

I 次の英文を読んで、以下の設問に答えよ。(90点)

The raised eyebrow, the curled lip and the exchange of hormone-laden spittle are very effective ways of communicating at close quarters, but animals also need to send long-distance messages to strangers of their own kind living in other communities. They even on occasion have to converse with individuals of another species. For both purposes, they have to use rather different techniques.

The message most frequently declared by one species to another is simple and straightforward: Go Away! An angry elephant charging with outstretched ears, trumpeting as it comes, makes its meaning perfectly clear very quickly. Other animals of all kinds are in no doubt about it, whether they are prowling lions or over-confident photographers. But inter-specific* communications can be rather more complicated than that.

The honey-guide** is a lark-sized bird that lives in east Africa. Its diet is insects of all kinds and it has a particular penchant for the grubs of honey-bees. Getting them, however, is not easy. Wild African bees build their nests in hollow trees or clefts in rocks. The honey-guide's beak is slender and delicate so the bird cannot cut away wood, still less chip stone. If it is to get its favourite food, it has to recruit a helper. Usually, that is a man.

In northern Kenya, where honey-guides still live in some numbers, particular men of the semi-nomadic Boran tribe specialise in collecting honey. When one sets out to do so, he begins by walking into the bush and whistling in a very penetrating way, blowing across a snail shell, a seed with a hole in it, or just using his clasped fists. If he is within the territory of a honey-guide, the bird will appear within minutes, singing a special chattering call that it makes on no other occasion. As soon as the two have registered one another's presence, the bird flies off with a peculiar low swooping flight, spreading its tail widely as it goes so that the white feathers on either side of it are clearly displayed. The man follows, whistling and shouting to reassure the bird that he understands its

summons and is following.

The bird may now disappear for several minutes. When it comes back, it perches high some distance away, calling loudly and waiting for the man to catch up with it. As the two travel together through the bush, the bird stops and calls more frequently and takes lower and lower perches until, after maybe a quarter of an hour, its song changes into one that is low and less agitated. Having repeated this two or three times, it falls silent and flutters to a perch where it stays. Beside it will be the entrance to a bees' nest.

It is now up to the man to take the initiative. If the day is hot, a stream of bees may be buzzing in and out of the entrance. 人と鳥がいずれもひどく刺されないようにするには、⁽¹⁾蜂をおとなしくさせるために何か手を打たねばならない。

The man lights a fire close to the nest and, if possible, pushes burning sticks into holes beneath it so that smoke swirls up around the nest itself. With the bees partially stupefied, he now opens up the tree with his bush knife or pokes out the nest from a rock cleft with a stick and extracts the combs, dripping with rich deep-brown honey. That is what *he* wants. But not the bird. It prefers grubs. Even so, tradition demands that the man should leave at least part of the honeycomb for the bird, spiked on a twig or put in some other prominent place. The honey-guide can now get its share. It flies to the remains of the wrecked nest and pulls out the fat white bee-grubs from the cells of the combs. It also, very remarkably, feeds enthusiastically on the wax. It is one of the very few animals that can digest it.

The bird does not find its bees' nests by accident. It has a detailed knowledge of its territory and knows the exact location of every bee colony within it. Watchers in camouflaged hides have observed a bird visiting every one of its bees' nests, day after day, as though checking on their condition. On a cold day, when the bees are quiescent, it may hop on to the lip of the entrance and peer inquisitively inside. 人間の道案内をはじめるとき、鳥は当てずっぽうに⁽²⁾うろうろするのではなく、いちばん近い巣へとまっすぐに誘導するのである。 And

the reason it leaves him for a short period just after their initial meeting is because it makes a quick flight to the nest it has in mind, perhaps to check that it is still flourishing. Furthermore, if having reached the nest the man for some reason does not open it, the bird, after a pause, will once more give its 'follow-me' call and lead him to another.

The fact that the bird has a digestive system specially adapted to dealing with wax suggests that it has been eating from bees' nests for a very long time and that therefore the relationship with man is an ancient one. Human beings have certainly been collecting honey in this part of the world for some twenty thousand years as is proved by rock paintings in the central Sahara and in Zimbabwe that show them doing so. Perhaps the partnership was forming even then. But the bird probably had other honey-hunting helpers even earlier still. The ratel^{***}, a badger-sized relative of the skunks, with black underparts and a vivid white back, is also a lover of honey. A honey-guide encountering one will behave in just the same way as it does towards the man, persistently calling 'Follow me'. The ratel responds with growls and trots after it. When they reach the bees' nest, the ratel tackles it with great efficiency. It is a powerful digger with very strong forelegs and it can squeeze into very narrow openings. It can even rival a man in pacifying the bees. Like its skunk cousins, it has a large scent gland below its tail which it everts and rubs all round the nest entrance so that the wood or rock is smeared with scent. The smell is so powerful that the bees are stupefied and human beings who have peered inside a plundered nest after a ratel's visit have said that they were made almost as dizzy as the bees.

Messages exchanged between different species are not always sent to friends. Enemies also find it profitable to communicate. Thomson's gazelles, like springbuck and several other small antelope, when chased by hunting dogs or hyaenas, behave in a strange and dramatic way. They stot, leaping into the air with their legs held stiffly straight downwards and landing on all four feet at the same time. Often they make several of these leaps one after the other, so that

the animal appears to be bouncing across the ground. It seems very odd that, at a time when its life is in real peril, when its overwhelming priority must be to flee, it should find the time and the energy to indulge in apparently unnecessary⁽⁴⁾ gymnastics.

If gazelles are chased by a cheetah, they rarely if ever behave in this way. The cheetah usually starts its hunt with a stalk, approaching closer and closer to the herd and apparently concentrating on one particular animal grazing in an approachable position. When the cheetah gets within range, it breaks cover and bursts into a sprint. Once it has started the chase, it concentrates on its target. It may be distracted by other gazelles running nearby or even crossing in front of it, but it seldom selects another victim, and either overhauls it within a hundred yards or so and pounces, or gives up. In such chases as that, the gazelle does not pause to stot. It runs for dear life.

Dogs, however, hunt in a quite different manner. They work in packs. Once they find the gazelles, they pursue the herd relentlessly. They show no sign at⁽⁵⁾ this stage of having selected one particular victim and often attack different individuals in turn. It is at this stage that the gazelles start stotting. Each is sending a message about its fitness and therefore its ability to outrun the dogs. The higher and more frequently it stots, the stronger it must be. The animal upon which the dogs finally focus their attention will be one of those whose leaps were relatively feeble. The high-stotters escape without having had their fitness put to the test.

But if an individual gazelle is so strong that it really can outrun the hunting dogs, why should it spend time and energy in stotting just to say so? The answer may be that by doing this it avoids an even greater expenditure of energy in a long chase, that it does not risk injuring itself in collisions or falls, and that if it is threatened by a second hunter immediately after the first, it will not already be exhausted and vulnerable.

The message of the stot is, necessarily, a truthful one. A gazelle cannot

appear to be fitter than it is. A plover, on the other hand, tells lies to its enemies. If, during the breeding season, you approach a ringed plover incubating its eggs on a pebbly English beach, it will sit tight, relying on its excellent camouflage for concealment until you are within a few yards of it. Then, when discovery seems inevitable, it will suddenly run off, shrieking loudly, with one wing raised above its back, the other held low and trailing as though it were crippled and unable to fly. If you were hunting for food you might well follow it, thinking that such an injured bird would be easily caught. You would be wrong. After some yards, as you get close to the bird, it opens both wings and effortlessly takes to the air. And you have had your attention distracted from its eggs which still lie safely in their scrape.

[Adapted from David Attenborough, *The Trials of Life: A Natural History of Animal Behaviour*, London: Collins; BBC Books, 1990, pp. 229–34.]

*inter-specific: occurring between different species

**honey-guide: ミツオシエ

***ratel: ラーテル, ミツアナグマ

I-1. 下線部(1)を英語に訳せ。

I-2. 下線部(2)を英語に訳せ。

I-3. 下線部(3)を 'one' が何を指すか明らかにしながら日本語に訳せ。

I-4. 下線部(4)の 'apparently unnecessary gymnastics' がどのようなものであるか、①と②についてそれぞれ定められた字数以内の日本語で説明せよ(句読点を含む)。

- ① 誰に何を伝えようとして、そのようなことをするのか。(30字)
- ② その最終的な目的は何か。(45字)

I-5. 下線部(5)を日本語に訳せ。

I-6. 以下の(A)から(E)までの問いに関してもっとも適切なものを一つ選び、記号で答えよ。

(A) Which situation, described in the text, illustrates inter-specific communications among enemies?

- ア a ratel growls at a honey-guide bird
- イ gazelles jump stiffly in front of hyaenas
- ウ people disguised in animal hides follow a honey-guide bird
- エ a person shouts at a ringed plover to scare it away from its eggs

(B) Which of the following does the author of this text assume about inter-specific communications?

- ア sound is the primary means of communication between species
- イ animals will enjoy communicating with animals of other species
- ウ humans cannot understand messages sent between non-human species
- エ messages between species can be transmitted through bodily movement

- (C) Which animal uses deception when under attack?
- ア an elephant hunted by a lion
 - イ a gazelle hunted by a cheetah
 - ウ a gazelle hunted by a pack of dogs
 - エ a ringed plover hunted by a human
- (D) Which of the following had to exist for humans to be useful inter-specific partners in raiding honeycombs?
- ア fire
 - イ compasses
 - ウ camouflage clothing
 - エ seed and snail shell whistles
- (E) The text gives examples of all of the following topics EXCEPT ONE. Which is mentioned but not depicted with examples?
- ア how prey communicate with predators of other species
 - イ how members of different species communicate in pursuit of a common goal
 - ウ how animals send long-distance messages to strangers within their own species
 - エ how animals protect or compete with members of their own species through communication with other species

II 次の英文を読んで、以下の設問に答えよ。(60点)

A demographic* time bomb is ticking in the world economy. Citizens in wealthy countries are not having enough babies — and they are living longer, creating an acute shortage of labor in most advanced industrial economies. Meanwhile, populations are exploding in many other parts of the world.

It is estimated that the United States needs to bring in more than ten million ⁽¹⁾ immigrants per year just to keep the ratio of workers to retired people steady. The European Union will need more than a million immigrants a year just to keep its working age population stable between now and the year 2050, and in Japan the ratio of retired people to workers is expected to double in twenty years. Who will take care of all those retirees?

One answer is to increase immigration. Contrary to popular belief, in most ⁽²⁾ countries, legal immigrants rarely depend on public assistance and their children are usually among the most motivated students at school. In the U.S. high-tech industry, for example, immigrants provide 30 percent of the manpower and 20 percent of the managerial talent. In England, Indian restaurants employ more people than the entire British steel industry — and many of those employees are immigrants.

Unskilled immigrants also help the economy by doing the jobs most people in wealthy industrial countries refuse to do. An eighteen-year-old British college student may not think it is “trendy” to work in an old age home, but for someone from India, going to London to work, even in a retirement home, could be a dream come true.

もし移民がいなかったら、1990年代終わり頃の合衆国の高い成長率は、きつ⁽³⁾と深刻な労働力不足とインフレの悪化に繋がっていたらろう。 Nevertheless, many people, especially labor unions, oppose immigration, saying that immigrants depress the wages. A German plan to import software programmers from India brought cries of “Kinder statt Inder” (children instead of Indians), implying that

the lack of skilled workers should be solved by training the young. Paradoxically, the countries with the lowest birth rates — Austria, Italy, Germany, and Japan, for example — are sometimes the ones protesting legal immigrants the most. The fact is that immigrants often provide the skills and manpower necessary to
 (4) make the economy stronger, meaning, in the end, still higher wages for everyone.

Illegal immigration poses even greater problems. When fifty-eight Chinese people hidden in a tomato cargo truck were found dead after crossing the English Channel, a whole different side of immigration was exposed: the large-scale trafficking** of human beings.

It has been estimated that more than thirty million people are smuggled*** across international borders each year, bringing the smugglers billions of dollars in revenue. Sometimes whole villages pay to have family members smuggled into
 (A) wealthy countries abroad, expecting to be repaid ten-fold when the money starts
flowing in from lucrative jobs in rich countries. Many of these immigrants end up working as prostitutes or “soldiers” for illegal gangs. It can take several years to pay off the debt owed to smugglers for getting illegal immigrants into rich countries. The smuggling of human beings has become a form of slavery — except in this case (_____).
 (B)

Unlike migrations of the past, when hordes of people crossed borders all
 (C) together, modern illegal migration usually occurs in secret. People cross
borders — such as the Rio Grande between Mexico and the United States — in
the dark of night or use modern modes of transport such as ships, planes, or
even the backs of produce trucks. According to the International Organization for Migration (IOM), the Geneva-based intergovernmental agency that keeps track of international immigration, there are from twenty to forty million “irregular” immigrants in the rich countries of the world, and the problem is getting worse.

As long as (_____) — and
 (D)

as long as hunger and poverty are allowed to exist in the Third World — immigration, legal or otherwise, will be part of the world economy.

[Adapted from Randy Charles Epping, *A Beginner's Guide to the World Economy*, New York: Vintage Books, 2001, pp. 170-172.]

*demographic: 人口統計の

**trafficking: 違法売買

***smuggle: ～を密輸する, ～を密入国させる

II-1. 下線部(1)を日本語に訳せ。

II-2. 下線部(2)を日本語に訳せ。

II-3. 下線部(3)を英語に訳せ。

II-4. 下線部(4)を日本語に訳せ。

II-5. 下線部(A)および(C)を他の英語で言い換えたものとしてもっとも適切なものを一つ選び, 記号で答えよ。

下線部(A)

ア Smuggling whole families abroad may result in lucrative income.

イ Desperate families smuggle members into poor countries to generate extra income.

ウ Family members often pay for immigrants to work for them to generate extra money.

エ Family members are smuggled abroad to generate income in excess of the cost of smuggling.

下線部(C)

- ア In modern times illegal immigrants cross borders in secret.
- イ People cross borders in the dark of night using planes and ships.
- ウ In the past, hordes of people crossed borders all together in secret in planes.
- エ In modern times illegal immigrants cross borders all together in broad daylight.

Ⅱ-6. 下線部(B)および(D)の空所に入るものとしてもっとも適切なものを一つ選び、記号で答えよ。

下線部(B)

- ア the “soldiers” are paid for by prostitutes
- イ the “soldiers” are paid by family members
- ウ the “slave-traders” are paid for by illegal gangs
- エ the “slave-traders” are paid by the victims themselves

下線部(D)

- ア skilled workers exist in the world
- イ huge disparities in wealth exist in the world
- ウ illegal gangs exist in wealthy industrial countries
- エ birth rates continue to rise in wealthy industrial countries