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FIRST LANGUAGE ENGLISH (US) **0524/13**

Paper 1 Reading **May/June 2021**

INSERT **2 hours**

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INFORMATION

- This insert contains the reading texts.
- You may annotate this insert and use the blank spaces for planning. **Do not write your answers** on the insert.

This document has **8** pages. Any blank pages are indicated.

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Read **Text A**, and then answer **Questions 1(a)–1(e)** on the question paper.

Text A: Are humans the only primates that can talk?

This text is an article about how primates communicate.

Primates such as monkeys and chimps have surprised and impressed research scientists in recent years. 700-year-old stone hammers discovered in Brazil provide evidence that capuchin monkeys used tools to open cashew nuts. Meanwhile, scientists filming chimps in Uganda identified a range of gestures that wild chimpanzees use to communicate.

Humans and other primates have very similar vocal anatomy in terms of their tongues and larynx (the parts of the throat which allow us to turn air into sound). Bonobos, which are the closest relative to humans, have 38 distinct calls. It has been suggested that their vocalizations are evidence of the early evolution of language. So why can only human primates actually talk?

As scientist, Dr Jacob Dunn explained, 'That's probably due to differences in the brain, but until now there haven't been studies which compare species.' Dr Dunn set out to do that. He ranked 34 different primate species based on their vocal abilities – the number of distinct calls they make in the wild. Bottom of his ranked list of primates was the proboscis monkey, with four known distinct calls. The apes – led by the bonobo – were at the top. He then examined the brain of each species, using information from existing, preserved brains kept for research.

Understanding how the brain is wired in these different primate species and how that relates to vocal ability could help scientists to understand how speech may have evolved in humans. Since we cannot study our extinct human ancestors, our closest primate cousins might fill the intriguing gaps in our knowledge. Elements of language found in other primates probably existed millions of years ago, when the common ancestors of both humans and these species roamed the earth.

However, other researchers urge caution in drawing conclusions from any study which does not include data from humans. They also argue that a much deeper understanding of how exactly non-human primates use their vocalizations is needed. For example, many primates can combine different calls in different ways to create different meanings. How this ability to combine calls might correspond to brain anatomy would be a promising avenue to explore.

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Read **Text B**, and then answer **Question 1(f)** on the question paper.

Text B: Nim Chimpsky: the chimp they tried to turn into a human

In the early 1970s, a chimpanzee named Nim Chimpsky was the subject of an experiment. Now, his strange life has been turned into a documentary by film director James Marsh.

Whether he's zooming past in a pushchair or annoying a passing cat, it's impossible not to be charmed by Nim the chimpanzee, adorably clothed in outfits more suited to a toddler than a baby chimpanzee.

Nim Chimpsky, to give him his full title, was born in the Institute for Primate Studies in the early 1970s. Highly intelligent, he was chosen to be the subject of a language experiment called Project Nim, led by scientist Herbert S Terrace. The project aimed to discover whether or not chimpanzees could use grammar to create sentences if they were taught sign language, and nurtured in a similar environment to human children. His name is a pun on Noam Chomsky, the linguist who claimed that language is unique to humans. Terrace's experiment hoped to disprove this.

Nim's life story is told in a new documentary which uses archive footage, photographs and interviews with those who cared for Nim. The film considers ethical issues and traces the emotional experiences of both the trainers and the chimpanzee.

At less than two weeks old Nim was sent to join a human family, to be raised like any other child. Terrace hoped that teaching communication to a 'humanized' chimpanzee would shed light on how language is acquired by human beings.

'Nim behaves in a way that is normal for a chimpanzee, but he's in a human world,' director James Marsh says. 'He's in the wrong context and that becomes his tragedy. At that time, the question of how much we are born a certain way, as a species and as individuals, and how much we are shaped by our surroundings, was being hotly debated by scientists. It remains an unanswered question today.'

When the experiment ended, Nim could only use fragments of sign language. He was returned to the institute, then sold on and struggled to adapt. Researchers reported that Nim used signs to them that included 'hug' and 'play'. He'd never previously met another chimp.

Marsh admits that conveying Nim's experiences was tough. 'I felt that Nim's life had already been blighted by people projecting human qualities on to him. I can't always be sure what Nim's thinking and feeling because he's a chimpanzee.'

Read **Text C**, and then answer **Questions 2(a)–2(d)** and **Question 3** on the question paper.

Text C: A window on the world – my years with chimpanzees

This text is part of a longer account. The narrator, Jane Goodall, is a scientist and expert in primate behavior as well as an animal rights campaigner. She has recently returned to the jungle.

I woke before the alarm. Breakfast – banana and coffee – was soon finished. Minutes later, pockets stuffed with camera, notebook, pencil, and a handful of raisins for lunch, I headed for the place where the evening before I'd watched 18 chimpanzees settle down for the night, and waited.

Rustling of leaves above signalled that the group was waking. Peering into the tree where Fifi had made a nest for herself and infant Flossi, I saw their silhouettes. Moments later eight-year-old daughter Fanni climbed up from her nest nearby, a small fluffy shape against the sky. Fifi's other two offspring, adult Freud and adolescent Frodo, had nested further up the slope.

In the trees, other chimpanzees of the group moved about, preparing for their day. Some began to feed. I remained still, aware that pandemonium might yet break out, but utterly content to be here after months away – long weeks of lectures and lobbying in the USA and Europe. This was my first day back with the chimps. I planned to enjoy getting reacquainted with my old friends, taking pictures and getting my climbing legs back.

It was Graybeard who led off, 30 minutes later, pausing twice to make sure the rest were following. We headed north, then plunged into the valley and with frequent pauses for feeding, made our way up the opposite slope. By the time the eastern sky grew brighter, we were high above the lake. The chimps stopped and groomed for a while, enjoying the warm morning sunshine.

From where I sat, I could look over the valley at the grassy ridge that in the early days was my vantage point before the chimps had learned to trust this human and I'd learned how to avoid trouble. From there I'd watched the chimpanzees through my binoculars. A surge of memories flooded back. Gradually in those days I'd pieced together fragments from their daily lives, feeding habits, travel routes and social structure. Thinking back I relived the thrill of watching Graybeard fishing for termites with stems of grass – picking a wide blade of grass and trimming it carefully so it could be poked into the narrow passage of the termite mound. What a discovery – humans weren't the only tool-making animals! Nor were chimpanzees the placid vegetarians people supposed. I shuddered, remembering grim years when the males of the community had waged war against a neighboring chimp group.

My attention jerked back to the present with a sudden outbreak of chimpanzee calls. Looking up through the canopy I saw a gray, heavy sky. Growing darkness brought stillness, punctuated only by distant drumming of thunder. Then the rain began. As the rain got heavier Frodo started leaping about in the tree tops above, swinging vigorously from one branch to the next, becoming wilder and more daring as fatter, faster drops found their way through the dense canopy. Suddenly, heralded by a thunderclap that shook the mountains and growled on and on, bouncing from peak to peak, the clouds released such torrential rain that sky and earth seemed joined by moving water. Frodo stopped playing and he, like the others, sat hunched and still, close to the trunk of a tree.

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It must have taken about an hour before the rain eased off and the heart of the storm swept away. The chimps climbed down and moved off through the soaked, dripping vegetation. I followed awkwardly, my cold wet clothes hindering movement. A pale watery sun had appeared. Its light caught the raindrops so that the world seemed hung with diamonds. I crouched low to avoid destroying a spider's web that stretched, exquisite and fragile, across the trail. The leaves were brilliant, vivid, veined greens in the soft sunlight; wet trunks and branches gleamed like ebony; the black coats of the chimps were shot with flashes of coppery-brown. I stayed until the chimps nested.

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How much we still have to learn …

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