

金沢大学

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1 Read the following passage and answer the questions in English.

The Urban Heat Island Effect

When it comes to coping with heatwaves, our own cities are working against us. Road surfaces, pavements, and buildings all contribute to keeping urban environments three to four degrees hotter than surrounding non-urban areas. With heatwaves predicted to increase in frequency and intensity, city governments are taking the urban heat island effect very seriously.

The urban heat island effect occurs because the dark surfaces of roads and buildings absorb and store heat during the day and then release it at night. "That's important, particularly during hot summer evenings; if the minimum temperatures are much warmer at night and not cooling down, then that can have health implications," says Dr. Melissa Hart of the University of New South Wales, Australia.

One of the simplest solutions to reducing the urban heat island effect is to provide more shade with trees. "On thermal images, you can see clearly the red hotspots of cities are streets, roads, car parks ... and you can see the contrast with parks, gardens, and trees," says Cathy Oke of Melbourne city government. Tree planting, however, has its limitations: trees can't be planted in the middle of roads, they can't necessarily be planted on private property, and there are also potential issues with having too many trees. Women can sometimes feel less safe walking around streets with many trees, more trees can mean more water use, and tree planting can also increase the risk of bushfires.

Another approach that can cut down on heat absorption is to consider different surface materials for roads and pavements. The city of Sydney has begun a trial of lighter-colored pavement on one inner-city street to see if this will reduce temperatures by reducing heat absorption. But lighter-colored pavement can be a problem in very sunny areas. "On a bright day ... the last thing you want is to be driving on the road with the sun coming down and bouncing off the pavement," says Dr. Simon Toze of Australia's Commonwealth Scientific and Industrial Research Organization.

One alternative is "green roads" with a special surface that allows water to soak in and even grass to grow through, which cuts down the amount of heat absorbed by the road surface. Dr. Toze says it might be particularly useful for low-traffic areas that don't see heavy vehicles, although he admits the special surface can make walking more difficult.

A similar principle to green roads applies to green roofs and green walls, where a building is partly or fully covered by plants. This approach indirectly reduces urban heat by cooling the building itself and reducing its air-conditioning requirements, which in turn reduces the amount of waste heat released into the environment. But green roofs can also have unwanted side effects. Recent research shows that increasing the number of green roofs may reduce the temperature in a city, but could also increase the humidity. The end result can be an increase in heat stress because of the combination of temperature and humidity.

There is another contributor to urban heat that is less talked about, and that is us. Our vehicles, the machinery we use to make our days more comfortable, such as air conditioning and refrigeration, and even our own bodies produce significant amounts of heat. This heat is something Dr. Hart argues we need to understand and deal with: "Obviously you can't get rid of the people in a city, but there are ways we can mitigate that." For example, more public transport means fewer heat-producing cars on the roads.

Another issue is our dependence on air conditioning during hot periods. Dr. Hart explains that we need to construct buildings that can deal with hot conditions more effectively than they currently do. This will mean that we won't have to use air conditioning so much, which in turn will result in less energy consumption and less waste heat.

There are no simple solutions to the urban heat island effect, but ignoring the problem is definitely not an option, according to Cathy Oke, who says, "The reality is that the climate is changing, and that cities that are already hot will get hotter." Perhaps the key thing that cities need to understand is that the factors that contribute to the urban heat island effect can be very different from city to city. This means that the potential solutions to it can also be very different. What works in one city, like planting trees along the wide streets of the U.S. city of Portland, is not going to be practical or effective in the narrow streets of Hong Kong, for example. Cities must, therefore, find solutions that match their particular characteristics.

(Adapted from "Urban heat islands: cooling things down with trees, green roads and fewer cars,"
The Guardian, February 20th, 2017)

Question 1: Based on the passage, answer questions (A) to (D) in English.

- (A) If the urban heat island effect worsens, why will this be harmful for residents of cities?
- (B) What are the possible problems when we plant too many trees as a solution to the urban heat island effect?
- (C) What problems may occur if cities adopt new materials for roads and pavements to hold down rises in temperature?
- (D) Why does the writer of the article conclude that each city must find its own solution to the urban

heat island effect?

Question 2: For statements (E) to (H), write TRUE if the statement matches the content of the passage. Write FALSE if the statement does not match the content of the passage.

- (E) In Sydney, tests with different materials have begun on several streets in order to understand the effects of heat absorption.
- (F) Buildings in urban cities covered with greenery will make the humidity level more comfortable for city dwellers.
- (G) The presence of humans itself is one cause of the urban heat island effect.
- (H) Changing the way buildings are constructed could help lessen the urban heat island problem.

Question 3: The urban heat island effect is also a big issue in Japan. What do you think Japanese cities should do about the urban heat island effect? Explain one possible approach and why this approach may be good for Japanese cities in 20 to 30 English words.

2 Read the following passage and answer the questions in English.

The Stages of Culture Shock

Living abroad can be a rewarding experience that encourages new world views, increases cultural curiosity, and supports willingness to explore unfamiliar places. However, it may also invite a sense of feeling a little lost in the world. Beginning with being unfamiliar with social norms or experiencing new foods, culture shock is a common phenomenon that generally moves through four different phases: honeymoon, frustration, adjustment, and acceptance. While individuals experience these stages differently and the impact and order of the stages varies widely, understanding the process can help people adapt and cope with new cultures.

The first stage of culture shock, the honeymoon stage, is often an overwhelmingly positive period when travelers fall in love with the language, people, and food in their new surroundings. At this stage, the trip or move seems like the greatest decision ever made or an exciting adventure to last forever. Fernanda Araujo, a Brazilian exchange student studying in America, remembers her honeymoon stage well. "I moved to the U.S. from Brazil to a host family and spoke almost no English," she said, "and within three months I had found a job, a boyfriend, I moved to an apartment with two other roommates, started a Brazilian dance club, and I was traveling all over California. It felt easy and quick for me to make the U.S. my home."

On short trips, the honeymoon stage may take over the entire experience as the later effects of culture shock don't have time to set in. On longer stays, the honeymoon will usually fade out and then comes a sense of frustration. This is the most difficult stage of culture shock and is probably familiar to anyone who has lived abroad or who travels frequently. During this period, miscommunications may happen frequently. Small things — losing keys, missing the bus or not being able to easily order food in a restaurant — may trigger frustration. Depression and homesickness are common and there is a strong desire to go home where things are familiar and comfortable. Describing this stage, Arne Plum, originally from Germany, said that his frustration in America began with repeated inconveniences relating to public transportation in rural areas. Plum said, "One thing that was particularly frustrating to me in the beginning was the lack of mobility that I experienced in the U.S. Where I grew up in Germany, you can get to any point at any time thanks to a great public transportation system, sidewalks, and bike lanes everywhere. In the U.S., you are very limited in the things you can do if you don't have a car and I completely underestimated how much you have to depend on others to get around. I realized that home, for me, meant to live in a place with countless opportunities and absolute freedom. I felt less independent and I think that this was one of the main reasons I felt frustrated."

The next stage, adjustment, usually begins when frustrations occur less often due to increased familiarity with the cultures, people, food, and languages of new environments. Navigation becomes easier, friends and communities of support are established, and the finer points of local languages may become more recognizable during this stage. Adjusting and settling in involves making efforts to understand local culture, according to Katie Riley, an American living in Turkey, who says, "After about six months or so, I found that the best way to understand my new environment was to ask questions and learn to respect the culture in the way it currently exists. The local Turkish people seemed much more accommodating when I showed genuine interest in their customs, rather than obviously being an American who was uncomfortable with her new situation. I also found myself asking my Turkish roommates what was okay to do, not okay to do, where to go and where not to go, so I was able to adjust to my environment more quickly."

Generally, though sometimes months or even years after wrestling with the emotional stages outlined above, the acceptance stage is reached. Acceptance doesn't mean that new cultures or environments are completely understood. Rather it signifies realization that complete understanding isn't necessary to function and thrive in the new surroundings. During the acceptance stage, those living in a new country gain a sense of familiarity that allows them to feel at ease. A common conclusion made by many who reach this stage is that it is not productive to judge a country's culture as wrong or right. Often, long-term residents gain peace of mind when they stop comparing and contrasting everything with their home culture, which leads to a genuine appreciation of cultural differences and how they shape the experience of living abroad.

For people living abroad, culture shock is just as much a part of the experience as food, people, and scenery. Recognizing the process and having an awareness of the sequence of four stages that unfold over time can help prevent culture shock from ruining an otherwise fantastic experience abroad.

(Adapted from "The 4 Stages of Culture Shock," *Global Perspectives*, February 20th, 2016)

Question 1: Based on the passage, answer questions (A) to (E) in complete English sentences.

- (A) What are three benefits of living abroad?
- (B) Why is a "lack of mobility" not usually a problem for Arne Plum in his homeland?
- (C) What are three examples of things that may cause frustration?
- (D) When Katie Riley wasn't sure if her actions were acceptable according to Turkish customs, what

did she sometimes do?

- (E) Over time, what do people who live abroad stop doing that leads to a true understanding of cultural differences?

Question 2: Read the following comments by four people staying in Japan.

Keith from the U.S.: "I think of myself as a really friendly person, but to be honest, I don't like it when total strangers talk to me in English. The other day I was in a supermarket and a young woman said to me, 'Hello, where are you from?' Maybe she just wanted to practice her English, but she has no right to bother me when I am shopping."

Pierre from France: "I am not Japanese, but I work for an international company based in Osaka. Over time, I stopped really thinking about how different the business culture is here, compared with France. There're still some things that I don't fully understand about the way things are done here, but I don't usually feel any stress from any cultural factors."

Natalie from Poland: "It's great to be living in Japan and I'm so happy to have a chance to be working here. Just walking around can be really awesome and I can see so many cool things. For example, the school uniforms that students wear are really cute! I have difficulty communicating in Japanese, but it's still fun to try."

Sarah from the U.K.: "Going to restaurants by myself used to be frustrating. I couldn't read Japanese so well, so I only went to places that had an English menu. But after a few months, with help from Japanese friends, I learned enough to get by and order some things in Japanese. Or I can ask staff for help."

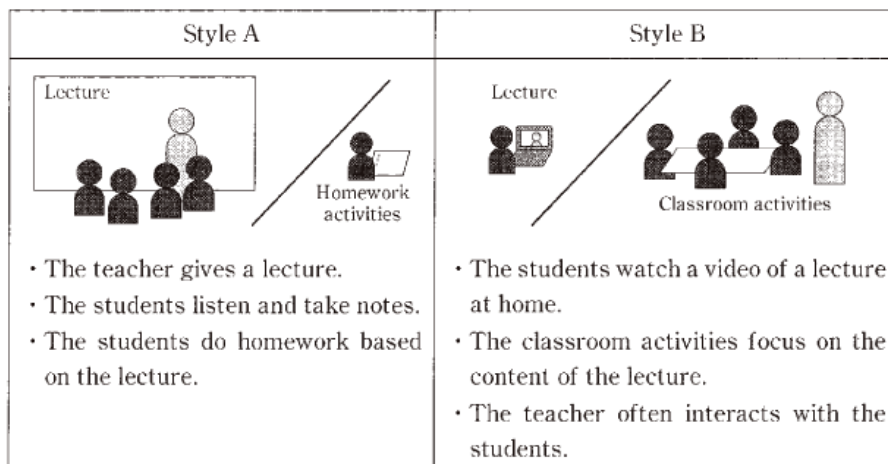
Answer the following questions by writing the correct name in the box.

- (F) Who is in the frustration stage?
(G) Who is in the adjustment stage?
(H) Who is in the acceptance stage?

Question 3: A honeymoon is a holiday taken by a newly married couple after their wedding. Why do you think the first stage of culture shock is called the honeymoon stage? Write your answer in 20 to 30 English words.

3

Look at the diagram below, which shows two different teaching styles, and answer the question.



(Adapted from <http://www.washington.edu/teaching/teaching-resources/engaging-students-in-learning/flipping-the-classroom/>)

Compare the advantages and disadvantages of the two styles. In your opinion, which style is better? Explain your opinion and give three reasons for it. Write 80 to 120 words in English.