

令和 5 (2023) 年度入学試験問題 (前期)

英 語

注 意

1. 合図があるまで表紙をあげないこと。
2. 受験票は机に出しておくこと。

I 以下の英文を読み、問いに答えよ。

The BBVA\* Foundation presented the Frontiers of Knowledge Award in Social Sciences to Mark Granovetter, “the most eminent economic sociologist in the world,” for revealing the power of “loose social ties” among individuals for people’s economic and social performance.

Granovetter’s work has led to significant scientific advances that are relevant not only to sociology and economics but also to social psychology, political science, communication, marketing, and computer science. His 1973 article “The Strength of Weak Ties” is the most widely cited paper in the social sciences, with over 65,000 citations\*\*.

The award committee points to the cross-cutting impact on the social sciences of Granovetter’s conclusion that “it is distant acquaintances rather than those closest to us that may exert most influence in areas of our lives by opening up new networks and creating opportunities that we could not find in our immediate circles. That was not a finding that was easy to anticipate.”

Granovetter launched this line of research to study how people found jobs. He did so on the basis of personal surveys and questionnaires in the Boston suburb of Newton (Massachusetts), which, despite covering a far smaller sample than those brought together later on, immediately laid bare the difficulty of obtaining data on social relationships: “One of the main challenges is the huge amount of data that have to be handled,” Granovetter explained in an interview after learning he had won the award. “If each individual knows around 500 people, which is the average size of a lot of networks, and each of them knows another 500, the study object quickly becomes unmanageable.”

Today Big Data and technology-mediated social networks offer a whole new scope for analysis, assuring that interest in Granovetter’s groundbreaking research of the 1960s has not only not faded but is, if anything, stronger: “What I find astonishing,” he said, “is that 97% of the citations received by my paper on the strength of weak ties date from the year 2000 onwards.”

Granovetter realized that people were not finding work through close friends and family members, but through extended networks of “acquaintances.” These weaker yet highly effective connections, which researchers were aware of but whose theoretical and practical importance they had largely ignored, were in reality a powerful force. It is “the kind of idea, that once you get it, you wonder how you didn’t see it earlier,” Granovetter said. “People you are very close to tend to know one another and talk about things you already know. So if you’re trying to get new information, talking to those you’re close to is not the best way. Whereas those you are only acquainted with are likelier to be associated with different networks from your own. So those people, who are your so-called weak ties, actually connect you to a wider community; they are, you might say, your windows on the world. That is the strength of weak ties.”

Granovetter’s insights into the importance of superficial relationships have opened the door to many questions: from how to access wider networks to their role in creating a less unequal society. In his book *Getting a Job*, he addresses the problem faced by those without access to facilitating networks: “If people from certain ethnic groups do not have the right connections,” he points out, “they will not have the same opportunities as others.”

Another conclusion of his work is that a network tends to grow in size along with the number of times a person changes jobs. Granovetter explains: “Each time you change your job you enter a new network, with other people who are also moving, and so those networks proliferate\*\*\*. I think of it as a snowball rolling down a hill: if you move through different settings in the course of your career, that makes it likelier that you can move again when you want to.”

The emergence of technology-mediated social networks has brought a series of changes that have yet to be the subject of an in-depth study. For example, they have produced new kinds of strong ties within networks that do not involve physical proximity: “For the first time we are seeing cases of people making close friends online before they meet them in real life,” Granovetter relates. “We still don’t know how that is going to change the world, but it’s something we need to pay a lot of attention to.”

(出典：BBVA.com, April 6, 2022. 一部変更あり)

\*BBVA (Banco Bilbao Vizcaya Argentaria): the name of a Spanish international bank

\*\* citation: a quotation from or reference to a book, paper, or author, especially in a scholarly work

\*\*\* proliferate: to increase rapidly in number; multiply

1. 下線部(1)を “them” の内容を明らかにした上で和訳せよ。
2. 下線部(2)を和訳せよ。
3. 下線部(3)の意味するところを本文に即して 60 字以内の日本語 (句読点を含む) で説明せよ。
4. 下線部(4)を和訳せよ。

## II 以下の英文を読み、下線部を和訳せよ。

Crows and ravens are well known for their black color and the harsh “caw” sound they make. They are intelligent birds that use tools, solve complex abstract problems and speak a volume of words. But what is less well appreciated is how diverse they are. Their diversity is accompanied by their ability to live all over the world in a variety of habitats. In fact, they are one of the most widespread group of birds worldwide. Crows and ravens — part of the avian family of Corvids that also includes jays and magpies — underwent rapid global expansion, unlike other family members that stayed mostly within single continents.

What is their secret to this amazing planetary expansion?

They have great flying ability, which allows them to gain access to new places more easily. While their flying skills were key to their success, new research from Washington University in St. Louis also shows that big bodies and big brains played an important role in helping crows and ravens survive in the new climates they occupied.

“When we think about processes of global diversification, it is important to consider not just the ability to reach new places, but also the ability to survive once you get there.” Our work suggests that crows and ravens diversified both quickly and widely because they were particularly good at coping with different habitats,” said Carlos Botero, assistant professor of biology in Arts & Sciences at Washington University in St. Louis.

In the work led by first-author Joan Garcia-Porta, a postdoctoral research associate in biology in Arts & Sciences and now a fellow in the Department of Genetics at the University of Barcelona, the authors show that crows’ and ravens’ incredible ability to rapidly expand and diversify across the planet was driven by a specific combination of traits.

Using specimens housed in museums across Europe and the U.S., the scientists found that they have longer wing lengths, bigger body sizes and bigger relative brain sizes compared with other Corvids. “We hypothesize that these three very convenient combinations of traits are what allowed this group of birds to colonize and diversify across the world,” Garcia-Porta said.

Longer wings mean higher flying capacities that allowed the birds to disperse across the world. Big brains relative to their bodies suggest that ancestral crows and ravens were behaviorally flexible. They were smarter than other Corvids and, therefore, able to figure out how to live in a new environment, increasing their chances of survival. Their bigger body size also gave them a competitive advantage over smaller species, helping them establish in a new place.

“We are excited with these new insights on how these birds were able to do things that even close relatives did not,” Botero said. “It truly seems that their incredible behavioral flexibility may have played a major role in allowing these birds to survive initial periods of maladaptation and hang in there long enough for selection to catch up and produce a range of new species in the process.”

Crows and ravens experienced high rates of trait evolution and speciation\* as they adapted to the many different environments they encountered during their rapid expansion across the planet. In fact, they had the highest rates compared with any other member of the Corvidae family.

Arrival in a new environment exposed them to new pressures for adaptation. Their ability to live in the cold Arctic region after moving from a tropical rainforest, for example, likely required very different strategies and traits.

“These new environments often favor tweaks\*\* to an organism’s phenotype\*\*\* that facilitate survival and overall performance. That process is often known as optimizing selection,” said Botero, who emphasized its potential importance in creating new species.

For crows and ravens, that meant acquiring new beak shapes that did not exist in any other Corvid, thereby increasing beak shape variation in the Corvidae family. They also increased body size variation as they colonized new environments.

Garcia-Porta said: “Thanks to these amazing birds, we now understand a bit more the processes by which animals rapidly expand across the planet and how this geographic expansion leads to the production of new species.”

(出典：NEWSROOM, Washington University in St. Louis, April 21, 2022. 一部変更あり)

\*speciation: the formation of new and distinct species in the course of evolution

\*\*tweaks: small changes or adjustments

\*\*\*phenotype: the physical characteristics of something living, especially those characteristics that can be seen

## III 下線部を英訳せよ。

ひとつの領域で専門家として秀でるには、約3時間の練習を10年間毎日続ける必要があると言われている。ただし、練習だけでは十分ではない。<sup>(1)</sup>自分のパフォーマンスを観察し、批判的に分析して、何がいけなかったのか、どうすればもっとうまくできるのかを考え続ける必要がある。<sup>(2)</sup>練習と反省のこうした過程を経てはじめて、スピードと精度の両方において優れた技量を獲得できるのである。<sup>(3)</sup>

