



SÈRIE 1

Listening comprehension (3 points)

We'll be on Mars again!

In the following conversation you are going to hear some new words. Read and listen to them. Make sure you know what they mean.

spacecraft, craft: nau espacial, nau / nave espacial, nave

layer: capa

gust of wind: cop de vent / golpe de viento

shield: escut / escudo

quake: terratrèmol / terremoto

seismometer: sismòmetre/sismómetro

Ready?

Now read the questions on the following page. Read them carefully before listening to the conversation.

Paul Smith: This is *Science Today*. Welcome! The spacecraft InSight successfully landed on the surface of Mars a few weeks ago, just as other spacecraft had done in previous missions, but it is different this time. Today, Dr Susan Halliday, a scientist working for the InSight mission for NASA is with us and will help us find out why this mission is different from previous ones.

Paul: We've had a lot of spacecraft go to Mars. What's unique about this mission?

Dr Halliday: We have had many missions that have looked at the surface of Mars, but we are the first one that is really going to tell us about the interior of Mars and its several layers, how all those layers got there. We will learn about the geologic activity that could have created a habitat that may have supported life early in Mars's history.

Paul: And why do we want to know that?

Dr Halliday: Well, what we are really aiming for, our big-picture scientific question is what happens in the first tens of millions of years after a planet forms. We know from investigations of volcanoes on Earth that all the rocky bodies go through this process of separating into different layers, but we don't know much about how that process really works. Our mission will help us gain a better understanding of this process.

Paul: Can you tell me a little bit about the craft?

Dr Halliday: Sure, it's the InSight Lander. Lander crafts don't have wheels. We actually need to stay in one place and be as quiet as possible so that we can use our instruments to detect Mars quakes. In fact, we put those instruments underground. This is extremely important to us. The first mission that landed on Mars, Viking, actually had a seismometer that stayed on the craft. So it detected the gusts of wind that made the craft shake, but it could not detect quakes precisely at all.

Paul: I see, so the InSight also has a seismometer?



Dr Halliday: Yes, that's right, but for the first time we're going to place it on the ground. The only other place where this has been done besides Earth is on the Moon. The Apollo astronauts actually drilled holes into the Moon to place some instruments underground. But now we are going to do all those things robotically. We use a robotic arm to put the seismometer in the ground and then place a wind shield on top of the seismometer to protect it from wind gusts that could be mistaken for seismic waves.

Paul: And how do you decide on the landing location? Can you determine a location precisely?

Dr Halliday: Yes, we can be very precise about the location. In fact, we chose a specific area where there is a certain elevation for safety reasons. The atmosphere of Mars is very thin, so we need to have enough atmosphere to slow us down so that we can land. And because the InSight is powered by solar energy, we need to be near the equator. And then, lastly, we don't want our spacecraft to land on rocks or to have rocks under the surface we want to drill. We went for the flattest, safest, most boring landing site ever on Mars, we were not interested in exploring the geology of various areas, as previous missions had done.

Paul: When the Curiosity spacecraft landed on Mars about six years ago, the landing was described as the seven minutes of terror. Is it less risky now?

Dr Halliday: Well, not really. Every time you land on Mars it's always very risky. When it works, it looks smooth and easy, but, in fact, at least a third of the missions that have been sent to Mars have failed.

Paul: And how is the landing achieved?

Dr Halliday: Well, first we need a heat shield, because we are going at 12,300 miles per hour when we hit the atmosphere of Mars. This slows down the craft quite a bit. Then, when it is pretty near the surface, the parachute is released. This makes the craft go quite slowly, and finally, in the last one hundred meters or so we remove the parachute and we come down on landing rockets. And so if everything goes well, it's quite a gentle touchdown.

Paul: But it's still a precision landing really, isn't it?

Susan: It is, and it's all automated. Because of the one-way flight time to Mars, we can't command anything when this is happening, we just have to rely on getting the sequence of commands correct in advance and we just sit in the control room and wait to hear back.

Paul: So, now that the landing was successful, what happens next?

Dr Halliday: Our initial mission lasts one Mars year, that is, two Earth years. The first thing we are going to do is spend a few months choosing the right place to put our instruments down in the ground. So it will be a while before we actually start acquiring data.

Paul: I am sure that data must be very interesting and revealing.

Dr Halliday: We hope so.



Paul: I'm afraid we've run out of time. Many thanks for talking to us about the InSight mission.

Dr Halliday: My pleasure.

Sources:

Adapted from:

<https://www.abc.net.au/radionational/programs/scienceshow/mars-insight-lander-to-monitor-mars-interior/10548156#>

ABC Radio National (Australian Broadcasting Corporation)



Listening comprehension

1. The InSight mission is unique in that it will investigate
 - ☒ **the geology of the interior of Mars.**
 - ☐ Mars' surface and atmosphere.
 - ☐ whether Mars can support human life.
 - ☐ the early history of Mars' atmosphere.
2. According to Dr Halliday, this mission will help scientists understand how
 - ☐ the activity of volcanoes developed on Earth millions of years ago.
 - ☐ layers of different types of rocks were formed on Earth.
 - ☒ **rocks separate into different layers.**
 - ☐ long ago planets like Mars and the Earth were formed.
3. Why does the InSight spacecraft need to stay in one place?
 - ☒ **To detect quakes.**
 - ☐ To detect wind.
 - ☐ To avoid making noise.
 - ☐ To avoid breaking instruments.
4. The seismometer of the Viking spacecraft
 - ☒ **could not detect Mars quakes well.**
 - ☐ could not measure wind gusts well.
 - ☐ was better than the one on the InSight lander.
 - ☐ was handled by astronauts.
5. The InSight makes use of a shield
 - ☐ to help put the InSight instruments underground.
 - ☒ **to protect the seismometer from wind gusts.**
 - ☐ to protect astronauts while they drill holes.
 - ☐ to protect the spacecraft from seismic waves.
6. The choice of the InSight's landing location was partially determined by
 - ☐ the orbit of Mars.
 - ☐ the amount of fuel left in the rocket.
 - ☒ **the type of surface of the landing spot.**
 - ☐ the speed of the spacecraft when reaching Mars.
7. A gentle touchdown of the spacecraft is achieved by
 - ☐ removing all rockets.
 - ☐ removing the heat shield.
 - ☒ **using a parachute to slow it down.**
 - ☐ separating the craft into 2 parts to make each part lighter in weight.
8. When will Dr Halliday and her team start receiving data from Mars?
 - ☐ One year after InSight lands.
 - ☐ Two years after InSight lands.
 - ☐ Almost immediately after InSight lands.
 - ☒ **After the instruments have been placed underground.**



Reading comprehension

1. According to professor Todorov

- ☐ **we only make first impressions about people we don't know.**
- ☐ we make first impressions only if they are misleading.
- ☐ our first impressions about someone are usually wrong.
- ☐ we usually share our first impression with many other people.

2. Once people have made their first impressions

- ☐ they may change them quite quickly if their opinions are not accurate.
- ☐ they will change their opinion if they are not sure of the person they have just met.
- ☐ **they will hardly ever change their first opinion about a person they have just met.**
- ☐ they always change their mind soon afterwards if given more time to judge a person.

3. Which one of these sentences is **TRUE**?

- ☐ **In first impressions women and men make similar judgments.**
- ☐ In first impressions women and men are judged similarly.
- ☐ In first impressions feminine-looking men are badly considered.
- ☐ In first impressions masculine-looking men are badly judged.

4. According to the text, the photos people publish on their dating profiles are

- ☐ their best ones in order to reflect their personalities only.
- ☐ a mixture of fake and real ones; people don't want to show how they really are.
- ☐ very superficial in order not to show one's real personality and generosity.
- ☐ **chosen to show physical and personality traits.**

5. Prof. Todorov affirms that

- ☐ first impressions are always reliable even when our date starts speaking.
- ☐ **people can change their first impressions when they start talking to their date.**
- ☐ talking to our date reinforces our first impressions, making them more certain.
- ☐ people in general make good predictions from their first impressions.

6. According to Professor Todorov, the conversational strategies used in online dating show

- ☐ that women talk more about themselves than men do.
- ☐ that men talk more about their profession than women do.
- ☐ that men and women use quite different approaches to dating.
- ☐ **that men and women take similar approaches to dating.**

7. If you want to find your perfect date, prof. Todorov recommends that you be

- ☐ talkative when you meet your date.
- ☐ **honest when you talk to your date.**
- ☐ a little vague when talking about your interests.
- ☐ responsible when you talk about your wealth.

8. At the end of the article we can come to the conclusion that speed-dating meetings

- ☐ are the only way to get married successfully.
- ☐ are successful only if you want to have children.
- ☐ **sometimes fulfil people's expectations.**
- ☐ are a very flawed system of meeting people.



SÈRIE 3

I. Listening Comprehension (3 points)

IS LIFE IN THE OUTBACK COMPATIBLE WITH CLIMATE CHANGE?

In the following conversation you are going to hear some new words. Read and listen to them. Make sure you know what they mean.

drought	sequera / sequía
livestock	bestià / Ganado
well	pou/pozo

Ready?

Now read the questions on the following page. Read them carefully before listening to the conversation.

Journalist: Today everyone is talking about climate change and its negative effects on our planet. In recent years, natural events such as huge forest fires, severe droughts and major hurricanes have made people around the world more aware of the importance of our environment. To talk about these and other issues, today we've invited Dr. Robert Thomas from Australian National University to our program. Welcome, Dr. Thomas.

Dr. Thomas: Thank you. Happy to be here.

Journalist: What can you tell us about the effects of climate change in Australia, Dr. Thomas?

Dr. Thomas: Climate change is affecting the amount of rain in the country. Simply put, it rains less. Right now one of the major issues in Australia is the shortage of water in the outback, the central part of the country that is quite a distance from the coastline cities where most Australians live. In the outback, there are more than a dozen towns without a reliable source of water.

Journalist: Oh, I didn't know that.

Dr. Thomas: In the past few years, there has been a severe drought in Australia. Most people don't realize that Australia is the world's most arid continent. Rivers and lakes are disappearing, so people are beginning to fear that many of the rural areas in the middle of the country may have to be abandoned.

Journalist: Is the lack of water only a result of climate change?

Dr. Thomas: Not exactly. In addition to severe drought in recent years that is related to climate change, the government approved mining projects that depended on an intensive use of water. Tourism in the outback has been promoted for years, and the



population there is growing. More mining and more people mean more pressure on water resources.

Journalist: So there has been a combination of factors involved.

Dr. Thomas: That's right. Besides the new mines and the growing number of people, the country has not invested enough money to prepare for its future water needs. Australia is behind countries like the United States and China in preparing for the future. And the sad part is, the future is now. It rains less in Australia than it did before, so the rivers are drying up. And every year there are huge forest fires that are uncontrollable.

Journalist: What are people going to do?

Dr. Thomas: Well, actually a lot of the farmers in the outback are giving up. Many have decided not to plant any crops on their land and are selling all their livestock. They are moving away. And the towns that developed to serve the farmers and ranchers will probably be abandoned. Those towns depend on the business created by the farmers, and the farmers depend on access to water. With no water, whole towns will probably disappear.

Journalist: It's surprising that nothing can be done. Can't they dig wells? I know that some deserts do have underground water.

Dr. Thomas: In some places, wells already supply part of the drinking water. Many towns want to dig new wells. But digging wells is not a permanent solution to the problem.

Journalist: Why not?

Dr. Thomas: Because the water underground is not high quality water for drinking. It often has a metallic taste, and there have been some studies to suggest that it is responsible for some long-term health problems like high blood pressure. This water has to be treated, and water treatment plants in the outback are expensive and harmful to the environment.

Journalist: Is the situation as bad in Australia's big cities, like Sydney and Melbourne?

Dr. Thomas: No, the situation in coastal areas like Sydney and Melbourne is better but not without problems. Both cities restrict the amount of water people can use. In Sydney the government has hired "water officers" to educate the public and enforce water restrictions.

Journalist: How about using sea water, like they do in other parts of the world? Australia obviously has easy access to oceans.

Dr. Thomas: We do use ocean water. The coastal areas have desalination plants, which are crucial to Australia's water supply. Desalination plants, however, also create some environmental problems because they require a lot of energy to operate and the salt they remove from the water is dumped back into the oceans, which is not good for fish and other sea-living creatures. But the fact is these plants are necessary for Australia.

Journalist: Can water be recycled? I know that in some places in the U.S. recycled water is used to clean streets, for example.



Dr. Thomas: Yes, recycling water is important now and will become even more important in the future. Recycled water is often used to water parks in cities. There are other things that can be done, too. For example, fire stations are studying how to use sand, instead of water, to put out fires. Gardens can have artificial lawns, as opposed to grass. We still don't know the long-term results of climate change, but it is clear that no matter what, Australia must plan for its future water needs.

Journalist: That's all we have time for today. Thank you, Dr. Thomas, for joining us today.

Dr. Thomas: My pleasure.

(adapted from an article by Livia Albeck-Ripka published in The New York Times, Dec. 8, 2019)



Listening comprehension

1. Which of the following is true about Australia?

- ☐ **The centre of the country has problems with its water supply.**
- ☐ Each year the country must prepare its coastal cities for hurricanes.
- ☐ The government currently restricts tourism in the outback.
- ☐ Several rivers flood every spring, after heavy rainstorms.

2. What is the relationship between the water supply in Australia and climate change, according to Dr. Thomas?

- ☐ Climate change is the only cause of the lack of rainfall in the outback.
- ☐ There is no obvious relationship between drought and climate change.
- ☐ **Climate change is one of the factors causing Australia's current problems.**
- ☐ The issue needs to be studied more before any conclusion can be reached.

3. What are some farmers and ranchers doing because of the situation described in the conversation?

- ☐ They are promoting the outback for tourism.
- ☐ They are building silver and gold mines.
- ☐ They are changing the crops they plant and raising sheep instead of cattle.
- ☐ **They are quitting and leaving.**

4. Why will digging wells not meet the population's needs in the outback?

- ☐ Because there is very little underground water in Australia.
- ☐ Because digging wells is extremely difficult and expensive.
- ☐ Because there are so many people that a few wells will not resolve anything.
- ☐ **Because the well water contains some elements that harm people's health.**

5. Which of the following is **NOT** a problem associated with water desalination plants?

- ☐ They need a lot of electricity to run.
- ☐ They deposit salt in ocean water.
- ☐ **They require nuclear power plants for energy.**
- ☐ They harm wildlife in the nearby seas.

6. Where is recycled water being used at present in Australia?

- ☐ In city drinking water.
- ☐ **In city parks.**
- ☐ On ranches, for animals to drink.
- ☐ In mines.

7. According to Dr. Thomas, which of the following is a possible measure to reduce the amount of water used?

- ☐ Cities can stop building public parks.
- ☐ New wells can be dug to use underground water.
- ☐ **Firefighters can substitute sand for water.**
- ☐ More dams can be built to better conserve river water.



8. Which of the following best characterizes Dr. Thomas' view of water use in Australia? He thinks that...

- ☐ **there should be more investment in the country's future requirements for water.**
- ☐ the government is doing everything it can to reduce water consumption.
- ☐ farms will disappear but ranches will continue to grow in the outback.
- ☐ new technology will help to reduce Australia's use of water.



Reading comprehension

1. According to the author, many young people...
 - ☐ want to wear light-coloured clothes with flowers.
 - ☐ like shopping for second-hand clothes to achieve a “retro” look.
 - ☒ **like buying used clothes that don't look dated.**
 - ☐ shop for genuine fur coats in second-hand shops.
2. In the US...
 - ☐ the second-hand market for clothing is getting smaller and smaller.
 - ☐ the first-hand market for clothing is 21 times larger than the second-hand market.
 - ☐ the second-hand market for clothing will overtake the first-hand market in 10 years.
 - ☒ **the second-hand market for clothing has increased much faster than the first-hand market.**
3. Which of the following is **TRUE** about people's shopping preferences in the U.K.?
 - ☒ **People over 60 are the age group that feels best about buying pre-worn clothing.**
 - ☐ Teenagers do not usually like buying second-hand clothes.
 - ☐ About 1/2 of all 30-40-year-olds regularly buy used clothes.
 - ☐ Less than half of people between 16 and 21 feel comfortable buying second-hand clothes.
4. Where is the first *Picknweight* vintage store?
 - ☐ In Covent Garden in London.
 - ☐ In Camden market in London.
 - ☒ **In Berlin.**
 - ☐ The text does not say.
5. How is second-hand clothes shopping different from buying new, unworn clothes?
 - ☐ Shoppers can find well-matched outfits ready to be purchased.
 - ☐ All sizes are available in second-hand stores.
 - ☒ **Shoppers should be ready to spend more time in the store.**
 - ☐ Clothes look nicer in a second-hand clothes shop than at home.
6. Which of the following is **NOT** true about *Rokit*?
 - ☐ Its business has grown substantially since 1986.
 - ☒ **It has a single retail location in London.**
 - ☐ It has sold a huge amount of pre-worn clothing.
 - ☐ It mends clothing before trying to sell it.
7. According to the author, if you want to buy now-but-not-new clothes...
 - ☐ you need to browse the internet.
 - ☐ you need to look for famous brands.
 - ☐ you should be looking for bright colours.
 - ☒ **you need to look for details currently in style.**
8. What does the phrase “Fashion is cyclical, after all” mean?
 - ☒ **It means that fashion trends return and are periodically back in style.**
 - ☐ It means that vintage clothes inevitably look old and outdated.
 - ☐ It means that cycling trends will always be fashionable.
 - ☐ It means that we should reduce, recycle and reuse vintage clothes.