

## 朗阁雅思阅读考题预测

### Passage 1

#### LONGAEVA — Ancient Bristlecone Pine

##### A

To understand more about the earth's history, humans have often looked to the natural environment for insight into the past. The bristlecone pine (*Pinus longaeva*), of the White Mountains in California, has served this purpose greater than any other species of tree on the planet. Conditions here are brutal: scant precipitation and low average temperatures mean a short growing season, only intensified by ferocious wind and mal-nutritious rocky. Nevertheless, bristlecone pines have claimed these barren slopes as their permanent home. Evolving here in this harsh environment, super-adapted and without much competition, bristlecones have earned their seat on the longevity throne by becoming the oldest living trees on the planet. Results of extensive studies on bristlecone pine stands have shown that in fact such, environment limitations are positively associated with the attainment of great age. This intriguing phenomenon will be discussed further on.

##### B

But exactly how old is old? Sprouted before the invention of Egyptian hieroglyphs and long before the teachings of Jesus of Nazareth, Dethuselah is the oldest bristlecone alive at roughly 4,700 years. Although specimens of this age do not represent the species' average, there are 200 trees more than 3,000 years old, and two dozen more than 4,000. Considering that these high ages are obtained in the face of such remarkable environmental adversity, the bristlecone pines have become the focus of much scientific examination over the past half century.

##### C

Perhaps most interested in the bristlecone pine are dendochronologists, or tree-ring daters. With every strenuous year that passes in the White Mountains, each bristlecone grows and forms a new outer layer of cambium that reflects a season's particular ease or hardship. So while, growing seasons may expand or shrink, the trees carry on, their growth rings faithfully recording the bad years alongside the goods. Through examining the annual growth rings of both living and dead specimens, taking thousands of core samples, and by processes of cross-dating between trees and other qualitative records, scientists have compiled a continuous tree-ring record that dates back to the last Ice Age between eight and ten thousand years ago. Among other linked accomplishments, this record has enhanced the dating process, helping to double-check and correct the radiocarbon-14 method to more accurately estimate the age of organic material.

##### D

Now more than ever the importance of monitoring the bristlecone is being realized. As our global climate continues to undergo its most recent and abrupt atmospheric change, these ancient scribes continue to respond. Since, the rings of wood formed each year reveal the trees' response to climatic conditions during a particular growing seasons, in their persistence they have left us natural recordings of the past, markers of the present,

and clues to the future.

### E

The species' name originates from the appearance of its unusual cones and needles. The bristlecone's short, pale needles are also trademarks, bunching together to form foxtail-like bundles. As is the case of most conifer needles, these specialized leaves cluster together to shelter the stomata so very little moisture is lost through them. This adaptation helps the bristlecone photosynthesize during particularly brutal months. Saving the energy of constant needle replacement and providing a stable supply of chlorophyll. For a plant trying to store so much energy, bristlecone seeds are relatively large in size. They are first reproduced when trees reach ages between thirty and seventy-five years old. Germination rates are generally high, in part because seeds require little to no initial stratification. Perhaps the most intriguing physical characteristic of a mature bristlecone, however, is its ratio of living to dead wood on harsh sites and how this relates to old age. In older trees, however, especially in individuals over 1,500 years, a strip-bark trait is adaptive. This condition occurs as a result of cambium dieback which erodes and thereby exposes certain areas of the bole, leaving only narrow bands of bark intact.

### F

The technique of cambial edge retreat has help promote old age in bristlecone pine, but that certainly is not the only reason. Most crucial to these trees' longevity is their compact size and slow rates of growth. By remaining in most cases under ten meters tall, bristlecones stay close to the limited water supply and can hence support more branches and photosynthesizing. Combined with the dry, windy, and often freezing mountain air, slow growth guarantees the bristlecones tight, fibrous rings with a high resin content and structural strength. The absence of natural disaster has also safeguarded the bristlecone's lengthy lifespan. Due to a lack of ground cover vegetation and an evenly spaced layout, bristlecone stands on the White Mountain peaks have been practically unaffected by fire. This lack of vegetation also means a lack of competition for the bristlecones.

### G

Bristlecone pine's restricted to numerous, rather isolated stands at higher altitudes in the southwestern United States. Stands occur from the Rocky Mountains, through the Colorado Plateau, to the western margin of the Great Basin. Within this natural range, the oldest and most widely researched stands of bristlecones occur in California's White Mountains. Even just 200 miles away from the Pacific Ocean, the White Mountains are home to one of this country's few high-elevation deserts. Located in the extreme eastern rain shadow of the Sierra Nevada, this region receives only 12.54 inches of precipitation per year and experiences temperatures between -20F and +50F. The peaks south of the Owens Valley, are higher up than they might appear from a distance. Although most summits exist somewhere around 11,000 feet, snow-capped White Mountain Peak, for which the range is named, stands at 14,246 feet above sea level. That said, to reach areas of pure bristlecone is an intense journey all to itself.

## H

With seemingly endless areas of wonder and interest, the bristlecone pines have become subject to much research over the past half-century. Since the annual growth of these ancient organisms directly reflects the climatic conditions of a particular time period, bristlecones are of greatest significance to dendochronologists, or tree-ring specialists. Dating any tree is simple and can be done within reasonable accuracy just by counting out the rings made each year by the plant's natural means of growth. By carefully compiling a nearly 10,000-year-old bristlecone pine record, these patient scientists have accurately corrected the carbon-14 dating method and estimated ages of past periods of global climate change. What makes this record so special to dendochronologists, too, is that, nowhere, throughout time, is precisely the same long-term sequence of wide and narrow rings repeated, because year-to-year variations in climate are never exactly the same.

Historically the bristlecone's remote location and gnarled wood have deterred commercial extraction, but nothing on earth will go unaffected by global warming. If temperatures rise by only 6 degrees F, which many experts say is likely this century, about two-thirds of the bristlecones' ideal habitat in the White Mountains effectively will be gone. Almost 30,000 acres of National Forest now preserves the ancient bristlecone, but paved roads, campsites, and self-guided trails have led only to more human impact. In 1966, the U.S.F.S reported over 20,000 visitors to the Ancient Bristlecone Pine Forest, a figure which could exceed 40,000 today. Over the past hundreds of thousands of years, this species has endured in one of earth's most trying environments; they deserve our respect and reverence. As global climate change slowly alters their environment, we as humans must do our part to raise awareness and lower our impact.



Since 1999

### Questions 1-4

The reading Passage has nine paragraphs A-I.

Which paragraph contains the following information?

Write the correct letter A-I, in boxes 1-4 on your answer sheet.

- 1 Human activity threatens bristlecone pines habitat
- 2 Explanations for ring of bristlecone pines
- 3 An accountable recording provided from the past till
- 4 Survived in hostile environment

### Questions 5-7

Choose the correct letter, A, B, C or D.

Write your answers in boxes 5-7 on your answer sheet.

5 According to passage A, what aspect of bristlecone pines attracts author's attention?

- A Brutal environment they live
- B Remarkable long age
- C They only live in California
- D Outstanding height

6 Why do we investigate Bristlecone pines in higher altitudes of California's White Mountains?

- A Because oldest ones researched in this region
- B Because most bizarre ones are in this region
- C Because precipitation is rich in this region
- D Because sea level is comparatively high in this region

7 Why there are repeated patterns of wide and narrow rings?

- A Because sea level rises which affects tree ring
- B Because tree ring pattern is completely random
- C Because ancient organisms affect its growth
- D Because variation of climate change is different

### Questions 8-13

#### Summary

Complete the following summary of the paragraphs of Reading Passage, using **no more than three words** from the Reading Passage for each answer. Write your answers in boxes 11-13 on your answer sheet.

The bristlecone's special adaptation is benefit for photosynthesizing, and reserving the 8..... of leave replacement and providing sufficient chlorophyll. Probably because seeds do not rely on primary 9....., Germination rate is high. Because of cambium dieback, only narrow 10..... remain complete. Due to multiple factors such as windy, cold climate and 11....., bristlecones' rings have tight and solid structure full of resin. Moreover, bristlecone stands are safe from fire because of little 12..... plants spread in this place. The summits of Owens Valley is higher than they emerge if you observe from a 13..... .



**Answer keys:**

- 1 I
- 2 C
- 3 D
- 4 A
- 5 B
- 6 A
- 7 D
- 8 energy
- 9 stratification
- 10 (bands of) bark
- 11 (dry mountain) air
- 12 ground cover
- 13 distance



### Can We Hold Back the Flood?

#### A

Last winter's floods on the rivers of central Europe were among the worst since the Middle Ages, and as winter storms return, the spectre of floods is returning too. Just weeks ago, the river Rhone in south-cast France burst its banks, driving 15,000 people from their homes, and worse could be on the way. Traditionally, river engineers have gone for Plan A: get rid of the water fast, draining it off the land and down to the sea in tall-sided rivers re-engineered as high-performance drains. But however big they dig city drains, however wide and straight they make the rivers, and however high they build the banks, the floods keep coming back to taunt them, from the Mississippi to the Danube. And when the floods come, they seem to be worse than ever.

#### B

No wonder engineers are turning to Plan B: sap the water's destructive strength by dispersing it into fields, forgotten lakes, flood plains and aquifers. Back in the days when rivers took a more tortuous path to the sea, flood waters lost impetus and volume while meandering across flood plains and idling through wetlands and inland deltas. But today the water tends to have an unimpeded journey to the sea. And this means that when it rains in the uplands, the water comes down all at once. Worse, whenever we close off more flood plain, the river's flow farther downstream becomes more violent and uncontrollable. Dykes are only as good as their weakest link — and the water will unerringly find it.

#### C

Today, the river has lost 7 per cent of its original length and runs up to a third faster. When it rains hard in the Alps, the peak flows from several tributaries coincide in the main river, where once they arrived separately. And with four-fifths of the lower Rhine's flood plain barricaded off, the waters rise ever higher. The result is more frequent flooding that does ever-greater damage to the homes, offices and roads that sit on the flood plain. Much the same has happened in the US on the mighty Mississippi, which drains the world's second largest river catchment into the Gulf of Mexico.

#### D

The European Union is trying to improve rain forecasts and more accurately model how intense rains swell rivers. That may help cities prepare, but it won't stop the floods. To do that, say hydrologists, you need a new approach to engineering not just rivers, but the whole landscape. The UK's Environment Agency — which has been granted an extra £150 million a year to spend in the wake of floods in 2000 that cost the country £1 billion — puts it like this: "The focus is now on working with the forces of nature. Towering concrete walls are out, and new wetlands are in. "To help keep London's feet dry, the agency is breaking the Thames's banks upstream and reflooding 10 square kilometres of ancient flood plain at Otmoor outside Oxford. Nearer to London it has spent £100 million creating new wetlands and a relief channel across 16 kilometres of flood plain to protect the town of Maidenhead, as well as the ancient playing fields of Eton College. And near the south coast the agency is digging out channels to reconnect old meanders on the

river Cuckmere in East Sussex that were cut off by flood banks 150 years ago.

**E**

The same is taking place on a much grander scale in Austria, in one of Europe's largest river restorations to date. Engineers are regenerating flood plains along 60 kilometres of the river Drava as it exits the Alps. They are also widening the river bed and channelling it back into abandoned meanders, oxbow lakes and backwaters overhung with willows. The engineers calculate that the restored flood plain can now store up to 10 million cubic metres of flood waters and slow storm surges coming out of the Alps by more than an hour, protecting towns as far downstream as Slovenia and Croatia.

**F**

"Rivers have to be allowed to take more space. They have to be turned from flood-chutes into flood-foilers," says Nienhuis. And the Dutch, for whom preventing floods is a matter of survival, have gone furthest. A nation built largely on drained marshes and seabed had the fright of its life in 1993 when the Rhine almost overwhelmed it. The same happened again in 1995, when a quarter of a million people were evacuated from the Netherlands. But a new breed of "soft engineers" wants our cities to become porous, and Berlin is their shining example. Since reunification, the city's massive redevelopment has been governed by tough new rules to prevent its drains becoming overloaded after heavy rains. Harald Kraft, an architect working in the city, says: "We now see rainwater as a resource to be kept rather than got rid of at great cost." A good illustration is the giant Potsdamer Platz, a huge new commercial redevelopment by DaimlerChrysler in the heart of the city.

**G**

Los Angeles has spent billions of dollars digging huge drains and concreting river beds to carry away the water from occasional intense storms. The latest plan is to spend a cool \$280 million raising the concrete walls on the Los Angeles river by another 2 metres. Yet many communities still flood regularly. Meanwhile this desert city is shipping in water from hundreds of kilometres away in northern California and from the Colorado river in Arizona to fill its taps and swimming pools, and irrigate its green spaces. It all sounds like bad planning. "In LA we receive half the water we need in rainfall, and we throw it away. Then we spend hundreds of millions to import water," says Andy Lipkis, an LA environmentalist who kick-started the idea of the porous city by showing it could work on one house.

**H**

Lipkis, along with citizens groups like Friends of the Los Angeles River and Unpaved LA, want to beat the urban flood hazard and fill the taps by holding onto the city's flood water. And it's not just a pipe dream. The authorities this year launched a \$100 million scheme to road-test the porous city in one flood-hit community in Sun Valley. The plan is to catch the rain that falls on thousands of driveways, parking lots and rooftops in the valley. Trees will soak up water from parking lots. Homes and public buildings will capture roof water to irrigate gardens and parks. And road drains will empty into old gravel pits and other leaky places that should recharge the city's underground water reserves. Result: less flooding





and more water for the city. Plan B says every city should be porous, every river should have room to flood naturally and every coastline should be left to build its own defences. It sounds expensive and Utopian, until you realise how much we spend trying to drain cities and protect our watery margins-and how bad we are at it.



### Questions 1-6

The reading Passage has seven paragraphs A-G.

Which paragraph contains the following information?

Write the correct letter A-G, in boxes 1-6 on your answer sheet.

- 1 A new approach carried out in the UK
- 2 Reasons why twisty path and dykes failed
- 3 Illustration of an alternative Plan in LA which seems much unrealistic
- 4 Traditional way of tackling flood
- 5 Effort made in Netherlands and Germany
- 6 One project on a river benefits three nations

### Questions 7-11

Complete the following summary of the paragraphs of Reading Passage, using **no more than two words** from the Reading Passage for each answer. Write your answers in boxes 7-11 on your answer sheet.

Flood makes river shorter than it used to be, which means faster speed and more damage to constructions on flood plain. Not only European river poses such threat but the same things happens to the powerful 7..... in the US.

In Europe, one innovative approach carried out by UK's Environment Agency, for example a wetland instead of concrete walls is generated not far from the city of 8..... to protect it from flooding. In 1995, Rhine flooded again and thousands of people left the country of 9..... A league of engineers suggested that cities should be porous, 10..... set a good example for others. Another city devastated by heavy storms casually is 11..... though its government pours billions of dollars each year in order to solve the problem.

### Questions 12-13

Choose **TWO** correct letter, write your answers in boxes 12-13 on your answer sheet.

What **TWO** benefits will the new approach in the UK and Austria bring to us according to this passage?

- A We can prepare before flood comes
- B It may stop the flood involving the whole area
- C Decrease strong rainfalls around Alps simply by engineering constructions
- D Reserve water to protect downstream towns
- E Store tons of water in downstream area

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**Answer keys:**

- 1 D
- 2 B
- 3 G
- 4 A
- 5 F
- 6 E
- 7 Mississippi
- 8 London
- 9 The Netherlands
- 10 Berlin
- 11 Los Angeles, LA
- 12 B
- 13 D



## Passage 2

### London Swaying Footbridge

#### A

In September 1996 a competition was organized by the Financial Times in association with the London Borough of Southwark to design a new footbridge across the Thames. The competition attracted over 200 entries and was won by a team comprising Arup (engineers), Foster and Partners (architects) and the sculptor Sir Anthony Caro.

#### B

The bridge opened to the public on 10th June 2000. Up to 100,000 people crossed it that day with up to 2000 people on the bridge at any one time. At first, the bridge was still. Then it began to sway, just slightly. Then, almost from one moment to the next, when large groups of people were crossing, the wobble intensified. This movement became sufficiently large for people to stop walking to retain their balance and sometimes to hold onto the hand rails for support. It was decided immediately to limit the number of people on the bridge, but even so the deck movement was sufficient to be uncomfortable and to raise concern for public safety so that on 12th June the bridge was closed until the problem could be solved.

#### C

The embarrassed engineers found the videotape that day which showed the center span swaying about 3 inches side to side every second. The engineers first thought that winds might be exerting excessive force on the many large flags and banners bedecking the bridge for its gala premiere. What's more, they also discovered that the pedestrians also played a key role. Human activities, such as walking, running, jumping, swaying, etc. could cause horizontal forces which in turn could cause excessive dynamic vibration in the lateral direction in the bridge. As the structure began moving, pedestrians adjusted their gait to the same lateral rhythm as the bridge. The adjusted footsteps magnified the motion — just like when four people all stand up in a small boat at the same time. As more pedestrians locked into the same rhythm, the increasing oscillations led to the dramatic swaying captured on film.

#### D

In order to design a method of reducing the movements, the force exerted by the pedestrians had to be quantified and related to the motion of the bridge. Although there are some descriptions of this phenomenon in existing literature, none of these actually quantifies the force. So there was no quantitative analytical way to design the bridge against this effect. An immediate research program was launched by the bridge's engineering designers Ove Arup, supported by a number of universities and research organizations.

#### E

The tests at the University of Southampton involved a person walking 'on the spot' on a small shake table. The tests at Imperial College involved persons walking along a specially built, 7.2m-long platform which could be driven laterally at different frequencies

and amplitudes. Each type of test had its limitations. The Imperial College tests were only able to capture 7-8 footsteps, and the 'walking on the spot' tests, although monitoring many footsteps, could not investigate normal forward walking. Neither test could investigate any influence of other people in a crowd on the behavior of the individual being tested.

**F**

The results of the laboratory tests provided information which enabled the initial design of a retro — fit to be progressed. However, the limitations of these tests was clear and it was felt that the only way to replicate properly the precise conditions of the Millennium Bridge was to carry out crowd tests on the bridge deck itself. These tests done by the Arup engineers could incorporate factors not possible in the laboratory tests. The first of these was carried out with 100 people in July 2000. The results of these tests were used to refine the load model for the pedestrians. A second series of crowd tests was carried out on the bridge in December 2000. The purpose of these tests was to further validate the design assumptions and to load test a prototype damper installation. The test was carried out with 275 people.

**G**

Unless the usage of the bridge was to be greatly restricted, only two generic options to improve its performance were considered feasible. The first was to increase the stiffness of the bridge to move all its lateral natural frequencies out of the range that could be excited by the lateral footfall forces, and the second was to increase the damping of the bridge to reduce the resonant response.



**Questions 14-17**

Choose four letters, A-H.

Write the correct letters in boxes 14-17 on your answer sheet.

Which four of the following situation were witnessed on the opening ceremony of the bridge?

- A. The frequency of oscillation increased after some time.
- B. All the engineers went to see the ceremony that day.
- C. The design of the bridge astonished the people.
- D. Unexpected sideways movement of the bridge occurred.
- E. Pedestrians had difficulty in walking on the deck.
- F. The bridge fell down when people tried to retain their balance.
- G. Vibration could be detected on the deck by the pedestrians.
- H. It was raining when the ceremony began.

**Questions 18-22**

Complete the following summary of the paragraphs of Reading Passage 2, using **NO MORE THAN THREE WORDS** from the Reading Passage for each answer.

Write your answers in boxes 18-22 on your answer sheet.

After the opening ceremony, the embarrassed engineers tried to find out the reason of the bridge's wobbling. Judged from the videotape, they thought that 18..... and 19..... might create excessive force on the bridge. The distribution of 20..... resulted from human activities could cause 21..... throughout the structure. This swaying prompted people to start adjusting the way they walk, which in turn reinforced the 22.....

**Questions 23-26**

Complete the table below.

Choose **NO MORE THAN THREE WORDS** from Reading Passage 2 for each answer.

Write your answers in boxes 23-26 on your answer sheet.

Research programs launched by universities and organizations	
Universities/People	Activity
Test at 23.....	Limited ability to have 7-8 footsteps
'walking on the spot' at Southampton	Not enough data on 24.....
Crowd test conducted by 25.....	Aim to verify 26.....

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**Answer keys:**

- 14 A
- 15 D
- 16 E
- 17 G
- 18 winds
- 19 (the) pedestrians
- 20 horizontal forces
- 21 (excessive dynamic) vibration
- 22 motion
- 23 Imperial College
- 24 normal forward walking
- 25 (the) Arup engineers
- 26 (the) design assumptions



## Chinese Yellow Citrus Ant for BIOLOGICAL CONTROL

### A

In 1476, the farmers of Berne in Switzerland decided, according to this story, there was only one way to rid their fields of the cutworms attacking their crops. They took the pests to court. The worms were tried, found guilty and excommunicated by the archbishop. In China, farmers had a more practical approach to pest control. Rather than rely on divine intervention, they put their faith in frogs, ducks and ants. Frogs and ducks were encouraged to snap up the pests in the paddies and the occasional plague of locusts. But the notion of biological control began with an ant. More specifically, the story says, it started with the predatory yellow citrus ant *Oecophylla smaragdina*, which has been polishing off pests in the orange groves of southern China for at least 1700 years. The yellow citrus ant is a type of weaver ant, which binds leaves and twigs with silk to form a neat, tent-like nest. In the beginning, farmers made do with the odd ants' nest here and there. But it wasn't long before growing demand led to the development of a thriving trade in nests and a new type of agriculture — ant farming.

### B

For an insect that bites, the yellow citrus ant is remarkably popular. Even by ant standards, *Oecophylla smaragdina* is a fearsome predator. It's big, runs fast and has a powerful nip — painful to humans but lethal to many of the insects that plague the orange groves of Guangdong and Guangxi in southern China. And for at least 17 centuries, Chinese orange growers have harnessed these six-legged killing machines to keep their fruit groves healthy and productive. The story explains that citrus fruits evolved in the Far East and the Chinese discovered the delights of their flesh early on. As the ancestral home of oranges, lemons and pomelos, China also has the greatest diversity of citrus pests. And the trees that produce the sweetest fruits, the mandarins — or kan — attract a host of plant-eating insects, from black ants and sap-sucking mealy bugs to leaf-devouring caterpillars. With so many enemies, fruit growers clearly had to have some way of protecting their orchards.

The West did not discover the Chinese orange growers' secret weapon until the early 20th century. At the time, Florida was suffering an epidemic of citrus canker and in 1915 Walter Swingle, a plant physiologist working for the US Department of Agriculture, was, the story says, sent to China in search of varieties of orange that were resistant to the disease. Swingle spent some time studying the citrus orchards around Guangzhou, and there he came across the story of the cultivated ant. These ants, he was told, were "grown" by the people of a small village nearby who sold them to the orange growers by the nestful.

### D

The earliest report of citrus ants at work among the orange trees appears in a book on tropical and subtropical botany written by His Han in AD 304. "The people of Chiao-Chih sell in their markets ants in bags of rush matting. The nests are like silk. The bags are all attached to twigs and leaves which, with the ants inside the nests, are for sale. The ants



are reddish-yellow in colour, bigger than ordinary ants. In the south if the kan trees do not have this kind of ant, the fruits will all be damaged by many harmful insects, and not a single fruit will be perfect.”

### E

Initially, fanners relied on nests which they collected from the wild or bought in the market — where trade in nests was brisk. ‘It is said that in the south orange trees which are free of ants will have wormy fruits. Therefore the people race to buy nests for their orange trees,’ wrote Liu Hsun in *Strange Things Noted in the South*, written about AD 890. The business quickly became more sophisticate. From the 10th century, country people began to trap ants in artificial nests baited with fat. “Fruit glowing families buy these ants from vendors who make a business of collecting and selling such creatures,” wrote Chuang Chi-Yu in 1130. “They trap them by filling hogs’ or sheep’s bladders with fat and placing them with the cavities open next to the ants’ nests. They wait until the ants have migrated into the bladders and take them away. This is known as ‘rearing orange ants.’” Farmers attached the bladders to their trees, and in time the ants spread to other trees and built new nests. By the 17th century, growers were building bamboo walkways between their trees to speed the colonization of their orchards. The ants ran along these narrow bridges from one tree to another and established nests “by the hundreds of thousands”.

### F

Did it work? The orange growers clearly thought so. One authority, Chi Ta-Chun, writing in 1700, stressed how important it was to keep the fruit trees free of insect pests, especially caterpillars. “It is essential to eliminate them so that the trees are not injured. But hand labour is not nearly as efficient as ant power...” Swingle was just as impressed. Yet despite this reports, many Western biologists were skeptical. In the West, the idea of using one insect to destroy another was new and highly controversial. The first breakthrough had come in 1888, when the infant orange industry in California had been saved from extinction by the Australian vedalia beetle. This beetle was the only thing that had made any inroad into the explosion of cottony cushion scale that was threatening to destroy the state’s citrus crops. But, as Swingle now knew, California’s “first” was nothing of the sort. The Chinese had been expert in biocontrol for many centuries.

### G

The story goes on to say that the long tradition of ants in the Chinese orchards only began to waver in the 1950s and 1960s with the introduction of powerful organic. I guess the author means chemical insecticides. Although most fruit growers switched to chemicals, a few hung onto their ants. Those who abandoned ants in favour of chemicals quickly became disillusioned. As costs soared and pests began to develop resistance to the chemicals, growers began to revive the old ant patrols. They had good reason to have faith in their insect workforce. Research in the early 1960s showed that as long as there were enough ants in the trees, they did an excellent job of dispatching some pests — mainly the larger insects — and had modest success against others. Trees with yellow ants produced almost 20 per cent more healthy leaves than those without. More recent

trials have shown that these trees yield just as big a crop as those protected by expensive chemical sprays.

## H

One apparent drawback of using ants — and one of the main reasons for the early skepticism by Western scientists — was that citrus ants do nothing to control mealy bugs, waxy-coated scale insects which can do considerable damage to fruit trees. In fact, the ants protect mealy bugs in exchange for the sweet honeydew they secrete. The orange growers always denied this was a problem but Western scientists thought they knew better. Research in the 1980s suggests that the growers were right all along. Where mealy bugs proliferate under the ants' protection they are usually heavily parasitized and this limits the harm they can do. Orange growers who rely on carnivorous ants rather than poisonous chemicals maintain a better balance of species in their orchards. While the ants deal with the bigger insect pests, other predatory species keep down the numbers of smaller pests such as scale insects and aphids. In the long run, ants do a lot less damage than chemicals — and they're certainly more effective than excommunication.



**RAFLE**

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**Questions 14-18**

Use the information in the passage to match the year (listed A-G) with correct description below. Write the appropriate letters A-G in boxes 14-18 on your answer sheet.

**NB** You may use any letter more than once

- A 1888
- B 1476
- C 1915
- D 1700
- E 1130
- F 304 AD
- G 1950

- 14 First record of ant against pests written.
- 15 WS studied ant intervention method in China.
- 16 First ease of orange crops rescued by insect in western world.
- 17 Chinese farmers start to choose chemical method.
- 18 A book wrote mentioned ways to trap ants.

**Questions 19-26**

Do the following statements agree with the information given in Reading Passage 2?

In boxes 19-26 on your answer sheet, write

- TRUE** if the statement is true
- FALSE** if the statement is false
- NOT GIVEN** if the information is not given in the passage

- 19 China has the most citrus pests counted in types in the world.
- 20 Swingle came to China in order to search an insect for the US government.
- 21 Western people were impressed by Swingle's theory of pest prevention.
- 22 Chinese farmers realised that price of pesticides became expensive.
- 23 Some Chinese farmers start to abandon the use of pesticide.
- 24 Trees without ants had grown more unhealthy leaves than those with.
- 25 Yield of fields using ants is larger a crop than that using chemical pesticides.
- 26 Chinese orange farmers proposed that ant protection doesn't work out of China.

**Since 1999**

**Answer keys:**

- 14 F
- 15 C
- 16 A
- 17 G
- 18 E
- 19 TRUE
- 20 FALSE
- 21 FALSE
- 22 TRUE
- 23 TRUE
- 24 TRUE
- 25 FALSE
- 26 NOT GIVEN



Passage 3

Save Endangered Language

*“Obviously we must do some serious rethinking of our priorities, lest linguistics go down in history as the only science that presided obviously over the disappearance of 90 percent of the very field to which it is dedicated.” - Michael Krauss, “The World’s Languages in Crisis.”*

A

Ten years ago Michael Krauss sent a shudder through the discipline of linguistics with his prediction that half the 6,000 or so languages spoken in the world would cease to be uttered within a century. Unless scientists and community leaders directed a worldwide effort to stabilize the decline of local languages, he warned, nine tenths of the linguistic diversity of humankind would probably be doomed to extinction. Krauss’s prediction was little more than an educated guess, but other respected linguists had been clanging out similar alarms. Kenneth L. Hale of the Massachusetts Institute of Technology noted in the same journal issue that eight languages on which he had done fieldwork had since passed into extinction. A 1990 survey in Australia found that 70 of the 90 surviving Aboriginal languages were no longer used regularly by all age groups. The same was true for all but 20 of the 175 Native American languages spoken or remembered in the US, Krauss told a congressional panel in 1992.

B

Many experts in the field mourn the loss of rare languages, for several reasons. To start, there is scientific self-interest: some of the most basic questions in linguistics have to do with the limits of human speech, which are far from fully explored. Many researchers would like to know which structural elements of grammar and vocabulary — if any — are truly universal and probably therefore hardwired into the human brain. Other scientists try to reconstruct ancient migration patterns by comparing borrowed words that appear in otherwise unrelated languages. In each of these cases, the wider the portfolio of languages you study, the more likely you are to get the right answers.

C

Despite the near constant buzz in linguistics about endangered languages over the past 10 years, the field has accomplished depressingly little. “You would think that there would be some organized response to this dire situation, some attempt to determine which language can be saved and which should be documented before they disappear,” says Sarah G. Thomason, a linguist at the University of Michigan at Ann Arbor. “But there isn’t any such effort organized in the profession. It is only recently that it has become fashionable enough to work on endangered languages.” Six years ago, recalls Douglas H. Whalen of Yale University, “when I asked linguists who was raising money to deal with these problems, I mostly got blank stares.” So Whalen and a few other linguists founded the Endangered Languages Fund. In the five years to 2001 they were able to collect only \$80,000 for research grants. A similar foundation in England, directed by Nicholas Ostler, has raised just \$8,000 since 1995.

**D**

But there are encouraging signs that the field has turned a corner. The Volkswagen Foundation, a German charity, just issued its second round of grants totaling more than \$2 million. It has created a multimedia archive at the Max Planck Institute for Psycholinguistics in the Netherlands that can house recordings, grammars, dictionaries and other data on endangered languages. To fill the archive, the foundation has dispatched field linguists to document Aweti (100 or so speakers in Brazil), Ega (about 300 speakers in Ivory Coast), Waima'a (a few hundred speakers in East Timor), and a dozen or so other languages unlikely to survive the century. The Ford Foundation has also edged into the arena. Its contributions helped to reinvigorate a master-apprentice program created in 1992 by Leanne Hinton of Berkeley and Native Americans worried about the imminent demise of about 50 indigenous languages in California. Fluent speakers receive \$3,000 to teach a younger relative (who is also paid) their native tongue through 360 hours of shared activities, spread over six months. So far about 5 teams have completed the program, Hinton says, transmitting at least some knowledge of 25 languages. "It's too early to call this language revitalization," Hinton admits. "In California the death rate of elderly speakers will always be greater than the recruitment rate of young speakers. But at least we prolong the survival of the language." That will give linguists more time to record these tongues before they vanish.

**E**

But the master-apprentice approach hasn't caught on outside the U.S. and Hinton's effort is a drop in the sea. At least 440 languages have been reduced to a mere handful of elders, according to the Ethnologue, a catalogue of languages produced by the Dallas-based group SIL International that comes closest to global coverage. For the vast majority of these languages, there is little or no record of their grammar, vocabulary, pronunciation or use in daily life. Even if a language has been fully documented, all that remains once it vanishes from active use is a fossil skeleton, a scattering of features that the scientist was lucky and astute enough to capture. Linguists may be able to sketch an outline of the forgotten language and fix its place on the evolutionary tree, but little more. "How did people start conversations and talk to babies? How did husbands and wives converse?" Hinton asks. "Those are the first things you want to learn when you want to revitalize the language."

**F**

But there is as yet no discipline of "conservation linguistics", as there is for biology. Almost every strategy tried so far has succeeded in some places but failed in others, and there seems to be no way to predict with certainty what will work where. Twenty years ago in New Zealand, Maori speakers set up "language nests", in which preschoolers were immersed in the native language. Additional Maori-only classes were added as the children progressed through elementary and secondary school. A similar approach was tried in Hawaii, with some success — the number of native speakers has stabilized at 1,000 or so, reports Joseph E. Grimes of SIL International, who is working on Oahu. Students can now get instruction in Hawaiian all the way through university.

**G**

One factor that always seems to occur in the demise of a language is that the speakers begin to have collective doubts about the usefulness of language loyalty. Once they start regarding their own language as inferior to the majority language, people stop using it for all situations. Kids pick up on the attitude and prefer the dominant language. In many cases, people don't notice until they suddenly realize that their kids never speak the language, even at home. This is how Cornish and some dialects of Scottish Gaelic is still only rarely used for daily home life in Ireland, 80 years after the republic was founded with Irish as its first official language.

**H**

Linguists agree that ultimately, the answer to the problem of language extinction is multilingualism. Even uneducated people can learn several languages, as long as they start as children. Indeed, most people in the world speak more than one tongue, and in places such as Cameroon (279 languages), Papua New Guinea (823) and India (387) it is common to speak three or four distinct languages and a dialect or two as well. Most Americans and Canadians, to the west of Quebec, have a gut reaction that anyone speaking another language in front of them is committing an immoral act. You get the same reaction in Australia and Russia. It is no coincidence that these are the areas where languages are disappearing the fastest. The first step in saving dying languages is to persuade the world's majorities to allow the minorities among them to speak with their own voices.

**RAFLE**



**Since 1999**

**Questions 27-33**

The reading passage has eight paragraphs, A-H

Choose the correct heading for paragraphs A-H from the list below.

Write the correct number, i-xi, in boxes 27-33 on your answer sheet.

**List of Headings**

- i data consistency needed for language
- ii consensus on an initiative recommendation for saving dying out languages
- iii positive gains for protection
- iv minimum requirement for saving a language
- v Potential threat to minority language
- vi a period when there was absent of real effort made.
- vii native language programs launched
- viii Lack in confidence in young speakers as a negative factor
- ix Practise in several developing countries
- x Value of minority language to linguists.
- xi government participation in language field

27 Paragraph A

28 Paragraph B

**Example**

**Answer**

Paragraph C

vi

29 Paragraph D

30 Paragraph E

31 Paragraph F

32 Paragraph G

33 Paragraph H

**Questions 34-38**

Use the information in the passage to match the people (listed A-F) with opinions or needs below. Write the appropriate letters A-F in boxes 34-38 on your answer sheet.

- A Nicholas Ostler
- B Michael Krauss
- C Joseph E. Grimes
- D Sarah G. Thomason
- E Keneth L. Hale
- F Douglas H. Whalen

34 Reported language conservation practice in Hawaii

35 Predicted that many languages would disappear soon

36 Experienced process that languages die out personally

37 Raised language fund in England

38 Not enough effort on saving until recent work



**Questions 39-40**

Choose the correct letter, A, B, C or D.

Write your answers in boxes 39-40 on your answer sheet.

39 What is real result of master-apprentice program sponsored by The Ford Foundation?

- A Teach children how to speak
- B Revive some endangered languages in California
- C postpone the dying date for some endangered languages
- D Increase communication between students

40 What should majority language speakers do according to the last paragraph?

- A They should teach their children endangered language in free lessons
- B They should learn at least four languages
- C They should show their loyalty to a dying language
- D They should be more tolerant to minority language speaker



**Answer keys:**

- 27 v
- 28 x
- 29 iii
- 30 i
- 31 vii
- 32 viii
- 33 ii
- 34 C
- 35 B
- 36 E
- 37 A
- 38 D
- 39 C
- 40 B



### Book review on Musicophilia

#### A

Music and the brain are both endlessly fascinating subjects, and as a neuroscientist specialising in auditory learning and memory, I find them especially intriguing. So I had high expectations of *Musicophilia*, the latest offering from neurologist and prolific author Oliver Sacks. And I confess to feeling a little guilty reporting that my reactions to the book are mixed.

#### B

Sacks himself is the best part of *Musicophilia*. He richly documents his own life in the book and reveals highly personal experiences. The photograph of him on the cover of the book — which shows him wearing headphones, eyes closed, clearly enchanted as he listens to Alfred Brendel perform Beethoven's *Pathétique* Sonata — makes a positive impression that is borne out by the contents of the book. Sacks's voice throughout is steady and erudite but never pontifical. He is neither self-conscious nor self-promoting.

The preface gives a good idea of what the book will deliver. In it Sacks explains that he wants to convey the insights gleaned from the “enormous and rapidly growing body of work on the neural underpinnings of musical perception and imagery, and the complex and often bizarre disorders to which these are prone.” He also stresses the importance of “the simple art of observation” and “the richness of the human context.” He wants to combine “observation and description with the latest in technology,” he says, and to imaginatively enter into the experience of his patients and subjects. The reader can see that Sacks, who has been practicing neurology for 40 years, is torn between the “old-fashioned” path of observation and the new-fangled, high-tech approach: He knows that he needs to take heed of the latter, but his heart lies with the former.

#### D

The book consists mainly of detailed descriptions of cases, most of them involving patients whom Sacks has seen in his practice. Brief discussions of contemporary neuroscientific reports are sprinkled liberally throughout the text. Part, “*Haunted by Music*”, begins with the strange case of Tony Cicoria, a nonmusical, middle-aged surgeon who was consumed by a love of music after being hit by lightning. He suddenly began to crave listening to piano music, which he had never cared for in the past. He started to play the piano and then to compose music, which arose spontaneously in his mind in a “torrent” of notes. How could this happen? Was the cause psychological? (He had had a near-death experience when the lightning struck him.) Or was it the direct result of a change in the auditory regions of his cerebral cortex? Electroencephalography (EEG) showed his brain waves to be normal in the mid-1990s, just after his trauma and subsequent “conversion” to music. There are now more sensitive tests, but Cicoria, has declined to undergo them; he does not want to delve into the causes of his musicality. What a shame!

#### E

Part II, “A Range of Musicality,” covers a wider variety of topics, but unfortunately, some of the chapters offer little or nothing that is new. For example, chapter 13, which is five pages long, merely notes that the blind often have better hearing than the sighted. The most interesting chapters are those that present the strangest cases. Chapter 8 is about “amusia”, an inability to hear sounds as music, and “dysharmonia”, a highly specific impairment of the ability to hear harmony, with the ability to understand melody left intact. Such specific “dissociations” are found throughout the cases Sacks recounts.

**F**

To Sacks’s credit, part III, “Memory, Movement and Music”, brings us into the underappreciated realm of music therapy. Chapter 16 explains how “melodic intonation therapy” is being used to help expressive aphasic patients (those unable to express their thoughts verbally following a stroke or other cerebral incident) once again become capable of fluent speech. In chapter 20, Sacks demonstrates the near-miraculous power of music to animate Parkinson’s patients and other people with severe movement disorders, even those who are frozen into odd postures. Scientists cannot yet explain how music achieves this effect.

**G**

To readers who are unfamiliar with neuroscience and music behavior, Musicophilia may be something of a revelation. But the book will not satisfy those seeking the causes and implications of the phenomena Sacks describes. For one thing, Sacks appears to be more at ease discussing patients than discussing experiments. And he tends to be rather uncritical in accepting scientific findings and theories.

**H**

It’s true that the causes of music-brain oddities remain poorly understood. However, Sacks could have done more to draw out some of the implications of the careful observations that he and other neurologists have made and of the treatments that have been successful. For example, he might have noted that the many specific dissociations among components of music comprehension, such as loss of the ability to perceive harmony but not melody, indicate that there is no music center in the brain. Because many people who read the book are likely to believe in the brain localisation of all mental functions, this was a missed educational opportunity.

**I**

Another conclusion one could draw is that there seem to be no “cures” for neurological problems involving music. A drug can alleviate a symptom in one patient and aggravate it in another, or can have both positive and negative effects in the same patient. Treatments mentioned seem to be almost exclusively antiepileptic medications, which “damp down” the excitability of the brain in general; their effectiveness varies widely.

**J**

Finally, in many of the cases described here the patient with music-brain symptoms is reported to have “normal” EEG results. Although Sacks recognizes the existence of new



technologies, among them far more sensitive ways to analyze brain waves than the standard neurological EEG test, he does not call for their use. In fact, although he exhibits the greatest compassion for patients, he conveys no sense of urgency about the pursuit of new avenues in the diagnosis and treatment of music-brain disorders. This absence echoes the book's preface, in which Sacks expresses fear that "the simple art of observation may be lost" if we rely too much on new technologies. He does call for both approaches, though, and we can only hope that the neurological community will respond.



**Questions 27-30**

Choose the correct letter, A, B, C, or D.

Write the correct letter in boxes 27-30 on your answer sheet

27 Why does the writer have a mixed feeling about the book?

- A The guilty feeling made him so.
- B The writer expected it to be better than it was.
- C Sacks failed to include his personal stories in the book.
- D This is the only book written by Sacks.

28 What is the best part of the book?

- A the photo of Sacks listening to music
- B the tone of voice of the book
- C the autobiographical description in the book
- D the description of Sacks's wealth

29 In the preface, what did Sacks try to achieve?

- A make a herald introduction of the research work and technique applied
- B give detailed description of various musical disorders
- C explain how people understand music
- D explain why he needs to do away with simple observation

30 What is disappointing about Tony Cicoria's case?

- A He refuses to have further tests.
- B He can't determine the cause of his sudden musicality.
- C He nearly died because of the lightning.
- D His brain waves were too normal to show anything.

**Questions 31-36**

Do the follow statements agree with the views of the writer in Reading Passage 3?

In boxes 31-36 on your answer sheet, write

- YES** if the statement agrees with the views of the writer
- NO** if the statement contradicts with the views of the writer
- NOT GIVEN** if it is impossible to say what the writer thinks about this

31 It is difficult to give a well-reputable writer a less than totally favorable review.

32 Beethoven's Pathetique Sonata is a good treatment for musical disorders.

33 Sacks believes technological methods is of little importance compared with traditional observation when studying his patients.

34 It is difficult to understand why music therapy is undervalued

35 Sacks held little skepticism when borrowing other theories and findings in describing reasons and notion for phenomena he depicts in the book.

36 Sacks is in a rush to use new testing methods to do treatment for patients.

**Questions 37-40**

Complete each sentence with the correct ending, A-F, below.

Write correct letter, A-F, in boxes 37-40 on your answer sheet.

- 37 The content covered dissociations in understanding between harmony and melody
- 38 The study of treating musical disorders
- 39 The EEG scans of Sacks's patients
- 40 Sacks believes testing based on new technologies

- A *show no music-brain disorders.*
- B *indicates that medication can have varied results.*
- C *is key for the neurological community to unravel the mysteries.*
- D *should not be used in isolation*
- E *indicate that not everyone can receive good education.*
- F *show a misconception that there is function centre localized in the brain*



**Answer keys:**

- 27 B
- 28 C
- 29 A
- 30 A
- 31 YES
- 32 NOT GIVEN
- 33 NO
- 34 NOT GIVEN
- 35 YES
- 36 NO
- 37 F
- 38 B
- 39 A
- 40 B

