马谷有一些地方可以看到相对完整的图像。天气晴朗的时候，30公里外就可以看到该雕像。

第6段

The earliest evidence of a horse at Uffington is from the 1070s CE when ‘White Horse Hill’ is mentioned in documents from the nearby Abbey of Abingdon, and the first reference to the horse itself is soon after, in 1190 CE. However, the carving is believed to date back much further than that. Due to the similarity of the Uffington White Horse to the stylised depictions of horses on 1st century BCE coins, it had been thought that the creature must also date to that period.

阿芬顿马儿的最早证据来自于公元11世纪70年代。当时附近的阿宾顿修道院的文档里第一次提到了“白马山丘”的名字。不久之后（公元1190年），马儿自己也被第一次提到。然而，人们认为这一图雕的历史可以追溯到很久之前。由于阿芬顿白马与公元前1世纪发行的硬币上马儿的简笔形象十分类似，人们认为，该生物也一定是那个年代的。

第7段

However, in 1995 Optically Stimulated Luminescence (OSL) testing was carried out by the Oxford Archaeological Unit on soil from two of the lower layers of the horse’s body, and from another cut near the base. The result was a date for the horse’s construction somewhere between 1400 and 600 BCE – in other words, it had a Late Bronze Age or Early Iron Age origin …

然而，1995年牛津考古队对马儿身体下方的两处土层，以及底部附近的土层进行了光释光测试。结果表明，马儿的刻画时间位于公元前1400年到公元前600年之间。换句话说，它出现于青铜时代晚期或者铁器时代初期。

第8段

The latter end of this date range would tie the carving of the horse in with occupation of the nearby Uffington hillfort, indicating that it may represent a tribal emblem marking the land of the inhabitants of the hillfort. Alternatively, the carving may have been carried out during a Bronze or Iron Age ritual. Some researchers see the horse as representing the Celtic horse goddess Epona, who was worshipped as a protector of horses, and for her associations with fertility. However, the cult of Epona was not imported from Gaul (France) until around the first century CE. This date is at least six centuries after the Uffington Horse was probably carved. Nevertheless, the horse had great ritual and economic significance during the Bronze and Iron Ages, as attested by its depictions on jewellery and other metal objects. It is possible that the carving represents a goddess in native mythology, such as Rhiannon, described in later Welsh mythology as beautiful woman dressed in gold and riding a white horse.

这一时间区间的末尾会将马儿的刻画与附近阿芬顿hillfort的占据联系起来，说明它可能代表部落的徽记，标注这是hillfort居民的土地。除此之外，该图形也有可能是在青铜时代或者铁器时代的仪式中被刻画出来的。一些研究者认为马儿代表了凯尔特人的马神Epona。它作为马儿的保护者，并因为与生育的联系而接受人们的朝拜。然而，Epona崇拜直到公元1世纪才从高卢（法国）引入进来。这一时间相比于阿芬顿马儿可能出现的时间至少晚了六个世纪。不过，马儿在青铜时代和铁器时代有着很重要的仪式意义和经济意义。这一点可以通过珠宝与其他金属物品上的描绘得到证明。这一图形有可能代表了本土神话中的神袛，例如来安诺。她在随后的威尔士神话中被描绘成一位穿着金衣，骑着白马的漂亮女性。

第9段

The fact that geoglyphs can disappear easily, along with their associated rituals and meaning, indicates that they were never intended to be anything more than temporary gestures. But this does not lessen their importance. These giant carvings are a fascinating glimpse into the minds of their creators and how they viewed the landscape in which they lived.

地雕容易消失的事实，再加上与之相连的仪式和意义表明它们只是被当作暂时的姿态而已。但这并没有削弱它们的重要性。这些巨幅画作让我们得以窥视其创作者的思想以及他们如何看到自己生活的环境。

### [16Test2Passage2 I contain multitudes 微生物](http://www.laokaoya.com/42815.html)

第1段

Microbes, most of them bacteria, have populated this planet since long before animal life developed and they will outlive us. Invisible to the naked eye, they are ubiquitous. They inhabit the soil, air, rocks and water and are present within every form of life, from seaweed and coral to dogs and humans. And, as Yong explains in his utterly absorbing and hugely important book, we mess with them at our peril.

微生物，大多数都是细菌，在动物出现很早以前就生活在地球上，而且它们会在我们消失之后继续存在。虽然裸眼看不到，但它们到处都是。它们出现在土壤、空气、岩石和水中，也存在于任何形式的生命内部，从海草和珊瑚，到狗和人类。并且，正如杨在其十分引人入胜又至关重要的书中所说的那样，我们冒着危险操纵它们。

第2段

Every species has its own colony of microbes, called a ‘microbiome’, and these microbes vary not only between species but also between individuals and within different parts of each individual. What is amazing is that while the number of human cells in the average person is about 30 trillion, the number of microbial ones is higher – about 39 trillion. At best, Yong informs us, we are only 50 per cent human. Indeed, some scientists even suggest we should think of each species and its microbes as a single unit, dubbed a ‘holobiont’.

每个物种都有它们自己的微生物群落，被叫做“微生物群”。不同物种之间，不同个体之间，乃至每个个体的不同部分之间，微生物都各有不同。令人惊讶的是，虽然平均每个人身上拥有大约30万亿的细胞，微生物的个数要更高一些，大约39万亿。杨告诉我们，哪怕在最好的情况下，我们也仅有50%属于人类。确实，一些科学家甚至认为，我们应该将每个物种及其微生物视为一体，称之为“holobiont”。

第3段

In each human there are microbes that live only in the stomach, the mouth or the armpit and by and large they do so peacefully. So ‘bad’ microbes are just microbes out of context. Microbes that sit contentedly in the human gut (where there are more microbes than there are stars in the galaxy) can become deadly if they find their way into the bloodstream. This article is from Laokaoya website. These communities are constantly changing too. The right hand shares just one sixth of its microbes with the left hand. And, of course, we are surrounded by microbes. Every time we eat, we swallow a million microbes in each gram of food; we are continually swapping microbes with other humans, pets and the world at large…

在每个人身上，都有只存在于胃部，口腔或腋窝的微生物。大体而言，它们生活的十分平和。所以，“坏”微生物实际只是脱离相应环境的微生物。惬意地生活在人类消化道中的微生物（那里的微生物数量甚至比银河系里的星星还多）如果进入血液的话就会变得非常致命。这些群落也经常发生变化。右手上的微生物和左手相比只有六分之一相同。当然，我们也被微生物所围绕着。每次吃饭的时候，伴随每克食物，我们会吞下100万个微生物。我们与其他人类，宠物和整个世界一直都在持续进行微生物的交换。

第4段

It’s a fascinating topic and Yong, a young British science journalist, is an extraordinarily adept guide. Writing with lightness and panache, he has a knack of explaining complex science in terms that are both easy to understand and totally enthralling. Yong is on a mission. Leading us gently by the hand, he takes us into the world of microbes – a bizarre, alien planet – in a bid to persuade us to love them as much as he does. By the end, we do.

这是个迷人的话题。杨，年轻的英国自然科学记者，是位十分娴熟的向导。他将复杂的科学术语用易于理解又让人着迷的方式解释出来。杨身负使命。轻轻地拉着我们的手，他将我们带入微生物的世界-一个光怪陆离而陌生的星球-尝试让我们像他一样爱上它们。在读完整本书之后，我们确实如此。

第5段

For most of human history we had no idea that microbes existed. The first man to see these extraordinarily potent creatures was a Dutch lens-maker called Antony van Leeuwenhoek in the 1670s. Using microscopes of his own design that could magnify up to 270 times, he examined a drop of water from a nearby lake and found it teeming with tiny creatures he called ‘animalcules’. It wasn’t until nearly two hundred years later that the research of French biologist Louis Pasteur indicated that some microbes caused disease. It was Pasteur’s ‘germ theory’ that gave bacteria the poor image that endures today.

在人类历史的大部分时间，我们都不知道微生物的存在。17世纪70年代，一名叫做Antony van Leeuwenhoek的荷兰镜片工匠文章来自老烤鸭雅思第一次看到了这些极其强大的生物。利用自己设计的、可以放大到270倍的显微镜，他检验了附近湖泊的一滴水，发现其中充满他称之为“animalcules”的微小生物。直到近200年后，法国生物学家Louis Pasteur的研究才表明，一些微生物会引发疾病。正是Pasteur的病菌理论赋予细菌一直延续到今天的不良形象。

第6段

Yong’s book is in many ways a plea for microbial tolerance, pointing out that while fewer than one hundred species of bacteria bring disease, many thousands more play a vital role in maintaining our health. The book also acknowledges that our attitude towards bacteria is no a simple one. We tend to see the dangers posed by bacteria, yet at the same time we are sold yoghurts and drinks that supposedly nurture “friendly’ bacteria. In reality, says Yong, bacteria should not be viewed as either friends or foes, villains or heroes. Instead we should realise we have a symbiotic relationship, that can be mutually beneficial or mutually destructive.

杨的书用多种方式请求我们对微生物持容忍态度。他指出，虽然有不到100种细菌会带来疾病，但还有上千种在维护我们的健康方面发挥着举足轻重的作用。这本书也认识到，我们对待细菌的态度并不统一。我们会看到细菌所造成的危险，但与此同时我们也会购买培养益生菌的酸奶和饮料。事实上，杨认为细菌既不应该被当作是朋友，也不应该被认为是敌人。它们既不是恶棍，也不是英雄。与之相反，我们应该意识到我们之间存在共生关系，即可以互相增益，也可以互相毁灭。

第7段

What then do these millions of organisms do? The answer is pretty much everything. New research is now unravelling the ways in which bacteria aid digestion, regulate our immune systems, eliminate toxins, produce vitamins, affect our behaviour and even combat obesity. ‘They actually help us become who we are,’ says Yong. But we are facing a growing problem. Our obsession with hygiene, our overuse of antibiotics and our unhealthy, low-fibre diets are disrupting the bacterial balance and may be responsible for soaring rates of allergies and immune problems, such as inflammatory bowel disease (IBD).

那么，这些数以百万计的生命究竟做什么呢？答案是几乎任何事情。新的研究如今表明，细菌帮助消化，管理我们的免疫系统，消除毒素，生产维生素，影响我们的行为，甚至对抗肥胖。“它们实际上帮助我们塑造自身”，杨说。但我们也面临越来越严重的问题。我们对卫生的痴迷，对抗生素的过度使用，以及我们不健康的、低纤维的饮食正在破坏菌落平衡，并且可能要为越来越多的过敏和免疫系统疾病负责，如炎性肠病。

第8段

The most recent research actually turns accepted norms upside down. For example, there are studies indicating that the excessive use of household detergents and antibacterial products actually destroys the microbes that normally keep the more dangerous germs at bay. Other studies show that keeping a dog as a pet gives children early exposure to a diverse range of bacteria which may help protect them against allergies later.

最新的研究实际上颠覆了我们普遍接受的观点。例如，有研究表明，在家庭中过度使用洗涤剂和抗菌产品会破坏平时阻碍更为危险的细菌入侵的微生物。其他研究表明，养一条狗作为宠物会让孩子早早接触到各类细菌，这有助于保护他们日后免受过敏的困扰。

第9段

The readers of Yong’s book must be prepared for a decidedly unglamorous world. Among the less appealing case studies is one about a fungus that is wiping out entire populations of frogs and that can be halted by a rare microbial bacterium. Another is about squid that carry luminescent bacteria that protect them against predators. However, if you can overcome your distaste for some of the investigations, the reasons for Yong’s enthusiasm become clear. The microbial world is a place of wonder. Already, in an attempt to stop mosquitoes spreading dengue fever – a disease that infects 400 million people a year – mosquitoes are being loaded with a bacterium to block the disease. In the future, our ability to manipulate microbes means we could construct buildings with useful microbes built into their walls to fight off infections. Just imagine a neonatal hospital ward coated in a specially mixed cocktail of microbes so that babies get the best start in life.

杨的作品的读者必须做好了解一个十分乏味的世界的准备。在不那么让人喜欢的案例研究中有一项是关于某个正在灭绝整个青蛙群体的真菌的，而只有一种稀有的细菌才能终止这一过程。另外一项是关于乌贼的。它们所携带的可以发光的细菌保护他们远离捕食者。然而，如果你可以克服对一些研究的厌恶，杨热情背后的原因就会变得十分明显。微生物世界充满了惊喜。在阻止蚊子传播革登热（一种每年感染4亿人的疾病）的尝试中，蚊子被搭载上一种可以阻碍疾病的细菌。未来，我们操纵微生物的能力意味着我们可以建造墙壁中内嵌微生物以对抗感染的建筑。想象一下，崭新医院病房覆盖着经过特定混合后的微生物，以便婴儿可以完美开启他们的生命。

### [16Test2Passage3 How to make wise decisions 如何做出明智的决策](http://www.laokaoya.com/42846.html)

第1段

Across cultures, wisdom has been considered one of the most revered human qualities. Although the truly wise may seem few and far between, empirical research examining wisdom suggests that it isn’t an exceptional trait possessed by a small handful of bearded philosophers after all – in fact, the latest studies suggest that most of us have the ability to make wise decisions, given the right context.

各个文化中，智慧一直都被认为是最受尊敬的人类品质之一。虽然真正的智慧似乎十分稀少罕见，但针对智慧的实证研究发现，它并不是一种只有少部分长满胡子的哲学家才拥有的独特品质。事实上，最新的研究表明，在正确情景下，我们大多数人都有做出明智决定的能力。

第2段

‘It appears that experiential, situational, and cultural factors are even more powerful in shaping wisdom than previously imagined,’ says Associate Professor Igor Grossmann of the University of Waterloo in Ontario, Canada. ‘Recent empirical findings from cognitive, developmental, social, and personality psychology cumulatively suggest that people’s ability to reason wisely varies dramatically across experiential and situational contexts. Understanding the role of such contextual factors offers unique insights into understanding wisdom in daily life, as well as how it can be enhanced and taught.’

“经验、情景和文化因素在塑造智慧方面似乎比我们之前想象的还要重要”，位于加拿大安大略省滑铁卢大学的副教授Igor Grossmann说。“最近来自认知心理学，发展心理学，社会心理学和个性心理学的实证研究逐渐发现，人们进行智慧思考的能力在不同的经验和情景下出现巨大差异。理解这些背景因素为我们理解日常生活中的智慧，以及它如何被加强和传授提供了独特的角度”。

第3段

It seems that it’s not so much that some people simply possess wisdom and others lack it, but that our ability to reason wisely depends on a variety of external factors. ‘It is impossible to characterize thought processes attributed to wisdom without considering the role of contextual factors,’ explains Grossmann. ‘In other words, wisdom is not solely an “inner quality” but rather unfolds as a function of situations people happen to be in. Some situations are more likely to promote wisdom than others.’

事情似乎并不简单是一些人拥有智慧而其他人没有智慧，我们明智思考的能力取决于各种外部因素。“不考虑背景因素的作用，就不可能总结出被归为智慧的思考过程的特点”，Grossmann解释道。“换句话说，智慧不仅仅是一种内部品质，而是人们所处情景的功能的展现。一些情景比其他情景更有可能促进智慧发展”。

第4段

Coming up with a definition of wisdom is challenging, but Grossmann and his colleagues have identified four key characteristics as part of a framework of wise reasoning. One is intellectual humility or recognition of the limits of our own knowledge, and another is appreciation of perspectives wider than the issue at hand. Sensitivity to the possibility of change in social relations is also key, along with compromise or integration of different attitudes and beliefs.

给智慧下定义很困难，但Grossmann和他的同事已经界定出四个关键点，作为智慧思考框架的一部分。一个是智力谦逊，或者说承认我们知识的有限性，另一个是对比收头问题更广泛的解决方法的欣赏。对社会关系变化的可能性保持敏感也是关键之一，以及不同态度与观点之间的妥协或者融合。

第5段

Grossmann and his colleagues have also found that one of the most reliable ways to support wisdom in our own day-to-day decisions is to look at scenarios from a third-party perspective, as though giving advice to a friend. Research suggests that when adopting a first-person viewpoint we focus on ‘the focal features of the environment’ and when we adopt a third-person, ‘observer’ viewpoint we reason more broadly and focus more on interpersonal and moral ideals such as justice and impartiality. Looking at problems from this more expansive viewpoint appears to foster cognitive processes related to wise decisions.

Grossmann和他的同事还发现，在我们日常决策中，支撑智慧最可靠的方式之一就是从第三方角度看待问题，就像给朋友提建议一样。研究表明，当我们采用第一视角的时候，我们关注环境的核心特征，而当我们采用第三方、观察者视角的时候，我们文章来自老烤鸭雅思会进行更广泛的思考，更加关注人际关系和道德理想，比如公平公正。从更加宽泛的视角看待问题似乎有助于促进与明智决策相关的认知过程。

第6段

What are we to do, then, when confronted with situations like a disagreement with a spouse or negotiating a contract at work, that require us to take a personal stake? Grossmann argues that even when we aren’t able to change the situation, we can still evaluate these experiences from different perspectives.

当面对与配偶意见不一致或者在工作上沟通合同这样需要我们进行个人决策的情景时，我们该如何做呢？Grossmann认为，即便我们无法改变这一情景，我们仍然可以从不同的角度对这些经验进行评估。

第7段

For example, in one experiment that took place during the peak of a recent economic recession, graduating college seniors were asked to reflect on their job prospects. This article is from Laokaoya website. The students were instructed to imagine their career either ‘as if you were a distant observer’ or ‘before your own eyes as if you were right there’. Participants in the group assigned to the distant observer’ role displayed more wisdom-related reasoning (intellectual humility and recognition of change) than did participants in the control group.

例如，在一项于近期经济衰退到顶点时进行的实验中，大学毕业生被要求对他们的职业前景进行思考。实验人员指示学生从不同角度想象自己的工作，要么当自己是一个中立的观察者，要么当自己是当事人。相比于控制组的参与者而言，从中立观察者角度出发的参与者展现出更多与智慧相关的思考（智力谦逊与认识到变化）。

第8段

In another study, couples in long-term romantic relationships were instructed to visualize an unresolved relationship conflict either through the eyes of an outsider or from their own perspective. Participants then discussed the incident with their partner for 10 minutes, after which they wrote down their thoughts about it. Couples in the ‘other’s eyes’ condition were significantly more likely to rely on wise reasoning – recognizing others’ perspectives and searching for a compromise -compared to the couples in the egocentric condition.

在另一项研究中，拥有长期浪漫关系的夫妻被要求从外人角度或者从他们自己的角度想象一项未能解决的人际冲突，随后参与者与他们的伴侣针对这一问题进行10分钟的讨论。然后他们写下自己的想法。与从自我角度出发的夫妻相比，从他人角度出发的夫妻明显更有可能进行明智的思考-接受他人的观点，并寻求妥协。

第9段

‘Ego-decentering promotes greater focus on others and enables a bigger picture, conceptual view of the experience, affording recognition of intellectual humility and change,’ says Grossmann.

“不那么以自我为中心会让人们更加关注他人，从更宽广的视角对体验形成概念化的认知，从而意识到知识的有限性和改变”，Grossmann说。

第10段

We might associate wisdom with intelligence or particular personality traits, but research shows only a small positive relationship between wise thinking and crystallized intelligence and the personality traits of openness and agreeableness. ‘It is remarkable how much people can vary in their wisdom from one situation to the next, and how much stronger such contextual effects are for understanding the relationship between wise judgment and its social and affective outcomes as compared to the generalized “traits”‘, Grossmann explains. ‘That is, knowing how wisely a person behaves in a given situation is more informative for understanding their emotions or likelihood to forgive [or] retaliate as compared to knowing whether the person may be wise “in general”‘.

我们可能会将智慧与智力或者特定的性格联系起来，但研究表明，智慧与明晰的智力以及开放、宜人的性格特点之间只有微弱的联系。“人们的智慧在不同情境中的差异之大让人震惊，而背景因素对于理解明智决策与其社会和情感结果之间关系的作用也要比普遍的性格特点有用很多”，Grossmann解释道。“了解一个人在特定情景下的表现有多么智慧或者有多大可能进行原谅或者报复，比了解这个人是否大体智慧要能够提供更多的信息”。

## 16Test3

### [16Test3Passage1 Roman shipbuilding and navigation 罗马造船与航海](http://www.laokaoya.com/42875.html)

第1段

Shipbuilding today is based on science and ships are built using computers and sophisticated tools. Shipbuilding in ancient Rome, however, was more of an art relying on estimation, inherited techniques and personal experience. The Romans were not traditionally sailors but mostly land-based people, who learned to build ships from the people that they conquered, namely the Greeks and the Egyptians.

现代造船业建立在科技之上。人们利用电脑和精密的工具建造船只。然而，古罗马的造船业更多的是一种依赖于判断，祖传技术以及个人经验的艺术。罗马人以前并不是水手，大部分人都在陆地上生活。他们从自己占领区的人们那里（希腊人和埃及人）学会如何建造船舶。

第2段

There are a few surviving written documents that give descriptions and representations of ancient Roman ships, including the sails and rigging. Excavated vessels also provide some clues about ancient shipbuilding techniques. Studies of these have taught us that ancient Roman shipbuilders built the outer hull first, then proceeded with the frame and the rest of the ship. Planks used to build the outer hull were initially sewn together. Starting from the 6th century BCE, they were fixed using a method called mortise and tenon, whereby one plank locked into another without the need for stitching. Then in the first centuries of the current era, Mediterranean shipbuilders shifted to another shipbuilding method, still in use today, which consisted of building the frame first and then proceeding with the hull and the other components of the ship. This method was more systematic and dramatically shortened ship construction times. The ancient Romans built large merchant ships and warships whose size and technology were unequalled until the 16th century CE.

有几份留存的文档描述了古罗马的船只，包括其风帆和绳索。考古发掘出来的轮船也为了解古代造船技术提供了一些线索。对这些东西的研究让我们得知，古罗马船匠首先建造外面的船身，然后才进行到框架和其余的部分。用于建造船身的木板一开始就被拼接在一起。从公元前六世纪开始，人们使用一种被称为榫 卯结构的方法（一块木板与另一块锁定，不需要缝补）将它们固定住。到了公元一世纪，地中海的造船者转向另一种如今仍在使用的造船方法，即先建造框架，然后是船体和船只的其他部分。这一方法更为系统，极大的缩减了船只的建造时间。古罗马人建造出大型商船和战舰。其尺寸和所涉及的技术一直到16世纪才有人可以匹敌。

第3段

Warships were built to be lightweight and very speedy. They had to be able to sail near the coast, which is why they had no ballast or excess load and were built with a long, narrow hull. They did not sink when damaged and often would lie crippled on the sea’s surface following naval battles. They had a bronze battering ram, which was used to pierce the timber hulls or break the oars of enemy vessels. Warships used both wind (sails) and human power (oarsmen)and were therefore very fast. Eventually, Rome’s navy became the largest and most powerful in the Mediterranean, and the Romans had control over what they therefore called Mare Nostrum meaning ‘our sea’.

战舰重量较轻，速度很快。它们必须能在近海航行。这也是它们为什么没有压舱物或额外负重，并且船体狭长的原因。它们受损之后不会沉没，而是在海战后残缺不全的飘在海面上。它们装有青铜撞角，用来刺穿木制船体或者破坏敌方船只的船桨。战舰同时使用风力和人力，所以速度很快。最终，罗马海军成为地中海规模最大、力量最强的舰队。罗马人控制这这片海域，将其称之为“我们的海”（内海）。

第4段

There were many kinds of warship. The ‘trireme’ was the dominant warship from the 7th to 4th century BCE. It had rowers in the top, middle and lower levels, and approximately 50 rowers in each bank. The rowers at the bottom had the most uncomfortable position as they were under the other rowers and were exposed to the water entering through the oar-holes. This article is from Laokaoya website. It is worth noting that contrary to popular perception, rowers were not slaves but mostly Roman citizens enrolled in the military. The trireme was superseded by larger ships with even more rowers.

有许多种不同的战舰。“三层划桨战船”是公元前7世纪到公元前4世纪的主力。它在上中下三层都配备了划桨者，每层50人。底层的划桨者位置最不舒服，因为他们位于其他划桨者之下，而且会接触到从划桨口进来的水。值得注意的是，与大多数人的认知相反，大部分划桨者并不是奴隶，而是加入军队的罗马公民。

第5段

Merchant ships were built to transport lots of cargo over long distances and at a reasonable cost. They had a wider hull, double planking and a solid interior for added stability. Unlike warships, their V-shaped hull was deep underwater, meaning that they could not sail too close to the coast. They usually had two huge side rudders located off the stern and controlled by a small tiller bar connected to a system of cables. They had from one to three masts with large square sails and a small triangular sail at the bow. Just like warships, merchant ships used oarsmen, but coordinating the hundreds of rowers in both types of ship was not an easy task. In order to assist them, music would be played on an instrument, and oars would then keep time with this.

商船被用来以合理的成本远距离运输货物。它们拥有更宽的串题，双层甲板，以及加固的内部以增加稳定性。跟战舰不一样，他们的V型船体吃水很深。这意味着他们无法在太过靠近海岸的地方航行。它们在船尾拥有两个巨大的侧舵，通过与缆绳系统相连接的小型舵柄进行控制。它们拥有一到三根桅杆，装配着巨大的方形风帆，在船头还有一张小型三角风帆。与战舰一样，商船需要人划桨。但在两种船型中，协调数百名划桨者并不是一项简单的任务。为了辅助它们，音乐通过工具被播放出来，而划桨者则跟着音乐的节奏。

第6段

The cargo on merchant ships included raw materials (e.g. iron bars, copper, marble and granite), and agricultural products (e.g. grain from Egypt’s Nile valley). During the Empire, Rome was a huge city by ancient standards of about one million inhabitants. Goods from all over the world would come to the city through the port of Pozzuoli situated west of the bay of Naples in Italy and through the gigantic port of Ostia situated at the mouth of the Tiber River. Large merchant ships would approach the destination port and, just like today, be intercepted by a number of towboats that would drag them to the quay.

商船上的货物包括原材料（如铁棒，铜，大理石和花岗岩）和农产品（如来自埃及尼罗河谷的小麦）。在帝国时期，罗马文章来自老烤鸭雅思是座巨型城市，按照古代标准，拥有100万的居民。通过意大利位于那不勒斯湾西侧的波佐力港和位于台伯河河口的奥斯提亚港，来自全世界的物品汇聚在这座城市里。大型商船会靠近目的港口，然后跟今天一样，被一些牵引船拦截，将它们拖进港口。

第7段

The time of travel along the many sailing routes could vary widely. Navigation in ancient Rome did not rely on sophisticated instruments such as compasses but on experience, local knowledge and observation of natural phenomena. In conditions of good visibility, seamen in the Mediterranean often had the mainland or islands in sight, which greatly facilitated navigation. They sailed by noting their position relative to a succession of recognisable landmarks. When weather conditions were not good or where land was no longer visible, Roman mariners estimated directions from the pole star or, with less accuracy, from the Sun at noon. They also estimated directions relative to the wind and swell. Overall, shipping in ancient Roman times resembled shipping today with large vessels regularly crossing the seas and bringing supplies from their Empire.

不同航海路线所需要的航行时间差别很大。古罗马时期的导航并不依赖于诸如罗盘这样精密的工具，而是依靠经验、当地知识和对自然现象的观察。在视野清晰的条件下，地中海上的海员经常能够看到大陆或者岛屿。这极大地方便了导航的进行。他们通过注意自己与一系列可辨识路标的相对位置来航行。当天气条件不好，或者看不到陆地的时候，罗马水手会通过北极星，或者正午的太阳来辨认方向。后者准确度不高。他们也会通过风和海浪辨认方向。整体而言，古罗马时期的船运跟今天十分类似。大型船只经常穿越海洋，从帝国带来补给。

### [16Test3Passage2 Climate change reveals ancient artefacts in Norway’s glaciers](http://www.laokaoya.com/42925.html)

A部分

Well above the treeline in Norway’s highest mountains, ancient fields of ice are shrinking as Earth’s climate warms. As the ice has vanished, it has been giving up the treasures it has preserved in cold storage for the last 6,000 years – items such as ancient arrows and skis from Viking Age traders. And those artefacts have provided archaeologists with some surprising insights into how ancient Norwegians made their livings.

在挪威最高峰的林木线以上，古老冰层的面积正在随着地球气候变暖而缩减。随着冰层的消失，它在过去6000年里保存的财宝也显现出来 – 比如来自维京时代商人的古老箭头和滑雪板。这些物品让考古学家惊讶地了解到古代维京人是如何谋生的。

B部分

Organic materials like textiles and hides are relatively rare finds at archaeological sites. This is because unless they’re protected from the microorganisms that cause decay, they tend not to last long. Extreme cold is one reliable way to keep artefacts relatively fresh for a few thousand years, but once thawed out, these materials experience degradation relatively swiftly.

织物和毛皮这样的有机材料是考古点相对稀有的发现。这是因为，除非它们远离引起腐烂的微生物，它们往往无法持续存在太久。在几千年里保持人工制品相对新鲜的一种可靠方式是极端寒冷。但一旦融化，这些材料就会迅速分解。

With climate change shrinking ice cover around the world, glacial archaeologists need to race the clock to find newly revealed artefacts, preserve them, and study them. If something fragile dries and is windblown it might very soon be lost to science, or an arrow might be exposed and then covered again by the next snow and remain well-preserved. The unpredictability means that glacial archaeologists have to be systematic in their approach to fieldwork.

随着气候变暖让世界各地的冰层都有所缩减，冰川考古学家需要与时间竞赛来寻找刚刚显露出来的人工制品，保存它们，并研究它们。如果一些脆弱的物品变得干燥并被风吹，它们很快就会失去科学上的意义，或者一枚箭头可能暴露出来，然后又被下一场风雪掩埋起来，从而得以良好地保存。这一不可预测性意味着冰川考古学家在现场发掘中必须拥有系统性的方法才行。

C部分

Over a nine-year period, a team of archaeologists, which included Lars Pilø of Oppland County Council, Norway, and James Barrett of the McDonald Institute for Archaeological Research, surveyed patches of ice in Oppland, an area of south-central Norway that is home to some of the country’s highest mountains. Reindeer once congregated on these icy patches in the later summer months to escape biting insects, and from the late Stone Age, hunters followed. In addition, trade routes threaded through the mountain passes of Oppland, linking settlements in Norway to the rest of Europe.

在九年的时间里，挪威奥普兰郡议会的Lars Pilø和麦当劳考古研究院的James Barrett一起研究了奥普兰的冰层。奥普兰位于挪威中南部，那里有着一些该国最高的山峰。驯鹿曾经在夏末聚集在这些冰面上，以躲避昆虫叮咬。从石器时代晚期开始，猎人也跟着过来。此外，贸易路线穿过奥普兰山口，将挪威的居民区与欧洲其他地方联系起来。

The slow but steady movement of glaciers tends to destroy anything at their bases, so the team focused on stationary patches of ice, mostly above 1,400 metres. That ice is found amid fields of frost-weathered boulders, fallen rocks, and exposed bedrock that for nine months of the year is buried beneath snow.

冰川缓慢而稳定的移动会摧毁它们底部的任何东西，因此该团队主要关注静止不动的冰层。它们大多数都位于海拔1400米以上。那里霜冻气候的巨石、滚落的石头、以及岩石底座一年之中有九个月都埋在雪里。

‘Fieldwork is hard work – hiking with all our equipment, often camping on permafrost – but very rewarding. You’re rescuing the archaeology, bringing the melting ice to wider attention, discovering a unique environmental history and really connecting with the natural environment,’ says Barrett.

“实地考察很辛苦 – 带着所有设备行走，经常在冻土上露营 – 但回报十分丰厚。你正在拯救考古学，将融化的冰面带到更多人面前，发现独特的环境历史，并与自然环境真正相连”，Barrett说。

D部分

At the edges of the contracting ice patches, archaeologists found more than 2.000 artefacts, which formed a material record that ran from 4.000 BCE to the beginnings of the Renaissance in the 14th century. Many of the artefacts are associated with hunting. Hunters would have easily misplaced arrows and they often discarded broken bows rather than take them all the way home. Other items could have been used by hunters traversing the high mountain passes of Oppland: all-purpose items like tools, skis, and horse tack.

在缩小的冰面边缘，考古学家发现了2000多个人工制品，构成从公元前四千年一直到十四世纪文艺复兴初期的物质记录。许多人工制品与捕猎相关。猎人很容易射丢箭头。他们文章来自老烤鸭雅思也经常将损坏的弓直接丢弃而非一路带回家。其他物品被猎人用来穿越奥普兰高耸的山口：比如工具、滑雪板、和马鞍这样的通用物品。

E部分

Barrett’s team radiocarbon-dated 153 of the artefacts and compared those dates to the timing of major environmental changes in the region – such as periods of cooling or warming – and major social and economic shifts – such as the growth of farming settlements and the spread of international trade networks leading up to the Viking Age. This article is from Laokaoya website. They found that some periods had produced lots of artefacts, which indicates that people had been pretty active in the mountains during those times. But there were few or no signs of activity during other periods.

Barrett的团队利用放射性碳元素测定了153件人工制品，并将它们的日期与该地区主要环境变化（如气候变冷或者变暖）和社会与经济转变（如农业居住地的增长和维京时代国际贸易网络的扩散）的时间进行了对比。他们发现一些时期产生了大量的人工制品。这表明在那些时间段里，人们在山区中尤其活跃。但其他时间里就很少有或者完全没有活动的迹象。

F部分

What was surprising, according to Barrett, was the timing of these periods. Oppland’s mountains present daunting terrain and in periods of extreme cold, glaciers could block the higher mountain passes and make travel in the upper reaches of the mountains extremely difficult. Archaeologists assumed people would stick to lower elevations during a time like the Late Antique Little Ice Age, a short period of deeper-than-usual cold from about 536-600 CE. But it turned out that hunters kept regularly venturing into the mountains even when the climate turned cold, based on the amount of stuff they had apparently dropped there.

据Barrett所说，让人吃惊的是这些时期的时间。奥普兰的山峰是令人生畏的领域。在极度寒冷的时期，冰川遮挡住较高地方的山口，让山峰上部的旅途变得极为困难。考古学家认为人们会在诸如小冰河时代晚期（公元536年到公元600年比往常更冷的一小段时间）这样的时间里选择较低的山峰。但猎人遗弃的物品数量证明即便是在气候变冷期间，他们也经常进入山区。

‘Remarkably, though, the finds from the ice may have continued through this period, perhaps suggesting that the importance of mountain hunting increased to supplement failing agricultural harvests in times of low temperatures,’ says Barrett. A colder turn in the Scandinavian climate would likely have meant widespread crop failures, so more people would have depended on hunting to make up for those losses.

“然而，出乎意料的是，冰层中的发现一直延续到这一时期 。这或许表明山区捕猎的重要性在低温时期有所上升，以弥补农业收获的下降”，Barrett说。斯堪的纳维亚气候转冷可能意味着大面积的粮食歉收，所以更多的人依靠打猎来弥补这些损失。

G部分

Many of the artefacts Barrett’s team recovered date from the beginning of the Viking Age, the 700s through to the 900s CE. Trade networks connecting Scandinavia with Europe and the Middle East were expanding around this time. Although we usually think of ships when we think of Scandinavian expansion, these recent discoveries show that plenty of goods travelled on overland routes, like the mountain passes of Oppland. And growing Norwegian towns, along with export markets, would have created a booming demand for hides to fight off the cold, as well as antlers to make useful things like combs. Business must have been good for hunters.

Barrett团队发现的许多物品都可以追溯到维京时代早期，即公元700年到公元900年左右。连接斯堪的纳维亚与欧洲和中东的贸易网络在这一时期有所扩大。虽然我们在想到斯堪的纳维亚人的扩张时总能想起船只，但这些最近的发现表明大量的物品是经由路上路线（如奥普兰的山口）运输过来的。正在发展的挪威城镇和出口市场对毛皮产生大量的需求以抵御寒冷，同时他们也需要鹿角以制作诸如梳子这样有用的东西。猎人的生意一定很好。

H部分

Norway’s mountains are probably still hiding a lot of history – and prehistory – in remote ice patches. When Barrett’s team looked at the dates for their sample of 153 artefacts they noticed a gap with almost no artefacts from about 3,800 to 2,200 BCE. In fact, archaeological finds from that period are rare all over Norway. The researchers say that could be because many of those artefacts have already disintegrated or are still frozen in the ice. That means archaeologists could be extracting some of those artefacts from retreating ice in years to come.

挪威山峰中偏僻的冰层可能还藏着许多历史和史前史。当Barret的团队研究这153个样本时，他们注意到公元前3800年到公元前2200年之间存在一段空白，这期间几乎没有任何人工制品。事实上，那个时间段的考古发现在挪威全境都十分稀少。研究者认为，这可能是因为许多这个时间的人工制品已经分解或者仍然冻在冰层中。这意味着未来考古学家能够从退去的冰层中发掘出一些这个时间段的人工制品。

### [16Test3Passage3 Plant thermometer triggers springtime growth by measuring night time heat](http://www.laokaoya.com/42945.html)

引言

A photoreceptor molecule in plant cells has been found to have a second job as a thermometer after dark – allowing plants to read seasonal temperature changes. Scientists say the discovery could help breed crops that are more resilient to the temperatures expected to result from climate change

植物细胞中的感光分子被发现还有另外一项作用，在夜晚降临时充当温度计，让植物可以读取季节性的温度变化。科学家认为，这一发现能够帮助培育更加适应气候变化所带来的温度变化的农作物。

A部分

An international team of scientists led by the University of Cambridge has discovered that the ‘thermometer’ molecule in plants enables them to develop according to seasonal temperature changes. Researchers have revealed that molecules called phytochromes – used by plants to detect light during the day – actually change their function in darkness to become cellular temperature gauges that measure the heat of the night.

由剑桥大学领导的国际科学家团队发现，植物中的“温度计”分子让他们可以根据季节温度的变化生长。研究者发现了一种叫做光敏素的分子 – 白天的时候植物用它来检测光照 – 会在夜晚改变自己的功能，变成分子温度计量器，测量晚上的热度。

The new findings, published in the journal Science, show that phytochromes control genetic switches in response to temperature as well as light to dictate plant development.

发表于《科学》杂志上的这些新发现表明，光敏素控制基因变化，以应对掌管植物生长的温度和光照。

B部分

At night, these molecules change states, and the pace at which they change is ‘directly proportional to temperature’, say scientists, who compare phytochromes to mercury in a thermometer. The warmer it is, the faster the molecular change – stimulating plant growth.

科学家比较了光敏素和温度计中的水印，发现这些分子晚上会改变形态，变化的速度“与温度直接相关”。温度越高，分子变化速度越快 – 刺激植物生长。

C部分

Farmers and gardeners have known for hundreds of years how responsive plants are to temperature: warm winters cause many trees and flowers to bud early, this article is from Laokaoya website, something humans have long used to predict weather and harvest times for the coming year. The latest research pinpoints for the first time a molecular mechanism in plants that reacts to temperature – often triggering the buds of spring we long to see at the end of winter.

农民和园艺师几百年前就知道植物对温度反应灵敏：温暖的冬天会促使树木和花朵早早发芽。人们长久以来都用这一现象来预测来年的天气和收获时间。最近的研究首次明确了植物内部分子回应温度的机制。该机制引发我们在冬天末尾渴望见到的春天的嫩芽。

D部分

With weather and temperatures set to become ever more unpredictable due to climate change, researchers say the discovery that this light-sensing molecule also functions as the internal thermometer in plant cells could help us breed tougher crops. ‘It is estimated that agricultural yields will need to double by 2050, but climate change is a major threat to achieving this. Key crops such as wheat and rice are sensitive to high temperatures. Thermal stress reduces crop yields by around 10% for every one degree increase in temperature,’ says lead researcher Dr Philip Wigge from Cambridge’s Sainsbury Laboratory. ‘Discovering the molecules that allow plants to sense temperature has the potential to accelerate the breeding of crops resilient to thermal stress and climate change.’

在由于气候变化，天气和温度注定变得更加难以预测的情况下，研究人员认为这一发现 – 光感分子也作为植物细胞内部的温度计 – 能够帮助我们培育更加顽强的农作物。“据估计，农业产出需要在2050年时翻倍，但气候变化文章来自老烤鸭雅思对达成这一目标构成严峻的威胁。诸如小麦和大米这样的主要农作物对高温很敏感。气温每上升1度，粮食产量就会下降10%”，剑桥Sainsbury实验室首席研究员Philip Wigge说。“发现植物中感受温度的分子有可能能够帮助我们更快地培育出更加适应温度上升和气候变化的农作物”。

E部分

In their active state, phytochrome molecules bind themselves to DNA to restrict plant growth. During the day, sunlight activates the molecules, slowing down growth. If a plant finds itself in shade, phytochromes are quickly inactivated enabling it to grow faster to find sunlight again. This is how plants compete to escape each other’s shade. ‘Light-driven changes to phytochrome activity occur very fast, in less than a second,’ says Wigge.

在活跃状态下，光敏素分子与DNA结合在一起，限制植物生长。白天，阳光激活这些分子，降低增长速度。如果一株植物发现自己位于阴影中，光敏素会迅速钝化，使得它能够更快地增长以再次找到阳光。这就是植物互相竞争以逃脱彼此阴影的机制。“受光驱动的光敏素活动的变化非常快，还不到1秒”，Wigge说。

At night, however, it’s a different story. Instead of a rapid deactivation following sundown, the molecules gradually change from their active to inactive state. This is called ‘dark reversion’. ‘Just as mercury rises in a thermometer, the rate at which phytochromes revert to their inactive state during the night is a direct measure of temperature,’ says Wigge.

然而，晚上的时候就是另一个故事了。太阳下山后，这些分子并没有快速钝化，而是逐渐从激活状态变成休眠状态。这一过程被称为“黑夜回归”。“就像水银在温度计中上升一样，光敏素在晚上回归休眠状态的速度是温度的直接体现”，Wigge说。

F部分

‘The lower the temperature, the slower the rate at which phytochromes revert to inactivity, so the molecules spend more time in their active, growth-suppressing state. This is why plants are slower to grow in winter. Warm temperatures accelerate dark reversion, so that phytochromes rapidly reach an inactive state and detach themselves from the plant’s DNA – allowing genes to be expressed and plant growth to resume.’ Wigge believes phytochrome thermo-sensing evolved at a later stage, and co-opted the biological network already used for light-based growth during the downtime of night.

“温度越低，光敏素回归休眠状态的速度就越慢，因此这些分子会有更多的时间处于活跃状态，压制植物生长。这就是植物为什么在冬天长得更慢一些的原因。温暖的温度会加速黑夜回归，以便光敏素快速到达不活跃状态，将它们自己与植物的DNA分离开来，让基因得以表达，植物恢复生长”。Wigge认为光敏素的温度感知能力出现于进化晚期，加入已经被用于在夜晚生长的生物网络。

G部分

Some plants mainly use day length as an indicator of the season. Other species, such as daffodils, have considerable temperature sensitivity, and can flower months in advance during a warm winter. In fact, the discovery of the dual role of phytochromes provides the science behind a well-known rhyme long used to predict the coming season: oak before ash we’ll have a splash, ash before oak we’re in for a soak.

一些植物主要使用日长作为季节的标志。其他植物，比如黄水仙，对温度很敏感，能够在温暖的冬季提前几个月开花。事实上，光敏素双重功能的发现为一句众所周知的、用来预测即将到来的季节的习语提供了科学依据： 如果梣树先发芽，那夏天雨水会很多，而如果橡树先发芽，那夏天雨水将很少。

Wigge explains: ‘Oak trees rely much more on temperature, likely using phytochromes as thermometers to dictate development, whereas ash trees rely on measuring day length to determine their seasonal timing. A warmer spring, and consequently a higher likeliness of a hot summer, will result in oak leafing before ash. A cold spring will see the opposite. As the British know only too well, a colder summer is likely to be a rain-soaked one.’

Wigge解释道：“橡树更多地依赖温度，有可能利用光敏素作为温度计来决定生长。而梣树则依赖日长以决定自己随季节变化的节奏。更加温暖的春季，以及随之而来的更可能出现的炎热的夏季会导致橡树比梣树更早发芽。寒冷的春天会造成相反的情况。正如英国人所熟知的，冷一点的夏天很有可能阴雨连绵。

H部分

The new findings are the culmination of twelve years of research involving scientists from Germany, Argentina and the US, as well as the Cambridge team. The work was done in a model system, using a mustard plant called Arabidopsis, but Wigge says the phytochrome genes necessary for temperature sensing are found in crop plants as well. ‘Recent advances in plant genetics now mean that scientists are able to rapidly identify the genes controlling these processes in crop plants, and even alter their activity using precise molecular “scalpels” ‘, adds Wigge. “Cambridge is uniquely well-positioned to do this kind of research as we have outstanding collaborators nearby who work on more applied aspects of plant biology, and can help us transfer this new knowledge into the field.

这些新的发现是一项长达12年的研究的成果。其参与人员包括来自德国、阿根廷和美国的科学家，以及剑桥大学自己的团队。具体工作通过模型系统进行，使用了一种叫做鼠耳芥的芥菜属植物。但Wigge说，感知温度所必需的光敏素基因在农作物中也存在。“如今植物基因领域最新的进展意味着科学家能够快速找到控制农作物中这些过程的基因片段，甚至使用精准的分子手术刀改变他们的活动状态”，Wigge补充到。“剑桥在进行这项研究方面具有独特的优势，因为我们附近存在优秀的合作人员。他们从事植物生物更偏应用方面的研究，能够帮助我们将这一崭新的知识应用于实践”。

## 16Test4

### [16Test4Passage1 Roman tunnels 罗马隧道](http://www.laokaoya.com/42970.html)

引言

The Romans, who once controlled areas of Europe, North Africa and Asia Minor, adopted the construction techniques of other civilizations to build tunnels in their territories.

曾经控制欧洲、北非和小亚细亚的罗马人，使用其他文明的建筑技巧来在他们自己的领土上修建隧道。

第1段

The Persians, who lived in present-day Iran, were one of the first civilizations to build tunnels that provided a reliable supply of water to human settlements in dry areas. In the early first millennium BCE, they introduced the qanat method of tunnel construction, which consisted of placing posts over a hill in a straight line, to ensure that the tunnel kept to its route, and then digging vertical shafts down into the ground at regular intervals. Underground, workers removed the earth from between the ends of the shafts, creating a tunnel. The excavated soil was taken up to the surface using the shafts, which also provided ventilation during the work. Once the tunnel was completed, it allowed water to flow from the top of a hillside down towards a canal, which supplied water for human use. Remarkably, some qanats built by the Persians 2,700 years ago are still in use today.

生活在今天伊朗地区的波斯人是最早修建隧道从而为干燥地区的聚居点提供可靠水源的文明之一。早在公元前一千年，他们就采用暗渠法修建隧道。这包括在山上按照直线打桩，确保隧道沿其路线行进，然后以规律的间隔在地面上打出竖井。地下，工人将竖井末端之间的土壤挖出形成隧道。挖出的土壤通过竖井运送到地面。这些竖井也在工程期间提供通风。一旦隧道完成，水就可以从山顶流向水渠，供人类使用。令人惊讶的是，一些波斯人在2700年前修建的暗渠如今仍在使用。

第2段

They later passed on their knowledge to the Romans, who also used the qanat method to construct water-supply tunnels for agriculture. Roman qanat tunnels were constructed with vertical shafts dug at intervals of between 30 and 60 meters. The shafts were equipped with handholds and footholds to help those climbing in and out of them and were covered with a wooden or stone lid. To ensure that the shafts were vertical, this article is from Laokaoya website, Romans hung a plumb line from a rod placed across the top of each shaft and made sure that the weight at the end of it hung in the center of the shaft. Plumb lines were also used to measure the depth of the shaft and to determine the slope of the tunnel. The 5.6-kilometer-long Claudius tunnel, built in 41 CE to drain the Fucine Lake in central Italy, had shafts that were up to 122 meters deep, took 11 years to build and involved approximately 30,000 workers.

他们随后将这些知识传给罗马人。罗马人使用这一暗渠法为农业修建供水隧道。罗马人暗渠隧道的竖井彼此之间间隔30到60米。竖井配备有扶手和脚蹬以帮助攀爬进出的人们，并且盖有木制或者石制的盖子。为了确保竖井垂直，罗马人将铅锤线挂在横跨竖井顶部的木棒上，确保尾端重物位于竖井中心。铅垂线也被用来测量竖井的深度，决定隧道的坡度。长达5.6千米的克劳狄隧道修建于公元41年，以便从意大利中部的Fucine湖抽水。其竖井深达122米，大约30000名工人用了11年的时间才完成。

第3段

By the 6th century BCE, a second method of tunnel construction appeared called the counter- excavation method, in which the tunnel was constructed from both ends. It was used to cut through high mountains when the qanat method was not a practical alternative. This method required greater planning and advanced knowledge of surveying, mathematics and geometry as both ends of a tunnel had to meet correctly at the center of the mountain. Adjustments to the direction of the tunnel also had to be made whenever builders encountered geological problems or when it deviated from its set path. They constantly checked the tunnel’s advancing direction, for example, by looking back at the light that penetrated through the tunnel mouth, and made corrections whenever necessary. Large deviations could happen, and they could result in one end of the tunnel not being usable. An inscription written on the side of a 428-meter tunnel, built by the Romans as part of the Saldae aqueduct system in modern-day Algeria, describes how the two teams of builders missed each other in the mountain and how the later construction of a lateral link between both corridors corrected the initial error.

公元前六世纪出现了第二种修建隧道的方法（反向挖掘法）。这种方法中，隧道从两端同时修建。它被用于穿越无法使用暗渠法的高山。这种方法需要更好的规划，以及测绘、数学和几何方面的高深知识，因为隧道两端必须在山的中央准确相遇。当建筑工人文章来自老烤鸭雅思遇到地质问题，或者当它偏离设定路线时，就必须对隧道的方向进行调整。他们经常通过观察隧道口射进来的光线来检查隧道前进的方向，并在必要的时候做出调整。大幅偏离可能发生，导致隧道一端变得不可用。一条长达428米的隧道侧面的铭刻描述了两队建筑工人如何在山中错过彼此，以及如何在两条通道之间修建横向连接以纠正最初的错误。

第4段

The Romans dug tunnels for their roads using the counter-excavation method, whenever they encountered obstacles such as hills or mountains that were too high for roads to pass over. An example is the 37-meter-long, 6-meter-high, Furlo Pass Tunnel built in Italy in 69-79 CE. Remarkably, a modern road still uses this tunnel today. Tunnels were also built for mineral extraction. Miners would locate a mineral vein and then pursue it with shafts and tunnels underground. Traces of such tunnels used to mine gold can still be found at the Dolaucothi mines in Wales. When the sole purpose of a tunnel was mineral extraction, construction required less planning, as the tunnel route was determined by the mineral vein.

当罗马人遇到障碍，如道路无法跨越的过高山峰时，他们就会使用反向挖掘法为道路挖掘隧道。一个例子是修建于公元69年到公元79年，位于意大利的Furlo Pass隧道。它长37米，高6米。令人惊讶的是，一条现代公路今天仍然在使用该隧道。隧道也被用于挖矿。矿工会定位矿脉，然后利用竖井和地下隧道追寻它。如今，我们在威尔士Dolaucothi矿区仍然可以看到一些用于挖掘金矿的隧道的痕迹。当隧道只用于挖矿时，其建造所需要的规划就少了许多，因为隧道路线由矿脉决定。

第5段

Roman tunnel projects were carefully planned and carried out. The length of time it took to construct a tunnel depended on the method being used and the type of rock being excavated. The qanat construction method was usually faster than the counter-excavation method as it was more straightforward. This was because the mountain could be excavated not only from the tunnel mouths but also from shafts. The type of rock could also influence construction times. When the rock was hard, the Romans employed a technique called fire quenching which consisted of healing the rock with fire, and then suddenly cooling it with cold water so that it would crack. Progress through hard rock could be very slow, and it was not uncommon for tunnels to take years, if not decades, to be built. Construction marks left on a Roman tunnel in Bologna show that the rate of advance through solid rock was 30 centimeters per day. In contrast, the rate of advance of the Claudius tunnel can be calculated at 1.4 meters per day. Most tunnels had inscriptions showing the names of patrons who ordered construction and sometimes the name of the architect. For example, the 1.4-kilometer Cevlik tunnel in Turkey, built to divert the floodwater threatening the harbor of the ancient city of Seleuceia Pieria, had inscriptions on the entrance, still visible today, that also indicate that the tunnel was started in 69 CE and was completed in 81 CE.

罗马隧道项目规划认真，施工仔细。修建一条隧道的时间长短取决于其所使用的方法，以及挖掘的岩石类型。暗渠法因为更加直接，要比反向挖掘法更快一点。这是因为山脉不仅可以从隧道口挖掘，而且也可以通过竖井。岩石类型也会影响建造时间。当岩石坚硬时，罗马人会使用一种叫作fire quenching的方法。他们先用火加热石头，然后突然用凉水将它冷却，从而造成裂缝。穿越坚硬岩石的进展会非常缓慢。用数年，甚至数十年的时间修建隧道并不少见。博洛尼亚一条罗马隧道内留下的建筑痕迹显示，它在坚硬岩石中前进的速度为每天30厘米。相比之下，计算出来的克劳狄隧道的前进速度为每天1.4米。大多数隧道都有铭刻，显示命令修建隧道的赞助人的名字，有时候也会有建筑师的名字。例如，土耳其境内，为了分流威胁到Seleuceia Pieria古城港口的洪水而修建的，长达1.4千米的Cevlik隧道，在入口处就有如今仍然可见的铭刻。它同时也表明该隧道的修建开始于公元69年，完成于公元81年。

### [16Test4Passage2 Changes in reading habits 习惯的改变](http://www.laokaoya.com/43044.html)

第1段

Look around on your next plane trip. The iPad is the new pacifier for babies and toddlers. Younger school-aged children read stories on smartphones; older kids don’t read at all, but hunch over video games. Parents and other passengers read on tablets or skim a flotilla of email and news feeds. Unbeknown to most of us, an invisible, game-changing transformation links everyone in this picture: the neuronal circuit that underlies the brain’s ability to read is subtly, rapidly changing and this has implications for everyone from the pre-reading toddler to the expert adult.

下次乘坐飞机的时候记得环顾四周。iPad已经成为婴儿和幼儿新的安抚物。年轻一些的学龄儿童在手机上看故事；年龄稍大一些的孩子则完全不，只是低头玩游戏。父母和其他乘客要么在平板上看东西，要么浏览电子邮件和新闻。我们大多数人不知道的是，一场看不见的，天翻地覆的变化将这一情景中的每个人联系在一起：构成大脑能力基础的神经回路正在发生微妙而迅速的改变。从尚不会的幼儿到成年专家，它影响着每一个人。

第2段

As work in neurosciences indicates, the acquisition of literacy necessitated a new circuit in our species’ brain more than 6,000 years ago. That circuit evolved from a very simple mechanism for decoding basic information, like the number of goats in one’s herd, to the present, highly elaborated reading brain. My research depicts how the present reading brain enables the development of some of our most important intellectual and affective processes: internalized knowledge, analogical reasoning, and inference; perspective-taking and empathy; critical analysis and the generation of insight. Research surfacing in many parts of the world now cautions that each of these essential ‘deep reading’ processes may be under threat as we move into digital-based modes of reading.

神经科学方面的研究表明，6000多年前，读写能力的获取让我们种族的大脑中出现新的回路。从解码基础信息（如羊群中的山羊数量）这一十分简单的机制开始，该回路进化成如今十分精妙的、有能力的大脑。我的研究描绘了当前拥有能力的大脑如何使得一些我们最为重要的智力和情感发展成为可能，如知识的内化、类比推理与干预；态度取舍与共情；批判性分析和洞察力的产生等。如今世界许多地方进行的研究告诫我们，随着我们转向数字模式的习惯，这些重要的深度过程可能遭到威胁。

第3段

This is not a simple, binary issue of print versus digital reading and technological innovation. As MIT scholar Sherry Turkle has written, we do not err as a society when we innovate but when we ignore what we disrupt or diminish while innovating. In this hinge moment between print and digital cultures, society needs to confront what is diminishing in the expert reading circuit, what our children and older students are not developing, and what we can do about it.

这并不是简单的纸张对抗数码与技术创新的二元问题。正如麻省理工学者Sherry Turkle所写的那样，我们的社会并不会在我们创新的时候出错，而是在我们忽略我们创新所打破或者消弭的东西时才会出错。在这一纸张与数码文化的承接时期，社会需要解决专业回路中什么东西正在消失，我们的孩子以及年龄稍大的学生没有提升什么能力，以及我们对此能做什么。

第4段

We know from research that the reading circuit is not given to human beings through a genetic blueprint like vision or language; it needs an environment to develop. Further, it will adapt to that environment’s requirements – from different writing systems to the characteristics of whatever medium is used. If the dominant medium advantages processes that are fast, multi-task oriented and well-suited for large volumes of information, like the current digital medium, so will the reading circuit. As UCLA psychologist Patricia Greenfield writes, the result is that less attention and time will be allocated to slower, time-demanding deep reading processes.

我们从研究中得知，与视力或者语言不同，回路并非通过基因蓝图被赋予给人类。它需要相应的环境才能发展。此外，它会适应环境的要求 – 从不同的书写体系到所使用的媒介的特点。如果主流媒介有利于快速、多重任务导向、以及适合处理大量信息的过程，比如当前的数码媒介，那么回路也会这样子。正如UCLA心理学家Patricia Greenfield所写的那样，结果是更少的注意力和时间会被分配给速度较慢、需要时间的深度过程。

第5段

Increasing reports from educators and from researchers in psychology and the humanities bear this out. English literature scholar and teacher Mark Edmundson describes how many college students actively avoid the classic literature of the 19th and 20th centuries in favour of something simpler as they no longer have the patience to read longer, denser, more difficult texts. We should be less concerned with students’ ‘cognitive impatience’, however, than by what may underlie it: the potential inability of large numbers of students to read with a level of critical analysis sufficient to comprehend the complexity of thought and argument found in more demanding texts.

越来越多来自教育者与心理学和人类学领域研究者的报告支持这一观点。英国文学学者和教师Mark Edmundson描述了有多少大学生会主动避开19世纪和20世纪的经典文学作品，反而选择一些更为简单的作品，因为他们不再拥有更长、更密集、难度更大的文本的耐心。 我们应该更多的关注学生认知急躁背后的原因，而非这一现象：大量的学生没有能力在中进行一定程度的批判性分析，从而理解要求更高的文本中所体现的复杂思想和争论。

第6段

Multiple studies show that digital screen use may be causing a variety of troubling downstream effects on reading comprehension in older high school and college students. In Stavanger, Norway, psychologist Anne Mangen and her colleagues studied how high school students comprehend the same material in different mediums. This article is from Laokaoya website. Mangen’s group asked subjects questions about a short story whose plot had universal student appeal; half of the students read the story on a tablet, the other half in paperback. Results indicated that students who read on print were superior in their comprehension to screen-reading peers, particularly in their ability to sequence detail and reconstruct the plot in chronological order.

许多研究表明，数码屏幕的使用可能对高中生和大学生的理解能力造成各种各样令人烦心的负面影响。在挪威的斯塔万格，心理学家Anne Mangen和她的同事研究了高中生在不同的媒介下如何理解相同的材料。Mangen的团队询问实验对象有关一篇短小故事的问题。该故事的情节受到学生的普遍欢迎。其中一半学生在平板上该故事，而另一半学生则在纸张上。研究表明，相比于在屏幕上的学生，在纸张上的学生在理解方面更胜一筹，尤其是在他们按顺序排列细节并根据时间发展重构情节的能力方面。

第7段

Ziming Liu from San Jose State University has conducted a series of studies which indicate that the ‘new norm’ in reading is skimming, involving word-spotting and browsing through the text. Many readers now use a pattern when reading in which they sample the first line and then word-spot through the rest of the text. When the reading brain skims like this, it reduces time allocated to deep reading processes. In other words, we don’t have time to grasp complexity, to understand another’s feelings, to perceive beauty, and to create thoughts of the reader’s own.

圣何塞州立大学的Ziming Liu进行的一系列研究表明，方面的新常态是略读，包括识别单词与浏览文本。如今，许多者文章来自老烤鸭雅思在时使用如下模式：首先看下第一行，然后只看剩余文本中的个别词汇。当大脑这样略读的时候，它就会减少分配给深入的时间。换句话说，我们没有时间领悟复杂的东西，理解他人的情感，欣赏美，或者产生读者自身的想法。

第8段

The possibility that critical analysis, empathy and other deep reading processes could become the unintended ‘collateral damage’ of our digital culture is not a straightforward binary issue about print versus digital reading. It is about how we all have begun to read on various mediums and how that changes not only what we read, but also the purposes for which we read. Nor is it only about the young. The subtle atrophy of critical analysis and empathy affects us all equally. It affects our ability to navigate a constant bombardment of information. It incentivizes a retreat to the most familiar stores of unchecked information, which require and receive no analysis, leaving us susceptible to false information and irrational ideas.

批判性分析、共情和其他深入过程可能成为我们数码文化无意之间附带的牺牲品。这一可能性并不是简单的纸张对抗数码的二元问题。它更多的是关于：我们所有人如何开始在不同媒介上，以及这如何改变了我们的内容和的目的。它也不仅仅是关于年轻人的。批判性分析和共情不易察觉的衰退同等地影响着我们所有人。它影响我们在持续不断的信息轰炸中寻找出路的能力。它刺激我们退回到未经核验的、最熟悉的信息中。这些信息不需要、也没有经过分析，让我们很容易受到错误信息和不合逻辑的观点的影响。

第9段

There’s an old rule in neuroscience that does not alter with age: use it or lose it. It is a very hopeful principle when applied to critical thought in the reading brain because it implies choice. The story of the changing reading brain is hardly finished. We possess both the science and the technology to identify and redress the changes in how we read before they become entrenched. If we work to understand exactly what we will lose, alongside the extraordinary new capacities that the digital world has brought us, there is as much reason for excitement as caution.

神经科学中有一条不随时间变化的古老规则：用进废退。当应用于大脑的批判性思维时，它是一条给人以希望的原理，因为它预示着选择。大脑改变的故事还远未终止。我们拥有科学和技术能够在方式的变化固化之前对其进行界定和矫正。如果我们尝试理解我们所损失的东西，以及数码世界带给我们的全新能力，那么我们就有相同的理由保持谨慎和兴奋。

### [16Test4Passage3 Attitudes towards Artificial Intelligence 对待人工智能的态度](http://www.laokaoya.com/43063.html)

A部分

Artificial intelligence (AI) can already predict the future. Police forces are using it to map when and where crime is likely to occur. Doctors can use it to predict when a patient is most likely to have a heart attack or stroke. Researchers are even trying to give AI imagination so it can plan for unexpected consequences.

人工智能已经可以预测未来。警察用它来标记犯罪可能在什么时候在哪里发生。医生用它来预测病人什么时候最有可能患上心脏病或者中风。研究者甚至尝试赋予人工智能想象力，以便它能够对未曾预料到的事情进行规划。

Many decisions in our lives require a good forecast, and AI is almost always better at forecasting than we are. Yet for all these technological advances, we still seem to deeply lack confidence in AI predictions. Recent cases show that people don’t like relying on AI and prefer to trust human experts, even if these experts are wrong.

我们生活中的许多决策都需要优秀的预测，而人工智能几乎总是要比我们更擅长预测一些。然而，就像对所有技术进步一样，我们似乎对人工智能的预测相当缺乏信心。最近的案例表明，人们不喜欢依赖人工智能，而更倾向于相信人类专家，即使这些专家是错的。

If we want AI to really benefit people, we need to find a way to get people to trust it. To do that, we need to understand why people are so reluctant to trust AI in the first place.

如果我们想让人工智能真正惠及人类，我们需要找到让人类信任它的方法。要做到这一点，我们需要理解为什么人们一开始就不愿意相信人工智能。

B部分

Take the case of Watson for Oncology, one of technology giant IBM’s supercomputer programs. Their attempt to promote this program to cancer doctors was a PR disaster. The AI promised to deliver top-quality recommendations on the treatment of 12 cancers that accounted for 80% of the world’s cases. But when doctors first interacted with Watson, they found themselves in a rather difficult situation. On the one hand, if Watson provided guidance about a treatment that coincided with their own opinions, physicians did not see much point in Watson’s recommendations. The supercomputer was simply telling them what they already knew, and these recommendations did not change the actual treatment.

以Watson for Oncology为例，它是技术巨头IBM推出的超级计算机程序。他们向肿瘤医生文章来自老烤鸭雅思推销该程序的尝试是场公共关系灾难。该人工智能承诺针对12种癌症的治疗方案提供高品质建议。这12种癌症占到世界所有病例的百分之八十。但当医生与Watson互动时，他们发现自己处于十分尴尬的境地。一方面，如果Watson提供的治疗方案与他们自己的意见恰好一致，医师并不觉得Watson的建议有什么意义。超级计算机只是告诉他们他们已经知道的东西，这些建议并不会改变实际的治疗。

On the other hand, if Watson generated a recommendation that contradicted the experts’ opinion, doctors would typically conclude that Watson wasn’t competent. And the machine wouldn’t be able to explain why its treatment was plausible because its machine-learning algorithms were simply too complex to be fully understood by humans. This article is from Laokaoya website. Consequently, this has caused even more suspicion and disbelief, leading many doctors to ignore the seemingly outlandish AI recommendations and stick to their own expertise.

另一方面，如果Watson给出的建议与专家意见相反，医生往往会得出Watson并不合格的结论。机器无法解释为什么它的治疗方案很有道理，因为机器学习的算法太过复杂，人类无法彻底理解。这就引发更多的怀疑和不信任，让许多医生忽略显得十分古怪的人工智能的建议，并坚持他们自己的专业知识。

C部分

This is just one example of people’s lack of confidence in AI and their reluctance to accept what AI has to offer. Trust in other people is often based on our understanding of how others think and having experience of their reliability. This helps create a psychological feeling of safety. AI, on the other hand, is still fairly new and unfamiliar to most people. Even if it can be technically explained (and that’s not always the case), Al’s decision-making process is usually too difficult for most people to comprehend. And interacting with something we don’t understand can cause anxiety and give us a sense that we’re losing control.

这只是人们对人工智能缺乏信心、不愿意接受人工智能所提供的服务的一个例子。对其他人的信任往往基于我们理解他们的思考方式，并对他们的可靠性有相关经验。这有助于营造一种心理上的安全感。另一方面，人工智能对于大多数人来说仍然属于崭新、陌生的事物。即便它能够从技术上得以解释（并不总是这样），人工智能的决策过程对于大多数人来说仍然难以理解。与某种我们无法理解的东西互动会引发焦虑，并让我们产生一种失控的感觉。

Many people are also simply not familiar with many instances of AI actually working, because it often happens in the background. Instead, they are acutely aware of instances where AI goes wrong. Embarrassing AI failures receive a disproportionate amount of media attention, emphasising the message that we cannot rely on technology. Machine learning is not foolproof, in part because the humans who design it aren’t.

许多人也不熟悉人工智能实际发挥作用的大量案例，因为这往往发生在背景中。相反，他们强烈意识到人工智能出错的例子。人工智能尴尬的失败吸引着不成比例的媒体注意，强调我们不能依赖科技。机器学习并非万无一失，这部分是由于设计它的人类也是如此。

D部分

Feelings about AI run deep. In a recent experiment, people from a range of backgrounds were given various sci-fi films about AI to watch and then asked questions about automation in everyday life. It was found that, regardless of whether the film they watched depicted AI in a positive or negative light, simply watching a cinematic vision of our technological future polarised the participants’ attitudes. Optimists became more extreme in their enthusiasm for AI and sceptics became even more guarded.

针对人工智能的情绪拥有极深的根源。在最近的一项实验中，来自不同背景的人们观看了各种各样有关人工智能的电影，然后被问一些有关日常生活中自动化的问题。研究人员发现，无论他们所看的电影中人工智能是正面角色还是反面角色，仅仅观看有关我们技术未来的电影画面就会让参与者的态度极化。乐观主义者对人工智能的热情变得更加极端，而怀疑论者则变得更加谨慎。

This suggests people use relevant evidence about AI in a biased manner to support their existing attitudes, a deep-rooted human tendency known as “confirmation bias”. As AI is represented more and more in media and entertainment, it could lead to a society split between those who benefit from AI and those who reject it. More pertinently, refusing to accept the advantages offered by AI could place a large group of people at a serious disadvantage.

这表明人们会用一种充满偏见的方式看待有关人工智能的证据，以支持他们现有的态度。这一根植于人类本性中的倾向被称为“确认偏误”。随着人工智能在媒体和娱乐方式中出现的越来越多，它会在从中受益的人和拒绝它的人之间造成分裂。更确切的说，拒绝接受人工智能所提供的好处会将一大批人置于严重不利的地位。

E部分

Fortunately, we already have some ideas about how to improve trust in AI. Simply having previous experience with AI can significantly improve people’s opinions about the technology, as was found in the study mentioned above. Evidence also suggests the more you use other technologies such as the internet, the more you trust them.

幸运的是，对于如何提升对人工智能的信任，我们已经有了一些想法。正如上述所提到的研究所发现的那样，仅仅有过使用人工智能的经验就可以显著提升人们有关技术的看法。证据也表明，你使用的其他技术越多，如互联网，你也会越信任它们。

Another solution may be to reveal more about the algorithms which AI uses and the purposes they serve. Several high-profile social media companies and online marketplaces already release transparency reports about government requests and surveillance disclosures. A similar practice for AI could help people have a better understanding of the way algorithmic decisions are made.

另一项解决方案可能是更多的披露人工智能所使用的算法，以及它们服务的目的。几家高调的社交媒体公司和线上交易平台已经发布了有关政府要求和监管的透明性报告。人工智能类似的操作也可以帮助人们更好的理解算法决策的方式。

F部分

Research suggests that allowing people some control over AI decision-making could also improve trust and enable AI to learn from human experience. For example, one study showed that when people were allowed the freedom to slightly modify an algorithm, they felt more satisfied with its decisions, more likely to believe it was superior and more likely to use it in the future.

研究表明，让人们对人工智能的决策制定拥有一定的控制也能够提升信任，并让人工智能可以学习人类的经验。例如，一项研究显示，当人们拥有稍微修改算法的自由时，他们会对人工智能的决策更加满意，更可能相信其更胜一筹，并更可能在未来使用它。

We don’t need to understand the intricate inner workings of AI systems, but if people are given a degree of responsibility for how they are implemented, they will be more willing to accept AI into their lives.

我们不需要理解人工智能系统复杂的内部工作机制，但如果人们拥有一定的权责决定它们如何生效，他们会更加愿意在生活中接受人工智能。

# 十七

## 17Test1

### [17Test1Passage1 The development of the London underground railway 伦敦地铁的发展](http://www.laokaoya.com/51905.html)

第1自然段

In the first half of the 1800s, London’s population grew at an astonishing rate, and the central area became increasingly congested. In addition, the expansion of the overground railway network resulted in more and more passengers arriving in the capital. However, in 1846, a Royal Commission decided that the railways should not be allowed to enter the City, the capital’s historic and business centre. The result was that the overground railway stations formed a ring around the City. The area within consisted of poorly built, overcrowded slums and the streets were full of horse-drawn traffic. Crossing the City became a nightmare. It could take an hour and a half to travel 8 km by horse-drawn carriage or bus. Numerous schemes were proposed to resolve these problems, but few succeeded.

19世纪前半页，伦敦人口快速增长。其中心区域变得越来越拥挤。此外，地上铁路网的扩展导致越来越多的人来到首都。然而，到了1846年的时候，皇家委员会决定火车不应该进入伦敦城（首都的历史和商业中心）。这一政策使得地上火车站围绕伦敦城形成一个圈。其内部区域包括粗制滥造、过度拥挤的平民窟，以及布满马车的街道。穿过伦敦城成为噩梦。乘坐马车或者马拉公交车走过8公里要花一个半小时。无数的计划被提出来解决这些问题，但鲜有成功的。

第2自然段

Amongst the most vocal advocates for a solution to London’s traffic problems was Charles Pearson, who worked as a solicitor for the City of London. He saw both social and economic advantages in building an underground railway that would link the overground railway stations together and clear London slums at the same time. His idea was to relocate the poor workers who lived in the inner-city slums to newly constructed suburbs, and to provide cheap rail travel for them to get to work. Pearson’s ideas gained support amongst some businessmen and in 1851 he submitted a plan to Parliament. It was rejected, but coincided with a proposal from another group for an underground connecting line, which Parliament passed.

解决伦敦交通问题呼声最大的方案之一是由伦敦城的法律政策专员Charles Pearson提出来的。他认为建造地铁连接地上火车站，并同时清除伦敦的贫民窟拥有社会和经济上的双重好处。其方案为，将居住在城市内部贫民窟里的低收入人群文章来自老烤鸭雅思迁移到新建设的郊区去，并为他们上班提供廉价的铁路服务。Pearson的观点赢得一些商人的支持。1851年，他向议会提交了方案。该方案被拒绝。但巧合的是，另一个团体也提交了修建地下铁路的方案，而议会则通过了。

第3自然段

The two groups merged and established the Metropolitan Railway Company in August 1854. The company’s plan was to construct an underground railway line from the Great Western Railway’s (GWR) station at Paddington to the edge of the City at Farringdon Street – a distance of almost 5 km. The organisation had difficulty in raising the funding for such a radical and expensive scheme, not least because of the critical articles printed by the press. This article is from laokaoya website. Objectors argued that the tunnels would collapse under the weight of traffic overhead, buildings would be shaken and passengers would be poisoned by the emissions from the train engines. However, Pearson and his partners persisted.

1854年8月，两个团体合并在一起，成立了大都会铁路公司。公司的计划是建造一条从帕丁顿GWR车站到城市边缘法灵登街的地铁线路。长度约5公里。如此激进且昂贵的项目在筹措资金上遇到了困难。特别是媒体还发表了批评文章。反对者认为，隧道会在路面交通的压力下坍塌，建筑物会因此晃动，而乘客则会受到火车发动机尾气的毒害。然而，Pearson和他的合作伙伴坚持了下去。

第4自然段

The GWR, aware that the new line would finally enable them to run trains into the heart of the City, invested almost £250,000 in the scheme. Eventually, over a five-year period, £1m was raised. The chosen route ran beneath existing main roads to minimise the expense of demolishing buildings. Originally scheduled to be completed in 21 months, the construction of the underground line took three years. It was built just below street level using a technique known as ‘cut and cover’. A trench about ten metres wide and six metres deep was dug, and the sides temporarily held up with timber beams. Brick walls were then constructed, and finally a brick arch was added to create a tunnel. A two-metre-deep layer of soil was laid on top of the tunnel and the road above rebuilt.

意识到新的线路能够让它们的火车进入城市中心，GWR在该项目上投资了将近250000英镑。最终，在五年的时间里，公司筹集了100万英镑。选定的路线位于主干道下方，以减少拆除建筑物的花费。一开始，地铁线路的建造预计在21个月内完成，但最终却耗费了3年。该线路应用一种被称为“cut and cover”的技术，位于街道下方不远的地方。大约10米宽，6米深的壕沟被挖掘出来。周边暂时用木梁支撑。随后修建砖墙，最终加入砖制的拱梁来形成隧道。隧道上方覆盖两米深的土层，在其上方重建道路。

第5自然段

The Metropolitan line, which opened on 10 January 1863, was the world’s first underground railway. On its first day, almost 40,000 passengers were carried between Paddington and Farringdon, the journey taking about 18 minutes. By the end of the Metropolitan’s first year of operation, 9.5 million journeys had been made.

大都会线于1863年1月开放，是世界上第一条地铁。在其运营的第一天，就有将近40000名乘客往返于帕丁顿和法灵登街之间。旅途只需18分钟左右。到大都会线运营一周年的时候，它一共发车950万次。

第6自然段

Even as the Metropolitan began operation, the first extensions to the line were being authorised; these were built over the next five years, reaching Moorgate in the east of London and Hammersmith in the west. The original plan was to pull the trains with steam locomotives, using firebricks in the boilers to provide steam, but these engines were never introduced. Instead, the line used specially designed locomotives that were fitted with water tanks in which steam could be condensed. However, smoke and fumes remained a problem, even though ventilation shafts were added to the tunnels.

在大都会线刚开始运营的时候，该线路的延伸就已经获得批准。它们在接下来的五年里逐步建造完成，东至伦敦Moorgate，西至Hammersmith。最初的计划是利用蒸汽火车头拉动火车，通过锅炉里的耐火砖提供蒸汽，但这些引擎从未被使用。相反，该线路使用特殊设计的火车头，匹配能够压缩蒸汽的水箱。然而，即便隧道里已经添加了排气扇，烟雾和废气仍然是个问题。

第7自然段

Despite the extension of the underground railway, by the 1880s, congestion on London’s streets had become worse. The problem was partly that the existing underground lines formed a circuit around the centre of London and extended to the suburbs, but did not cross the capital’s centre. The ‘cut and cover’ method of construction was not an option in this part of the capital. The only alternative was to tunnel deep underground.

尽管地铁有所扩展，到了19世纪80年代的时候，伦敦街头的拥堵却变得更加严重。问题的产生部分是由于现存的地铁线路围绕伦敦中心形成环线，并延伸至郊区，却没有穿过首都中心。“cut and cover”这一建造方法不适用于该区域。唯一的替代方案是在地下深处建造隧道。

第8自然段

Although the technology to create these tunnels existed, steam locomotives could not be used in such a confined space. It wasn’t until the development of a reliable electric motor, and a means of transferring power from the generator to a moving train, that the world’s first deep-level electric railway, the City & South London, became possible. The line opened in 1890, and ran from the City to Stockwell, south of the River Thames. The trains were made up of three carriages and driven by electric engines. The carriages were narrow and had tiny windows just below the roof because it was thought that passengers would not want to look out at the tunnel walls. The line was not without its problems, mainly caused by an unreliable power supply. Although the City & South London Railway was a great technical achievement, it did not make a profit. Then, in 1900, the Central London Railway, known as the ‘Tuppenny Tube’, began operation using new electric locomotives. It was very popular and soon afterwards new railways and extensions were added to the growing tube network. By 1907, the heart of today’s Underground system was in place.

虽然修建这些隧道的技术已经存在，但蒸汽车头却无法在如此狭小的空间里使用。直到可靠的电力发动机与动力传输方式的出现，世界上第一条深地电力铁路 – City & South London才成为可能。该线路于1890年开始运营，从伦敦城到泰晤士河南岸的斯托克韦尔。其火车由三节车厢组成，并通过电力发动机驱动。车厢十分狭窄，只在紧挨车顶的地方才有微小的窗户，因为人们认为乘客并不想看外面的隧道墙壁。但这条线路也有自己的问题，主要是由不稳定的电力供应引起的。虽然City & South London线在技术上取得了巨大的成功，但它并未盈利。随后，到了1900年的时候，Central London线，也被称为“Tuppenny Tube”开始使用新的电力车头。它非常受欢迎。很快，新的线路和延伸加入日益增长的地铁网络。到了1907年的时候，如今的地铁体系核心已经出现。

### [17Test1Passage2 Stadiums: Past, present and future 体育场的过去，现在与未来](http://www.laokaoya.com/51982.html)

A部分

Stadiums are among the oldest forms of urban architecture: vast stadiums where the public could watch sporting events were at the centre of western city life as far back as the ancient Greek and Roman Empires, well before the construction of the great medieval cathedrals and the grand 19th- and 20th-century railway stations which dominated urban skylines in later eras.

体育场是最古老的城市建筑形式之一：早在古希腊和罗马帝国时期，供公众观看运动项目的大型体育场就位于西方城市生活的中心，远在后来主导城市天际线的中世纪大型教堂和19、20世纪宏伟的火车站之前。

Today, however, stadiums are regarded with growing scepticism. Construction costs can soar above £1 billion, and stadiums finished for major events such as the Olympic Games or the FIFA World Cup have notably fallen into disuse and disrepair.

然而，如今，体育场越来越受到人们的怀疑。其建造成本能够高出10亿英镑。为奥运会或者FIFA世界杯等大型项目修建完工的体育场更是造人废弃，破败不堪。

But this need not be the case. History shows that stadiums can drive urban development and adapt to the culture of every age. Even today, architects and planners are finding new ways to adapt the mono-functional sports arenas which became emblematic of modernisation during the 20th century.

但这种情况并非必然。历史表明，体育场能够推动城市发展，并适应各个年代的文化。即便是现在，设计师和规划者也在寻找调整单一功能运动场地的新方法。而这些运动场已经成为20世纪现代化进程的象征。

B部分

The amphitheatre of Arles in southwest France, with a capacity of 25,000 spectators, is perhaps the best example of just how versatile stadiums can be. Built by the Romans in 90 AD, it became a fortress with four towers after the fifth century, and was then transformed into a village containing more than 200 houses. With the growing interest in conservation during the 19th century, it was converted back into an arena for the staging of bullfights, thereby returning the structure to its original use as a venue for public spectacles.

法国西南部能够容纳25000名观众的阿尔勒圆形露天竞技场或许是运动场具备多种功能的最佳例证。由罗马人在公元90年修建完成，它在5世纪之后成为拥有四个塔台的堡垒，随后又被改建成容纳200多座房子的村庄。19世纪，随着保护意识的提升，它被改回运动场，用于举办斗牛比赛，从而回归到其最初的用途-举办大型公共事项的场地。

Another example is the imposing arena of Verona in northern Italy, with space for 30,000 spectators, which was built 60 years before the Arles amphitheatre and 40 years before Rome’s famous Colosseum. It has endured the centuries and is currently considered one of the world’s prime sites for opera, thanks to its outstanding acoustics.

另一个例子是意大利北部壮观的维罗纳竞技场。它可以容纳30000名观众，修建时间比阿尔勒圆形露天竞技场早60年，比著名的罗马斗兽场早40年。它在随后的十几个世纪中留存下来。由于优秀的音响效果，它如今被认为是世界上歌剧演出的最佳场地之一。

C部分

The area in the centre of the Italian town of Lucca, known as the Piazza dell’Anfiteatro, is yet another impressive example of an amphitheatre becoming absorbed into the fabric of the city. The site evolved in a similar way to Arles and was progressively filled with buildings from the Middle Ages until the 19th century, variously used as houses, a salt depot and a prison. But rather than reverting to an arena, it became a market square, designed by Romanticist architect Lorenzo Nottolini. Today, the ruins of the amphitheatre remain embedded in the various shops and residences surrounding the public square.

意大利卢卡镇的中心区域，也被称为Piazza dell’Anfiteatro，是露天竞技场融入城市的另一个例子。该场地的演变与阿尔勒相似，从中世纪到19世纪逐渐被各种建筑物填满。它们被当做房屋，食盐仓库以及监狱。但它并没有被改回竞技场，而是在浪漫主义建筑师Lorenzo Nottolini的设计下成为集市广场。如今，圆形露天竞技场的残留文章来自老烤鸭雅思仍然遗存在广场周围各种商店与民居里。

D部分

There are many similarities between modern stadiums and the ancient amphitheatres intended for games. But some of the flexibility was lost at the beginning of the 20th century, as stadiums were developed using new products such as steel and reinforced concrete, and made use of bright lights for night-time matches.

现代体育场与为比赛而修建的古代圆形露天竞技场之间存在许多相似之处。但由于体育场使用诸如钢筋和水泥这样的新型材料，以及利用灯光为夜晚的比赛照明，其灵活性在20世纪初期的时候有所丧失。

Many such stadiums are situated in suburban areas, designed for sporting use only and surrounded by parking lots. These factors mean that they may not be as accessible to the general public, require more energy to run and contribute to urban heat.

许多这样的体育场位于城市郊区，仅为运动设计，周围都是停车场。这些因素意味着，公众可能不太方便前往，需要更多的能量来运营，并加剧城市的热岛效应。

E部分

But many of today’s most innovative architects see scope for the stadium to help improve the city. Among the current strategies, two seem to be having particular success: the stadium as an urban hub, and as a power plant.

但如今，许多最具创新精神的建筑师在这些体育场身上看到了帮助改善城市的前景。在现有的方案中，有两种似乎特别成功：体育场作为城市中心，以及作为发电站。

There’s a growing trend for stadiums to be equipped with public spaces and services that serve a function beyond sport, such as hotels, retail outlets, conference centres, restaurants and bars, children’s playgrounds and green space. Creating mixed-use developments such as this reinforces compactness and multi-functionality, making more efficient use of land and helping to regenerate urban spaces.

体育场配备运动之外的公共功能和服务，如酒店、零售商店、会议中心、餐厅和酒吧、儿童运动场地、公园等，变得越来越常见。诸如此类混合用途的发展加强了其紧凑性与多功能性，可以更加高效地使用土地，帮助改善城市空间。

This opens the space up to families and a wider cross-section of society, instead of catering only to sportspeople and supporters. There have been many examples of this in the UK: the mixed-use facilities at Wembley and Old Trafford have become a blueprint for many other stadiums in the world.

这一举措将运动场地向家庭和更广泛的社会群体开放，而不是仅用于运动人群和支持者们。英国就有许多这样的例子：温布利和老特拉福德混合用途的设施成为世界上许多其他体育馆的范本。

F部分

The phenomenon of stadiums as power stations has arisen from the idea that energy problems can be overcome by integrating interconnected buildings by means of a smart grid, which is an electricity supply network that uses digital communications technology to detect and react to local changes in usage, without significant energy losses. This article is from laokaoya website. Stadiums are ideal for these purposes, because their canopies have a large surface area for fitting photovoltaic panels and rise high enough (more than 40 metres) to make use of micro wind turbines.

运动场作为发电站的现象源自于以下想法：通过智能电网（即利用数字通信技术对当地电力使用的变化进行侦测和应对，从而避免大量能量损失的电力供应网络）整合互相联系的建筑可以克服能源问题。运动场非常适合达成这些目的，因为它们的顶篷有着巨大的表面积，可以用来安装光电池板，并提升到足够的高度（超过40米）以利用微型风力涡轮机。

Freiburg Mage Solar Stadium in Germany is the first of a new wave of stadiums as power plants, which also includes the Amsterdam Arena and the Kaohsiung Stadium. The latter, inaugurated in 2009, has 8,844 photovoltaic panels producing up to 1.14 GWh of electricity annually. This reduces the annual output of carbon dioxide by 660 tons and supplies up to 80 percent of the surrounding area when the stadium is not in use. This is proof that a stadium can serve its city, and have a decidedly positive impact in terms of reduction of CO2 emissions.

德国的Freiburg Mage太阳能体育场是体育场作为发电站这一新潮流的首个例子。其他案例还包括阿姆斯特丹竞技场和高雄体育馆。后者于2009年首次投入使用，拥有8844块光电池板，每年发电11.4亿瓦时。这每年可以减少660吨的二氧化碳排放，并在体育场不使用时最多为80%的周边地区供电。这证明，运动场可以为其城市服务，并在减少二氧化碳排放方面有着显著的积极影响。

G部分

Sporting arenas have always been central to the life and culture of cities. In every era, the stadium has acquired new value and uses: from military fortress to residential village, public space to theatre and most recently a field for experimentation in advanced engineering. The stadium of today now brings together multiple functions, thus helping cities to create a sustainable future.

运动场所一直都是城市生活和文化的中心。每一个时代，体育场都获得过新的价值和用途：从军事堡垒到居民村庄，到公共空间，到剧院，再到最近前沿工程学的实验场地。如今的体育场结合了多种用途，从而帮助城市创造出可持续的未来。

### [17Test1Passage3 To catch a king 抓捕国王](http://www.laokaoya.com/52051.html)

**第1段**

Charles Spencer’s latest book, *To Catch a King*, tells us the story of the hunt for King Charles II in the six weeks after his resounding defeat at the Battle of Worcester in September 1651. And what a story it is. After his father was executed by the Parliamentarians in 1649, the young Charles II sacrificed one of the very principles his father had died for and did a deal with the Scots, thereby accepting Presbyterianism\* as the national religion in return for being crowned King of Scots. His arrival in Edinburgh prompted the English Parliamentary army to invade Scotland in a pre-emptive strike. This was followed by a Scottish invasion of England. The two sides finally faced one another at Worcester in the west of England in 1651. After being comprehensively defeated on the meadows outside the city by the Parliamentarian army, the 21-year-old king found himself the subject of a national manhunt, with a huge sum offered for his capture. Over the following six weeks he managed, through a series of heart-poundingly close escapes, to evade the Parliamentarians before seeking refuge in France. For the next nine years, the penniless and defeated Charles wandered around Europe with only a small group of loyal supporters.

Charles Spencer最近完成的一本书，《抓捕国王》，向我们讲述了1651年9月在查尔斯二世于伍斯特战役中大败之后抓捕他的故事。这是个精彩非凡的故事。在其父亲于1649年被国会议员处决之后，年轻的查尔斯二世放弃了他父亲为之而死的原则之一，与苏格兰人达成协议，从此接受“长老派”为英国国教，以换取自己加冕为苏格兰国王。他驾临爱丁堡的举动促使英国议会军队采取先发制人的策略，入侵苏格兰。随后，苏格兰也对英格兰发起了进攻。1651年，双方最终在英格兰西部的伍斯特相遇。在城外的草原上被议会军队彻底击败之后，年仅21岁的国王发现他成为全国上下追捕的目标。抓住他的人将获巨额赏金。在接下来的六周里，他经历了一系列惊心动魄的死里逃生，最终摆脱议会军队，前往法国寻求庇护。随后的九年里，身无分文、丢盔卸甲的查尔斯在一小撮忠实支持者的陪伴下，流亡欧洲各地。

**第2段**

Years later, after his restoration as king, the 50-year-old Charles II requested a meeting with the writer and diarist Samuel Pepys. His intention when asking Pepys to commit his story to paper was to ensure that this most extraordinary episode was never forgotten. This article is from laokaoya website. Over two three-hour sittings, the king related to him in great detail his personal recollections of the six weeks he had spent as a fugitive. As the king and secretary settled down (a scene that is surely a gift for a future scriptwriter), Charles commenced his story: ‘After the battle was so absolutely lost as to be beyond hope of recovery, I began to think of the best way of saving myself.’

多年之后，已重归王位的五十岁的查尔斯要求与作家和日记作者Samuel Pepys会面。他请求Pepys将其故事付诸纸面，以确保这段非同寻常的人生插曲永远都不会被忘记。在两三个小时的会晤中，国王向他详细讲述了自己在六周的时间里作为逃犯的回忆。在国王和记录员坐下之后（未来的剧作家一定会将这一幕视为珍宝），查尔斯开始了他的故事：“战斗彻底失败，毫无任何卷土重来的可能，我开始思考拯救自己的最佳方式”，

**第3段**

One of the joys of Spencer’s book, a result not least of its use of Charles II’s own narrative as well as those of his supporters, is just how close the reader gets to the action. The day-by-day retelling of the fugitives’ doings provides delicious details: the cutting of the king’s long hair with agricultural shears, the use of walnut leaves to dye his pale skin, and the day Charles spent lying on a branch of the great oak tree in Boscobel Wood as the Parliamentary soldiers scoured the forest floor below. Spencer draws out both the humour – such as the preposterous refusal of Charles’s friend Henry Wilmot to adopt disguise on the grounds that it was beneath his dignity – and the emotional tension when the secret of the king’s presence was cautiously revealed to his supporters.

Spencer作品的乐趣之一就在于读者能够无限接近当时的情景，尤其是在使用查尔斯二世自己和其支持者的口吻之后。对逃亡者每日举动的复述提供了宝贵的细节。例如，用农家羊毛剪剪去了国王的长发，用核桃树的树叶对其苍白的皮肤进行染色，以及当议会士兵在Boscobel树林里四处搜索的时候，查尔斯文章来自老烤鸭雅思就躺在上面一颗大橡树的枝杈上。Spencer不但描绘出了幽默感 – 比如查尔斯的朋友Henry Wilmot荒谬地拒绝进行伪装，因为这有损其尊严 – 而且还写出了当国王藏身之处的秘密被小心翼翼地透露给其支持者时的紧张情绪。

**第4段**

Charles’s adventures after losing the Battle of Worcester hide the uncomfortable truth that whilst almost everyone in England had been appalled by the execution of his father, they had not welcomed the arrival of his son with the Scots army, but had instead firmly bolted their doors. This was partly because he rode at the head of what looked like a foreign invasion force and partly because, after almost a decade of civil war, people were desperate to avoid it beginning again. This makes it all the more interesting that Charles II himself loved the story so much ever after. As well as retelling it to anyone who would listen, causing eye-rolling among courtiers, he set in train a series of initiatives to memorialise it. There was to be a new order of chivalry, the Knights of the Royal Oak. A series of enormous oil paintings depicting the episode were produced, including a two-metre-wide canvas of Boscobel Wood and a set of six similarly enormous paintings of the king on the run. In 1660, Charles II commissioned the artist John Michael Wright to paint a flying squadron of cherubs carrying an oak tree to the heavens on the ceiling of his bedchamber. It is hard to imagine many other kings marking the lowest point in their life so enthusiastically, or indeed pulling off such an escape in the first place.

查尔斯在伍斯特战役失败之后的冒险掩盖了令人不快的事实，虽然每个英格兰人都为其父亲的处决感到震惊，但他们并不欢迎他的儿子带着苏格兰军队的到来，反而牢牢锁住了自家大门。这部分是由于他率领着一支看起来像外国入侵者的武装力量，另一部分原因则在于，在将近十年的内战之后，人们迫切想要避免重启战争。查尔斯二世在此之后如此喜欢这段经历就更加耐人寻味。除了向任何愿意倾听的人复述之外（这引发朝臣的不快），他还启动了一系列的举措来纪念它。他建立了一支新的、名为皇家橡树的骑士团。一系列描述这一经历的巨幅油画被创作出来。其中包括一幅以Boscobel树林为主题的、两米宽的画作，以及一套六幅类似尺寸的展现在逃国王的大幅绘画。1660年，查尔斯二世命令艺术家John Michael Wright在自己卧室的天花板上创作了这样一幅画：一队小天使扛着橡树飞向天堂。很难想象其他国王会如此热衷于纪念自己人生的最低点，或者首先就不会有很多国王能够完成这样一场逃亡。

**第5段**

Charles Spencer is the perfect person to pass the story on to a new generation. His pacey, readable prose steers deftly clear of modern idioms and elegantly brings to life the details of the great tale. He has even-handed sympathy for both the fugitive king and the fierce republican regime that hunted him, and he succeeds in his desire to explore far more of the background of the story than previous books on the subject have done. Indeed, the opening third of the book is about how Charles II found himself at Worcester in the first place, which for some will be reason alone to read *To Catch a King*.

Charles Spencer是将这一故事传递给下一代的绝佳人选。他笔下节奏紧凑，颇为可读的散文熟练地避开了现代习语，优雅地为这一传奇故事的细节赋予了鲜活的生命。他对逃亡的国王和追捕他的凶猛的共和派政权给予了一视同仁的共情。他也成功实现了自己的愿望，相比于之前同一主题的图书而言，更进一步探索故事的背景。确实，书的前三分之一用于描述查尔斯二世如何一路走到了伍斯特。对于一些人来说，单单这一点就足以成为他们《抓捕国王》的原因。

**第6段**

The tantalising question left, in the end, is that of what it all meant. Would Charles II have been a different king had these six weeks never happened? The days and nights spent in hiding must have affected him in some way. Did the need to assume disguises, to survive on wit and charm alone, to use trickery and subterfuge to escape from tight corners help form him? This is the one area where the book doesn’t quite hit the mark. Instead its depiction of Charles II in his final years as an ineffective, pleasure-loving monarch doesn’t do justice to the man (neither is it accurate), or to the complexity of his character. But this one niggle aside, *To Catch a  King* is an excellent read, and those who come to it knowing little of the famous tale will find they have a treat in store.

最终只剩下了这样一个撩人心弦的问题，这一切到底是为了什么。如果这六周的故事从来都没有发生过的话，查尔斯二世会是一个不一样的国王吗？那些东躲西藏的日日夜夜一定以某种形式影响了他。需要披上伪装，只能依靠智慧和魅力生存下去，利用诡计和权谋来死里逃生的经历是否帮助塑造了他？本书恰恰在这一领域未能一语中的。相反，它对查尔斯二世晚年无所作为，热衷享乐的描述并不公正（也不准确），也没能真实地反映出其性格的复杂性。但瑕不掩瑜，《抓捕国王》是本精彩的读物。那些对这段著名的故事知之甚少的人们在商店里打开它时，会发现自己即将享受一场盛宴。

## 17Test2

### [17Test2Passage1 The Dead Sea Scrolls 死海古卷](http://www.laokaoya.com/52100.html)

第1段

In late 1946 or early 1947, three Bedouin teenagers were tending their goats and sheep near the ancient settlement of Qumran, located on the northwest shore of the Dead Sea in what is now known as the West Bank. One of these young shepherds tossed a rock into an opening on the side of a cliff and was surprised to hear a shattering sound. He and his companions later entered the cave and stumbled across a collection of large clay jars, seven of which contained scrolls with writing on them. The teenagers took the seven scrolls to a nearby town where they were sold for a small sum to a local antiquities dealer. Word of the find spread, and Bedouins and archaeologists eventually unearthed tens of thousands of additional scroll fragments from 10 nearby caves; together they make up between 800 and 900 manuscripts. It soon became clear that this was one of the greatest archaeological discoveries ever made.

1946年末或者1947年初的时候，三个贝都因少年正在古代库姆兰定居点附近放羊。它位于死海西北岸，如今被称为西岸。其中一名年轻的牧羊人朝悬崖旁边的洞口扔了块石头，惊奇地听到什么东西被打碎的声音。他和他的同伴随后进入洞穴，跌跌撞撞地穿过大片巨型陶罐，发现其中七个装有带着字迹的卷轴。这些青少年将七幅卷轴带到附近的城镇，卖给当地的古董商，换取少许金钱。这一发现的消息扩散开来。最终，贝都因人和考古学家从10个附近的洞穴里又挖掘出数万枚卷轴碎片。它们一起组成800到900张手稿。很快人们意识到，这是有史以来最伟大的考古发现之一。

第2段

The origin of the Dead Sea Scrolls, which were written around 2,000 years ago between 150 BCE and 70 CE, is still the subject of scholarly debate even today. According to the prevailing theory, they are the work of a population that inhabited the area until Roman troops destroyed the settlement around 70 CE. The area was known as Judea at that time, and the people are thought to have belonged to a group called the Essenes, a devout Jewish sect.

这些创作于2000年前（公元前150年到公园70年）的死海古卷的起源至今仍然是学术争论的主题。根据主流理论，它们是当地居民的作品。这些人一直居住在此，直到公元70年左右罗马军队摧毁了这一定居点。该地区当时被称为Judea，而其居民则被认为是艾赛尼派信徒，一支虔诚的犹太教派。

第3段

The majority of the texts on the Dead Sea Scrolls are in Hebrew, with some fragments written in an ancient version of its alphabet thought to have fallen out of use in the fifth century BCE. But there are other languages as well. Some scrolls are in Aramaic, the language spoken by many inhabitants of the region from the sixth century BCE to the siege of Jerusalem in 70 CE. In addition, several texts feature translations of the Hebrew Bible into Greek.

死海古卷上大部分的内容都由希伯来文组成。其中一些则使用更为古老的字母体系。该体系被认为于公元5世纪被淘汰。但也有其他语言。一些文卷是用亚拉姆语完成的，一种从公元前6世纪到公元70年耶路撒冷被围期间在该地区居住的民众所使用的语言。除此之外，一些文本还将希伯来文的圣经翻译为希腊文。

第4段

The Dead Sea Scrolls include fragments from every book of the Old Testament of the Bible except for the Book of Esther. The only entire book of the Hebrew Bible preserved among the manuscripts from Qumran is Isaiah; this copy, dated to the first century BCE, is considered the earliest biblical manuscript still in existence. This article is from laokaoya website. Along with biblical texts, the scrolls include documents about sectarian regulations and religious writings that do not appear in the Old Testament.

死海古卷中包含《圣经·旧约》每一卷的片段，除了《以斯帖之书》。在库姆兰发现的手稿中，唯一一部保存完整的希伯来圣经是《以赛亚书》。这一可以追溯到公元前1世纪的版本被认为是现存最早的圣经手稿。除了圣经内容之外，这些卷轴还包括教派制度和没有出现在《旧约》中的宗教内容。

第5段

The writing on the Dead Sea Scrolls is mostly in black or occasionally red ink, and the scrolls themselves are nearly all made of either parchment (animal skin) or an early form of paper called ‘papyrus’. The only exception is the scroll numbered 3Q15, which was created out of a combination of copper and tin. Known as the Copper Scroll, this curious document features letters chiselled onto metal – perhaps, as some have theorized, to better withstand the passage of time. One of the most intriguing manuscripts from Qumran, this is a sort of ancient treasure map that lists dozens of gold and silver caches. Using an unconventional vocabulary and odd spelling, it describes 64 underground hiding places that supposedly contain riches buried for safekeeping. None of these hoards have been recovered, possibly because the Romans pillaged Judea during the first century CE. According to various hypotheses, the treasure belonged to local people, or was rescued from the Second Temple before its destruction or never existed to begin with.

死海古卷上的笔迹大多是黑色，偶尔为红色。卷轴本身几乎全部由羊皮纸（动物皮革）或者一种被称为“papyrus”的早期纸张构成。唯一的例外是编号为3Q15的卷轴。它由铜锡混合制作而成。这份神奇的文档被称为“铜卷轴”，其文字被錾刻在金属上 – 或许，正如一些人所设想的那样，这么做是为了抵御时间的流逝。作为库兰姆地区最有趣的手稿之一，它是某种古代的藏宝图，列出了数十处藏宝之地。利用非常规的词汇和古怪的拼写，它描述了64处应该埋藏有宝藏的地方。但尚未有一处被发现。这或许是因为罗马人在公元1世纪洗劫了Judea地区。根据各种假说，这些财宝属于当地民众，或者在第二圣殿毁坏之前被抢救出来，或者一开始就并不存在。

第6段

Some of the Dead Sea Scrolls have been on interesting journeys. In 1948, a Syrian Orthodox archbishop known as Mar Samuel acquired four of the original seven scrolls from a Jerusalem shoemaker and part-time antiquity dealer, paying less than $100 for them. He then travelled to the United States and unsuccessfully offered them to a number of universities, including Yale. Finally, in 1954, he placed an advertisement in the business newspaper The Wall Street Journal – under the category ‘Miscellaneous Items for Sale’ – that read: ‘Biblical Manuscripts dating back to at least 200 B.C. are for sale. This would be an ideal gift to an educational or religious institution by an individual or group.’ Fortunately, Israeli archaeologist and statesman Yigael Yadin negotiated their purchase and brought the scrolls back to Jerusalem, where they remain to this day.

一些死海古卷曾经踏上奇妙的旅程。1948年，一位叫作Mar Samuel的叙利亚东正教大主教只用了不到100美元，就从一个耶路撒冷鞋匠兼业余古董商那里买下来最初七个卷轴中的四个。他随后前往美国，试图将它们卖给一些大学（其中也包括耶鲁），但并未成功。文章来自老烤鸭雅思。最终，他于1954年在商务报纸《华尔街日报》上刊登了一则广告，放在杂项物品出售这一类别下。其内容为“出售可以至少追溯到公元前200年的圣经手稿。无论是个人还是团体，这将是赠予教育或宗教机构的理想礼物”。幸运的是，以色列考古学家、政治家Yigael Yadin协商买下了它们，并将这些卷轴带回耶路撒冷。它们至今仍然保存在那里。

第7段

In 2017, researchers from the University of Haifa restored and deciphered one of the last untranslated scrolls. The university’s Eshbal Ratson and Jonathan Ben-Dov spent one year reassembling the 60 fragments that make up the scroll. Deciphered from a band of coded text on parchment, the find provides insight into the community of people who wrote it and the 364-day calendar they would have used. The scroll names celebrations that indicate shifts in seasons and details two yearly religious events known from another Dead Sea Scroll. Only one more known scroll remains untranslated.

2017年，海法大学的研究者复原并破译了某个最后一批未翻译的卷轴。来自该学校的Eshbal Ratson和Jonathan Ben-Dov用了一年的时间将60块残片重新组合在一起，拼接成卷轴。羊皮卷上一系列加密文本的破译让我们得以窥视写下这些文字的族群，以及他们所使用的一年364天的历法。卷轴中提到了昭示季节变化的庆典的名字，以及从另一部死海古卷中所得知的一年两次宗教仪式的细节。如今，只剩下一部已知的卷轴还未破译。

### [17Test2Passage2 A second attempt at domesticating the tomato 第二次驯化番茄](http://www.laokaoya.com/52190.html)

A部分

It took at least 3,000 years for humans to learn how to domesticate the wild tomato and cultivate it for food. Now two separate teams in Brazil and China have done it all over again in less than three years. And they have done it better in some ways, as the re-domesticated tomatoes are more nutritious than the ones we eat at present.

人们用了三千多年的时间才学会如何驯化野生番茄，将其培育成食物。如今，巴西和中国两只互相独立的队伍在不到三年的时间里就将这一过程重复了一遍。他们在一些方面甚至做的更好。再次驯化的番茄比我们现在吃的更有营养。

This approach relies on the revolutionary CRISPR genome editing technique, in which changes are deliberately made to the DNA of a living cell, allowing genetic material to be added, removed or altered. The technique could not only improve existing crops, but could also be used to turn thousands of wild plants into useful and appealing foods. In fact, a third team in the US has already begun to do this with a relative of the tomato called the groundcherry.

这一方法建立在革命性的CRISPR基因组编辑技术上。它可以对一个活体细胞的DNA进行有意识的更改，添加、移除或改变基因材料。该技术不仅可以提升现有的农作物，而且还能用来将数千种野生植物转变为有益且美味的食物。事实上，第三支来自美国的队伍已经开始对一种被称为“地樱桃”的番茄近亲进行常识。

This fast-track domestication could help make the world’s food supply healthier and far more resistant to diseases, such as the rust fungus devastating wheat crops.

这种快速的驯化可以帮助让世界食物供应变得更加健康，大大增强其对疾病的抵御能力，如大规模破坏小麦的锈病菌。

‘This could transform what we eat,’ says Jorg Kudla at the University of Munster in Germany, a member of the Brazilian team. ‘There are 50,000 edible plants in the world, but 90 percent of our energy comes from just 15 crops.’

巴西团队中、来自德国明斯特大学的Jorg Kudla说道，“这可能彻底改变我们所吃的东西。世界上有50000种可供食用的植物，但我们能量的90%都来自于仅仅15种作物”。

‘We can now mimic the known domestication course of major crops like rice, maize, sorghum or others,’ says Caixia Gao of the Chinese Academy of Sciences in Beijing. ‘Then we might try to domesticate plants that have never been domesticated.’

北京中科院的Caixia Gao说：“我们如今可以模仿已知的主要作物的驯化过程，如水稻、玉米、高粱等。接下来，我们会尝试驯化之前从未被驯化的植物”。

B部分

Wild tomatoes, which are native to the Andes region in South America, produce pea-sized fruits. Over many generations, peoples such as the Aztecs and Incas transformed the plant by selecting and breeding plants with mutations in their genetic structure, which resulted in desirable traits such as larger fruit.

野生西红柿原产于南美洲的安第斯地区，其果实只有豌豆大小。世世代代的当地居民，如阿兹台克人和印加人等，通过选育那些基因结构发生突变的植株改造这种植物。最终产生一些优良特征，如更大的果实等。

But every time a single plant with a mutation is taken from a larger population for breeding, much genetic diversity is lost. And sometimes the desirable mutations come with less desirable traits. For instance, the tomato strains grown for supermarkets have lost much of their flavour.

但每一次发生突变的单独植株从更大的族群中取出用于繁殖的时候，许多基因多样性就会丧失。有时候，令人满意的突变反而会带来更少的优良特性。例如，超市售卖的番茄品种就丧失了丰富的味道。

By comparing the genomes of modern plants to those of their wild relatives, biologists have been working out what genetic changes occurred as plants were domesticated. The teams in Brazil and China have now used this knowledge to reintroduce these changes from scratch while maintaining or even enhancing the desirable traits of wild strains.

通过比较现代植物与它们野生近亲的基因结构，生物学家已经弄清楚植物驯化过程中基因所发生的改变。巴西和中国的团队文章来自老烤鸭雅思如今利用这一知识重新诱发这些变化，同时保留甚至加强野生品种中令人满意的特性。

C部分

Kudla’s team made six changes altogether. For instance, they tripled the size of fruit by editing a gene called FRUIT WEIGHT, and increased the number of tomatoes per truss by editing another called MULTIFLORA.

Kudla的团队一共做出了六处改变。例如，他们通过编辑一段被称为“果重”的基因，将果实的大小变为以前的三倍，通过编辑另一段叫作“多花”的基因，提升了每束番茄上的果实数量。

While the historical domestication of tomatoes reduced levels of the red pigment lycopene – thought to have potential health benefits – the team in Brazil managed to boost it instead. The wild tomato has twice as much lycopene as cultivated ones; the newly domesticated one has five times as much.

历史上番茄的驯化降低了其番茄红素的水平 – 该成分被认为可能对健康有益 – 而巴西的团队则设法提升了它。野生番茄的番茄红素含量是家养的两倍。新驯化的品种则是其五倍。

‘They are quite tasty,’ says Kudla. ‘A little bit strong. And very aromatic.’

Kudla说，“他们很美味。口味稍微有些重，但香气四溢”。

The team in China re-domesticated several strains of wild tomatoes with desirable traits lost in domesticated tomatoes. In this way they managed to create a strain resistant to a common disease called bacterial spot race, which can devastate yields. They also created another strain that is more salt tolerant – and has higher levels of vitamin C.

中国的团队再次驯化了几种野生番茄，保留了之前驯化的番茄所丧失的优良特性。这样一来，他们培育出的番茄品种能够抵抗一种被称为“疮茄病”的常见病。这种病能够让番茄大幅减产。他们还培育出另外一种更加耐盐的品种，而且维生素C的含量更高。

D部分

Meanwhile, Joyce Van Eck at the Boyce Thompson Institute in New York state decided to use the same approach to domesticate the groundcherry or goldenberry (Physalis pruinosa) for the first time. This article is from laokaoya website. This fruit looks similar to the closely related Cape gooseberry (Physalis peruviana).

与此同时，纽约州博伊斯汤普森研究所的Joyce Van Eck决定使用同样的方法首次对地樱桃，也就是黄金莓进行驯化。这种水果看起来与其近亲海角鹅莓十分类似。

Groundcherries are already sold to a limited extent in the US but they are hard to produce because the plant has a sprawling growth habit and the small fruits fall off the branches when ripe. Van Eck’s team has edited the plants to increase fruit size, make their growth more compact and to stop fruits dropping. ‘There’s potential for this to be a commercial crop,’ says Van Eck. But she adds that taking the work further would be expensive because of the need to pay for a licence for the CRISPR technology and get regulatory approval.

地樱桃在美国其实已经有所销售，但数量有限。它们很难生产，因为该植物惯于四处蔓延生长，而小小的果实成熟之后就会从枝头掉落。Van Eck的团队对该植物的基因进行编辑，以提升果实的大小，让它们生长的更为紧凑一些，并防止果实脱落。Van Eck说，“它有潜力变成一种商业作物”。但她补充到，进一步推进现有的研究耗费巨大，因为需要购买CRISPR技术许可，并经过注册审批。

E部分

This approach could boost the use of many obscure plants, says Jonathan Jones of the Sainsbury Lab in the UK. But it will be hard for new foods to grow so popular with farmers and consumers that they become new staple crops, he thinks.

英国塞恩斯伯里实验室的Jonathan Jones说，这种方法可以促进人们利用许多鲜为人知的植物。但他认为，新型食物要想受到农民和消费者的欢迎，并成为新的主要作物则十分困难。

The three teams already have their eye on other plants that could be ‘catapulted into the mainstream’, including foxtail, oat-grass and cowpea. By choosing wild plants that are drought or heat tolerant, says Gao, we could create crops that will thrive even as the planet warms.

三个团队已经将注意力放在那些可能一跃成为主流的其他植物上，如狐尾草、燕麦草和豇豆。Gao说，通过选择耐旱或者耐热的野生植物，我们能够培育出在气候变暖的情况下仍然茁壮生长的农作物。

But Kudla didn’t want to reveal which species were in his team’s sights, because CRISPR has made the process so easy. ‘Any one with the right skills could go to their lab and do this.’

但Kudla不想透露其团队正在关注哪些品种，因为CRISPR使得这一过程变得如此简单。“任何拥有合适技能的人都可以到他们的实验室去做这件事”。

### [17Test2Passage3 Insight or evolution 洞见还是进化](http://www.laokaoya.com/52286.html)

第1段

Scientific discovery is popularly believed to result from the sheer genius of such intellectual stars as naturalist Charles Darwin and theoretical physicist Albert Einstein. Our view of such unique contributions to science often disregards the person’s prior experience and the efforts of their lesser-known predecessors. Conventional wisdom also places great weight on insight in promoting breakthrough scientific achievements, as if ideas spontaneously pop into someone’s head – fully formed and functional.

人们普遍认为，科学发现来自于智力超群的天才，如博物学者查尔斯·达尔文和理论物理学家阿尔伯特·爱因斯坦。我们关于这些独特科学贡献的看法往往忽视了这个人之前的经历，以及他们鲜为人知的前辈的努力。传统的观念十分重视洞察力在推动科学研究突破上的作用，仿佛想法会自然而然地突然出现在一个人的脑子里-完全成型且可用。

第2段

There may be some limited truth to this view. However, we believe that it largely misrepresents the real nature of scientific discovery, as well as that of creativity and innovation in many other realms of human endeavor.

这一观点可能不无道理。然而，我们认为它在很大程度上错误地呈现了科学发现的真正本质，也同样歪曲了许多人类努力探索的其他领域里的创造和创新。

第3段

Setting aside such greats as Darwin and Einstein – whose monumental contributions are duly celebrated – we suggest that innovation is more a process of trial and error, where two steps forward may sometimes come with one step back, as well as one or more steps to the right or left. This evolutionary view of human innovation undermines the notion of creative genius and recognizes the cumulative nature of scientific progress.

抛开达尔文和爱因斯坦这样的伟人不提，他们的伟大贡献确实值得称赞，我们认为创新更多的是实验与犯错的过程。在往前走两步的同时伴随着后退一步，当然也有可能是往左或者往右走一两步。这种进化论式的人类创新观念动摇了创造性天才的认知，并认可科学进步是逐渐积累的本质。

第4段

Consider one unheralded scientist: John Nicholson, a mathematical physicist working in the 1910s who postulated the existence of ‘proto-elements’ in outer space. By combining different numbers of weights of these proto-elements’ atoms, Nicholson could recover the weights of all the elements in the then-known periodic table. These successes are all the more noteworthy given the fact that Nicholson was wrong about the presence of proto-elements: they do not actually exist. Yet, amid his often fanciful theories and wild speculations, Nicholson also proposed a novel theory about the structure of atoms. Niels Bohr, the Nobel prize-winning father of modern atomic theory, jumped off from this interesting idea to conceive his now-famous model of the atom.

想想下面这位名不见经传的科学家，John Nicholson。作为一名20世纪10年代的数学物理学家，他提出外太空中存在“元初元素”的假说。通过合并不同数量的元初元素原子的重量，Nicholson能够复原当时所知的元素周期表中所有元素的重量。考虑到Nicholson在元初元素的存在上犯了错误（它们并不存在），这些成就就更加引人注目。然而，在他往往充满幻想的观念和缺乏依据的推测中，Nicholson也提出了一个有关原子结构的新颖理论。诺贝尔奖获得者、现代原子理论之父Niels Boher从这一有趣的想法出发，构想出如今著名的原子模型。

第5段

What are we to make of this story? One might simply conclude that science is a collective and cumulative enterprise. That may be true, but there may be a deeper insight to be gleaned. We propose that science is constantly evolving, much as species of animals do. This article is from laokaoya website. In biological systems, organisms may display new characteristics that result from random genetic mutations. In the same way, random, arbitrary or accidental mutations of ideas may help pave the way for advances in science. If mutations prove beneficial, then the animal or the scientific theory will continue to thrive and perhaps reproduce.

我们该如何看待这个故事呢？一个人可能很轻易地得出以下结论：科学是一项集体性的、积累的事业。这或许是正确的，但也可能需要更进一步的认识。我们认为，科学是不断发展进化的，正如大多数动物那样。在生物系统中，有机物可能会由于基因突变而展现出新的特点。同样的，观念上随机、任意或者偶然的突变会为科学进步铺平道路。如果突变被证明是有益的，那么动物或者科学理论会继续茁壮成长，或许还能够繁衍生息。

第6段

Support for this evolutionary view of behavioral innovation comes from many domains. Consider one example of an influential innovation in US horseracing. The so-called ‘acey-deucy’ stirrup placement, in which the rider’s foot in his left stirrup is placed as much as 25 centimeters lower than the right, is believed to confer important speed advantages when turning on oval tracks. It was developed by a relatively unknown jockey named Jackie Westrope. Had Westrope conducted methodical investigations or examined extensive film records in a shrewd plan to outrun his rivals? Had he foreseen the speed advantage that would be conferred by riding acey-deucy? No. He suffered a leg injury, which left him unable to fully bend his left knee. His modification just happened to coincide with enhanced left-hand turning performance. This led to the rapid and widespread adoption of riding acey-deucy by many riders, a racing style which continues in today’s thoroughbred racing.

支持这一行为创新进化观点的证据来自许多领域。以美国赛马中一个颇具影响的创新为例。所谓“左低右高”的马镫设置，即骑手左脚马镫比右边低25厘米，被认为可以在椭圆赛道转弯时带来重要的速度优势。它由一位相对默默无闻的骑手Jackie Westrope发明。Westrope有计划地进行过方法周密的调查或大量查看过影视记录，以击败其竞争对手吗？他事先预见了左低右高的骑行方式所赋予的速度优势吗？并没有。他的腿受过伤，左膝盖无法完全弯曲。其调整凑巧提升了左转弯的表现。这导致许多骑手迅速而广泛的采用了左低右高的骑行方式。这种风格一直延续到今天的纯种马比赛中。

第7段

Plenty of other stories show that fresh advances can arise from error, misadventure, and also pure serendipity – a happy accident. For example, in the early 1970s, two employees of the company 3M each had a problem: Spencer Silver had a product – a glue which was only slightly sticky – and no use for it, while his colleague Art Fry was trying to figure out how to affix temporary bookmarks in his hymn book without damaging its pages. The solution to both these problems was the invention of the brilliantly simple yet phenomenally successful Post-It note. Such examples give lie to the claim that ingenious, designing minds are responsible for human creativity and invention. Far more banal and mechanical forces may be at work; forces that are fundamentally connected to the laws of science.

还有许多其他故事表明，崭新的进步可能诞生于错误、不幸的遭遇，以及纯粹的意外 – 一场美好的事故。例如，20世纪70年代早期，3M公司的两名员工各自遇到了一个问题：Spencer Silver有种产品 – 一种只有少量黏性的胶水 – 却找不到用途，而其同事Art Fry则在努力探索如何将临时性的书签粘在赞美诗集上文章来自老烤鸭雅思而不破坏书页。这两个问题的解决方案即简单到令人惊叹却也大获成功的便利贴的发明。这些例子证明了并非是那些天才的、善于设计的头脑产生了人类的创新。更为平平无奇的、机械的力量可能在发挥作用。这些力量与科学规律在根本上联系在一起。

第8段

The notions of insight, creativity and genius are often invoked, but they remain vague and of doubtful scientific utility, especially when one considers the diverse and enduring contributions of individuals such as Plato, Leonardo da Vinci, Shakespeare, Beethoven, Galileo, Newton, Kepler, Curie, Pasteur and Edison. These notions merely label rather than explain the evolution of human innovations. We need another approach, and there is a promising candidate.

洞见、创造与天才的概念经常被引用，但它们依然模糊不清，对科学研究的有用性也存疑，尤其是当人们考虑到诸如柏拉图、莱昂纳多·达芬奇、莎士比亚、贝多芬、伽利略、牛顿、开普来、居里、巴斯德和爱迪生这些人多样而持久的贡献。这些理念仅仅标注了人类创新的进化，而非对其进行解释。我们需要另外一种方法，而眼前就有一个充满希望的备选。

第9段

The Law of Effect was advanced by psychologist Edward Thorndike in 1898, some 40 years after Charles Darwin published his groundbreaking work on biological evolution, On the Origin of Species. This simple law holds that organisms tend to repeat successful behaviors and to refrain from performing unsuccessful ones. Just like Darwin’s Law of Natural Selection, the Law of Effect involves an entirely mechanical process of variation and selection, without any end objective in sight.

效果定律由心理学家Edward Thorndike在1898年提出，即查尔斯·达尔文发表其有关生物进化的开天辟地的作品《物种起源》40多年后。这一定律认为有机物倾向于重复成功的行为，并克制表现不成功的那些。正如达尔文的自然选择定律一样，效果定律涉及一套有关变化与选择的完全机械的过程，没有任何终极目标。

第10段

Of course, the origin of human innovation demands much further study. In particular, the provenance of the raw material on which the Law of Effect operates is not as clearly known as that of the genetic mutations on which the Law of Natural Selection operates. The generation of novel ideas and behaviors may not be entirely random, but constrained by prior successes and failures – of the current individual (such as Bohr) or of predecessors (such as Nicholson).

当然，人类创新的起源需要更进一步的研究。尤其是效果定律所作用的原材料的起源并不如自然选择所描述的基因突变那么清晰地为人所知。新颖观点与行为的产生可能并不是完全随机的，而是受到之前成功与失败的制约 – 它们要么是生活在当下的个人的（如Bohr），要么是其先行者们的（如Nicholson）。

第11段

The time seems right for abandoning the naive notions of intelligent design and genius, and for scientifically exploring the true origins of creative behavior.

如今正是抛弃智慧设计与天才的幼稚观念，转而科学地探索创造性行为真正起源的好时候。

## 17Test3

### [17Test3Passage1 The thylacine 袋狼](http://www.laokaoya.com/52375.html)

第1段

The extinct thylacine, also known as the Tasmanian tiger, was a marsupial that bore a superficial resemblance to a dog. Its most distinguishing feature was the 13–19 dark brown stripes over its back, beginning at the rear of the body and extending onto the tail. The thylacine’s average nose-to-tail length for adult males was 162.6 cm, compared to 153.7 cm for females.

业已灭绝的袋狼，也被称为塔斯马尼亚虎，是一种有袋目哺乳动物，外观看起来有些像狗。它最与众不同的特征是背上有13到19道深棕色条纹，从臀部一直延伸到尾巴。成年雄性袋狼从鼻子到尾巴的平均长度为162.6厘米，雌性袋狼则为153.7厘米。

第2段

The thylacine appeared to occupy most types of terrain except dense rainforest, with open eucalyptus forest thought to be its prime habitat. In terms of feeding, it was exclusively carnivorous, and its stomach was muscular with an ability to distend so that it could eat large amounts of food at one time, probably an adaptation to compensate for long periods when hunting was unsuccessful and food scarce. The thylacine was not a fast runner and probably caught its prey by exhausting it during a long pursuit. During long-distance chases, thylacines were likely to have relied more on scent than any other sense. They emerged to hunt during the evening, night and early morning and tended to retreat to the hills and forest for shelter during the day. Despite the common name ‘tiger’, the thylacine had a shy, nervous temperament. Although mainly nocturnal, it was sighted moving during the day and some individuals were even recorded basking in the sun.

袋狼似乎分布于除了茂密雨林之外的大部分地域。而开阔的桉树林被认为是其最主要的栖息地。至于饮食方面，它是纯粹的食肉动物。胃部肌肉发达，能够大幅膨胀，从而使它可以一次吃下大量的食物。这或许是为了适应捕猎失败或者食物稀缺时长时间的饥饿而进行的进化。袋狼跑的不快，可能通过长途追逐，耗尽猎物体力来捕猎。在远距离的追捕中，袋狼可能更加依赖气味而非其他感官。它们在傍晚、夜间和清晨时现身捕猎，在白天则会退回到山区和森林进行躲避。尽管被称为“虎”，袋狼性格腼腆，容易紧张。虽然其主要是种夜行动物，但也有人在白天见到过它，一些人甚至看到过它晒太阳的样子。

第3段

The thylacine had an extended breeding season from winter to spring, with indications that some breeding took place throughout the year. The thylacine, like all marsupials, was tiny and hairless when born. Newborns crawled into the pouch on the belly of their mother, and attached themselves to one of the four teats, remaining there for up to three months. When old enough to leave the pouch, the young stayed in a lair such as a deep rocky cave, well-hidden nest or hollow log, whilst the mother hunted.

袋狼的繁殖季节很长，从冬天一直到春天。还有证据表明一些繁殖行为终年可见。袋狼，像所有的有袋目哺乳动物一样，出生时体型细小，没有毛发。新生儿会爬进妈妈腹部的袋子里，牢牢叼住四个乳头之一，在那里最长待三个月。当幼崽长到足以离开育儿袋时，它们会在妈妈出去捕猎时待在巢穴里，如岩洞深处，隐藏的很好的窝，或者空心的原木。

第4段

Approximately 4,000 years ago, the thylacine was widespread throughout New Guinea and most of mainland Australia, as well as the island of Tasmania. The most recent, well-dated occurrence of a thylacine on the mainland is a carbon-dated fossil from Murray Cave in Western Australia, this article is from laokoaya website, which is around 3,100 years old. Its extinction coincided closely with the arrival of wild dogs called dingoes in Australia and a similar predator in New Guinea. Dingoes never reached Tasmania, and most scientists see this as the main reason for the thylacine’s survival there.

大约4000年前，袋狼广泛分布于新几内亚，澳洲大陆的大部分地区，以及塔斯马尼亚岛。大路上距今最近、时间最为明确的袋狼存在的证据，来自澳大利亚西部Murray洞穴中一块碳测定的化石。其历史大约有3100年左右。袋狼的灭绝与一种名为dingoes的野狗来到澳大利亚的时间和一种相似捕食者来到新几内亚的时间恰好吻合。Dingoes从未到过塔斯马尼亚。而大部分科学家认为这是袋狼得以在那里存活下来的主要原因。

第5段

The dramatic decline of the thylacine in Tasmania, which began in the 1830s and continued for a century, is generally attributed to the relentless efforts of sheep farmers and bounty hunters with shotguns. While this determined campaign undoubtedly played a large part, it is likely that various other factors also contributed to the decline and eventual extinction of the species. These include competition with wild dogs introduced by European settlers, loss of habitat along with the disappearance of prey species, and a distemper-like disease which may also have affected the thylacine.

塔斯马尼亚岛上袋狼数量的急剧下降开始于19世纪30年代，并且持续了一个世纪。这一现象普遍被归因于牧羊人和带有猎枪的赏金猎人孜孜不倦的捕杀。虽然这场坚决的运动毫无疑问扮演了主要角色，但其他因素也可能造成这一物种的数量下降，并最终灭绝。它们包括与欧洲殖民者所带来的野狗展开的竞争，栖息地的减少，以及随之而来的猎物的消失。此外，一种类似于犬瘟热的疾病也可能影响了袋狼。

第6段

There was only one successful attempt to breed a thylacine in captivity, at Melbourne Zoo in1899. This was despite the large numbers that went through some zoos, particularly London Zoo and Tasmania’s Hobart Zoo. The famous naturalist John Gould foresaw the thylacine’s demise when he published his Mammals of Australia between 1848 and 1863, writing, ‘The numbers of this singular animal will speedily diminish, extermination will have its full sway, and it will then, like the wolf of England and Scotland, be recorded as an animal of the past.’

圈养状态下，唯一一次成功的袋狼繁殖发生于1899年的墨尔本动物园。尽管袋狼曾大量存在于一些动物园，尤其是伦敦动物园和塔斯马尼亚的霍巴特动物园。著名的博物学家John Gould曾在其发表于1848年和1863年之间的《澳大利亚哺乳动物》中预见了袋狼的灭绝。他写到：“这种独特动物的数量会快速下降，灭绝终将到来。那时，它将像英格兰和苏格兰狼那样，作为一种过去的动物被记载下来”。

第7段

However, there seems to have been little public pressure to preserve the thylacine, nor was much concern expressed by scientists at the decline of this species in the decades that followed. A notable exception was T.T. Flynn, Professor of Biology at the University of Tasmania. In 1914, he was sufficiently concerned about the scarcity of the thylacine to suggest that some should be captured and placed on a small island. But it was not until 1929, with the species on the very edge of extinction, that Tasmania’s Animals and Birds Protection Board passed a motion protecting thylacines only for the month of December, which was thought to be their prime breeding season. The last known wild thylacine to be killed was shot by a farmer in the north-east of Tasmania in 1930, leaving just captive specimens. Official protection of the species by the Tasmanian government was introduced in July 1936, 59 days before the last known individual died in Hobart Zoo on 7th September, 1936.

然而，对于保护袋狼似乎没有什么公众舆论压力，在其数量下降的几十年里，也没有科学家表示太多的关心。塔斯马尼亚大学的生物学教授T.T Flynn是个引人注目的例外。1914年，他对袋狼的稀少文章来自老烤鸭雅思表示出足够的关心，建议应该将其中一些捕捉起来，并放在小岛上。但直到1929年，当这一物种已经处于灭绝的边缘时，塔斯马尼亚动物与鸟类保护委员会才通过一项提案，还只是在十二月这一个月里对袋狼进行保护。最后一头已知的野生袋狼于1930年在塔斯马尼亚东北部被一位农民射杀。从此世界上只剩下圈养的几只。1936年7月，塔斯马尼亚政府正式宣布要保护该物种。59天后，即1936年9月7日，最后一只已知的袋狼在霍巴特动物园死去。

第8段

There have been numerous expeditions and searches for the thylacine over the years, none of which has produced definitive evidence that thylacines still exist. The species was declared extinct by the Tasmanian government in 1986.

过去数年里曾有许多次探索搜寻袋狼的行为。但没有一次得到过袋狼仍然存在的明确证据。1986年，塔斯马尼亚政府宣布该物种灭绝。

### [17Test3Passage2 palm oil 棕榈油](http://www.laokaoya.com/52441.html)

A部分

Palm oil is an edible oil derived from the fruit of the African oil palm tree, and is currently the most consumed vegetable oil in the world. It’s almost certainly in the soap we wash with in the morning, the sandwich we have for lunch, and the biscuits we snack on during the day. Why is palm oil so attractive for manufacturers? Primarily because its unique properties – such as remaining solid at room temperature – make it an ideal ingredient for long-term preservation, allowing many packaged foods on supermarket shelves to have ‘best before’ dates of months, even years, into the future.

棕榈油是从非洲油棕榈树果实中提炼出的一种可食用油，也是目前世界上消耗量最大的植物油。它几乎必然存在于我们早上清洗所使用的肥皂中，午餐所吃的三明治里，以及一天之中当做零食吃的饼干里。为什么棕榈油对生产商具有如此大的吸引力？主要原因在于它独特的属性 – 比如室温条件下为固态 – 十分利于长期保存，让那些超市货架上包装好的食物可以拥有数月、甚至数年的保质期。

B部分

Many farmers have seized the opportunity to maximise the planting of oil palm trees. Between 1990 and 2012, the global land area devoted to growing oil palm trees grew from 6 to 17 million hectares, now accounting for around ten percent of total cropland in the entire world. From a mere two million tonnes of palm oil being produced annually globally 50 years ago, there are now around 60 million tonnes produced every single year, a figure looking likely to double or even triple by the middle of the century.

许多农民都抓住这个机会尽可能多的种植油棕榈树。在1990年和2012年间，全球用于种植油棕榈树的土地面积从600万公顷增长到1700万公顷，如今大约占到全球耕地面积的百分之十。50年前，全球棕榈油的年产量还只有200万吨，如今每年的产量已经达到6000万吨左右。这一数字到本世纪中叶时还可能有两倍甚至三倍的增长。

C部分

However, there are multiple reasons why conservationists cite the rapid spread of oil palm plantations as a major concern. There are countless news stories of deforestation, habitat destruction and dwindling species populations, all as a direct result of land clearing to establish oil palm tree monoculture on an industrial scale, particularly in Malaysia and Indonesia. Endangered species – most famously the Sumatran orangutan, but also rhinos, elephants, tigers, and numerous other fauna – have suffered from the unstoppable spread of oil palm plantations.

然而，多重原因使得环保主义者对油棕榈树种植园的快速扩张感到担心。有关森林砍伐，栖息地破坏，以及物种数量下降的新闻报道层出不穷。这些都是清理土地用于工业规模种植油棕榈树这一单一植物的直接后果。这点在马来西亚和印度尼西亚尤为明显。濒危物种 – 其中最知名的就是苏门答腊猩猩，但也包括河马、大象、狮子和众多其他动物 – 饱受油棕榈树种植园不停扩张的痛苦。

D部分

‘Palm oil is surely one of the greatest threats to global biodiversity,’ declares Dr Farnon Ellwood of the University of the West of England, Bristol. ‘Palm oil is replacing rainforest, and rainforest is where all the species are. That’s a problem.’ This has led to some radical questions among environmentalists, such as whether consumers should try to boycott palm oil entirely.

布里斯托西英格兰大学的Farnon Ellwood博士认为：“棕榈油当然是全球生物多样性最大的威胁之一。棕榈油正在取代热带雨林，而雨林是所有物种的栖身之处。这正是问题所在”。这在环保主义者之间引发激烈的争论，例如消费者是否应该彻底抵制棕榈油。

Meanwhile Bhavani Shankar, Professor at London’s School of Oriental and African Studies, argues, ‘It’s easy to say that palm oil is the enemy and we should be against it. It makes for a more dramatic story, and it’s very intuitive. But given the complexity of the argument, I think a much more nuanced story is closer to the truth.’

与此同时，伦敦东方与非洲研究学院的Bhavani Shankar认为：“嘴上说说棕榈油是敌人，我们应该抵制它十分容易。这样故事更有戏剧性，而且非常直观。但考虑到这场争论的复杂性，我认为一个更加细致入微的故事才更接近真相”。

E部分

One response to the boycott movement has been the argument for the vital role palm oil plays in lifting many millions of people in the developing world out of poverty. Is it desirable to have palm oil boycotted, replaced, eliminated from the global supply chain, given how many this article is from laokaoya website low-income people in developing countries depend on it for their livelihoods? How best to strike a utilitarian balance between these competing factors has become a serious bone of contention.

对抵制运动的一种回应为，棕榈油在帮助发展中国家数百万人口脱离贫困方面发挥着至关重要的作用。考虑到发展中国家如此多的低收入人群以此为生，对棕榈油进行抵制、替换、甚至从全球供应链中将其剔除出去是否可取呢？如何在众多互相冲突的因素中达成最佳平衡已经成为争论焦点。

F部分

Even the deforestation argument isn’t as straightforward as it seems. Oil palm plantations produce at least four and potentially up to ten times more oil per hectare than soybean, rapeseed, sunflower or other competing oils. That immensely high yield – which is predominantly what makes it so profitable – is potentially also an ecological benefit. If ten times more palm oil can be produced from a patch of land than any competing oil, then ten times more land would need to be cleared in order to produce the same volume of oil from that competitor.

即便是砍伐森林这种观点也不像它看起来那么简单。相比于大豆、油菜籽、向日葵或者其他油料作物，每公顷油棕榈种植园的产油量是它们的至少四倍，甚至可能是十倍。这种极高的产量 – 这也正是其利润如此丰厚的主要原因 – 可能有益于生态系统。如果一块土地上产出的棕榈油数量比其他油料作物多10倍，那么利用其他油料作物生产相同数量的食用油就意味着需要清理10倍的土地。

As for the question of carbon emissions, the issue really depends on what oil palm trees are replacing. Crops vary in the degree to which they sequester carbon – in other words, the amount of carbon they capture from the atmosphere and store within the plant. The more carbon a plant sequesters, the more it reduces the effect of climate change. As Shankar explains: ‘[Palm oil production] actually sequesters more carbon in some ways than other alternatives. […] Of course, if you’re cutting down virgin forest it’s terrible – that’s what’s happening in Indonesia and Malaysia, it’s been allowed to get out of hand. But if it’s replacing rice, for example, it might actually sequester more carbon.’

至于碳排放的问题，这实际上取决于油棕榈树所取代的究竟是什么。农作物在碳隔离方面的程度各有不同 – 换句话说，即它们从大气中所捕捉并贮藏在植株内的碳的数量。一种植物文章来自老烤鸭雅思所隔离的碳越多，它对减少气候变化影响的贡献也就越大。正如Shankar所阐述的那样：“从某种方式上来讲，棕榈油的生产实际上比其他替代方案隔离更多的碳。当然，如果你砍伐的是原始森林，那肯定糟透了 – 这也是印度尼西亚和马拉西亚正在发生的事情，事态被允许脱离控制。但如果它取代的是，比如说，水稻，那么它实际上隔离了更多的碳”。

G部分

The industry is now regulated by a group called the Roundtable on Sustainable Palm Oil (RSPO), consisting of palm growers, retailers, product manufacturers, and other interested parties. Over the past decade or so, an agreement has gradually been reached regarding standards that producers of palm oil have to meet in order for their product to be regarded as officially ‘sustainable’. The RSPO insists upon no virgin forest clearing, transparency and regular assessment of carbon stocks, among other criteria. Only once these requirements are fully satisfied is the oil allowed to be sold as certified sustainable palm oil (CSPO). Recent figures show that the RSPO now certifies around 12 million tonnes of palm oil annually, equivalent to roughly 21 percent of the world’s total palm oil production.

该行业目前受到一个叫做“可持续棕榈油圆桌会议”的组织的管控。它包括棕榈树种植者，零售商，生产商，以及其他利益团体。在过去十年左右的时间里，人们逐渐在棕榈油生产商应该满足什么标准才能使其产品被官方认证为“可持续”上达成一致。RSPO坚持的原则包括：不准砍伐原始森林，生产透明，以及定期评估碳储量。一旦这些要求得以满足，油品就可以作为官方认证的可持续棕榈油销售。最近的数据表示，RSPO如今每年认证1200万吨左右的棕榈油，大约相当于全世界棕榈油总产量的21%。

H部分

There is even hope that oil palm plantations might not need to be such sterile monocultures, or ‘green deserts’, as Ellwood describes them. New research at Ellwood’s lab hints at one plant which might make all the difference. The bird’s nest fern (Asplenium nidus) grows on trees in an epiphytic fashion (meaning it’s dependent on the tree only for support, not for nutrients), and is native to many tropical regions, where as a keystone species it performs a vital ecological role. Ellwood believes that reintroducing the bird’s nest fern into oil palm plantations could potentially allow these areas to recover their biodiversity, providing a home for all manner of species, from fungi and bacteria, to invertebrates such as insects, amphibians, reptiles and even mammals.

甚至有这样子的期望，油棕榈树种植园可能并不需要如此单一栽培，或者成为如Ellwood所说的“绿色荒漠”。Ellwood实验室一项新的研究表明，有一种植物可能带来翻天覆地的变化。鸟巢蕨以一种附生的方式生长在树上（它仅仅依赖树的支撑，而不需要养分），是许多热带地区土生土长的品种。它作为关键物种，在生态系统中扮演着至关重要的角色。Ellwood相信，将鸟巢蕨重新引入油棕榈树种植园中可能会让这些区域恢复其生物多样性，为各种各样的物种提供栖息地，从真菌和细菌，到诸如昆虫这样的无脊椎动物，两栖动物，爬行动物，甚至哺乳动物等。

### [17Test3Passage3 Building the skyline: The birth and growth of Manhattan’s skyscrapers](http://www.laokaoya.com/52546.html)

第1段

In Building the Skyline, Jason Barr takes the reader through a detailed history of New York City. The book combines geology, history, economics, and a lot of data to explain why business clusters developed where they did and how the early decisions of workers and firms shaped the skyline we see today. Building the Skyline is organized into two distinct parts. The first is primarily historical and addresses New York’s settlement and growth from 1609 to 1900; the second deals primarily with the 20th century and is a compilation of chapters commenting on different aspects of New York’s urban development. The tone and organization of the book changes somewhat between the first and second parts, as the latter chapters incorporate aspects of Barr’s related research papers.

在《建造天际线》一书中，Jason Barr带领读者详细回顾了纽约城的历史。该书结合地质学、历史、经济学和大量的数据，解释为什么企业选择聚集在这里，以及工人和公司的早期决定如何塑造我们今天所看到的天际线。《建造天际线》分为两个截然不同的部分。第一部分主要关注历史，描绘纽约的定居点和其1609年到1900年之间的发展。第二部分将重点放在20世纪，几个章节点评了纽约城市发展的不同方面。全书格调与结构在第一部分和第二部分之间有些变化。后者囊括了Barr本人相关论文中的一些内容。

第2段

Barr begins chapter one by taking the reader on a ‘helicopter time-machine’ ride – giving a fascinating account of how the New York landscape in 1609 might have looked from the sky. He then moves on to a subterranean walking tour of the city, indicating the location of rock and water below the subsoil, before taking the reader back to the surface. His love of the city comes through as he describes various fun facts about the location of the New York residence of early 19th-century vice-president Aaron Burr as well as a number of legends about the city.

第一章中，Barr带领读者踏上一场“直升机时间机器”之旅，引人入胜地描绘了1609年从空中看到的纽约风景。他接下来又转向一场城市地下漫步，标示土壤之下的岩石和水源位置，然后才带读者返回地面。当他描述19世纪美国副总统Aaron Burr纽约住址的各种有趣事实，以及有关这座城市的一系列传奇时。他对这座城市的爱跃然纸上。

第3段

Chapters two and three take the reader up to the Civil War (1861–1865), with chapter two focusing on the early development of land and the implementation of a grid system in 1811. Chapter three focuses on land use before the Civil War. Both chapters are informative and well researched and set the stage for the economic analysis that comes later in the book. I would have liked Barr to expand upon his claim that existing tenements prevented skyscrapers in certain neighborhoods because ‘likely no skyscraper developer was interested in performing the necessary “slum clearance”’. Later in the book, Barr makes the claim that the depth of bedrock was not a limiting factor for developers, as foundation costs were a small fraction of the cost of development. At first glance, it is not obvious why slum clearance would be limiting, while more expensive foundations would not.

第二章和第三章带领读者来到内战期间（1861年到1865年）。其中第二章关注早期的土地发展以及1811年电网系统的实施。第三章重点描述内战之前的土地使用。两个章节信息充沛，研究详实，为本书后面的经济分析铺垫好背景。我其实希望Barr能扩展一下他下面的这个观点：当时存在的廉价公寓阻碍了摩天大楼在特定区域的发展，因为似乎没有摩天大楼开发商对清理平民窟感兴趣。后文中，Barr认为，地基的深度对于开发商来说并不是限制因素，因为地基花费在整个开发费用中只占很小一部分。乍一看，似乎不是很清楚，为什么清理平民窟会限制摩天大楼，而更为昂贵的地基则不会。

第4段

Chapter four focuses on immigration and the location of neighborhoods and tenements in the late 19th century. Barr identifies four primary immigrant enclaves and analyzes their locations in terms of the amenities available in the area. Most of these enclaves were located on the least valuable land, between the industries located on the waterfront and the wealthy neighborhoods bordering Central Park.

第四章关注19世纪末的移民，以及居民区和廉价公寓的位置。Barr确认了四块主要的移民聚集区，并从该区域内福利设施的角度分析它们的位置。大多数聚集区位于价值最低的土地上，介于河岸工业区和毗邻中央公园的富人区之间。

第5段

Part two of the book begins with a discussion of the economics of skyscraper height. In chapter five, Barr distinguishes between engineering height, economic height, and developer height — where engineering height is the tallest building that can be safely made at a given time, economic height is the height that is most efficient from society’s point of view, and developer height is the actual height chosen by the developer, who is attempting to maximize return on investment.

该书的第二部分以对摩天大楼高度的经济学讨论开始。在第五章中，Barr区分了工程学高度，经济学高度和开发商高度。其中，工程学高度是在特定时期能够安全实现的最高建筑；经济学高度是从社会角度效益最大的高度；开发商高度则是开发商为了实现投资收益最大化而选择的实际高度。

第6段

Chapter five also has an interesting discussion of the technological advances that led to the construction of skyscrapers. For example, the introduction of iron and steel skeletal frames made thick, load-bearing walls unnecessary, expanding the usable square footage of buildings and increasing the use of windows and availability of natural light. Chapter six this article is from laokaoya website then presents data on building height throughout the 20th century and uses regression analysis to ‘predict’ building construction. While less technical than the research paper on which the chapter is based, it is probably more technical than would be preferred by a general audience.

第五章对促成摩天大楼建设的技术进步进行了有趣的讨论。例如，铁和钢制骨架的引入淘汰了厚厚的承重墙，扩大了建筑的可使用面积，并提升了窗户和自然光的使用。随后，第六章给出整个20世纪建筑高度的相关数据，并利用回归分析预测楼宇建筑。虽然相比于其作为基础的研究论文，本章的技术性稍低，但它可能比普通大众所偏爱的内容更加艰深一些。

第7段

Chapter seven tackles the ‘bedrock myth’, the assumption that the absence of bedrock close to the surface between Downtown and Midtown New York is the reason for skyscrapers not being built between the two urban centers. Rather, Barr argues that while deeper bedrock does increase foundation costs, these costs were neither prohibitively high nor were they large compared to the overall cost of building a skyscraper. What I enjoyed the most about this chapter was Barr’s discussion of how foundations are actually built. He describes the use of caissons, which enable workers to dig down for considerable distances, often below the water table, until they reach bedrock. Barr’s thorough technological history discusses not only how caissons work, but also the dangers involved. While this chapter references empirical research papers, it is a relatively easy read.

第七章解决“基岩谜题”，即有假说认为，纽约下城和中城之间靠近地表的地方缺少基岩，因此两个商业中心之间并没有建设摩天大楼。但Barr却认为并非如此，尽管更深的基岩位置确实增加了地基成本，但这些成本并没有高到离谱的地步，而且相比于建造一座摩天大楼的整体花费文章来自老烤鸭雅思而言也不大。这一章最让我喜欢的是Barr关于地基实际建造过程的讨论。他描述了沉箱的使用，这使得工人可以向下挖掘相当深的距离，经常达到地下水位线以下，直至触及基岩。Barr详尽的技术史描述不仅讨论了沉箱的工作原理，而且还提到其中涉及的危险。尽管这个章节引用了实证性的研究论文，但读起来相对还算容易。

第8段

Chapters eight and nine focus on the birth of Midtown and the building boom of the 1920s. Chapter eight contains lengthy discussions of urban economic theory that may serve as a distraction to readers primarily interested in New York. However, they would be well-suited for undergraduates learning about the economics of cities. In the next chapter, Barr considers two of the primary explanations for the building boom of the 1920s — the first being exuberance, and the second being financing. He uses data to assess the viability of these two explanations and finds that supply and demand factors explain much of the development of the 1920s; though it enabled the boom, cheap credit was not, he argues, the primary cause.

第八章和第九章关注中城区的诞生和20世纪20年代的建筑爆发。第八章包括对城市经济理论的大幅讨论。这可能会干扰到只对纽约感兴趣的读者。然而，它们很适合学习城市经济学的本科生。下一章中，Barr探讨了促成20世纪20年代建筑爆发的两个主流解释：其一是繁荣的环境，其二是金融的支持。他利用数据评估这两种解释的有效性，发现供给与需求很大程度上促进了20世纪20年代的发展。他认为，虽然低息贷款确实使得繁荣成为可能，但它并非主要原因。

第9段

In the final chapter (chapter 10), Barr discusses another of his empirical papers that estimates Manhattan land values from the mid-19th century to the present day. The data work that went into these estimations is particularly impressive. Toward the end of the chapter, Barr assesses ‘whether skyscrapers are a cause or an effect of high land values’. He finds that changes in land values predict future building height, but the reverse is not true. The book ends with an epilogue, in which Barr discusses the impact of climate change on the city and makes policy suggestions for New York going forward.

在最后一章中（第十章），Barr讨论了他的另一篇评估20世纪中叶一直到现在曼哈顿土地价值的实证论文。这些评估的数据工作让人印象深刻。在本章末尾，Barr探讨“摩天大楼究竟是高昂土地价值的原因还是结果”。他发现土地价值的变化能够预测未来建筑的高度，但反过来却不成立。全书以一篇后记收尾。Barr在其中讨论了气候变化对城市的影响，并对纽约的未来做出一些政策建议。

## 17Test4

### [17Test4Passage1 Bats to the rescue 马达加斯加蝙蝠](http://www.laokaoya.com/52627.html)

第1段

There are few places in the world where relations between agriculture and conservation are more strained. Madagascar’s forests are being converted to agricultural land at a rate of one percent every year. Much of this destruction is fuelled by the cultivation of the country’s main staple crop: rice. And a key reason for this destruction is that insect pests are destroying vast quantities of what is grown by local subsistence farmers, leading them to clear forest to create new paddy fields. The result is devastating habitat and biodiversity loss on the island, but not all species are suffering. In fact, some of the island’s insectivorous bats are currently thriving and this has important implications for farmers and conservationists alike.

世界上很少有其他地方，农业与自然保护之间的关系是如此紧张。马达加斯加的森林正在以每年百分之一的速率转化为农业用地。推动这一破坏的主要原因是该国家所种植的主要粮食作物：大米。而造成这一破坏的一个关键因素则是各种害虫正在摧毁大量当地农民为了维持生计而种植的粮食。这迫使他们不得不清除森林以开辟新的耕地。结果就是岛上栖息地的破坏和生物多样性的损失。但并非所有的物种都饱受其害。事实上，岛上一些以昆虫为食的蝙蝠就过的很好。这对于农民和环保主义者来说都有重大意义。

第2段

Enter University of Cambridge zoologist Ricardo Rocha. He’s passionate about conservation, and bats. More specifically, he’s interested in how bats are responding to human activity and deforestation in particular. Rocha’s new study shows that several species of bats are giving Madagascar’s rice farmers a vital pest control service by feasting on plagues of insects. And this, he believes, can ease the financial pressure on farmers to turn forest into fields.

以剑桥大学动物学家Ricardo Rocha为例。他对环境保护和蝙蝠都充满热情。更确切的说，他对蝙蝠如何回应人类活动和森林砍伐尤其感兴趣。Rocha最近的研究表明，某些种类的蝙蝠通过捕食成灾的昆虫，为马达加斯加的稻农提供至关重要的害虫控制服务。他认为，这可以减轻农民将森林变为田地的经济压力。

第3段

Bats comprise roughly one-fifth of all mammal species in Madagascar and thirty-six recorded bat species are native to the island, making it one of the most important regions for conservation of this animal group anywhere in the world.

蝙蝠大约占马达加斯加所有哺乳动物的五分之一。36种有记录的蝙蝠都是该岛的原生物种。这使得它成为世界上保护这一动物群体最重要的区域之一。

第4段

Co-leading an international team of scientists, Rocha found that several species of indigenous bats are taking advantage of habitat modification to hunt insects swarming above the country’s rice fields. They include the Malagasy mouse-eared bat, Major’s long-fingered bat, the Malagasy white-bellied free-tailed bat and Peters’ wrinkle-lipped bat.

作为国际科学家团队的共同领队，Rocha发现，几种本土的蝙蝠正利用栖息地的变化，捕食该国稻田里泛滥的昆虫。它们包括马达加斯加鼠耳蝠、马加长趾蝠、马达加斯加白腹犬吻蝠和彼氏皱唇蝠。

第5段

‘These winner species are providing a valuable free service to Madagascar as biological pest suppressors,’ says Rocha. ‘We found that six species of bat are preying on rice pests, including the paddy swarming caterpillar and grass webworm. The damage which these insects cause puts the island’s farmers under huge financial pressure and that encourages deforestation.’

“这些赢家物种作为生物害虫抑制者为马达加斯加提供宝贵的免费服务，”Rocha说。“我们发现六种蝙蝠以水稻害虫为食。其中包括灰翅夜蛾和水稻切叶野螟。这些害虫所造成的破坏给岛上的农民带来沉重的经济压力，而这又鼓励砍伐森林的行为”。

第6段

The study, now published in the journal Agriculture, Ecosystems and Environment, set out to investigate the feeding activity of insectivorous bats in the farmland bordering the Ranomafana National Park in the southeast of the country.

这一研究，如今发表在期刊《农业，生态系统与环境》上，着手调查食虫蝙蝠在该国东南部拉努马法纳国家公园边界处农田里的捕食行为。

第7段

Rocha and his team used state-of-the-art ultrasonic recorders to record over a thousand bat ‘feeding buzzes’ (echolocation sequences used by bats to target their prey) at 54 sites, in order to identify the favourite feeding spots of the bats. They next used DNA barcoding techniques to analyse droppings collected from bats at the different sites.

Rocha和他的团队利用最先进的超声录音设备记录了来自54个地点，超过1000段蝙蝠的“进食嗡鸣”（即蝙蝠用来定位猎物的回声定位序列），以界定这些蝙蝠文章来自老烤鸭雅思最喜欢的捕食地点。他们随后使用DNA条码技术分析在不同地点所收集的蝙蝠粪便。

第8段

The recordings revealed that bat activity over rice fields was much higher than it was in continuous forest – seven times higher over rice fields which were on flat ground, and sixteen times higher over fields on the sides of hills – leaving no doubt that the animals are preferentially foraging in these man-made ecosystems. The researchers suggest that the bats favour these fields because lack of water and nutrient run-off make these crops this article is from laokaoya website more susceptible to insect pest infestations. DNA analysis showed that all six species of bat had fed on economically important insect pests. While the findings indicated that rice farming benefits most from the bats, the scientists also found indications that the bats were consuming pests of other crops, including the black twig borer (which infests coffee plants), the sugarcane cicada, the macadamia nut-borer, and the sober tabby (a pest of citrus fruits).

记录显示，蝙蝠在稻田上的活动要远高于连绵的森林 – 稻田上的活动比平地上高7倍，比山坡上的区域高16倍。毫无疑问，这些动物更喜欢在这些人造生态系统中寻找食物。研究者认为，蝙蝠喜欢这些地方是因为缺水和营养流失使得这些农作物更容易受到害虫的侵扰。DNA分析显示，所有六种蝙蝠都以对经济有重大影响的害虫为食。尽管研究表明稻田从蝙蝠身上受益最多，但科学家也发现一些迹象，证明蝙蝠同样会捕食其他庄稼的害虫，其中包括黑色枝小蠹（侵害咖啡作物）、甘蔗蝉、坚果异胫小卷蛾，以及平纹林翅蛾（一种侵害柑橘类水果的害虫）。

第9段

‘The effectiveness of bats as pest controllers has already been proven in the USA and Catalonia,’ said co-author James Kemp, from the University of Lisbon. ‘But our study is the first to show this happening in Madagascar, where the stakes for both farmers and conservationists are so high.’

“蝙蝠作为害虫控制者的有效性已经在美国和加泰罗尼亚得以证实”，来自里斯本大学的共同作者James Kemp说到。“但我们的研究第一次表明马达加斯加也有相同的情况。这里农民和环保主义者所承担的风险都是如此之大”。

第10段

Local people may have a further reason to be grateful to their bats. While the animal is often associated with spreading disease, Rocha and his team found evidence that Malagasy bats feed not just on crop pests but also on mosquitoes – carriers of malaria, Rift Valley fever virus and elephantiasis – as well as blackflies, which spread river blindness.

当地人有更深一层的理由来感谢蝙蝠。虽然该动物经常与传播疾病联系在一起，Rocha和他的团队发现，有证据表明，马达加斯加的蝙蝠不仅吃庄稼害虫，而且也吃蚊子（它们是疟疾、裂谷热病毒和象皮病的携带者 ）和传播河盲症的黑蝇。

第11段

Rocha points out that the relationship is complicated. When food is scarce, bats become a crucial source of protein for local people. Even the children will hunt them. And as well as roosting in trees, the bats sometimes roost in buildings, but are not welcomed there because they make them unclean. At the same time, however, they are associated with sacred caves and the ancestors, so they can be viewed as beings between worlds, which makes them very significant in the culture of the people. And one potential problem is that while these bats are benefiting from farming, at the same time deforestation is reducing the places where they can roost, which could have long-term effects on their numbers. Rocha says, ‘With the right help, we hope that farmers can promote this mutually beneficial relationship by installing bat houses.’

Rocha指出，其关系很复杂。当食物匮乏的时候，蝙蝠会成为当地人重要的蛋白质来源。即便是孩子也会捕捉它们。而且除了栖息在树上之外，蝙蝠有时候也会栖息在建筑里。但它们在此并不受欢迎，因为它们会弄脏这些地方。然而，与此同时，它们与神圣的洞穴和祖先联系在一起，它们也因此被当成可以穿越不同世界的生物。这使得它们在当地民众的文化中十分重要。另外，一个潜在的问题是，虽然这些蝙蝠正从农耕中受益，但同时发生的森林砍伐却在减少它们可以栖身的地点。这对其数量有着长期的影响。Rocha说：“在正确的帮助下，我们希望农民可以通过建造蝙蝠屋来促进这种互利关系”。

第12段

Rocha and his colleagues believe that maximising bat populations can help to boost crop yields and promote sustainable livelihoods. The team is now calling for further research to quantify this contribution. ‘I’m very optimistic,’ says Rocha. ‘If we give nature a hand, we can speed up the process of regeneration.’

Rocha和其同事认为，蝙蝠数量的最大化能够帮助提升农作物产量，推动可持续的谋生之道。其团队如今需要更进一步的研究来量化这一贡献。“我十分乐观”，Rocha说。“如果我们给予自然帮助，我们就能加速恢复的过程”。

### [17Test4Passage2 Does education fuel economic growth 教育会促进经济发展吗](http://www.laokaoya.com/52731.html)

A部分

Over the last decade, a huge database about the lives of southwest German villagers between 1600 and 1900 has been compiled by a team led by Professor Sheilagh Ogilvie at Cambridge University’s Faculty of Economics. It includes court records, guild ledgers, parish registers, village censuses, tax lists and – the most recent addition – 9,000 handwritten inventories listing over a million personal possessions belonging to ordinary women and men across three centuries. Ogilvie, who discovered the inventories in the archives of two German communities 30 years ago, believes they may hold the answer to a conundrum that has long puzzled economists: the lack of evidence for a causal link between education and a country’s economic growth.

过去十年里，剑桥大学经济学院Sheilagh Ogilvie领导的团队整理出1600年到1900年之间有关德国西南部村民生活状况的巨大数据库。它包括法庭记录，行业账目，教区注册者，村镇人口，税单，以及最近添加的9000份过去三个世纪里普通男性和女性所拥有的超过100万件物品的手写财产清单。30年前，Ogilvie在两个德国社区的档案里发现了这一财产目录，认为它们可能能够回答长期困扰经济学家的谜题：缺乏证据证明教育与一个国家的经济增长之间存在因果关系。

B部分

As Ogilvie explains, ‘Education helps us to work more productively, invent better technology, and earn more … surely it must be critical for economic growth? But, if you look back through history, there’s no evidence that having a high literacy rate made a country industrialise earlier.’ Between 1600 and 1900, England had only mediocre literacy rates by European standards, yet its economy this article is from laokaoya website grew fast and it was the first country to industrialise. During this period, Germany and Scandinavia had excellent literacy rates, but their economies grew slowly and they industrialised late. ‘Modern cross-country analyses have also struggled to find evidence that education causes economic growth, even though there is plenty of evidence that growth increases education,’ she adds.

Ogilvie解释说：“教育帮助我们更有成效地工作，发明更好的技术，赚更多的钱。那么它必然对经济发展至关重要？但是，如果你回顾历史，并没有证据表明较高的识字率让一个国家更早地实现工业化”。1600年到1900年间，以欧洲的标准而言，英格兰的识字率仅仅是中等而已。然而，它的经济快速增长，也是第一个进行工业化的国家。在此期间，德国和斯堪的纳维亚的识字率很高，但它们的经济增长缓慢，工业化也开始的比较晚。“现代跨国研究也很难发现教育引发经济增长的证据，即便有充足的证据表明经济增长会提升教育”，她补充到。

C部分

In the handwritten inventories that Ogilvie is analysing are the belongings of women and men at marriage, remarriage and death. From badger skins to Bibles, sewing machines to scarlet bodices – the villagers’ entire worldly goods are included. Inventories of agricultural equipment and craft tools reveal economic activities; ownership of books and education-related objects like pens and slates suggests how people learned. In addition, the tax lists included in the database record the value of farms, workshops, assets and debts; signatures and people’s estimates of their age indicate literacy and numeracy levels; and court records reveal obstacles (such as the activities of the guilds) that stifled industry.

Ogilvie正在分析的手写财产清单中包含着已婚、再婚和死亡男性与女性的所属物品。从獾皮到圣经，从缝纫机到深红色的女性紧身胸衣，村民的一切物品都包含在内。农具和手工工具的目录揭示经济活动，书本和教育文章来自老烤鸭雅思相关物品，比如笔和写字板，表明人们如何学习，此外，数据库中所包括的税单记录着农场、工作室、财产和债务的价值；签名与人们对自己年龄的评估表明识字水平和计算能力。庭审记录揭示遏制工业的障碍（比如行业协会的活动）。

Previous studies usually had just one way of linking education with economic growth – the presence of schools and printing presses, perhaps, or school enrolment, or the ability to sign names. According to Ogilvie, the database provides multiple indicators for the same individuals, making it possible to analyse links between literacy, numeracy, wealth, and industriousness, for individual women and men over the long term.

之前的研究往往只有一种方式将教育与经济增长联系在一起，即学校与印刷报纸的存在，或许还有学校的入学率，或者书写名字的能力。Ogilvie认为，数据库为相同的个体提供多重指标，让分析男性和女性识字能力，计算水平，财富和勤奋之间的长期联系成为可能。

D部分

Ogilvie and her team have been building the vast database of material possessions on top of their full demographic reconstruction of the people who lived in these two German communities. ‘We can follow the same people – and their descendants – across 300 years of educational and economic change,’ she says. Individual lives have unfolded before their eyes. Stories like that of the 24-year-olds Ana Regina and Magdalena Riethmüllerin, who were chastised in 1707 for reading books in church instead of listening to the sermon. ‘This tells us they were continuing to develop their reading skills at least a decade after leaving school,’ explains Ogilvie. The database also reveals the case of Juliana Schweickherdt, a 50-year-old spinster living in the small Black Forest community of Wildberg, who was reprimanded in 1752 by the local weavers’ guild for ‘weaving cloth and combing wool, counter to the guild ordinance’. When Juliana continued taking jobs reserved for male guild members, she was summoned before the guild court and told to pay a fine equivalent to one third of a servant’s annual wage. It was a small act of defiance by today’s standards, but it reflects a time when laws in Germany and elsewhere regulated people’s access to labour markets. The dominance of guilds not only prevented people from using their skills, but also held back even the simplest industrial innovation.

Ogilvie和她的团队重建了居住在这两个德国社区的人们的人口统计数据，并在此之上建立起庞大的财产数据库。“我们可以追踪相同人群 – 和他们的子孙 – 在这300年间教育和经济方面所发生的变化”，她说。个人生活在她们眼前展开。比如，1707年，24岁的Ana Regina和Magdalena Riethmüllerin因在教堂中读书而非聆听布道被严惩。“这告诉我们，她们在离开学校十多年后仍然继续提升自己的能力”，Ogilvie解释到。该数据库也展示了Juliana Schweickherdt的故事，一名居住在Wildberg社区小黑森林的50岁未婚女性。她在1752年“因违反协会条例织布和梳理羊毛”被当地织工协会严格惩罚。当Juliana继续从事为男性协会成员保留的工作时，她被传唤到协会法庭前，并被要求支付相当于一名仆人一年工资的三分之一的罚款。按照今天的标准，这不过是小小的违抗行为而已。但它反映出，某个时间里，德国和其他地方的法律控制人们是否可以进入劳动市场。协会的主导地位不仅阻止人们使用他们的技能，而且也阻碍了最简单的工业创新。

E部分

The data-gathering phase of the project has been completed and now, according to Ogilvie, it is time ‘to ask the big questions’. One way to look at whether education causes economic growth is to ‘hold wealth constant’. This involves following the lives of different people with the same level of wealth over a period of time. If wealth is constant, it is possible to discover whether education was, for example, linked to the cultivation of new crops, or to the adoption of industrial innovations like sewing machines. The team will also ask what aspect of education helped people engage more with productive and innovative activities. Was it, for instance, literacy, numeracy, book ownership, years of schooling? Was there a threshold level – a tipping point – that needed to be reached to affect economic performance?

该项目的数据收集阶段已经完成。根据Ogilvie的说法，现在是提出大问题的时候了。一种研究教育是否引发经济增长的方式是“控制财富常量”。这涉及在一定的时间内，追踪拥有相同财富水平的不同人群的生活。如果财富恒定，就有可能发现教育是否与新作物的培育或者工业创新（比如缝纫机）的采用相关。该团队也会研究教育的哪个方面帮助人们更多地从事生产与创新活动。例如，究竟是识字能力，计算水平，图书拥有量，还是多年的教育？是否需要达到特定的门槛 – 转折点 – 才能影响经济表现？

F部分

Ogilvie hopes to start finding answers to these questions over the next few years. One thing is already clear, she says: the relationship between education and economic growth is far from straightforward. ‘German-speaking central Europe is an excellent laboratory for testing theories of economic growth,’ she explains. Between 1600 and 1900, literacy rates and book ownership were high and yet the region remained poor. It was also the case that local guilds and merchant associations were extremely powerful and legislated against anything that undermined their monopolies. In villages throughout the region, guilds blocked labour migration and resisted changes that might reduce their influence.

Ogilvie希望在接下来几年的时间里能够开始寻找这些问题的答案。一件事情已经很明确，她说，教育与经济增长之间的关系远不简单。“说德语的中欧是测试经济增长理论的绝佳实验室”，她解释到。1600年到1900年之间，该区域的识字率和图书拥有量很高，但却仍然贫困。同时，当地协会和商人组织的力量极为强大，会通过立法对抗任何破坏它们统治地位的行为。在该区域所有的村庄中，协会阻止工人迁徙，拒绝可能削弱它们影响力的改变。

‘Early findings suggest that the potential benefits of education for the economy can be held back by other barriers, and this has implications for today,’ says Ogilvie. ‘Huge amounts are spent improving education in developing countries, but this spending can fail to deliver economic growth if restrictions block people – especially women and the poor – from using their education in economically productive ways. If economic institutions are poorly set up, for instance, education can’t lead to growth.’

“早期发现表明，教育对经济的潜在好处会受到其他障碍的影响。这点对今天仍有意义”，Ogilvie说。“发展中国家在提升教育上投入巨大，但如果存在限制阻碍人们 – 尤其是女性和穷人 – 以一种富有经济成效的方式利用他们的教育的话，这种投入可能无法促进经济增长。例如，如果经济机构设立的很差，那么教育就无法带来增长”。

### [17Test4Passage3 Timur Gareyev – blindfold chess champion 盲棋冠军](http://www.laokaoya.com/52774.html)

段落A

Next month, a chess player named Timur Gareyev will take on nearly 50 opponents at once. But that is not the hard part. While his challengers will play the games as normal, Gareyev himself will be blindfolded. Even by world record standards, it sets a high bar for human performance. The 28-year-old already stands out in the rarefied world of blindfold chess. He has a fondness for bright clothes and unusual hairstyles, and he gets his kicks from the adventure sport of BASE jumping. He has already proved himself a strong chess player, too. In a 10-hour chess marathon in 2013, Gareyev played 33 games in his head simultaneously. He won 29 and lost none. The skill has become his brand: he calls himself the Blindfold King.

下个月，一位名为Timur Gareyew的国际象棋选手将一次性对战近50名对手。但这还不是最困难的地方。他的挑战者们将跟往常一样下棋，而Gareyev自己则将蒙上眼睛。即便是以世界纪录的标准衡量，这也为人类的表现设下新的标杆。这位28岁的选手在盲棋这一高深的世界里已经十分优秀。他喜欢亮色的衣服和不同寻常的发型，从定点跳伞中获得极大的乐趣。他也已经证明自己是位实力非凡的国际象棋选手。在2013年长达10个小时的象棋马拉松比赛中，Gareyev在脑海中同时进行33场对局。他赢了29场，没有一场告负。这一能力成为他的标志：他称自己为盲棋之王。

段落B

But Gareyev’s prowess has drawn interest from beyond the chess-playing community. In the hope of understanding how he and others like him can perform such mental feats, researchers at the University of California in Los Angeles (UCLA) called him in for tests. They now have their first results. ‘The ability to play a game of chess with your eyes closed is not a far reach for most accomplished players,’ said Jesse Rissman, who runs a memory lab at UCLA. ‘But the thing that’s so remarkable about Timur and a few other individuals is the number of games they can keep active at once. To me it is simply astonishing.’

但Gareyev’s的高超技艺也引起象棋圈子之外的兴趣。为了了解他和其他类似的人如何达成这些智力伟业，加利福尼亚大学洛杉矶分校的研究者们找他进行了一些测试。他们现在有了初步的结果。“闭上眼睛下国际象棋的能力对于大多数高端选手来说并不是那么的遥不可及”，在UCLA管理着一间记忆实验室的Jesse Rissman说。“但Timur和其他人如此引人注目的地方在于同时进行的对局数量。对我而言，这太不可思议了”。

段落C

Gareyev learned to play chess in his native Uzbekistan when he was six years old. Tutored by his grandfather, he entered his first tournament aged eight and soon became obsessed with competitions. At 16, he was crowned Asia’s youngest ever chess grandmaster. He moved to the US soon after, and as a student helped his university win its first national chess championship. In 2013, Gareyev was ranked the third best chess player in the US.

Gareyev从六岁开始在其祖国乌兹别克斯坦学习下象棋。受他祖父的教导，他在8岁的时候第一次参加锦标赛，并很快痴迷上这种比赛。16岁的时候，他成为亚洲有史以来最年轻的国际象棋大师。在那之后不久，他搬到美国，作为学生帮助其大学第一次赢得全国象棋冠军。2013年，他被评为美国第三的国际象棋选手。

段落D

To the uninitiated, blindfold chess seems to call for superhuman skill. But displays of the feat go back centuries. The first recorded game in Europe was played in 13th-century Florence. In 1947, the Argentinian grandmaster Miguel Najdorf played 45 simultaneous games in his mind, winning 39 in the 24-hour session.

对于外行人来说，盲棋似乎需要超人的技能。但这种技艺的展示几个世纪之前就有了。欧洲第一次有记录的对局发生在13世纪的佛罗伦萨。1947年，阿根廷大师Miguel Najdorf同时在脑海中进行45场对局，在24小时的时间里赢下了其中39场。

段落E

Accomplished players can develop the skill of playing blind even without realising The nature of the game is to run through possible moves in the mind to see how they play out. From this, regular players develop a memory for the patterns the pieces make, the defences and attacks. ‘You recreate it in your mind,’ said Gareyev. ‘A lot of players are capable of doing what I’m doing.’ The real mental challenge comes from playing multiple games at once in the head. Not only must the positions of each piece on every board be memorised, they must be recalled faithfully when needed, updated with each player’s moves, and then reliably stored again, this article is from laokaoya website, so the brain can move on to the next board. First moves can be tough to remember because they are fairly uninteresting. But the ends of games are taxing too, as exhaustion sets in. When Gareyev is tired, his recall can get patchy. He sometimes makes moves based on only a fragmented memory of the pieces’ positions.

高超的选手可以提升盲棋的技能，即便他们没有意识到，这种对局的本质在于在脑海中推算所有可能的下法以观测它们如何被演绎出来。以此为基础，普通的选手记下棋子防守与进攻的模式。“你在大脑中重现它”，Gareyev说。“许多选手都能做到我在做的事情”。真正的智力挑战来自于在脑海中同时进行多场对局。他们不仅得记住每个棋盘上每个棋子的位置，而且还得在需要的时候能够如实地回忆起来，更新每个选手的操作，然后再可靠地储存起来。这样一来，大脑才能移到下一盘棋。第一步记起来会很难，因为它们十分无趣。但因为疲惫，终盘也会很吃力。当Gareyev累了的时候，他的回忆会变得差强人意。他有时会仅仅根据有关棋子位置支离破碎的记忆来下棋。

段落F

The scientists first had Gareyev perform some standard memory tests. These assessed his ability to hold numbers, pictures and words in mind. One classic test measures how many numbers a person can repeat, both forwards and backwards, soon after hearing them. Most people manage about seven. ‘He was not exceptional on any of these standard tests,’ said Rissman. ‘We didn’t find anything other than playing chess that he seems to be supremely gifted at.’ But next came the brain scans. With Gareyev lying down in the machine, Rissman looked at how well connected the various regions of the chess player’s brain were. Though the results are tentative and as yet unpublished, the scans found much greater than average communication between parts of Gareyev’s brain that make up what is called the frontoparietal control network. Of 63 people scanned alongside the chess player, only one or two scored more highly on the measure. ‘You use this network in almost any complex task. It helps you to allocate attention, keep rules in mind, and work out whether you should be responding or not,’ said Rissman.

科学家首先让Gareyev进行一些标准的记忆测试。它们会评估他记忆数字、图片和单词的能力。一个经典的测试是衡量一个人在听到数字之后短时间内能够正向和逆向复述出多少个。大多数人能够说出7个。“他在所有这些标准测试中的表现并不出彩”，Rissman说。“除了下象棋之外，我们并没有找到任何他似乎特别有天赋的领域”。但接下来是大脑扫描。Gareyev躺在机器里，Rissman观察该象棋选手文章来自老烤鸭雅思不同大脑区域之间的联系如何。尽管结果尚不明确，而且也没有发表，但扫描显示，Gareyev构成左额顶脑控制网络不同大脑部分之间的交流要远高于平均水平。在与该象棋选手一起扫描检测的63人中，只有一两个人在该方面的得分更高。“你会在几乎任何复杂任务中用到该网络。它帮助你分配注意力，记忆规则，决定你是否应该回应”，Rissman说。

段落G

It was not the only hint of something special in Gareyev’s brain. The scans also suggest that Gareyev’s visual network is more highly connected to other brain parts than usual. Initial results suggest that the areas of his brain that process visual images – such as chess boards – may have stronger links to other brain regions, and so be more powerful than normal. While the analyses are not finalised yet, they may hold the first clues to Gareyev’s extraordinary ability.

这并不是Gareyev大脑特殊之处的唯一提示。扫描还表明，与普通人相比，Gareyev的视觉网络与大脑其他部分的联系更加紧密。初步结果显示，其大脑处理视觉图像（如棋盘）的区域可能与其他区域有着更强的联系，也因此比普通人更加强大。尽管分析尚未完成，它们可能为Gareyev的杰出能力提供初步线索。

段落H

For the world record attempt, Gareyev hopes to play 47 blindfold games at once in about 16 hours. He will need to win 80% to claim the title. ‘I don’t worry too much about the winning percentage, that’s never been an issue for me,’ he said. ‘The most important part of blindfold chess for me is that I have found the one thing that I can fully dedicate myself to. I miss having an obsession.’

为了创建世界纪录，Gareyev希望在16小时左右的时间里同时进行47场盲棋对弈。他需要赢得其中的80%才能获得相应的称号。“我对获胜比例并不是很担心。这对我来说从来都不是问题”，他说。“我觉得盲棋最重要的地方在于我找到了一件自己可以全力以赴的事情。我十分怀念这种痴迷的感觉”。

# 十八

## 18Test1

### [18Test1Passage1 Urban farming 城市农业](http://www.laokaoya.com/56149.html)

引言

In Paris, urban farmers are trying a soil-free approach to agriculture that uses less space and fewer resources. Could it help cities face the threats to our food supplies?

在巴黎，城市农民正在尝试一种无土农业的方法，它所需要的空间更少，资源消耗更少。这种方法能否帮助城市应对我们食品供应的威胁呢？

第1段

On top of a striking new exhibition hall in southern Paris, the world’s largest urban rooftop farm has started to bear fruit. Strawberries that are small, intensely flavored and resplendently red sprout abundantly from large plastic tubes. Peer inside and you see the tubes are completely hollow, the roots of dozens of strawberry plants dangling down inside them. From identical vertical tubes nearby burst row upon row of lettuces; near those are aromatic herbs, such as basil, sage and peppermint. Opposite, in narrow, horizontal trays packed not with soil but with coconut fibre, grow cherry tomatoes, shiny aubergines and brightly coloured chards.

在巴黎南部一个引人注目的新展馆顶部，世界上最大的城市屋顶农场开始结出果实。小巧、香味浓郁且色彩鲜艳的草莓从大型塑料管中茁壮成长。往里面看，你会发现这些管子中间完全是空的，数十株草莓的根系悬挂在管子内部。附近相同的垂直管道中，一排又一排的莴苣茂密生长；在它们旁边则种植着如罗勒、鼠尾草和薄荷等香草。对面狭窄的水平盘子上填充着椰子纤维，而非土壤，里面生长着樱桃番茄、亮闪闪的茄子和色彩鲜艳的甜菜。

第2段

Pascal Hardy, an engineer and sustainable development consultant, began experimenting with vertical farming and aeroponic growing towers – as the soil-free plastic tubes are known – on his Paris apartment block roof five years ago. The urban rooftop space above the exhibition hall is somewhat bigger: 14,000 square metres and almost exactly the size of a couple of football pitches. Already, the team of young urban farmers who tend it have picked, in one day, 3,000 lettuces and 150 punnets of strawberries. When the remaining two thirds of the vast open area are in production, 20 staff will harvest up to 1,000 kg of perhaps 35 different varieties of fruit and vegetables, every day.”We’re not ever, obviously, going to feed the whole city this way,’ cautions Hardy.’In the urban environment, you’re working with very significant practical constraints, clearly, on what you can do and where. But if enough unused space can be developed like this, there’s no reason why you shouldn’t eventually target maybe between 5% and 10% of consumption.’

五年前，工程师和可持续发展顾问Pascal Hardy在他巴黎公寓的楼顶开始尝试垂直种植和气雾式生长塔（也称为无土塑料管）。展馆上方的城市屋顶空间则要大一些：面积达到14,000平方米，几乎相当于两个足球场的大小。目前，负责管理这片空间的年轻城市农民团队一天内就可以采摘3,000颗莴苣和150盒草莓。当这个巨大的开放区域剩下的三分之二开始生产时，20名员工每天将收获多达35个不同品种的水果和蔬菜，总重量可能高达1,000公斤。Hardy提醒道：“显然，我们不可能通过这种方式养活整个城市。在城市环境中，你肯定会遇到许多实际操作方面的限制，包括做什么和在哪里做。但如果能像该项目一样，开发足够多的未利用空间，那么没有理由不能最终达到消耗量的5%到10%。”

第3段

Perhaps most significantly, however, this is a real-life showcase for the work of Hardy’s flourishing urban agriculture consultancy, Agripolis, which is currently fielding enquiries from around the world to design, build and equip a new breed of soil-free inner-city farm.”The method’s advantages are many,’ he says.”First, I don’t much like the fact that most of the fruit and vegetables we eat have been treated with something like 17 different pesticides, or that the intensive farming techniques that produced them are such huge generators of greenhouse gases. I don’t much like the fact, either, that they’ve travelled an average of 2,000 refrigerated kilometres to my plate, that their quality is so poor, because the varieties are selected for their capacity to withstand such substantial journeys, or that 80% of the price I pay goes to wholesalers and transport companies, not the producers.’

然而，最重要的是，这是Hardy繁盛城市农业咨询公司Agripolis的实际展示。该公司目前正接受来自世界各地的咨询，设计、建设和装配一种新型的无土城市农场。“这种方法的优点很多，”他说道。“首先，我不太喜欢我们所吃的大多数水果和蔬菜都被喷洒过大约17种不同的农药，也不喜欢那些生产它们的密集农业技术所产生大量的温室气体。我还不太喜欢它们平均要经过2,000公里的冷藏运输才能到达我的餐盘。它们的品质很差，因为这些品种被选中是因为它们能够经受长途旅行。还有就是，我支付的80%的价格流向批发商和运输公司，而不是生产者。”

第4段

Produce grown using this soil-free method, on the other hand – which relies solely on a small quantity of water, enriched with organic nutrients, pumped around a closed circuit of pipes, towers and trays – is ‘produced up here, and sold locally, just down there. This article is from laokaoya website. It barely travels at all,’ Hardy says.”You can select crop varieties for their flavour, not their resistance to the transport and storage chain, and you can pick them when they’re really at their best, and not before.’No soil is exhausted, and the water that gently showers the plants’ roots every 12 minutes is recycled, so the method uses 90% less water than a classic intensive farm for the same yield.

另一方面，使用这种无土种植方法生产的农产品只需要少量富含有机营养物质的水。它们通过管道、塔和托盘的封闭循环进行泵送。Hardy说：“这些农产品在这里生长，然后在附近销售，几乎不需要任何运输。”他继续说：“你可以选择口感更好的农作物品种，而不是选择那些能够耐受运输和储存环节的品种，而且你可以在它们达到最佳状态时采摘，而不是提前采摘。”这种方法不会使土壤衰竭。每12分钟轻轻喷洒植物根部的水也会被循环利用。因此与传统密集农场相比，该方法的用水量减少了90%，但产量相同。

第5段

Urban farming is not, of course, a new phenomenon. Inner-city agriculture is booming from Shanghai to Detroit and Tokyo to Bangkok. Strawberries are being grown in disused shipping containers, mushrooms in underground car parks. Aeroponic farming, he says, is ‘virtuous’. The equipment weighs little, can be installed on almost any flat surface and is cheap to buy: roughly €10o to €15o per square metre. It is cheap to run, too, consuming a tiny fraction of the electricity used by some techniques.

城市农业当然并不是一个新现象。从上海到底特律，从东京到曼谷，城市内的农业生产正在蓬勃发展。草莓被种植在废弃的货运集装箱中，蘑菇文章来自老烤鸭雅思在地下停车场中生长。他说，气雾式农业是“有益的”。这种设备重量轻，几乎可以安装在任何平坦的表面上，而且价格便宜：大约每平方米100到150欧元。运行成本也很低，耗电量仅占某些技术所用电力微不足道的一小部分。

第6段

Produce grown this way typically sells at prices that, while generally higher than those of classic intensive agriculture, are lower than soil-based organic growers. There are limits to what farmers can grow this way, of course, and much of the produce is suited to the summer months.‘Root vegetables we cannot do, at least not yet,’ he says.’Radishes are OK, but carrots, potatoes, that kind of thing – the roots are simply too long. Fruit trees are obviously not an option. And beans tend to take up a lot of space for not much return.’ Nevertheless, urban farming of the kind being practised in Paris is one part of a bigger and fast-changing picture that is bringing food production closer to our lives.

通常来说，使用这种种植方式生产的农产品的售价，虽然高于传统密集农业，但低于基于土壤的有机农产品。当然，农民用这种方法种植作物会存在一些限制，而且很多农产品只适合夏季种植。“我们无法种植根类蔬菜，至少目前还不行，”他说。“萝卜还可以，但是胡萝卜、土豆之类的蔬菜根部太长了。果树显然不是一个可行之选。而豆类占用的空间相对较大，产量不高。”尽管如此，巴黎正在实施的这种城市农业是一个快速变化的、更大的图景中的一部分，它使得食品生产更加贴近我们的生活。

### [18Test1Passage2 Forest management in Pennsylvania, USA 美国宾夕法尼亚州的丛林管理](http://www.laokaoya.com/56207.html)

段落A

A tree’s ‘value’ depends on several factors including its species, size, form, condition, quality, function, and accessibility, and depends on the management goals for a given forest. The same tree can be valued very differently by each person who looks at it. A large, straight black cherry tree has high value as timber to be cut into logs or made into furniture, but for a landowner more interested in wildlife habitat, the real value of that stem (or trunk) may be the food it provides to animals. Likewise, if the tree suffers from black knot disease, its value for timber decreases, but to a woodworker interested in making bowls, it brings an opportunity for a unique and beautiful piece of art.

一棵树的“价值”取决于几个因素，包括树种、大小、形态、状态、品质、功能和可达性，它还取决于既定森林的管理目标。同一棵树对于观察它的人们来说，价值可能截然不同。一棵又大又直的黑樱桃树作为木材或用来制作家具会有很高的价值，但对于更关注野生动物栖息地的土地所有者来说，该树干的真正价值可能在于它为动物所提供的食物。同样，如果树木患有黑节病，它的木材价值就会降低，但对于一个喜欢制作碗的木工来说，它则提供了制作独特而美丽的艺术品的机会。

段落B

In the past, Pennsylvania landowners were solely interested in the value of their trees as high-quality timber. The norm was to remove the stems of highest quality and leave behind poorly formed trees that were not as well suited to the site where they grew. This practice, called ‘high-grading’, has left a legacy of ‘low-use wood’ in the forests. Some people even call these ‘junk trees’, and they are abundant in Pennsylvania. These trees have lower economic value for traditional timber markets, compete for growth with higher-value trees, shade out desirable regeneration and decrease the health of a stand leaving it more vulnerable to poor weather and disease. Management that specifically targets low-use wood can help landowners manage these forest health issues, and wood energy markets help promote this.

过去，宾夕法尼亚州的土地所有者只对他们的树木作为高品质木材的价值感兴趣。常规做法是移除最高质量的树干，而留下那些形态较差的、不太适合其生长地点的树木。这种被称为“高伐”的做法在森林中留下了大量的“低利用木材”。有些人甚至称这些树木为“垃圾树”。它们在宾夕法尼亚州很常见。这些树木在传统木材市场上具有较低的经济价值，与高价值树木竞争生长空间，遮挡人们想要的再生所需要的阳光，并降低树群的健康状况，使其更容易受到恶劣天气和疾病的侵害。专门针对低利用木材的管理可以帮助土地所有者处理这些森林的健康问题，而木材能源市场则有助于促进这一点。

段落C

Wood energy markets can accept less expensive wood material of lower quality than would be suitable for traditional timber markets. Most wood used for energy in Pennsylvania is used to produce heat or electricity through combustion. Many schools and hospitals use wood boiler systems to heat and power their facilities, many homes are primarily heated with wood, and some coal plants incorporate wood into their coal streams to produce electricity. Wood can also be gasified for electrical generation and can even be made into liquid fuels like ethanol and gasoline for lorries and cars. All these products are made primarily from low-use wood. Several tree- and plant-cutting approaches, which could greatly improve the long-term quality of a forest, focus strongly or solely on the use of wood for those markets.

木材能源市场可以接受比传统木材市场更便宜和质量更低的树木材料。宾夕法尼亚州大部分的能源木材通过燃烧产生热能或电能。许多学校和医院使用燃烧木头的锅炉系统来供暖和为设施提供电力。许多家庭主要利用木材进行取暖。一些煤电厂混合使用木材和煤炭发电。木材还可以气化来产生电力，甚至可以制成如乙醇和汽油这样的液体燃料用于卡车和汽车。所有这些产品主要由低利用木材制成。一些砍伐树木和植物的方法可以大大改善森林的长期质量，专注于为这些市场提供木材。

段落D

One such approach is called a Timber Stand Improvement (TSI) Cut. In a TSI Cut, really poor-quality tree and plant material is cut down to allow more space, light, and other resources to the highest-valued stems that remain. This article is from laokaoya website. Removing invasive plants might be another primary goal of a TSI Cut. The stems that are left behind might then grow in size and develop more foliage and larger crowns or tops that produce more coverage for wildlife; they have a better chance to regenerate in a less crowded environment. TSI Cutscan be tailored to one farmer’s specific management goals for his or her land.

其中一种方法被称为“林木改良砍伐”。在TSI砍伐中，质量真正差的树木和植物会被砍倒，从而为留下的高价值树干提供更多的空间、光线和其他资源。清除入侵植物可能是TSI砍伐的另一个主要目标。留下的树干可能会因此长的更大，长出更多的叶子和更大的树冠，为野生动物提供更多的遮蔽；它们在较为宽敞的环境中更有机会再生。TSI砍伐可以根据农民对自己土地的具体管理目标进行定制。

段落E

Another approach that might yield a high amount of low-use wood is a Salvage Cut. With many pests and pathogens visiting forests including hemlock wooly adelgid, Asian long-horned beetle, emerald ash borer, and gypsy moth, to name just a few, it is important to remember that those working in the forests can help ease these issues through cutting procedures. These types of cut reduce the number of sick trees and seek to manage the future spread of a pest problem. They leave vigorous trees that have stayed healthy enough to survive the outbreak.

另一种可能产生大量低利用木材的方法是“抢救砍伐”。由于包括银杏绵介壳虫、亚洲天牛、翠绿灰褐天蛾等在内的许多害虫和病原体进入森林，在森林中工作的人文章来自老烤鸭雅思可以通过砍伐来缓解这些问题。这些类型的砍伐减少了患病树木的数量，并试图管理未来虫害的蔓延。他们留下了那些足够健康，得以在虫害爆发中幸存的健壮树木。

段落F

A Shelterwood Cut, which only takes place in a mature forest that has already been thinned several times, involves removing all the mature trees when other seedlings have become established. This then allows the forester to decide which tree species are regenerated. It leaves a young forest where all trees are at a similar point in their growth. It can also be used to develop a two-tier forest so that there are two harvests and the money that comes in is spread out over a decade or more.

“伞伐”只在已经经过数次砍伐的成熟森林中进行，即在其他树苗已经成长起来时移除所有成熟树木。这样，林务人员就可以决定要重新培育哪些树种。它留下一个年轻的森林，其中所有树木都处于类似的生长阶段。它还可以用于培育双层森林，这样就能够进行两次收获，由此而来的收入可以持续十年甚至更长的时间。

段落G

Thinnings and dense and dead wood removal for fire prevention also center on the production of low-use wood. However, it is important to remember that some retention of what many would classify as low-use wood is very important. The tops of trees that have been cut down should be left on the site so that their nutrients cycle back into the soil. In addition, trees with many cavities are extremely important habitats for insect predators like woodpeckers, bats and small mammals. They help control problem insects and increase the health and resilience of the forest. It is also important to remember that not all small trees are low-use. For example, many species like hawthorn provide food for wildlife. Finally, rare species of trees in a forest should also stay behind as they add to its structural diversity.

为了防止火灾而削薄森林，并移除密集和死去的树木也会产生低利用木材。然而，重要的是要记住，保留一些被许多人认为的低利用木材是非常重要的。被砍伐的树木的树梢应该留在现场，从而使其养分可以循环回土壤。此外，对于像啄木鸟、蝙蝠和小型哺乳动物这样的昆虫捕食者来说，具有许多腔体的树木是极其重要的栖息地。它们有助于控制害虫，提升森林的健康和抵抗力。同时，要记住，并非所有小树都是低利用木材。例如，山楂等许多树种为野生动物提供食物。最后，森林中的稀有树种也应该留下，因为它们增加了森林结构的多样性。

### [18Test1Passsage3 Conquering Earth’s space junk problem 解决地球的太空垃圾问题](http://www.laokaoya.com/56292.html)

A部分

Last year, commercial companies, military and civil departments and amateurs sent more than 400 satellites into orbit, over four times the yearly average in the previous decade. Numbers could rise even more sharply if leading space companies follow through on plans to deploy hundreds to thousands of large constellations of satellites to space in the next few years.

去年，商业公司、军事和民用部门以及业余爱好者将超过400颗卫星送入轨道，是过去十年平均数量的四倍还多。如果领先的太空公司按计划在接下来的几年内部署数百到数千个庞大的卫星群到太空，这个数字可能还会进一步急剧上升。

All that traffic can lead to disaster. Ten years ago, a US commercial Iridium satellite smashed into an inactive Russian communications satellite called Cosmos-2251, creating thousands of new pieces of space shrapnel that now threaten other satellites in low Earth orbit – the zone stretching up to 2,000 kilometres in altitude. Altogether, there are roughly 20,000 human-made objects in orbit, from working satellites to small rocket pieces. And satellite operators can’t steer away from every potential crash, because each move consumes time and fuel that could otherwise be used for the spacecraft’s main job.

如此频繁的卫星活动可能导致灾难。十年前，一颗美国商业Iridium卫星撞上了一颗已停用的俄罗斯通信卫星Cosmos-2251，产生数千个太空碎片，现在这些碎片威胁着低地球轨道上的其他卫星。该轨道的高度一直延伸到2,000公里。总共大约有20,000个人造物体在轨道上，包括工作卫星和小型火箭碎片。卫星运营商无法避开每一次潜在的碰撞，因为每次移动都需要时间并消耗燃料，这些资源本来可以用于完成卫星的主要任务。

B部分

Concern about space junk goes back to the beginning of the satellite era, but the number of objects in orbit is rising so rapidly that researchers are investigating new ways of attacking the problem. Several teams are trying to improve methods of assessing what is in orbit, so that satellite operators can work more efficiently in ever-more-crowded space. Some researchers are now starting to compile a massive data set that includes the best possible information on where everything is in orbit. Others are developing taxonomies of space debris – working on measuring properties such as the shape and size of an object, so that satellite operators know how much to worry about what’s coming their way.

对太空碎片的担忧可以追溯到卫星时代的初始阶段，但轨道上的物体数量正在以如此之快的速度增长，以至于研究人员正在探索解决这个问题的新方法。几个团队正在尝试改进评估轨道上物体的方法，以便卫星运营商能够在日益拥挤的太空中更高效地工作。一些研究人员开始编制庞大的数据库，其中包含关于轨道上物体位置的最准确信息。其他人正在开发太空碎片的分类方法，研究如何测量物体的形状和大小等属性，以便卫星运营商知道是否需要担心即将接近的物体。

The alternative, many say, is unthinkable. Just a few uncontrolled space crashes could generate enough debris to set off a runaway cascade of fragments, rendering near-Earth space unusable.’If we go on like this, we will reach a point of no return,’ says Carolin Frueh, an astrodynamical researcher at Purdue University in WestLafayette, Indiana.

许多人认为，另一种情况是不可想象的。只要发生几次失控的太空碰撞，就能够产生足够的碎片，引发连锁反应，使近地空间变得无法使用。“如果继续这样下去，我们将到达一个无法回头的点，”印第安纳州西拉斐特的普渡大学天体动力学研究员Carolin Frueh表示。

C部分

Even as our ability to monitor space objects increases, so too does the total number of items in orbit. That means companies, governments and other players in space are collaborating in new ways to avoid a shared threat. International groups such as the Inter-Agency Space Debris Coordination Committee have developed guidelines on space sustainability. Those include inactivating satellites at the end of their useful life by venting pressurized materials or leftover fuel that might lead to explosions. The intergovernmental groups also advise lowering satellites deep enough into the atmosphere that they will burn up or disintegrate within 25 years. But so far, only about half of all missions have abided by this 25-year goal, says Holger Krag, head of the European Space Agency’s space-debris office in Darmstadt, Germany. Operators of the planned large constellations of satellites say they will be responsible stewards in their enterprises in space, but Krag worries that problems could increase, despite their best intentions.’What happens to those that fail or go bankrupt?’ he asks.’They are probably not going to spend money to remove their satellites from space.’

随着我们监测太空物体的能力的增强，轨道上物体的总数也在增加。这意味着公司、政府和太空活动的其他参与者正在以新的方式合作，以避免共同面临的威胁。像国际太空碎片协调委员会这样的国际组织已经制定了太空可持续性发展指南。其中包括在卫星使用寿命结束时通过释放压力材料或剩余燃料来终止卫星，以防止发生爆炸。这些政府间组织还建议将卫星降低到大气层深处，在25年内燃烧或分解掉。但是，位于德国达姆施塔特的欧洲航天局的太空碎片办公室主任Holger Krag表示，到目前为止，只有约一半的卫星符合该25年目标。有计划发射大型卫星群的运营商表示，他们将在太空企业中扮演负责任的管理者角色。但Krag担心，尽管他们抱着最好的意图，但问题可能会恶化。“那些失败或破产的企业会怎样？”他问道。“他们可能不会花钱将卫星从太空中移除出去。”

D部分

In theory, given the vastness of space, satellite operators should have plenty of room for all these missions to fly safely without ever nearing another object. So some scientists are tackling the problem of space junk by trying to find out where all the debris is to a high degree of precision. That would alleviate the need for many of the unnecessary maneuvers that are carried out to avoid potential collisions.’If you knew precisely where everything was, you would almost never have a problem,’ says Marlon Sorge, a space-debris specialist at the Aerospace Corporation in El Segundo, California.

从理论上讲，考虑到太空的广袤，卫星运营商应该有足够的空间让所有这些卫星安全地飞行，而不会接近其他物体。因此，一些科学家正在尝试通过精准定位所有碎片来解决太空垃圾问题。这将减少许多避免潜在碰撞而进行的不必要的机动操作。“如果你准确的知道所有东西的位置，那么几乎就永远不会有问题，”位于加利福尼亚州埃尔塞贡多的航天公司的太空碎片专家Marlon Sorge表示。

E部分

The field is called space traffic management, because it’s similar to managing traffic on the roads or in the air. Think about a busy day at an airport, says Moriba Jah, an astrodynamicist at the University of Texas at Austin: planes line up in the sky, this article is from laokaoya website, landing and taking off close to one another in a carefully choreographed routine. Air-traffic controllers know the location of the planes down to one metre in accuracy. The same can’t be said for space debris. Not all objects in orbit are known, and even those included in databases are not tracked consistently.

这个领域被称为太空交通管理，因为它类似于管理道路或空中交通。想象一下机场繁忙的一天，德克萨斯大学奥斯汀分校的天体动力学家Moriba Jah说道：飞机在天空中排队，按照精心编排的次序紧挨着彼此起降。空中交通管制员准确地了解飞机的位置，精度可达一米。但对于太空碎片来说，情况并非如此。并非所有轨道上的物体都是已知的，即使包含在数据库中的物体也没有得到持续跟踪。

F部分

An additional problem is that there is no authoritative catalogue that accurately lists the orbits of all known space debris. Jah illustrates this with a web-based database that he has developed. It draws on several sources, such as catalogues maintained by the US and Russian governments, to visualise where objects are in space. When he types in an identifier for a particular space object, the database draws a purple line to designate its orbit. Only this doesn’t quite work for a number of objects, such as a Russian rocket body designated in the database as object number 32280. When Jah enters that number, the database draws two purple lines: the US and Russian sources contain two completely different orbits for the same object. Jah says that it is almost impossible to tell which is correct, unless a third source of information made it possible to cross-correlate.

另一个问题是没有一个权威的目录准确列出所有已知太空碎片的轨道。Jah通过他开发的一个基于网络的数据库来说明该问题。该数据库利用了多个信息源，如美国和俄罗斯政府维护的目录等，以可视化的方式展示物体在太空中的位置。当他输入特定太空物体的标识符时，数据库文章来自老烤鸭雅思会绘制一条紫色线来表示其轨道。然而，对于一些物体来说，这并不完全适用，比如在数据库中被标识为32280的俄罗斯火箭残骸。当Jah输入该编号时，数据库绘制了两条紫色线：美国和俄罗斯的信息源对同一个物体展现出两个完全不同的轨道。Jah表示，除非有第三方信息源能够进行交叉验证，否则几乎不可能确定哪一个才是正确的。

Jah describes himself as a space environmentalist:’I want to make space a place that is safe to operate, that is free and useful for generations to come.’Until that happens, he argues, the space community will continue devolving into a tragedy in which all spaceflight operators are polluting a common resource.

Jah自称太空环保主义者：“我希望使太空成为一个可以安全运营的地方，为子孙后代提供免费和有用的资源。”在这个目标实现之前，他认为，太空界将继续陷入悲剧之中，所有的太空飞行运营商都在污染共同的资源。

## 18Test2

### [18Test2Passage1 Stonehenge 巨石阵](http://www.laokaoya.com/56365.html)

第1段

For centuries, historians and archaeologists have puzzled over the many mysteries of Stonehenge, a prehistoric monument that took an estimated 1,500 years to erect. Located on Salisbury Plain in southern England, it is comprised of roughly 100 massive upright stones placed in a circular layout.

几个世纪以来，历史学家和考古学家一直致力于解开巨石阵的许多谜团。这座史前遗迹据估计花费了约1,500年的时间来建造。它位于英国南部的索尔兹伯里平原上，由大约100块巨大的直立石头组成，呈圆形分布。

第2段

Archaeologists believe England’s most iconic prehistoric ruin was built in several stages, with the earliest constructed 5,000 or more years ago. First, Neolithic Britons used primitive tools, which may have been fashioned out of deer antlers, to dig a massive circular ditch and bank, or henge. Deep pits dating back to that era and located within the circle may have once held a ring of timber posts, according to some scholars.

考古学家认为，英国最具标志性的史前废墟是分为几个阶段建成的。最早的建筑可以追溯到5,000年前甚至更久以前。一开始，新石器时代的不列颠人使用可能由鹿角制成的原始工具，挖掘了一座巨大的圆形护城沟和土堤，即巨石阵。根据一些学者的说法，位于圆环内的深坑可能曾经放置着一圈木柱。

第3段

Several hundred years later, it is thought, Stonehenge’s builders hoisted an estimated 80 bluestones, 43 of which remain today, into standing positions and placed them in either a horseshoe or circular formation. These stones have been traced all the way to the Preseli Hills in Wales, some 300 kilometers from Stonehenge. How, then, did prehistoric builders without sophisticated tools or engineering haul these boulders, which weigh up to four tons, over such a great distance?

据推测，几百年后，巨石阵的建造者将大约80块蓝石竖起，并将它们排列成马蹄形或圆形。其中43块一直保存到今天。这些石头可以追溯到威尔士的普雷塞利山区，距离巨石阵约300公里。那么，史前建筑者在没有先进工具或工程设备的情况下，如何将重达四吨的巨石从如此远的距离运送过来呢？

第4段

According to one long-standing theory among archaeologists, Stonehenge’s builders fashioned sledges and rollers out of tree trunks to lug the bluestones from the Preseli Hills. They then transferred the boulders onto rafts and floated them first along the Welsh coast and then up the River Avon toward Salisbury Plain; alternatively, they may have towed each stone with a fleet of vessels. More recent archaeological hypotheses have them transporting the bluestones with supersized wicker baskets on a combination of ball bearings and long grooved planks, hauled by oxen.

根据考古学家中一个由来已久的理论，巨石阵的建造者使用树干制成的雪橇和滚轮从普雷塞利山区运送蓝石。然后，他们将巨石转移到木筏上，先沿着威尔士海岸漂流，然后沿着埃文河运向索尔兹伯里平原。或者，他们可能用一系列船只拖曳石头。更近期的考古学理论认为，他们使用超大号柳条篮子，搭配球轴承和长凹槽板用牛来拉动运送蓝石。

第5段

As early as the 1970s, geologists have been adding their voices to the debate over how Stonehenge came into being. Challenging the classic image of industrious builders pushing, carting, rolling or hauling giant stones from faraway Wales, some scientists have suggested that it was glaciers, not humans, that carried the bluestones to Salisbury plain. Most archaeologists have remained sceptical about this theory, however, wondering how the forces of nature could possibly have delivered the exact number of stones needed to complete the circle.

早在上世纪70年代，地质学家就开始参与巨石阵建造方式的争论。一些科学家挑战传统观念中勤劳的建筑工人从遥远的威尔士推、拉、滚或拖曳巨石到索尔兹伯里平原的情景，提出了一个不同的观点：巨石是由冰川而非人类运送到索尔兹伯里平原的。然而，大多数考古学家对这个理论持怀疑态度，他们好奇自然力量运送的石头数量为什么恰好足够完成圆环。

第6段

The third phase of construction took place around 2000 BCE. At this point, sandstone slabs – known as ‘sarsens’ – were arranged into an outer crescent or ring; some were assembled into the iconic three-pieced structures called trilithons that stand tall in the centre of Stonehenge. Some 50 of these stones are now visible on the site, which may once have contained many more. Radiocarbon dating has revealed that work continued at Stonehenge until roughly 1600 BCE, with the bluestones in particular being repositioned multiple times.

建造的第三阶段发生在公元前约2000年左右。这时，沙岩石板，也被称为“萨森石”，在外部被排列成新月形或圆形；其中一些被搭建成了巨石阵中心耸立的标志性的三块结构，被称为“三块石”。现在，在该遗址上大约可以见到50块这样的石头，而曾经可能有更多的石头存在。放射性碳测定显示，在公元前约1600年左右，巨石阵的建造工作仍在进行，特别是蓝石被多次重新放置。

第7段

But who were the builders of Stonehenge? In the 17th century, archaeologist John Aubrey made the claim that Stonehenge was the work of druids, who had important religious, judicial and political roles in Celtic society. This theory was widely popularized by the antiquarian William Stukeley, who had unearthed primitive graves at the site. Even today, people who identify as modern druids continue to gather at Stonehenge for the summer solstice. However, in the mid-20th century, radiocarbon dating demonstrated that Stonehenge stood more than 1,000 years before the Celts inhabited the region.

但是，究竟是谁建造了巨石阵呢？在17世纪，考古学家约翰·奥布里声称巨石阵是德鲁伊的作品。他们在凯尔特社会中担任重要的宗教、司法和政治角色。这个理论文章来自老烤鸭雅思被考古学家威廉·斯图克利广为宣传。他在遗址上发现了原始的墓穴。即使在今天，自认为是现代德鲁伊的人仍然在夏至时节在巨石阵聚集。然而，20世纪中叶，放射性碳测定显示巨石阵存在的时间要比凯尔特人在该地区定居的时间早1000多年。

第8段

Many modern historians and archaeologists now agree that several distinct tribes of people contributed to Stonehenge, each undertaking a different phase of its construction. Bones, tools and other artefacts found on the site seem to support this hypothesis. This article is from laokaoya website. The first stage was achieved by Neolithic agrarians who were likely to have been indigenous to the British Isles. Later, it is believed, groups with advanced tools and a more communal way of life left their mark on the site. Some believe that they were immigrants from the European continent, while others maintain that they were probably native Britons, descended from the original builders.

许多现代历史学家和考古学家如今都认同这样一个观点，即几个不同的部落共同参与了巨石阵的建造，每个部落承担建造的不同阶段。在遗址上发现的骨骼、工具和其他文物似乎支持这一假设。第一阶段是由新石器时代的农民完成的，他们可能是不列颠群岛的土著居民。后来，据信，使用先进工具和过着更加群居生活的人们也在这个遗址上留下了痕迹。一些人认为他们是欧洲大陆的移民，而另一些人则认为他们可能是当地的不列颠人，是原始建造者的后裔。

第9段

If the facts surrounding the architects and construction of Stonehenge remain shadowy at best, the purpose of the striking monument is even more of a mystery. While there is consensus among the majority of modern scholars that Stonehenge once served the function of burial ground, they have yet to determine what other purposes it had.

如果说有关巨石阵的建造者和建筑过程仍然模糊的话，这座引人注目的纪念物的目的更是一个谜。尽管大多数现代学者一致认为巨石阵曾经是一个墓地，但他们仍然无法确定它还有哪些其他用途。

第10段

In the 1960s, the astronomer Gerald Hawkins suggested that the cluster of megalithic stones operated as a form of calendar, with different points corresponding to astrological phenomena such as solstices, equinoxes and eclipses occurring at different times of the year. While his theory has received a considerable amount of attention over the decades, critics maintain that Stonehenge’s builders probably lacked the knowledge necessary to predict such events or that England’s dense cloud cover would have obscured their view of the skies.

20世纪60年代，天文学家杰拉德·霍金斯提出一种理论，即巨石阵的石块其实是一种日历，不同位置对应着不同时间的天文现象，如夏至、春分、日食等。尽管他的理论几十年来引起了相当大的关注，但批评者认为巨石阵的建造者可能缺乏预测这些事件所需的知识，或者英国常年存在的浓密云层会遮挡他们对天空的观测。

第11段

More recently, signs of illness and injury in the human remains unearthed at Stonehenge led a group of British archaeologists to speculate that it was considered a place of healing, perhaps because bluestones were thought to have curative powers.

最近，英国一群考古学家在巨石阵出土的人类遗骸中发现了疾病和伤痛的痕迹，这使他们猜测巨石阵可能被认为是一个治疗之地，这或许是因为人们认为蓝石具有治愈的力量。

### [18Test2Passage2 Living with artificial intelligence 与人工智能共存](http://www.laokaoya.com/56446.html)

引言

Powerful artificial intelligence (AI) needs to be reliably aligned with human values, but does this mean AI will eventually have to police those values?

强大的人工智能（AI）需要可靠地与人类价值观保持一致，但这是否意味着最终AI将不得不监管这些价值观呢？

第1段

This has been the decade of AI, with one astonishing feat after another. A chess-playing AI that can defeat not only all human chess players, but also all previous human-programmed chess machines, after learning the game in just four hours? That’s yesterday’s news, what’s next? True, these prodigious accomplishments are all in so-called narrow Al, where machines perform highly specialised tasks. But many experts believe this restriction is very temporary. By mid-century, we may have artificial general intelligence (AGI) – machines that can achieve human-level performance on the full range of tasks that we ourselves can tackle.

这个十年是属于AI的。它们一次又一次地创造了令人惊叹的壮举。一个下棋的AI在仅仅学习四个小时之后，就不仅能够击败所有人类棋手，还能击败所有之前由人类编程的棋类机器？这已经是昨天的新闻了，接下来呢？诚然，这些惊人的成就都是在所谓的狭义AI领域中取得的，即机器执行高度专业化的任务。但是，许多专家认为这种限制即将消失。到了本世纪中叶，我们可能会拥有人工通用智能（AGI）— 机器将会在所有我们自己能够处理的任务上达到人类水平。

第2段

If so, there’s little reason to think it will stop there. Machines will be free of many of the physical constraints on human intelligence. Our brains run at slow biochemical processing speeds on the power of a light bulb, and their size is restricted by the dimensions of the human birth canal. It is remarkable what they accomplish, given these handicaps. But they may be as far from the physical limits of thought as our eyes are from the incredibly powerful Webb Space Telescope.

如果是这样的话，我们没有什么理由认为发展会止步于此。机器将摆脱人类智能的许多物理限制。我们大脑的功率相当于一颗灯泡，以缓慢的生物化学速率运行。而且它们的大小受限于人类分娩通道的尺寸。考虑到这些限制，它们所取得的成就是非常了不起的。但是它们与思维的物理极限的差距，可能就像我们的眼睛与强大的韦伯太空望远镜的差距一样大。

第3段

Once machines are better than us at designing even smarter machines, progress toward these limits could accelerate. What would this mean for us? Could we ensure safe and worthwhile coexistence with such machines? On the plus side, AI is already useful and profitable for many things, and super AI might be expected to be super useful, and super profitable. But the more powerful AI becomes, the more important it will be to specify its goals with great care. Folklore is full of tales of people who ask for the wrong thing, with disastrous consequences – King Midas, for example, might have wished that everything he touched turned to gold, but didn’t really intend this to apply to his breakfast.

一旦机器比我们更加擅长设计更为聪明的机器，那么朝着这些极限的进展可能会加速。这对我们意味着什么？我们能够确保与这样的机器安全而愉快地共存吗？从积极的方面来看，AI在许多方面已经展现出自己的用处和能够带来的利润。我们完全可以期待超级AI会超级有用，带来超额利润。但是，AI变得越强大，认真仔细的指定其目标就会变得越重要。民间传说中充满了那些因为错误愿望而带来灾难性后果的故事—比如国王米达斯。他希望自己触碰的一切都变成黄金，但并没有真的想过早餐也包括在内。

第4段

So we need to create powerful AI machines that are ‘human-friendly’- that have goals reliably aligned with our own values. One thing that makes this task difficult is that we are far from reliably human-friendly ourselves. We do many terrible things to each other and to many other creatures with whom we share the planet. If superintelligent machines don’t do a lot better than us, we’ll be in deep trouble. We’ll have powerful new intelligence amplifying the dark sides of our own fallible natures.

因此，我们需要创造出强大的“人类友好型”AI。它们的目标可靠地与我们自己的价值观保持一致。这个任务的困难之一在于，我们自己与“人类友好型”都相去甚远。我们对彼此和与我们共享地球的许多其他生物做了许多可怕的事情。如果超级智能机器不能比我们做得更好，我们将陷入深深的麻烦之中。我们将拥有的强大新智能会放大我们自己易犯错误的本性的阴暗面。

第5段

For safety’s sake, then, we want the machines to be ethically as well as cognitively superhuman. We want them to aim for the moral high ground, not for the troughs in which many of us spend some of our time. Luckily they’ll be smart enough for the job. If there are routes to the moral high ground, they’ll be better than us at finding them, and steering us in the right direction.

为了安全起见，我们希望这些机器在道德和认知能力上都超越人类。我们希望它们追求道德的高地，而不是我们许多人所经历的低谷。幸运的是，它们的智能足够胜任这项工作。如果存在通往道德高地的途径，它们会比我们更擅长找到这些途径，并引导我们朝着正确的方向前进。

第6段

However, there are two big problems with this utopian vision. One is how we get the machines started on the journey, the other is what it would mean to reach this destination. The ‘getting started’ problem is that we need to tell the machines what they’re looking for with sufficient clarity that we can be confident they will find it – whatever ‘it’ actually turns out to be. This won’t be easy, given that we are tribal creatures and conflicted about the ideals ourselves. We often ignore the suffering of strangers, and even contribute to it, at least indirectly. How then, do we point machines in the direction of something better?

然而，这种乌托邦式的愿景存在两个重大问题。一是我们如何让机器开始这个旅程，另一个是达到这个目标意味着什么。”开始”的问题在于，我们文章来自老烤鸭雅思需要以足够清晰的方式告诉机器它们正在寻找什么，以便我们能够相信它们将找到它 — 无论这个”它”实际上是什么。这并不容易，因为我们是部族生物，自己对理想本身都存在争议。我们经常忽视陌生人的痛苦，甚至间接地促成了它。那么，我们应该如何引导机器朝着更好的方向发展呢？

第7段

As for the ‘destination’ problem, we might, by putting ourselves in the hands of these moral guides and gatekeepers, be sacrificing our own autonomy – an important part of what makes us human. Machines who are better than us at sticking to the moral high ground may be expected to discourage some of the lapses we presently take for granted. We might lose our freedom to discriminate in favour of our own communities, for example.

至于“目标”问题，如果我们将自己置于这些道德指导和守门人的手中，我们可能会牺牲自己的自主权 — 这是构成我们人类的重要部分。那些比我们更善于坚守道德高地的机器可能会劝阻我们目前视为理所当然的某些过失。例如，我们可能会失去优待我们自己社群的自由。

第8段

Loss of freedom to behave badly isn’t always a bad thing, of course: denying ourselves the freedom to put children to work in factories, or to smoke in restaurants are signs of progress. But are we ready for ethical silicon police limiting our options? They might be so good at doing it that we won’t notice them; but few of us are likely to welcome such a future.

当然，失去行为不端的自由并不总是一件坏事：拒绝让孩子在工厂工作，或在餐厅吸烟，都是进步的标志。但是，我们准备好接受道德警察来限制我们的选择了吗？它们可能在这方面做得非常出色，以至于我们都没有注意到；但是很少有人愿意迎接这样的未来。

第9段

These issues might seem far-fetched, but they are to some extent already here. AI already has some input into how resources are used in our National Health Service (NHS)here in the UK, for example. If it was given a greater role, it might do so much more efficiently than humans can manage, and act in the interests of taxpayers and those who use the health system. This article is from laokaoya website. However, we’d be depriving some humans (e.g. senior doctors) of the control they presently enjoy. Since we’d want to ensure that people are treated equally and that policies are fair, the goals of AI would need to be specified correctly.

这些问题可能看起来有些牵强，但它们在某种程度上已经存在。例如，在英国，人工智能已经对NHS的资源的使用产生了一些影响。如果给予它更大的权限，它可能比人类管理得更高效，并以符合纳税人和病人利益的方式行事。然而，我们将剥夺一些人类（如高级医生）目前所享有的控制权。由于我们希望确保人们受到平等对待，并且政策公平合理，因此需要正确明确人工智能的目标。

第10段

We have a new powerful technology to deal with – itself, literally, a new way of thinking. For our own safety, we need to point these new thinkers in the right direction, and get them to act well for us. It is not yet clear whether this is possible, but if it is, it will require a cooperative spirit, and a willingness to set aside self-interest.

我们面临着一项强大的新技术 – 它本身甚至代表着一种新的思维方式。为了我们自身的安全，我们需要引导这些新的思考者朝着正确的方向发展，并让它们善待我们。目前尚不清楚是否有可能实现这一点，但如果可能的话，这将需要一种合作精神和愿意抛开个人利益的意愿。

第11段

Both general intelligence and moral reasoning are often thought to be uniquely human capacities. But safety seems to require that we think of them as a package: if we are to give general intelligence to machines, we’ll need to give them moral authority, too. And where exactly would that leave human beings? All the more reason to think about the destination now, and to be careful about what we wish for.

通用智能和道德推理通常被认为是人类独有的能力。但是安全似乎要求我们将它们视为一个整体：如果我们要将通用智能赋予机器，我们也需要赋予它们道德权威。这会对人类产生什么影响呢？我们更加需要现在就考虑目标，并谨慎地审视我们的愿望。

### [18Test2Passage3 An ideal city 理想城市](http://www.laokaoya.com/56524.html)

第1段

The word ‘genius’ is universally associated with the name of Leonardo da Vinci. A true Renaissance man, he embodied scientific spirit, artistic talent and humanist sensibilities. Five hundred years have passed since Leonardo died in his home at Chateau du Clos Luce, outside Tours, France. Yet far from fading into insignificance, his thinking has carried down the centuries and still surprises today.

“天才”这个词往往与列奥纳多·达·芬奇的名字联系在一起。作为一个真正的文艺复兴人物，他具备科学精神、艺术才能和人文情怀。自从达·芬奇在法国图尔市郊外的克洛斯吕斯城堡的家中去世以来已经过去了五百年。然而，他的思想并没有慢慢变得无关紧要，而是一直流传至今，仍然让人们感到惊讶。

第2段

The Renaissance marked the transition from the 15th century to modernity and took place after the spread of the plague in the 14th century, which caused a global crisis resulting in some 200 million deaths across Europe and Asia. Today, the world is on the cusp of a climate crisis, which is predicted to cause widespread displacement, extinctions and death, if left unaddressed. Then, as now, radical solutions were called for to revolutionise the way people lived and safeguard humanity against catastrophe.

文艺复兴标志着从15世纪向现代的过渡，它发生在14世纪鼠疫蔓延之后。鼠疫导致全球危机。欧洲和亚洲共有大约2亿人死亡。如今，世界正处在气候危机的边缘，如果不加以解决，将导致大范围的人口迁移、物种灭绝和死亡。就像过去一样，现在也需要采取激进的解决方案，彻底改变人们的生活方式，以保护人类免受灾难的侵害。

第3段

Around 1486 – after a pestilence that killed half the population in Milan, Italy – Leonardo turned his thoughts to urban planning problems. Following a typical Renaissance trend, he began to work on an ‘ideal city’ project, which – due to its excessive costs – would remain unfulfilled. This article is from laokaoya website. Yet given that unsustainable urban models are a key cause of global climate change today, it’s only natural to wonder how Leonardo might have changed the shape of modern cities.

1486年左右（一场杀死意大利米兰市一半人口的瘟疫之后），列奥纳多开始思考城市规划问题。他遵循文艺复兴时期的典型趋势，开始着手一个名为“理想城市”的项目。然而由于成本过高，这个项目最终未能实现。不过，考虑到不可持续的城市模式是如今全球气候变化的主要原因之一，我们不禁想知道列奥纳多会如何改变现代城市的形态。

第4段

Although the Renaissance is renowned as an era of incredible progress in art and architecture, it is rarely noted that the 15th century also marked the birth of urbanism as a true academic discipline. The rigour and method behind the conscious conception of a city had been largely missing in Western thought until the moment when prominent Renaissance men pushed forward large-scale urban projects in Italy, such as the reconfiguration of the town of Pienza and the expansion of the city of Ferrara. These works surely inspired Leonardo’s decision to rethink the design of medieval cities, with their winding and overcrowded streets and with houses piled against one another.

尽管文艺复兴因艺术和建筑方面令人难以置信的进步而闻名，但很少有人注意到，15世纪也标志着城市规划作为真正的学术学科的诞生。西方思想缺少有意识规划城市所需要的严谨和方法，直到著名的文艺复兴人物推动了意大利的大规模城市项目，如皮恩扎小镇的重新规划和费拉拉市的扩张。这些作品无疑启发列奥纳多文章来自老烤鸭雅思重新思考中世纪的城市设计，即蜿蜒拥挤的街道，以及紧密相连的房屋。

第5段

It is not easy to identify a coordinated vision of Leonardo’s ideal city because of his disordered way of working with notes and sketches. But from the largest collection of Leonardo’s papers ever assembled, a series of innovative thoughts can be reconstructed regarding the foundation of a new city along the Ticino River, which runs from Switzerland into Italy and is 248 kilometres long. He designed the city for the easy transport of goods and clean urban spaces, and he wanted a comfortable and spacious city, with well-ordered streets and architecture. He recommended ‘high, strong walls’, with ‘towers and battlements of all necessary and pleasant beauty’.

由于列奥纳多凌乱的笔记和草图，很难确定他对理想城市的整体愿景。但从迄今为止最大的列奥纳多文集中，我们可以重构一系列关于在从瑞士流入意大利的提契诺河沿岸建立新城的创新思想。他设计这座城市以方便货物运输，创造清洁的城市空间，并希望得到一个舒适而宽敞的城市。那里拥有井然有序的街道和建筑。他推荐建造“高大坚固的城墙”，并配以“所有必要和漂亮的塔楼与城垛”。

第6段

His plans for a modern and ‘rational’ city were consistent with Renaissance ideals. But, in keeping with his personality, Leonardo included several innovations in his urban design. Leonardo wanted the city to be built on several levels, linked with vertical outdoor staircases. This design can be seen in some of today’s high-rise buildings but was unconventional at the time. Indeed, this idea of taking full advantage of the interior spaces wasn’t implemented until the 1920s and 1930s, with the birth of the Modernist movement.

他追求现代和“理性”的城市规划与文艺复兴的理念是一致的。然而，与他的个性相符，列奥纳多在城市设计中做了几项创新。他希望这座城市建在几个平面上，通过垂直的户外楼梯相连。这种设计在一些现代高层建筑中可以看到，但在当时不常见的。事实上，充分利用室内空间的这一想法直到20世纪20，30年代现代主义运动诞生之后才得以实施。

第7段

While in the upper layers of the city, people could walk undisturbed between elegant palaces and streets, the lower layer was the place for services, trade, transport and industry. But the true originality of Leonardo’s vision was its fusion of architecture and engineering. Leonardo designed extensive hydraulic plants to create artificial canals throughout the city. The canals, regulated by clocks and basins, were supposed to make it easier for boats to navigate inland. Leonardo also thought that the width of the streets ought to match the average height of the adjacent houses: a rule still followed in many contemporary cities across Italy, to allow access to sun and reduce the risk of damage from earthquakes.

在城市上层，人们可以在优雅的宫殿和街道之间自由行走，而下层则是用于服务、贸易、交通和工业的地方。然而，列奥纳多愿景中真正的独创性在于将建筑和工程融合在一起。他设计了大量的水力设施，在整个城市中建造人工运河。这些运河由时钟和水池调节，旨在使船只更容易在内陆航行。列奥纳多还认为街道的宽度应与相邻房屋的平均高度相匹配：许多意大利现代城市仍然遵循这一规则，以享受阳光，减少地震的危害。

第8段

Although some of these features existed in Roman cities, before Leonardo’s drawings there had never been a multi-level, compact modern city which was thoroughly technically conceived. Indeed, it wasn’t until the 19th century that some of his ideas were applied. For example, the subdivision of the city by function – with services and infrastructures located in the lower levels and wide and well-ventilated boulevards and walkways above for residents – is an idea that can be found in Georges-Eugene Haussmann’s renovation of Paris under Emperor Napoleon Ⅲ between 1853 and 1870.

尽管上述一些特征在罗马城市中就已经存在，但在列奥纳多的图画之前，还从未出现过一个经过彻底技术构思的，多层次、紧凑的现代城市。实际上，直到19世纪，他的一些想法才开始得以应用。例如，通过功能划分城市，将服务和基础设施置于低层，而将宽阔通风良好的林荫大道和步行道置于上层，以供居民使用。该想法在拿破仑三世时期（1853年至1870年）乔治·尤金·奥斯曼对巴黎的改造中有所体现。

第9段

Today, Leonardo’s ideas are not simply valid, they actually suggest a way forward for urban planning. Many scholars think that the compact city, built upwards instead of outwards, integrated with nature (especially water systems), with efficient transport infrastructure, could help modern cities become more efficient and sustainable. This is yet another reason why Leonardo was aligned so closely with modern urban planning and centuries ahead of his time.

如今，列奥纳多的思想不仅仍然有效，而且为城市规划提供了进步的方向。许多学者认为，紧凑的城市（向上而非向外扩展，与自然（尤其是水系统）融为一体，并拥有高效的交通基础设施）可以帮助现代城市变得更加高效和可持续。这也是为什么列奥纳多与现代城市规划密切相关，并领先于其所在时代好几个世纪的又一个原因。

## 18Test3

### [18Test3Passage1 Materials to take us beyond concrete 混凝土的替代材料](http://www.laokaoya.com/56570.html)

A部分

Concrete is the second most used substance in the global economy, after water – and one of the world’s biggest single sources of greenhouse gas emissions. The chemical process by which cement, the key ingredient of concrete, is created results in large quantities of carbon dioxide. The UN estimates that there will be 9.8 billion people living on the planet by mid-century. They will need somewhere to live. If concrete is the only answer to the construction of new cities, then carbon emissions will soar, aggravating global warming. And so scientists have started innovating with other materials, in a scramble for alternatives to a universal commodity that has underpinned our modern life for many years.

混凝土是全球经济中使用量仅次于水的第二大物质，也是全球最大的温室气体排放单一来源之一。混凝土的关键成分-水泥的化学制程会产生大量二氧化碳。联合国预计，到本世纪中叶地球上将有98亿人口。他们需要地方居住。如果混凝土是新城市建造的唯一解决方案，那么碳排放将飙升，加剧全球变暖。因此，科学家们开始开发其他材料，以寻找替代这种长期以来支撑我们现代生活的通用商品的方法。

B部分

The problem with replacing concrete is that it is so very good at what it does. Chris Cheeseman, an engineering professor at Imperial College London, says the key thing to consider is the extent to which concrete is used around the world, and is likely to continue to be used. ‘Concrete is not a high-carbon product. Cement is high carbon, but concrete is not. But it is the scale on which it is used that makes it high carbon. The sheer scale of manufacture is so huge, that is the issue.’

替代混凝土的问题在于它的表现太过出色。伦敦帝国理工学院的工程学教授克里斯·奇斯曼表示，关键要考虑的是混凝土在全球的使用范围，以及未来可能继续使用的范围。“混凝土并不是高碳产品。水泥才是高碳的，混凝土不是。但是它的高碳问题在于其使用规模。生产规模是如此巨大，这才是问题所在。”

C部分

Not only are the ingredients of concrete relatively cheap and found in abundance in most places around the globe, the stuff itself has marvelous properties: Portland cement, the vital component of concrete, is mouldable and pourable, but quickly sets hard. Cheeseman also notes another advantage: concrete and steel have similar thermal expansion properties, this article is from laokaoya website, so steel can be used to reinforce concrete, making it far stronger and more flexible as a building material than it could be on its own. According to Cheeseman, all these factors together make concrete hard to beat. ‘Concrete is amazing stuff. Making anything with similar properties is going to be very difficult.’

混凝土的原材料不仅相对廉价且在全球大多数地方都能充分获得。它本身还具有神奇的特性：混凝土的关键成分—波特兰水泥可塑性强、易于倾注，还能迅速变硬。奇斯曼还指出了另一个优点：混凝土和钢材具有相似的热膨胀特性，因此可以使用钢材来加固混凝土，使其比独立使用时更加坚固和更具弹性，成为一种优秀的建筑材料。根据奇斯曼的说法，所有这些因素共同使得混凝土难以被替代。“混凝土是令人惊叹的物质。要制造出具有类似特性的任何东西都将非常困难。”

D部分

A possible alternative to concrete is wood. Making buildings from wood may seem like a rather medieval idea, but climate change is driving architects to turn to treated timber as a possible resource. Recent years have seen the emergence of tall buildings constructed almost entirely from timber. Vancouver, Vienna and Brumunddal in Norway are all home to constructed tall, wooden buildings.

一种可能替代混凝土的材料是木材。用木材建造建筑物可能看起来有些像是中世纪的想法，但气候变化正在推动建筑师们将经过处理的木材作为一种可能的资源。近年来，几乎完全由木材建成的高层建筑越来越多。温哥华、维也纳和挪威的布鲁蒙达尔都有高层木制结构的建筑。

E部分

Using wood to construct buildings, however, is not straightforward. Wood expands as it absorbs moisture from the air and is susceptible to pests, not to mention fire. But treating wood and combining it with other materials can improve its properties. Cross-laminated timber is engineered wood. An adhesive is used to stick layers of solid-sawn timber together, crosswise, to form building blocks. This material is light but has the strength of concrete and steel. Construction experts say that wooden buildings can be constructed at a greater speed than ones of concrete and steel and the process, it seems, is quieter.

然而，使用木材建造建筑并不简单。木材会吸收空气中的水分膨胀，并容易受到害虫的侵害，更不用提发生火灾的风险了。但是通过对木材进行处理并与其他材料结合可以改善其性能。交叉层压木材是一种工程木材。使用胶粘剂将多层实木以交叉方式粘合在一起，形成建筑模块。这种材料虽然轻便，但具有混凝土和钢材的强度。建筑专家表示，与混凝土和钢材相比，木质建筑可以更快地建造，而且这个过程似乎更加安静。

F部分

Stora Enso is Europe’s biggest supplier of cross-laminated timber, and its vice-president Markus Mannstrom reports that the company is seeing increasing demand globally for building in wood, with climate change concerns the key driver. Finland, with its large forests, where Stora Enso is based, has been leading the way, but the company is seeing a rise in demand for its timber products across the world, including in Asia. Of course, using timber in a building also locks away the carbon that it absorbed as it grew. But even treated wood has its limitations and only when a wider range of construction projects has been proven in practice will it be possible to see wood as a real alternative to concrete in constructing tall buildings.

斯多拉恩索（Stora Enso）是欧洲最大的交叉层压木材供应商，其副总裁马库斯·曼斯特罗姆（Markus Mannstrom）表示，公司观察到全球对木制建筑需求的日益增长。气候变化问题是其主要驱动因素。芬兰是斯多拉恩索所在地，拥有广阔的森林资源，一直走在木制建筑的前沿，但该公司文章来自老烤鸭雅思也看到全球范围内，包括亚洲地区，对其木材产品的需求增长。当然，使用木制建筑还可以封存其生长过程中吸收的碳。然而，即使是经过处理的木材也有其局限性，只有在更广泛的建筑项目中经过实践验证后，才能将木材视为建造高层建筑的真正替代品。

G部分

Fly ash and slag from iron ore are possible alternatives to cement in a concrete mix. Fly ash, a byproduct of coal-burning power plants, can be incorporated into concrete mixes to make up as much as 15 to 30% of the cement, without harming the strength or durability of the resulting mix. Iron-ore slag, a byproduct of the iron-ore smelting process, can be used in a similar way. Their incorporation into concrete mixes has the potential to reduce greenhouse gas emissions.

煤灰和铁矿石渣可以作为混凝土中水泥的替代品。煤灰是燃煤电厂的副产品，可以加入混凝土中，占15%到30%的比例，而不会损害混凝土的强度和耐久性。铁矿石渣是铁矿石冶炼过程的副产品，可以以类似的方式使用。将它们纳入混凝土原材料有可能能够减少温室气体的排放。

But Anna Surgenor, of the UK’s Green Building Council, notes that although these waste products can save carbon in the concrete mix, their use is not always straightforward. It’s possible to replace the cement content in concrete with waste products to lower the overall carbon impact. But there are several calculations that need to be considered across the entire life cycle of the building – these include factoring in where these materials are being shipped from. If they are transported over long distances, using fossil fuels, the use of alternative materials might not make sense from an overall carbon reduction perspective.’

但英国绿色建筑委员会的安娜·萨金纳指出，尽管这些废弃物可以用在混凝土中节省碳排放，但它们的使用并不总是简单明了的。可以用废弃物替代混凝土中的水泥，以降低整体碳足迹。但是，在整个建筑寿命周期中需要考虑多个因素，其中就包括这些材料的运输来源。如果它们经过长途运输并使用化石燃料，从减少整体碳排放的角度来看，使用替代材料可能并不合理。

H部分

While these technologies are all promising ideas, they are either unproven or based on materials that are not abundant. In their overview of innovation in the concrete industry, Felix Preston and Johanna Lehne of the UK’s Royal Institute of International Affairs reached the conclusion that, ‘Some novel cements have been discussed for more than a decade within the research community, without breaking through. At present, these alternatives are rarely as cost-effective as conventional cement, and they face raw-material shortages and resistance from customers.’

虽然这些技术都有一定的前景，但它们要么尚未经过验证，要么需要稀缺的材料。在对混凝土行业创新的概述中，英国皇家国际事务研究所的费利克斯·普雷斯顿（Felix Preston）和约翰娜·莱恩（Johanna Lehne）得出结论：“一些新型水泥已经在研究界讨论了十多年，但尚未取得突破。目前，这些替代品很少像传统水泥一样具有成本效益，并且它们面临着原材料短缺和客户的抵制。”

### [18Test3Passage2 The steam Car 蒸汽汽车](http://www.laokaoya.com/56612.html)

段落A

When primitive automobiles first began to appear in the 1800s, their engines were based on steam power. Steam had already enjoyed a long and successful career in the railways, so it was only natural that the technology evolved into a miniaturized version which was separate from the trains. But these early cars inherited steam’s weaknesses along with its strengths. The boilers had to be lit by hand, and they required about twenty minutes to build up pressure before they could be driven. Furthermore, their water reservoirs only lasted for about thirty miles before needing replenishment. Despite such shortcomings, these newly designed self-propelled carriages offered quick transportation, and by the early 1900s it was not uncommon to see such machines shuttling wealthy citizens around town.

19世纪汽车刚出现时，它们的发动机基于蒸汽动力。蒸汽在铁路上已经有了漫长而成功的运用历史，因此技术的发展自然而然地演变出一个与火车分离的小型化版本。然而，这些早期汽车除了继承了蒸汽的优点外，也继承了它的缺点。锅炉必须手动点火，并且需要约20分钟才能积攒起足够的压力，然后才能行驶。此外，它们的水箱只能维持大约30英里的行驶距离，随后就需要重新补充水源。尽管存在这些缺点，这些新设计的自动行驶马车提供了快速的交通方式。到了19世纪初，这样的机器在城里来回穿梭运送富有的市民并不少见。

段落B

But the glory days of steam cars were few. A new technology called the Internal Combustion Engine soon appeared, which offered the ability to drive down the road just moments after starting up. At first, these noisy gasoline cars were unpopular because they were more complicated to operate and they had difficult hand-crank starters, which were known to break arms when the engines backfired. But in 1912 General Motors introduced the electric starter, and over the following few years steam power was gradually phased out.

然而，蒸汽汽车的辉煌十分短暂。很快出现了一种名为内燃机的新技术，它可以在启动后短时间内上路行驶。起初，这些吵闹的汽油汽车并不受欢迎，因为它们操作更加复杂，而且手摇曲轴启动器很难使用。当发动机回火时，会导致手臂骨折。但在1912年，通用汽车引入了电动起动器。接下来的几年里，蒸汽动力汽车逐渐被淘汰。

段落C

Even as the market was declining, four brothers made one last effort to rekindle the technology. Between 1906 and 1909, while still attending high school, Abner Doble and his three brothers built their first steam car in their parents’ basement. It comprised parts taken from a wrecked early steam car but reconfigured to drive an engine of their own design. Though it did not run well, the Doble brothers went on to build a second and third prototype in the following years. Though the Doble boys’ third prototype, nicknamed the Model B, still lacked the convenience of an internal combustion engine, this article is from laokaoya website, it drew the attention of automobile trade magazines due to its numerous improvements over previous steam cars. The Model B proved to be superior to gasoline automobiles in many ways. Its high-pressure steam drove the engine pistons in virtual silence, in contrast to clattering gas engines which emitted the aroma of burned hydrocarbons. Perhaps most impressively, the Model B was amazingly swift. It could accelerate from zero to sixty miles per hour in just fifteen seconds, a feat described as ‘remarkable acceleration’ by Automobile magazine in 1914.

尽管市场衰退，但四兄弟为重启这项技术做出了最后一次努力。在1906年至1909年期间，仍在上高中的阿布纳·多布尔和他的三个兄弟在父母的地下室里组装了他们的第一辆蒸汽汽车。它由来自一辆报废的早期蒸汽汽车的零部件组成，但重新配备了他们自己设计的发动机。尽管它的运行情况不佳，但多布尔兄弟在接下来的几年里继续建造了第二和第三个原型车。尽管多布尔兄弟的第三个原型车，“B型”，仍然缺乏内燃机的便利性，但它因为对之前的蒸汽汽车进行了多项改进而引起了汽车贸易杂志的关注。B型车在许多方面被证实优于汽油汽车。它的高压蒸汽以近乎无声的方式驱动发动机活塞，与吵闹的、散发出燃烧烃类化合物气味的燃气发动机形成鲜明对比。也许最令人印象深刻的是，B型车车速极快。它只需15秒就能从静止加速到每小时60英里。这一壮举被1914年的《汽车》杂志称为“令人瞩目的加速度”。

段落D

The following year Abner Doble drove the Model B from Massachusetts to Detroit in order to seek investment in his automobile design, which he used to open the General Engineering Company. He and his brothers immediately began working on the Model C, which was intended to expand upon the innovations of the Model B. The brothers added features such as a key-based ignition in the cabin, eliminating the need for the operator to manually ignite the boiler. With these enhancements, the Dobles’new car company promised a steam vehicle which would provide all of the convenience of a gasoline car, but with much greater speed, much simpler driving controls, and a virually silent powerplant. By the following April, the General Engineering Company had received 5,390 deposits for Doble Detroits, which were scheduled for delivery in early 1918.

次年，阿布纳·多布尔驾驶着B型车从马萨诸塞州开往底特律，寻求对其汽车设计的投资。他利用这笔钱创办了通用工程公司。他和他的兄弟们立即开始着手研发C型车，旨在在B型车的创新基础上进一步扩展。他们兄弟增加了一些功能，例如车内钥匙点火装置。这使的驾驶员文章来自老烤鸭雅思不再需要手动点燃锅炉。凭借这些改进，多布尔兄弟的新汽车公司承诺推出一种蒸汽汽车，它将提供汽油汽车的所有便利，但速度更快、驾驶起来更简单，并且动力装置几乎无声。到了次年四月，通用工程公司已经收到5,390份定金，用于订购预计在1918年初交付的多布尔底特律车型。

段落E

Later that year Abner Doble delivered unhappy news to those eagerly awaiting the delivery of their modern new cars. Those buyers who received the handful of completed cars complained that the vehicles were sluggish and erratic, sometimes going in reverse when they should go forward. The new engine design, though innovative, was still plagued with serious glitches.

同年晚些时候，阿布纳·多布尔向那些急切等待交付现代新车的人传达了令人不快的消息。少数收到已完成的汽车的买家抱怨说这些车辆行驶迟缓且不稳定，有时候应该前进却倒退。尽管新的发动机设计具有创新性，但仍然存在严重的故障。

段落F

The brothers made one final attempt to produce a viable steam automobile. In early 1924, the Doble brothers shipped a Model E to New York City to be road-tested by the Automobile Club of America. After sitting overnight in freezing temperatures, the car was pushed out into the road and left to sit for over an hour in the frosty morning air. At the turn of the key, the boiler lit and reached its operating pressure inside of forty seconds. As they drove the test vehicle further, they found that its evenly distributed weight lent it surprisingly good handling, even though it was so heavy. As the new Doble steamer was further developed and tested, its maximum speed was pushed to over a hundred miles per hour, and it achieved about fifteen miles per gallon of kerosene with negligible emissions.

多布尔兄弟做出了最后一次尝试，试图生产一辆可用的蒸汽汽车。1924年初，多布尔兄弟将一辆E型车运到纽约市，由美国汽车俱乐部进行道路测试。在寒冷的环境中停放一夜之后，它被推上道路，但又在清冷的早晨等待了一个小时。转动钥匙的一刻，锅炉被点燃，并在四十秒内达到操作压力。当驾驶这辆测试车辆时，他们发现尽管它非常沉重，但均匀分布的重量使它具有令人惊讶的良好操控性。随着新的多布尔蒸汽汽车的进一步开发和测试，它的最高时速被推至每小时一百英里以上，每十五英里消耗一加仑煤油，排放几乎可以忽略不计。

段落G

Sadly, the Dobles’ brilliant steam car never was a financial success. Priced at around $18,000 in 1924, it was popular only among the very wealthy. Plus, it is said that no two model Es were quite the same, because Abner Doble tinkered endlessly with the design. By the time the company folded in 1931, fewer than fifty of the amazing Model E steam cars had been produced. For his whole career, until his death in 1961, Abner Doble remained adamant that steam-powered automobiles were at least equal to gasoline cars, if not superior. Given the evidence, he may have been right. Many of the Model E Dobles which have survived are still in good working condition, some having been driven over half a million miles with only normal maintenance. Astonishingly, an unmodified Doble Model Eruns clean enough to pass the emissions laws in California today, and they are pretty strict. It is true that the technology poses some difficult problems, but you cannot help but wonder how efficient a steam car might be with the benefit of modern materials and computers. Under the current pressure to improve automotive performance and reduce emissions, it is not unthinkable that the steam car may rise again.

可悲的是，多布尔兄弟出色的蒸汽汽车从未在财务上获得成功。1924年，它的售价约为18,000美元，只受到非常富有的人士的欢迎。此外，据说没有两辆E型车完全相同，因为阿布纳·多布尔对设计进行了无休止的调整。到1931年公司倒闭时，他们仅生产了不到50辆令人惊叹的E型蒸汽汽车。直到1961年去世，阿布纳·多布尔在他整个职业生涯中始终坚信蒸汽动力汽车至少与汽油汽车不相上下，如果不是更好的话。从证据来看，他可能是正确的。许多保存下来的E型多布尔汽车仍然处于良好的工作状态，有些车辆甚至行驶了超过50万英里，仅需要常规维护。令人惊讶的是，未经修改的多布尔E型车足以达到今天加利福尼亚州排放法规的清洁标准，而这些法规要求相当严格。的确，这项技术存在一些难以解决的问题，但你不禁想知道如果借助现代材料和计算机的优势，蒸汽汽车可能会有多么高效。在当前提升汽车性能和减少排放的压力下，蒸汽汽车再次崛起并非不可想象。

### [18Test3Passage3 The case for mixed-ability classes 混合能力的班级](http://www.laokaoya.com/56693.html)

第1段

Picture this scene. It’s an English literature lesson in a UK school, and the teacher has just read an extract from Shakespeare’s Romeo and Juliet with a class of 15-year-olds. He’s given some of the students copies of No Fear Shakespeare, a kid-friendly translation of the original. For three students, even these literacy demands are beyond them. Another girl simply can’t focus and he gives her pens and paper to draw with. The teacher can ask the No Fear group to identify the key characters and maybe provide a tentative plot summary. He can ask most of the class about character development, and five of them might be able to support their statements with textual evidence. Now two curious students are wondering whether Shakespeare advocates living a life of moderation or one of passionate engagement.

想象一下这个场景。在英国的一所学校里，正在进行一堂英语文学课，老师刚刚给一群15岁的学生朗读了莎士比亚的《罗密欧与朱丽叶》的片段。他给其中一些学生提供了《无畏莎士比亚》的副本，这是一本儿童版的原著翻译。然而，对于其中三名学生来说，即便是这样的要求也超出了他们的能力。另一个女孩根本无法集中注意力，于是他给了她一些纸和笔来画画。老师可以要求那些《无畏莎士比亚》的学生识别关键人物，并提供一个初步的情节概要。他可以询问大多数学生关于角色发展的问题，其中五个人可能能够用文本证据支持他们的陈述。现在有两个好奇的学生想知道莎士比亚是主张过着克制的生活还是热情奔放的生活。

第2段

As a teacher myself, I’d think my lesson would be going rather well if the discussion went as described above. But wouldn’t this kind of class work better if there weren’t such a huge gap between the top and the bottom? If we put all the kids who needed literacy support into one class, and all the students who want to discuss the virtue of moderation into another?

作为一名教师，我认为如果讨论按照上面所说的进行，那么我的课堂应该会很顺利。但是，如果顶尖学生和垫底学生之间的差距不那么大，这种课堂不是更有效吗？如果我们把所有需要读写帮助的孩子放在一个班级，把所有想要讨论中庸之美的学生放在另一个班级，那会不会更好呢？

第3段

The practice of ‘streaming’, or ‘tracking’, involves separating students into classes depending on their diagnosed levels of attainment. At a macro level, it requires the establishment of academically selective schools for the brightest students, and comprehensive schools for the rest. Within schools, it means selecting students into a ‘stream’ of general ability, or ‘sets’ of subject-specific ability. The practice is intuitively appealing to almost every stakeholder.

“分班”或“分轨”这种做法，意味着根据学生被诊断出的学业水平将他们分到不同的班级中。在宏观层面上，这要求为最优秀学生的建立精品学校，以及为其他学生设立综合性学校。在学校内部，它意味着将学生分到普通班或者各种特长班。这种做法乍看起来对所有利益相关者都有好处。

第4段

I have heard the mixed-ability model attacked by way of analogy: a group hike. The fittest in the group take the lead and set a brisk pace, only to have to stop and wait every 20 minutes. This is frustrating, and their enthusiasm wanes. Meanwhile, the slowest ones are not only embarrassed but physically struggling to keep up. What’s worse, they never get a long enough break. They honestly just want to quit. Hiking, they feel, is not for them.

我听过用一群人一起远足这样的类比来攻击混合能力模式的说法。最健壮的人领头，并保持着快速的步伐，但每隔20分钟就不得不停下等待其他人。这很令人沮丧，他们的热情逐渐消退。与此同时，速度最慢的人不仅感到尴尬，而且身体上也很难跟上步伐。更糟糕的是，他们从未得到足够的休息。他们真心很想放弃，觉得远足不适合他们。

第5段

Mixed-ability classes bore students, frustrate parents and burn out teachers. The brightest ones will never summit Mount Qomolangma, and the stragglers won’t enjoy the lovely stroll in the park they are perhaps more suited to. Individuals suffer at the demands of the collective, mediocrity prevails. So: is learning like hiking?

混合能力的班级令学生感到无聊，让家长感到沮丧，也会让教师感到精疲力竭。最聪明的学生永远无法登顶珠穆朗玛峰，而落后的学生也无法享受更适合他们的悠闲的公园漫步。个体在集体的要求下受苦，平庸盛行。那么，学习是否像远足一样呢？

第6段

The current pedagogical paradigm is arguably that of constructivism, which emerged out of the work of psychologist Lev Vygotsky. In the 1930s, Vygotsky emphasised the importance of targeting a student’s specific ‘zone of proximal development'(ZPD). This is the gap between what they can achieve only with support – teachers, textbooks, worked examples, parents and so on – and what they can achieve independently. The purpose of teaching is to provide and then gradually remove this ‘scaffolding’ until they are autonomous. If we accept this model, it follows that streaming students with similar ZPDs would be an efficient and effective solution. And that forcing everyone on the same hike – regardless of aptitude – would be madness.

当前的教育范式可以说是建构主义。这一理论源于心理学家列夫·维果茨基。在20世纪30年代，维果茨基强调以学生特定的“近期发展区域”（ZPD）为目标的重要性。这指的是学生在依靠支持（教师、教科书、示范例子、家长等）时能够达到的水平与他们独立学习时能够达到的水平的差距。教学的目的是提供、然后逐渐去除这种“脚手架”，直到他们能够自主学习。如果我们接受这个模型，那么按照ZPD对相似的学生进行分班将是一种高效的解决方案。而迫使所有人，无论他们能力如何，参加相同的徒步旅行，将是疯狂的做法。

第7段

Despite all this, there is limited empirical evidence to suggest that streaming results in better outcomes for students. Professor John Hattie, director of the Melbourne Education Research Institute, notes that ‘tracking has minimal effects on learning outcomes’. This article is from laokaya website. What is more, streaming appears to significantly – and negatively – affect those students assigned to the lowest sets. These students tend to have much higher representation of low socioeconomic class. Less significant is the small benefit for those lucky clever students in the higher sets. The overall result is that the smart stay smart and the dumb get dumber, further entrenching the social divide.

尽管如此，目前只有十分有限的实证证据表明分班对学生的学习成绩更好。墨尔本教育研究所的约翰·哈蒂教授指出，“分班对学习成绩的影响很小”。此外，分班似乎对被分配到最低班级的学生产生了明显且负面的影响。这些学生文章来自老烤鸭雅思更多的来自较低的社会经济阶层。对于那些被分到较高班级的聪明学生来说，获得的好处也不那么显著。总而言之，聪明的学生还是老样子，而弱势的学生则变得更差，进一步加深了社会分化。

第8段

In the latest update of Hattie’s influential meta-analysis of factors influencing student achievement, one of the most significant factors is the teachers’ estimate of achievement. Streaming students by diagnosed achievement automatically limits what the teacher feels the student is capable of. Meanwhile, in a mixed environment, teachers’ estimates need to be more diverse and flexible.

在哈蒂对影响学生学业成就因素的最新综合分析中，最重要的因素之一是教师对学业成就的评估。将学生按照被诊断的成绩进行分班会自动限制教师对学生能力的认知。而在混合环境中，教师的评估需要更灵活，更加多样化。

第9段

While streaming might seem to help teachers effectively target a student’s ZPD, it can underestimate the importance of peer-to-peer learning. A crucial aspect of constructivist theory is the role of the MKO-‘more-knowledgeable other’- in knowledge construction. While teachers are traditionally the MKOs in classrooms, the value of knowledgeable student peers must not go unrecognised either.

虽然分班可能看似有助于教师有效地以学生的近期发展区域（ZPD）为目标，但它低估了同伴学习的重要性。建构主义理论的一个关键在于“知识更加渊博的他人”（MKO）在知识构建中的作用。虽然传统上，教师是课堂中的MKO，但优秀的学生同伴的价值也不容忽视。

第10段

I find it amazing to watch students get over an idea to their peers in ways that I would never think of. They operate with different language tools and different social tools from teachers and, having just learnt it themselves, they possess similar cognitive structures to their struggling classmates. There is also something exciting about passing on skills and knowledge that you yourself have just mastered – a certain pride and zeal, a certain freshness to the interaction between ‘teacher’ and ‘learner’ that is often lost by the expert for whom the steps are obvious and the joy of discovery forgotten.

我感到惊讶的是，学生们以我从未想到的方式向同伴传授想法。他们运用与老师不同的语言工具和社交工具。而且因为他们自己才刚刚学会，他们与感到困惑的同学拥有相似的认知结构。同时，将刚刚掌握的技能和知识传授给他人也让人感到兴奋，产生一种特殊的自豪和热情，一种“教师”和“学习者”之间的互动所带来的新鲜感。这种新鲜感常常被那些觉得事情显而易见、已经遗忘了探索的乐趣的专家所忽视。

第11段

Having a variety of different abilities in a collaborative learning environment provides valuable resources for helping students meet their learning needs, not to mention improving their communication and social skills. And today, more than ever, we need the many to flourish-not suffer at the expense of a few bright stars. Once a year, I go on a hike with my class, a mixed bunch of students. It is challenging. The fittest students realise they need to encourage the reluctant. There are lookouts who report back, and extra items to carry for others. We make it – together.

协作学习环境中，各种不同能力的学生提供了宝贵的资源，帮助满足他们的学习需求，更不用说改善他们的沟通和社交技巧了。而且，在当今时代，我们更需要让众多学生茁壮成长，而不是为了培养少数优秀学生而让其他学生受苦。每年，我都会和我的班级，一个能力各异的学生群体，一起进行一次徒步旅行。这是个极具挑战的过程。最健壮的学生意识到他们需要鼓励不太愿意前进的同学。还有一些人负责观察并回报情况，为其他人携带额外的东西。我们共同努力，一起完成目标。

## 18Test4

### [18Test4Passage1 Green roofs 绿色屋顶](http://www.laokaoya.com/56752.html)

段落A

Rooftops covered with grass, vegetable gardens and lush foliage are now a common sight in many cities around the world. More and more private companies and city authorities are investing in green roofs, drawn to their wide-ranging benefits. Among the benefits are saving on energy costs, mitigating the risk of floods, making habitats for urban wildlife, tackling air pollution and even growing food. These increasingly radical urban designs can help cities adapt to the monumental problems they face, such as access to resources and a lack of green space due to development. But the involvement of city authorities, businesses and other institutions is crucial to ensuring their success – as is research investigating different options to suit the variety of rooftop spaces found in cities. The UK is relatively new to developing green roofs, and local governments and institutions are playing a major role in spreading the practice. London is home to much of the UK’s green roof market, mainly due to forward-thinking policies such as the London Plan, which has paved the way to more than doubling the area of green roofs in the capital.

覆盖着草坪、菜园和郁郁葱葱植被的屋顶在如今世界许多城市中已经不足为奇。越来越多的私营公司和城市当局受到绿色屋顶各种好处的吸引，正在投资该项目。其好处包括降低能源成本、减小洪水风险、为城市野生动植物提供栖息地、解决空气污染问题，甚至可以种植食物等。这些日益激进的城市设计能够帮助城市应对其所面临的重大问题，比如资源获取和由于发展而缺乏绿地等。但是，城市当局、企业和其他机构的参与对绿色屋顶的成功至关重要。同时我们还需要研究调查适合城市不同屋顶的各种选项。英国在发展绿色屋顶方面还是个新手。地方政府和机构在推广这一实践方面发挥着重要作用。伦敦是英国绿色屋顶的集中地，这主要得益于其前瞻性的政策，比如《伦敦计划》。该计划使伦敦的绿色屋顶面积增加了一倍以上。

段落B

Ongoing research is showcasing how green roofs in cities can integrate with ‘living walls’: environmentally friendly walls which are partially or completely covered with greenery, including a growing medium, such as soil or water. Research also indicates that green roofs can be integrated with drainage systems on the ground, such as street trees, so that the water is managed better and the built environment is made more sustainable. This article is from laokaoya website. There is also evidence to demonstrate the social value of green roofs. Doctors are increasingly prescribing time spent gardening outdoors for patients dealing with anxiety and depression. And research has found that access to even the most basic green spaces can provide a better quality of life for dementia sufferers and help people avoid obesity.

不断进行的研究展示了城市中的绿色屋顶如何与“活着的墙壁”相结合：这些环保墙壁部分或完全被绿色植物覆盖，包括诸如土壤和水这样的生长介质。研究还表明，绿色屋顶可以与地面上的排水系统相结合（比如街道树木）从而更好地管理水资源，使建筑环境更加可持续。还有证据证明绿色屋顶的社会价值。医生越来越多地为患有焦虑和抑郁症的患者开处方，让他们花时间在户外进行园艺活动。研究还发现，即使是最基础的绿色空间也能提升痴呆症患者的生活质量，并帮助人们避免肥胖问题。

段落C

North America, green roofs have become mainstream, with a wide array of expansive, accessible and food-producing roofs installed in buildings. Again, city leaders and authorities have helped push the movement forward – only recently, San Francisco, USA, created a policy requiring new buildings to have green roofs. Toronto, Canada, has policies dating from the 1990s, encouraging the development of urban farms on rooftops. These countries also benefit from having newer buildings than in many parts of the world, which makes it easier to install green roofs. Being able to keep enough water at roof height and distribute it right across the rooftop is crucial to maintaining the plants on any green roof – especially on ‘edible roofs’ where fruit and vegetables are farmed. And it’s much easier to do this in newer buildings, which can typically hold greater weight, than to retro-fit old ones. Having a stronger roof also makes it easier to grow a greater variety of plants, since the soil can be deeper.

在北美地区，绿色屋顶已经成为主流，建筑物上安装了各种广阔、易于进入和可生产食物的屋顶。此外，城市领导和当局一直在推动这一运动的发展。就在不久前，美国旧金山市制定了一项政策，要求新建筑物必须有绿色屋顶。加拿大多伦多自上世纪90年代起就出台了鼓励在屋顶上发展城市农场的政策。这些国家还因拥有比世界上许多地区更新的建筑物而受益，这使得安装绿色屋顶变得更加容易。对于维护绿色屋顶上植物而言，在屋顶上保持足够的水分并使其均匀分布至关重要，特别是在种植水果和蔬菜的“可食用屋顶”上。在更新的建筑物中，这样做要容易得多，因为它们文章来自老烤鸭雅思通常可以承受更大的重量，而不像老旧建筑物那样需要改装。拥有更坚固的屋顶还使得更容易种植更多种类的植物，因为土壤可以更深。

段落D

For green roofs to become the norm for new developments, there needs to be support from public authorities and private investors. Those responsible for maintaining buildings may have to acquire new skills, such as landscaping, and in some cases, volunteers may be needed to help out. Other considerations include installing drainage paths, meeting health and safety requirements and perhaps allowing access for the public, as well as planning restrictions and disruption from regular activities in and around the buildings during installation. To convince investors and developers that installing green roofs is worthwhile, economic arguments are still the most important. The term ‘natural capital’ has been developed to explain the economic value of nature; for example, measuring the money saved by installing natural solutions to protect against flood damage, adapt to climate change or help people lead healthier and happier lives.

要使绿色屋顶成为新建筑物的常态，需要得到公共当局和私人投资者的支持。负责维护建筑物的人可能需要学习新的技能，比如园艺设计。在某些情况下，可能还需要志愿者的帮助。其他需要考虑的东西还包括安装排水路径，满足卫生和安全要求，也许还需要向公众开放，并且还要做好计划，在安装期间可能会受到建筑物内外常规活动的限制和干扰。为了说服投资者和开发商安装绿色屋顶是值得的，经济依据仍然至关重要。 “自然资本” 这个术语已被开发出来，用于解释自然的经济价值；例如，我们可以计算通过采用自然解决方案降低防洪损失、适应气候变化、或帮助人们过上更健康更幸福的生活所带来的受益。

段落E

As the expertise about green roofs grows, official standards have been developed to ensure that they are designed, constructed and maintained properly, and function well. Improvements in the science and technology underpinning green roof development have also led to new variations in the concept. For example, ‘blue roofs’ enable buildings to hold water over longer periods of time, rather than draining it away quickly – crucial in times of heavier rainfall. There are also combinations of green roofs with solar panels, and ‘brown roofs’ which are wilder in nature and maximise biodiversity. If the trend continues, it could create new jobs and a more vibrant and sustainable local food economy – alongside many other benefits. There are still barriers to overcome, but the evidence so far indicates that green roofs have the potential to transform cities and help them function sustainably long into the future. The success stories need to be studied and replicated elsewhere, to make green, blue, brown and food-producing roofs the norm in cities around the world.

随着关于绿色屋顶的专业知识不断增长，官方标准已经制定出来，以确保它们被正确设计、建造和维护，并能够正常运转。支撑绿色屋顶发展的科学和技术的改进也导致新概念的出现。例如，“蓝色屋顶”能够使建筑物在较长时间内储藏水资源，而不是迅速排水。这在降雨较多时至关重要。还有的方案将绿色屋顶与太阳能电池板相结合。而“棕色屋顶”则更加贴近自然，能够最大程度地增加生物多样性。如果这种趋势持续下去，它可能会创造新的就业机会和更加充满活力和可持续的本地食品经济，同时带来许多其他好处。虽然还有一些障碍需要克服，但迄今为止的证据表明，绿色屋顶有潜力改变城市，并在未来帮助它们实现可持续发展。成功案例需要被研究并复制到其他地方，以使绿色、蓝色、棕色和生产食物的屋顶成为世界各地城市的常态。

### [18Test4Passage2 The growth mindset 成长心态](http://www.laokaoya.com/56798.html)

第1段

Over the past century, a powerful idea has taken root in the educational landscape. The concept of intelligence as something innate has been supplanted by the idea that intelligence is not fixed, and that, with the right training, we can be the authors of our own cognitive capabilities. Psychologist Alfred Binet, the developer of the first intelligence tests, was one of many 19th-century scientists who held that earlier view and sought to quantify cognitive ability. Then, in the early 20th century, progressive thinkers revolted against the notion that inherent ability is destiny. Instead, educators such as John Dewey argued that every child’s intelligence could be developed, given the right environment.

在过去的这个世纪里，一种强大的观念在教育领域生根发芽。把智力看作是与生俱来的概念已被取代，而现在普遍认为智力并非固定不变。通过适当的培训，我们可以成为自己认知能力的主宰。心理学家阿尔弗雷德·比奈是第一批智力测试的开发者之一，他和19世纪许多科学家一样坚持着早期的观点，试图量化认知能力。然而，在20世纪初，一些进步思想家反对了与生俱来的能力决定论。相反，像约翰·杜威这样的教育家认为，每个孩子的智力在适当的环境下都可以得到发展。

第2段

‘Growth mindset theory’ is a relatively new – and extremely popular – version of this idea. In many schools today you will see hallways covered in motivational posters and hear speeches on the mindset of great sporting heroes who simply believed their way to the top. A major focus of the growth mindset in schools is coaxing students away from seeing failure as an indication of their ability, and towards seeing it as a chance to improve that ability. As educationalist Jeff Howard noted several decades ago: ‘Smart is not something that you just are, smart is something that you can get.’

“成长心态理论”是这一观念一个相对较新、也非常流行的版本。在今天的许多学校里，你会看到走廊上贴满激励性的海报，并听到有关伟大体育英雄心态的演讲，他们仅凭信念就达到了顶峰。成长心态在学校中的重点在于引导学生不再将失败视为他们能力的表现，而是将其看成提高自己能力的机会。正如教育学家杰夫·霍华德几十年前所指出的那样：“聪明不是你的固有品质，而是一种可以获得的东西。”

第3段

The idea of the growth mindset is based on the work of psychologist Carol Dweck in California in the 1990s. In one key experiment, Dweck divided a group of 10- to 12-year-olds into two groups. All were told that they had achieved a high score on a test but the first group were praised for their intelligence in achieving this, while the others were praised for their effort. The second group – those who had been instilled with a ‘growth mindset’ – were subsequently far more likely to put effort into future tasks. Meanwhile, the former took on only those tasks that would not risk their sense of worth. This group had inferred that success or failure is due to innate ability, and this ‘fixed mindset’ had led them to fear of failure and lack of effort. Praising ability actually made the students perform worse, while praising effort emphasised that change was possible.

成长心态理论的基础是心理学家卡罗尔·德韦克（Carol Dweck）在20世纪90年代在加利福尼亚所进行的研究工作。在一项关键实验中，德韦克将一组10至12岁的孩子分为两组。所有孩子都被告知在一项测试中取得了高分，但第一组被赞扬他们在取得高分时的聪明才智，而另一组则被赞扬他们的努力。随后，那些被灌输了“成长心态”的第二组孩子更有可能在未来的任务中付出努力。与此同时，前一组孩子只接受那些不会影响他们价值感的任务。这组孩子推断成功或失败取决于其与生俱来的能力，而这种“固定心态”导致他们害怕失败并缺乏努力。事实上，赞扬能力使学生表现更差，而赞扬努力则强调了改变是可能的。

第4段

One of the greatest impediments to successfully implementing a growth mindset, however, is the education system itself: in many parts of the world, the school climate is obsessed with performance in the form of constant testing, analysing and ranking of students -a key characteristic of the fixed mindset. Nor is it unusual for schools to create a certain cognitive dissonance, when they applaud the benefits of a growth mindset but then hand out fixed target grades in lessons based on performance.

然而，成功实施成长心态的最大障碍之一是教育系统本身：在世界许多地方，学校氛围过于注重通过持续的测试、分析和排名来评估学生的表现，这是固定心态的一个主要特征。而且，学校常常会在赞扬成长心态的好处的同时，在课程中设置固定的目标成绩，这会造成一定的认知失调。

第5段

Aside from the implementation problem, the original growth mindset research has also received harsh criticism. The statistician Andrew Gelman claims that ‘their research designs have enough degrees of freedom that they could take their data to support just about any theory at all’. Professor of Psychology Timothy Bates, who has been trying to replicate Dweck’s work, is finding that the results are repeatedly null. He notes that:’People with a growth mindset don’t cope any better with failure … Kids with the growth mindset aren’t getting better grades, either before or after our intervention study.’

除了实施问题外，最初的成长心态研究也受到了严厉的批评。统计学家安德鲁·吉尔曼（Andrew Gelman）声称：“他们的研究设计具有足够的自由度，以至于他们可以用数据支持几乎任何理论。”心理学教授蒂莫西·贝茨（Timothy Bates）一直在尝试复制德韦克的工作，但发现结果一再为零。他指出：“拥有成长心态的人并没有更好地应对失败…拥有成长心态的孩子在我们的干预研究之前或之后的成绩都没有变得更好。”

第6段

Much of this criticism is not lost on Dweck, and she deserves great credit for responding to it and adapting her work accordingly. In fact, she argues that her work has been misunderstood and misapplied in a range of ways. She has also expressed concerns that her theories are being misappropriated in schools by being conflated with the self-esteem movement: ‘For me the growth mindset is a tool for learning and improvement. It’s not just a vehicle for making children feel good.’

德韦克对这些批评并没有视而不见，她对批评的回应和对自己工作的调整值得称赞。实际上，她认为自己的研究在很多方面被误解和错误应用。她也表达了文章来自老烤鸭雅思对学校错误使用其理论的担忧，特别是将其与自尊运动相混淆：“对我来说，成长心态是学习和改进的工具，而不仅仅是为了让孩子感觉良好。”

第7段

But there is another factor at work here. The failure to translate the growth mindset into the classroom might reflect a misunderstanding of the nature of teaching and learning itself. Growth mindset supporters David Yeager and Gregory Walton claim that interventions should be delivered in a subtle way to maximize their effectiveness. This article is from laokoaya website. They say that if adolescents perceive a teacher’s intervention as conveying that they are in need of help, this could undo its intended effects.

但还有另一个因素在起作用。未能将成长心态应用于课堂可能反映出对教学和学习本质的误解。成长心态的支持者大卫·耶格（David Yeager）和格雷戈里·沃尔顿（Gregory Walton）认为，干预措施应采用微妙的方式，以最大限度地发挥其效果。他们表示，如果青少年将老师的干预看作是他们需要帮助，这可能会适得其反，削弱干预的预期效果。

第8段

A lot of what drives students is their innate beliefs and how they perceive themselves. There is a strong correlation between self-perception and achievement, but there is evidence to suggest that the actual effect of achievement on self-perception is stronger than the other way round. To stand up in a classroom and successfully deliver a good speech is a genuine achievement, and that is likely to be more powerfully motivating than vague notions of ‘motivation’ itself.

学生的行为在很大程度上受其内在信念和自我认知的影响。自我认知与学业成就之间存在着强烈的相关性。但有证据表明，实际成就对自我认知的影响要比反过来强烈得多。在课堂上能够自信地进行出色的演讲是一种真正的成就，这可能比模糊的“动机”概念更具有强大的激励作用。

第9段

Recent evidence would suggest that growth mindset interventions are not the elixir of student learning that its proponents claim it to be. The growth mindset appears to be a viable construct in the lab, which, when administered in the classroom via targeted interventions, doesn’t seem to work. It is hard to dispute that having faith in the capacity to change is a good attribute for students. Paradoxically, however, that aspiration is not well served by direct interventions that try to instill it.

最近的证据表明，成长心态干预并不像其支持者所声称的那样是学生学习的灵丹妙药。成长心态在实验室中似乎是一个可行的概念，但当它通过针对性的干预措施被引入到课堂中时，似乎并没有起到预期的作用。不可否认的是，对于学生来说，相信自己能够改变是一个好的品质。然而，矛盾的是，直接试图灌输这种愿望的干预措施并没有取得良好的效果。

第10段

Motivational posters and talks are often a waste of time, and might well give students a deluded notion of what success actually means. Teaching concrete skills such as how to write an effective introduction to an essay then praising students’ effort in getting there is probably a far better way of improving confidence than telling them how unique they are, or indeed how capable they are of changing their own brains. Perhaps growth mindset works best as a philosophy and not an intervention.

激励海报和演讲通常是在浪费时间，而且可能会让学生对成功产生错误观念。教授具体的技能，比如如何写一篇有效的论文引言，然后赞扬学生在这方面付出的努力，可能是提高他们信心的更好方法，而不是告诉他们自己有多独特，或者自己有能力改变自己的大脑。也许成长心态最好作为一种哲学理念，而不是一种干预措施。

### [18Test4Passage3 Alfred Wegener: science, exploration, and the theory of continental drift 阿尔弗雷德·韦格纳](http://www.laokaoya.com/56818.html)

第1段

This is a book about the life and scientific work of Alfred Wegener, whose reputation today rests with his theory of continental displacements, better known as ‘continental drift. Wegener proposed this theory in 1912 and developed it extensively for nearly 20 years. His book on the subject, The Origin of Continents and Oceans, went through four editions and was the focus of an international controversy in his lifetime and for some years after his death.

这是一本关于阿尔弗雷德·韦格纳生平和科学工作的书，他如今的声誉主要建立在他提出的“大陆漂移”理论上。韦格纳在1912年提出该理论，并在接下来的近20年里对其进行了深入研究。其相关著作《大陆和海洋的起源》经历了四次修订，在他有生之年和他去世后的几年里一直都是国际争议的中心。

第2段

Wegener’s basic idea was that many mysteries about the Earth’s history could be solved if one supposed that the continents moved laterally, rather than supposing that they remained fixed in place. Wegener showed in great detail how such continental movements were plausible and how they worked, using evidence from a large number of sciences including geology, geophysics, paleontology, and climatology. Wegener’s idea – that the continents move – is at the heart of the theory that guides Earth sciences today: namely plate tectonics. This article is from laokaoya website. Plate tectonics is in many respects quite different from Wegener’s proposal, in the same way that modern evolutionary theory is very different from the ideas Charles Darwin proposed in the 1850s about biological evolution. Yet plate tectonics is a descendant of Alfred Wegener’s theory of continental drift, in quite the same way that modern evolutionary theory is a descendant of Darwin’s theory of natural selection.

韦格纳的基本观点是，如果假设大陆在地球历史中沿水平方向移动，而不是保持固定位置，那么许多关于地球历史的谜团都可以解开。韦格纳详细展示了这种大陆运动为什么是可能的，以及它们的运作方式。他运用来自地质学、地球物理学、古生物学和气候学等多个科学领域的证据来支持这一理论。韦格纳的观点 – 大陆是移动的 – 是如今指导地球科学的核心理论，即板块构造学。板块构造学在很多方面与韦格纳的理论存在较大差异，就像现代进化论与查尔斯·达尔文在19世纪50年代提出的生物进化理论有很大的不同一样。然而，板块构造学是阿尔弗雷德·韦格纳大陆漂移理论的延续，就像现代进化论是达尔文自然选择理论的延续一样。

第3段

When I started writing about Wegener’s life and work, one of the most intriguing things about him for me was that, although he came up with a theory on continental drift, he was not a geologist. He trained as an astronomer and pursued a career in atmospheric physics. When he proposed the theory of continental displacements in 1912, he was a lecturer in physics and astronomy at the University of Marburg, in southern Germany. However, he was not an ‘unknown’. In 1906 he had set a world record (with his brother Kurt) for time aloft in a hot-air balloon: 52 hours. Between 1906 and 1908 he had taken part in a highly publicized and extremely dangerous expedition to the coast of northeast Greenland. He had also made a name for himself amongst a small circle of meteorologists and atmospheric physicists in Germany as the author of a textbook, Thermodynamics of the Atmosphere (1911), and of a number of interesting scientific papers.

当我开始书写有关韦格纳的生平和工作时，最让我着迷的一点在于，尽管他提出了大陆漂移理论，但他并不是一名地质学家。他的专业是天文学，并从事有关大气物理学的工作。当他在1912年提出大陆漂移理论时，他在德国南部的马尔堡大学担任物理学和天文学讲师。然而，他并不是一个“无名之辈”。1906年，他与他的兄弟库尔特文章来自老烤鸭雅思一起创下了热气球持续飞行的世界纪录：52小时。在1906年至1908年期间，他参与了一次备受瞩目且极其危险的探险，前往格陵兰东北部的海岸。他作为《大气热力学》（1911）一书和其他一些有趣科学论文的作者，还在德国气象学家和大气物理学家的小圈子中颇有名望。

第4段

As important as Wegener’s work on continental drift has turned out to be, it was largely a sideline to his interest in atmospheric physics, geophysics, and paleoclimatology’, and thus I have been at great pains to put Wegener’s work on continental drift in the larger context of his other scientific work, and in the even larger context of atmospheric sciences in his lifetime. This is a ‘continental drift book’ only to the extent that Wegener was interested in that topic and later became famous for it. My treatment of his other scientific work is no less detailed, though I certainly have devoted more attention to the reception of his ideas on continental displacement, as they were much more controversial than his other work.

尽管韦格纳在大陆漂移理论上的工作被证明非常重要，但它在很大程度上只是他对大气物理学、地球物理学和古气候学兴趣的一个副产品。因此，我非常努力的将韦格纳在大陆漂移理论上的工作放入他其他科学研究和生前所处的大气科学的更广泛背景中。这本书之所以被称为“大陆漂移”，仅仅是因为韦格纳对这个主题十分感兴趣，并因此而闻名。我对他的其他科学研究同样进行了详细的论述。尽管相较于其他工作，我理所应当的将更多的内容放在其大陆漂移理论在当时所引发的争议上。

第5段

Readers interested in the specific detail of Wegener’s career will see that he often stopped pursuing a given line of investigation (sometimes for years on end), only to pick it up later. I have tried to provide guideposts to his rapidly shifting interests by characterizing different phases of his life as careers in different sciences, which is reflected in the titles of the chapters. Thus, the index should be a sufficient guide for those interested in a particular aspect of Wegener’s life but perhaps not all of it. My own feeling, however, is that the parts do not make as much sense on their own as do all of his activities taken together. In this respect I urge readers to try to experience Wegener’s life as he lived it, with all the interruptions, changes of mind, and renewed efforts this entailed.

那些对韦格纳职业生涯细节感兴趣的读者，会发现他经常中断某一特定的研究方向（有时长达数年），然后再次重新开始。我试图通过总结其生命的不同阶段，即不同科学领域的职业生涯，来为其快速转变的兴趣提供指引。这一点也体现在章节标题上。因此，对于那些只对韦格纳生活的特定方面而不是全部内容感兴趣的读者来说，目录就应该能够提供足够指引。然而，我个人的感觉是，单独这些部分可能没有将其全部活动整合在一起有意思。在这方面，我建议读者尽量像韦格纳自己那样体验他的生活，包括其中的中断、改变主意和再度努力。

第6段

Wegener left behind a few published works but, as was standard practice, these reported the results of his work – not the journey he took to reach that point. Only a few hundred of the many thousands of letters he wrote and received in his lifetime have survived and he didn’t keep notebooks or diaries that recorded his life and activities. He was not active (with a few exceptions) in scientific societies, and did not seek to find influence or advance his ideas through professional contacts and politics, spending most of his time at home in his study reading and writing, or in the field collecting observations.

韦格纳留下了一些出版物，但按照当时的惯例，这些作品只报告了他的工作结果，而未涉及他为达到那一点所经历的过程。他在世期间收发的成千上万封信中，只有几百封幸存下来。他也没有做笔记或写日记来记录生活和活动的习惯。他并没有积极参与科学学会（存在少数例外），也不通过职业联系和政治手段寻求影响力或推广自己的观点。他大部分时间都待在家中的书房里和写作，或者在实地收集观察数据。

第7段

Some famous scientists, such as Newton, Darwin, and Einstein, left mountains of written material behind, hundreds of notebooks and letters numbering in the tens of thousands. Others, like Michael Faraday, left extensive journals of their thoughts and speculations, parallel to their scientific notebooks. The more such material a scientist leaves behind, the better chance a biographer has of forming an accurate picture of how a scientist’s ideas took shape and evolved.

一些著名的科学家，如牛顿、达尔文和爱因斯坦，留下了大量的书面材料，数百本笔记和数以万计的信件。而其他一些科学家，如迈克尔·法拉第，除了科学笔记外，还留下了大量日志记录他们的想法和推测。科学家留下的此类材料越多，传记作者就越能描绘出准确的画像，展现科学家的思想是如何形成和演变的。

第8段

I am firmly of the opinion that most of us, Wegener included, are not in any real sense the authors of our own lives. We plan, think, and act, often with apparent freedom, but most of the time our lives ‘happen to us’, and we only retrospectively turn this happenstance into a coherent narrative of fulfilled intentions. This book, therefore, is a story both of the life and scientific work that Alfred Wegener planned and intended and of the life and scientific work that actually ‘happened to him’. These are, as I think you will soon see, not always the same thing.

我坚定地认为，我们大多数人，包括韦格纳在内，实际上并不完全是自己人生的主宰。我们的规划、思考和行动可能拥有表面上的自由，但大部分时间我们的生活是被动发生的。只有回顾往事时，我们才将这种偶然性转化为一个连贯的、履行了相应意图的故事。因此，这本书是关于阿尔弗雷德·韦格纳所计划和所想要的生活和科学工作的故事，也是关于实际发生在他身上的生活和科学工作的故事。正如你很快会看到的那样，这两者并不总是一样的。