

CHUKYO UNIVERSITY  
Entrance Examination 2020  
< First Term Exam >  
MAJOR in GLOBAL LIBERAL STUDIES (GLS)

【 Essay 】

Sunday, October 6, 2019 10:00-11:00

Do not turn over exam papers until told to do so.

General Directions

1. Listen carefully to instructions. Students are required to comply with the instructions of invigilators at all times.
2. You are not allowed to leave the exam room during the exam.
3. Place your Examination Card on your desk visible to the invigilators.
4. Students are permitted to have only these following items on their desks.  
<pencils, mechanical pencils, pencil caps, pencil sharpeners, erasers, glasses, handkerchiefs, blankets, eye drops, watches, tissues without cases>
5. Everything you write must be in the answer sheet.
6. If you have any trouble, raise your hand and the invigilators will come to you. The invigilators will not give hints or answers, so please do not ask for them.
7. Fill in your Examinee Number and your name in appropriate spaces when the exam has started.
8. Write your Examinee Number correctly while referring to your Examination Card
9. Remember that talking is not allowed at any time during the exam.
10. Make sure that all your mobile phones, smart watches, and other electronic devices are turned off before beginning the examination and must be kept in your bag.
11. Stop writing immediately when invigilators says it is the end of the exam.

※It might not be able to grade papers if your Examinee Number or your name is incorrect.

※Take your Examination Card and your seating sign taped on the desk home with you.

[ I ] Please read the following passage and answer each questions below in English, in 100 ~ 150 words.

The bottled water industry is increasing efforts to replace plastic bottles with more easily recycled aluminum containers, or cans. The effort follows public anger about reports that plastic water bottles are severely polluting the world's oceans. The French Danone company is the latest to replace some plastic water bottles with aluminum cans. Competitors like Coca-Cola, PepsiCo and Nestle have also started selling water in aluminum cans. Replacing plastic water bottles that pollute the seas with recyclable aluminum cans should be an easy way to help the environment, right? Maybe not.

Aluminum cans might result in less ocean waste, but they also come with their own cost to the environment. The production of an aluminum can is estimated to release two times as much carbon dioxide into the air as a plastic bottle. "That's the dilemma you're going to have to choose between," said Ruben Griffioen, an official at beermaker Heineken. He said his company was trying to reduce both plastic waste and carbon dioxide release.

The Environmental Protection Agency says aluminum cans have about 68 percent recycled content compared to just 3 percent for plastic bottles in the United States. As a result, aluminum is widely seen as the better choice for the environment.

Martin Barrow is with the non-profit organization Carbon Trust. He said, "The aluminum industry can play on the fact that its product is infinitely recyclable, and they're right." However, Barrow said, "aluminum uses huge amounts of electricity and it's also got some chemical releases of greenhouse gas emissions."

Aluminum has a larger carbon footprint<sup>1</sup> in production because of the power needed in the smelting<sup>2</sup> process. But, the metal containers also are lighter than glass or plastic bottles. Also, aluminum cans require less electric power to cool the liquid they contain.

"It's a complex picture," said Simon Lowden of Pepsico. "You have to think about transport, secondary packaging, time in store, all those considerations come into play." Bruce Karas of Coca-Cola North America agreed. He said, "There's a mix, there are some things that are not that desirable, but if you have five good things and one that isn't, we'll all have to make decisions." "It'll never be that clean," he added.

Bottled water is a \$19 billion industry. Although its use of cans is increasing, experts say cans are unlikely to completely replace plastic bottles. Aluminum is costlier than plastic so canned drinks mean higher prices for buyers. Another major consideration is user convenience – cans stay open while bottles can be reclosed. Karas said Coca-Cola is still looking at how the buying public reacts to canned water. The company plans to test the market. Later this year, it will carry out a limited launch of its water product, Dasani, in aluminum cans and aluminum bottles that can be reclosed. Other companies, including Danone and Pepsi, are testing new plastics that are biodegradable<sup>3</sup> or easier to recycle.

There is another possible barrier to ending the use of plastic water bottles: There may not be enough cans to go around. Beer and wine makers are now also increasingly using aluminum. An official with Ball, the world's top supplier of aluminum cans, said, "This is a level of growth that we haven't seen in a long time."

Source: Voice of America "Aluminum Cans or Plastic Bottles?" October 23, 2019

<https://learningenglish.voanews.com/a/aluminum-cans-or-plastic-bottles-/5130092.html>

Access date: January 27, 2020

※ With minor modifications

[Notes]

<sup>1</sup> carbon footprint – *n.* is the total amount of greenhouse gas emissions produced directly and in directly

<sup>2</sup> smelt – *v.* to melt rock that contains metal in order to get the metal out

<sup>3</sup> biodegradable – *adj.* capable of being slowly destroyed and broken into very small parts by natural process

Q1. According to the article, are aluminum cans or plastic bottles more environmentally friendly?

Q2. The article frames the problem as a choice between aluminum and plastic. What are other possible solutions that the article does not explore?

[ II ] Please read the following passage and answer each questions below in English, in 100 ~ 150 words.

Hundreds of fires are currently burning across Australia. They began burning in September. Smoke from the fires has spread across more than 20 million square kilometers. The United Nations weather agency and the Copernicus Atmospheric Monitoring Service reported the smoke has moved across the Pacific Ocean, reaching South America.

The fires in Australia have destroyed more than 2,000 homes and killed at least 26 people. Officials have ordered several evacuations in New South Wales and the neighboring state of Victoria. Both states also issued hazardous air quality warnings for affected areas. Officials said people with health problems should consider moving somewhere else until the smoke clears. Every year, an estimated 20,000 people die sooner than expected in the United States because of continuous wildfire smoke exposure. Scientists expect that number to double in the next 100 years.

The California National Primate Research Center is carrying out one of the few long-term health studies on wildfire smoke exposure. They are studying the effects the smoke can have on monkeys. For the study, they looked at the lungs of 50 rhesus monkeys. The monkeys were living in outdoor pens year-round. In 2008, they were exposed to a long period of wildfire smoke. The monkeys were babies at the time. They went on to develop lungs 20 percent smaller than another group of monkeys born a year later, researchers found. The center's associate director of research, Lisa Miller, said of the study, "It's the closest animal model to replicate<sup>1</sup> what happens with kids."

Studies of wildland firefighters also offer a look at the risks of smoke inhalation. Wildland firefighters are trained especially to fight wildfires. These studies have shown notably higher rates of lung cancer and death from heart disease among the firefighters, said Michael Kleinman. He researches the health effects of air pollution and is a professor of environmental toxicology<sup>2</sup> at the University of California, Irvine. Firefighters get hit with smoke much more often and at much higher levels. But Kleinman said a small increase in illnesses could be expected among people who have been exposed to wildfire smoke across California and the West.

Kelsey Norton remembers fleeing Paradise with her boyfriend. It was the morning of November 8, 2018. She said the smoke was so thick "it was like midnight." A few days later, she went back to work at a hospital in Chico, about 24 kilometers from Paradise. But smoke from the still-burning wildfire had made it inside the hospital itself. There was not enough face protection to go around. So, Norton says, she went without any protection for several days. At first, she felt just a little out of breath, But two weeks later, she developed a respiratory<sup>3</sup> infection. Her body temperature was high and she had severe congestion. When she finally got better, she got sick again. And then again. She has had eight or nine respiratory infections in the past year. She said, "I just want to break this cycle of sickness."

Norton is one of about 9,000 people taking part in a study on smoke exposure in Paradise and other California communities. The work is led by researchers at the University of California, Davis. The researchers plan to study the long-term health of a small number of those 9,000 people in the coming years. They are also working with the primate center to see if the effects seen in the young monkeys are at all similar to those seen in young humans.

The wildfires in Australia and the western U.S. have burned thousands of homes and other structures -- not just wood from trees. This adds to the health risks, experts say. Building materials and household items made from petroleum-based plastics burn hotter and generate smoke that is more poisonous.

Nicholas Kenyon is a researcher involved in the effort. He said identifying the health effects of smoke is increasingly urgent. "We've got the population affected right now, but ... this is going to be the entire West," Kenyon said. "Nobody's been really inhaling this kind of stuff from structures until now."

Source: Voice of America "Smoke from Wildfires Has Long Term Health Effects" January 19, 2020

<https://learningenglish.voanews.com/a/smoke-from-wildfires-has-long-term-health-effects/5245604.html>

Access date: January 27, 2020

※ With minor modifications

[Notes]

<sup>1</sup> replicate – *v.* to repeat or copy something exactly

<sup>2</sup> toxicology – *n.* the study of poisonous chemicals and drugs and how a person or other living thing reacts to them

<sup>3</sup> respiratory – *adj.* of or relating to breathing or the organs of the body that are used in breathing

Q1: What is some evidence of the type of problems caused by smoke exposure, and what is the connection between primates and humans in this regard?

Q2: In your opinion, what is the primary reason for the increase in wildfires in recent years, and what possible solutions should we explore to limit the damage caused by such fires?

## Model Answers

[1]

### Q1.

According to the article, it is a complex issue, but in general, aluminum is more environmentally friendly. There are several reasons for this.

Plastic bottles seriously pollute our environment, whereas aluminum cans have a higher recycle rate. Plastic bottles contain only 3% recycled content, while for aluminum cans it is 68%. That is a significant difference. One problem, however, is that aluminum uses huge amounts of electricity in the production process, so it emits more greenhouse gases. Yet plastic bottles require the use of more electricity than aluminum to cool the liquids.

While there is no perfect solution, the advantages to the environment are more for aluminum. Nevertheless, we are not sure if consumers will be attracted to drinking water from a can. Several companies are now testing this. They are also testing cans which can be reclosed. Unfortunately, there may not be enough aluminum to go around, since many companies are thinking of switching to aluminum. We will have to see what the future brings, but it is certain that something has to be done to reduce pollution.

(179 Words)

### Q2.

While the reading just compares plastic and aluminum, there may be other options. One of the best options would be for people to start using their own refillable containers. In many countries such as Germany, people go to the supermarket with all their own bags and containers, and put the goods directly into those. The government might be able to convince people to bring their own “PET” bottles, glass bottles, or thermos/”*suito*” to the convenience store or supermarket, and fill the liquids from drink machines. This would be a challenge, but it is worth trying.

We could also increase the tax on small plastic bottles and cans, and give some incentive for people to buy larger containers, and then transfer the water to their own bottle or thermos at home. We could consider to give a refund of 10 yen to customers who bring back their plastic bottles, which would increase the amount of recycling. As you see, there are a variety of possible solutions which we should explore.

(169 Words)

[II]

**Q1.**

Due to the smoke exposure from wildfires, various health problems occur. In the short term, there is an increase in sickness and respiratory problems for people exposed to smoke, such as Kelsey Norton. Also, people living near a fire, as well as professional firefighters, seem to experience higher rates of lung cancer, and death from heart disease. And of course, many people lose their homes and other property.

Regarding the connection to primates, the California National Primate Research Center conducted a study on 50 baby monkeys who had been living in outdoor pens, and had been exposed to a long period of wildfire smoke. The study shows that the monkeys went on to develop lungs which were 20% smaller than the lungs of another group, who were born one year later. So the evidence seems strong that these kinds of problems could develop among human children exposed to smoke, as well.

(151 Words)

**Q2.**

In my opinion, the primary reason for the increase in wildfires is global warming and related climate change. With temperatures increasing every year, forests are becoming more dry and easy to burn. In addition, I believe the amount of rainfall has decreased during certain seasons in many parts of the world. As a result, fires may start spontaneously, or when they are started by careless people, they spread more quickly.

We must strongly explore several solutions to limit the damage caused by the wildfires. One of the key choices maybe not to allow people to build houses near an area that commonly has trouble with wildfires. In addition, we should thin the forests before the dry season, and the governments should create spaces, or “fire breaks” between trees, at regular intervals, so there is some land with no trees and the fires may be stopped. We should pursue these and other measures to reduce wildfires in the future.

(158 Words)