大学進学塾　灘ゼミ　２０２２年度　志望大学・特定出題形式対策

〇京大英語の和訳＆日本語説明・直近１０か年過去問演習　　〔　　月　　日配布〕

氏名〔　　〕

演習問題

【１】2021 京都大学 2/26,前期 総合人間　文　教育　法　経済　理　医　薬　工　農

次の文章の下線をほどこした部分(1)～(3)を和訳しなさい。

Telling stories is an activity that has been with human beings from the beginning of time. We might go so far as to say we are story-telling animals born with narrative instinct. We go to work in the morning, see our officemates, and tell them what happened on the previous night; we go home in the evening, see our family, and tell them what happened during the day. We love to tell stories and we love to listen to them. Narrative is everywhere: news, gossip, dreams, fantasies, reports, confessions, and so on and so forth.

In particular, we spend a deal of time consuming all kinds of fictional narratives, such as novels, cartoon stories, movies, TV serials. Surely it will be of some use to ponder whether fiction is good for us or not. Indeed, this is a problem with a long history going back to ancient philosophers. Plato famously excluded poets from his ideal republic, for he thought their creations were ultimately untrue. Put in the simplest terms, he regarded poems as lies. He did not believe something offered as fiction could justify itself. His brightest pupil Aristotle thought differently. One major point of Aristotle's theory is said to be: (1)while history expresses the particular, concentrating on specific details as they happened, poetry can illuminate the universal, not allowing the accidental to intervene. Hence the justification.

As the debate continues to the present time, researchers in psychology have shown us a new way of dealing with this old problem. From various experiments, it emerges that fiction has the power to modify us. Reportedly, (2)"when we read nonfiction, we read with our shields up. We are critical and skeptical. But when we are absorbed in a story, we drop our intellectual guard. We are moved emotionally, and this seems to make us rubbery and easy to shape." This might sound rather simplistic, but importantly, researchers are attempting to tell us that reading fiction cultivates empathy. When a reader is immersed in the fictional world, she places herself in the position of characters in the narrative, and the repeated practice of this activity sharpens the ability to understand other people. So, nurturing our interpersonal sensitivity in the real world, fiction, especially literary fiction, can shape us for the better.

Although this is not exactly news, it is surely comforting to have scientific support for the importance of fiction. Nevertheless, a careful distinction is in order here. It may be true that fiction actually makes one behave with better understanding towards the people around one. Empathy, however, does not necessarily lead to social good. A recent article on the topic points out: "Some of the most empathetic people you will ever meet are businesspeople and lawyers. (3)They can grasp another person's feelings in an instant, act on them, and clinch a deal or win a trial. The result may well leave the person on the other

side feeling anguished or defeated. Conversely, we have all known bookish, introverted people who are not good at puzzling out other people, or, if they are, lack the ability to act on what they have grasped about the other person." (Here bookish people are, we are meant to understand, keen readers of fiction.) Empathetic understanding and sympathetic action are different matters — how and why they are so, in connection with reading fiction, will be further explored by future research, we hope.

【２】2020 京都大学 2/26,前期 総合人間　文　教育　法　経済　理　医　薬　工　農

次の文章を読み，下の設問(1)～(3)に答えなさい。

Various doctrines of human cognitive superiority are made plausible by a comparison of human beings and the chimpanzees. For questions of evolutionary cognition, this focus is one-sided. Consider the evolution of cooperation in social insects, such as the Matabele ant. After a termite attack, these ants provide medical services. Having called for help by means of a chemical signal, injured ants are brought back to the nest. Their increased chance of recovery benefits the entire colony. Red forest ants have the ability to perform simple arithmetic operations and to convey the results to other ants.

When it comes to adaptations in animals that require sophisticated neural control, evolution offers (a)other spectacular examples. The banded archerfish is able to spit a stream of water at its prey, compensating for refraction at the boundary between air and water. It can also track the distance of its prey, so that the jet develops its greatest force just before impact. Laboratory experiments show that the banded archerfish spits on target even when the trajectory of its prey varies. Spit hunting is a technique that requires the same timing used in throwing, an activity otherwise regarded as unique in the animal kingdom. In human beings, the development of throwing has led to an enormous further development of the brain. And the archerfish? The calculations required for its extraordinary hunting technique are based on the interplay of about six neurons. Neural mini-networks could therefore be much more widespread in the animal kingdom than previously thought.

Research on honeybees has brought to light the cognitive capabilities of (b)minibrains. Honeybees have no brains in the real sense. Their neuronal density, however, is among the highest in insects, with roughly 960 thousand neurons — far fewer than any vertebrate. Even if the brain size of honeybees is normalized to their body size, their relative brain size is lower than most vertebrates. Insect behavior should be less complex, less flexible, and less modifiable than vertebrate behavior. But honeybees learn quickly how to extract pollen and nectar from a large number of different flowers. They care for their young, organize the distribution of tasks, and, with the help of the waggle dance, they inform each other about the location and quality of distant food and water.

Early research by Karl von Frisch suggested that such abilities cannot be the result of inflexible information processing and rigid behavioral programs. Honeybees learn and they remember. The most recent experimental research has, in confirming this conclusion, created an astonishing picture of the honeybee's cognitive competence. Their representation of the world does not consist entirely of associative chains. It is far more complex, flexible, and integrative. Honeybees show context-dependent learning and

remembering, and even some forms of concept formation. Bees are able to classify images based on such abstract features as bilateral symmetry and radial symmetry; they can comprehend landscapes in a general way, and spontaneously come to classify new images. They have recently been promoted to the set of species capable of social learning and tool use.

(c)In any case, the much smaller brain of the bee does not appear to be a fundamental limitation for comparable cognitive processes, or at least their performance. The similarities between mammals and bees are astonishing, but they cannot be traced to homologous neurological developments. As long as the animal's neural architecture remains unknown, we cannot determine the cause of their similarity.

(1)　下線部(a)の具体例として，このパラグラフではテッポウウオが獲物に水を噴射して狩りをする能力が紹介されている。その能力の特長を 3 点，日本語で箇条書きにしなさい。

(2)　下線部(b)でいう minibrains とは，ミツバチの場合，具体的にはどのような意味で用いられているか。本文に即して日本語で説明しなさい。

(3)　下線部(c)を和訳しなさい。

【３】2019 京都大学 2/26,前期 総合人間　文　教育　法　経済　理　医　薬　工　農

次の文章を読み，下の設問(1)～(4)に答えなさい。

Virtual reality is a means for creating comprehensive illusions that you are in a different place, perhaps a fantastical, alien environment, perhaps with a body that is far from human. And yet, it is also the farthest-reaching apparatus for researching what a human being *is* in terms of cognition and perception.

In order for the visual aspect of the virtual reality to work, for example, you have to calculate what your eyes should see in the virtual world as you look around. Your eyes wander and the virtual reality computer must constantly, and as instantly as possible, calculate whatever graphic images they would see were the virtual world real. When you turn to look to the right, the virtual world must turn to the left in compensation, to create the illusion that it is stationary, outside of you and independent. Unlike prior media devices, every component of virtual reality must function in tight reflection of the motion of the human body.

(a)<u>That is why virtual reality researchers prefer verbs to nouns when it comes to describing how people interact with reality</u>. Vision depends on continuous experiments carried out by the nervous system and actualized in large part through the motion of the head and eyes. The body and the brain are constantly probing and testing reality.

Look around you and notice what happens as you move your head just a tiny bit. If you move your head absolutely as little as you can, you will still see that edges of objects at different distances line up differently with each other in response to the motion. You will also see the subtle changes in the lighting and texture of many things. Look at another person's skin and you will see that you are probing into the interior of the skin as your head moves. The skin and eyes evolved together to make this work. If you look at another person, you will see, if you pay close attention, an infinite variety of tiny head motion messages bouncing back and forth between you and the person whom you are looking at. (b)<u>There is a secret visual motion language between all people</u>.

From the brain's point of view, reality is the expectation of what the next moment will be like, but that expectation must constantly be adjusted. Vision works by pursuing and noticing changes instead of constancies and therefore a neural expectation exists of what is about to be seen. (c)<u>Your nervous system acts a little like a scientific community; it is greedily curious, constantly testing out ideas about what's out in the world. A virtual reality system succeeds when it temporarily convinces the "community" to support another hypothesis. Once the nervous system has been given enough cues to treat the virtual world as the world on which to base expectations, virtual reality can start to feel real</u>.

Some virtual reality believers think that virtual reality will eventually become better than the human nervous system, so that it would not (　ア　) sense to try to improve it anymore. I do not see things that way. One reason is that the human nervous system (　イ　) from hundreds of millions of years of evolution. When we think technology can (　ウ　) our bodies in a comprehensive way, we are (　エ　) what we know about our bodies and physical reality. The universe doesn't have infinitely fine grains, and the body is already tuned in as finely as anything can ever be, when it needs to be.

(1)　下線部(a)はどのようなことを意味しているか，日本語で説明しなさい。

(2)　下線部(b)の内容を，本文に即して日本語で説明しなさい。

(3)　下線部(c)を和訳しなさい。

(4)　空欄(　ア　)～(　エ　)に入る最も適切な動詞を以下の中から選び，解答欄に記入しなさい。そのさい，必要であれば適切な形に変えること。また，同じ語は一度しか使用してはならない。

behave　　benefit　　forget　　make　　predict　　surpass

【4】2018 京都大学 2/26,前期 総合人間　文　教育　法　経済　理　医　薬　工　農

次の文章を読み，下の設問(1)～(3)に答えなさい。

Luckily for all of us, many people are interested in helping others; some devote their careers and lives to it. Not everyone is so inclined, of course, and most people are self-interested at least some of the time. An evolutionary biologist or psychologist might say that we are *always* self-interested, and that our effort to help others is simply our attempt to feel good about ourselves. Regardless of our motivations, however, a remarkable number of us help out our colleagues, family, friends, and even strangers.

Although admirable, there is a risk in helping others, which is related to the possibility that helping can actually be selfish. That risk lies in falling prey to what some call "(a)<u>the savior complex.</u>" This is just what it sounds like — an attitude or stance toward the world where you believe you are the expert who can suddenly appear to save others. It is an uneven approach to helping, in which the helper believes he or she has all of the answers, knows just what to do, and that the person or group in need has been waiting for a savior to come along.

While this is a genuine problem, we should not let the real pitfalls of the savior complex extinguish one of the most humane instincts there is — the instinct to lend a hand. The trick is to help others without believing yourself to be, or acting like you are, their savior.

(b)<u>All of which is to say that *how* you help matters just as much as that you *do* help, which is why it is essential to begin by asking, "How can I help?" If you start with this question, you are asking, with humility, for direction. You are recognizing that others are experts in their own lives, and you are affording them the opportunity to remain in charge, even if you are providing some help.</u>

I recently heard a great story on *The Moth*, which underscored the importance of asking *how* you can help. *The Moth* is a radio program and podcast that features true stories, told live by people from around the world. The stories are fascinating, including a recent one from a woman in her eighties, who explained how she valued her independence. She loved the fact that she had always taken care of herself and that she could still do so into her eighth decade. And then she had a stroke.

While she was in the hospital, her neighbors in her New York City apartment building made some minor renovations to her apartment to make it easier for her to (　ア　) a walker, which she would need after her first stroke. To (　イ　), she was taken aback, as she was cordial but not good friends with her neighbors. But their gesture of goodwill inspired her to (　ウ　) that some dependence on others could actually enrich her life, especially if she returned the favor. So she hung a sign on her apartment door welcoming her neighbors to (　エ　) a chat. She then recounted how her neighbors often came by to talk

and emphasized with gratitude that, when they offered to help, they always asked *how* they could help. By asking her how they could help, she explained, they were allowing her to (　オ　) her independence and dignity.

(1)　下線部(a)はどのようなものか。本文に即して日本語で説明しなさい。解答欄(12cm×6 行)におさまる長さにすること。

(2)　下線部(b)を和訳しなさい。

(3)　空欄(　ア　)～(　オ　)に入る最も適切な語句を以下の中から選び，番号を記入しなさい。同じ語句は一度しか使用してはならない。

①　begin with	②　come in for	③　deny
④　live there with	⑤　recognize	⑥　retain

【5】2017 京都大学 2/26,前期 総合人間　文　教育　法　経済　理　医　薬　工　農

次の文章を読み，下の設問(1)～(3)に答えなさい。

The most common conception of deserts and arid lands, as embodied by the 1994 UN Convention to Combat Desertification, innumerable national development agencies, and many nongovernmental organizations, is that they are barren, deforested, overgrazed lands — wastelands with little value that need to be repaired and improved. Up to 70% of global arid and semiarid lands are frequently claimed to be suffering from varying degrees of desertification. Yet the word "desertification" has no agreed definition, measures of desertification are not standardized, and it is very difficult to differentiate degradation caused by humans from the effects of drought in the drylands, which makes (a)<u>such estimates</u> of desertification questionable at best. Indeed, academic research has shown for more than 25 years that estimates of desertification have been significantly exaggerated and that most of the world's drylands are not being invaded by spreading deserts caused by deforestation, burning, and overgrazing as claimed since the word was first invented nearly one hundred years ago. This has led a majority of arid lands ecologists to conclude that there is insufficient scientific evidence of large-scale permanent desertification.

Desertification as a concept is extremely important, however, not least because the fear it generates drives a multimillion-dollar global anti-desertification campaign that impacts the lives of millions of people. Desertification is also important because it was the first major environmental issue to be recognized as occurring on a global scale. (b)<u>As such, the way that the "crisis of desertification" was conceptualized, framed, and tackled as a policy problem shaped in numerous ways our reactions to subsequent environmental crises such as deforestation, biodiversity loss, and climate change</u>. Global concern about desertification is most commonly dated to the 1970s when a great drought and famine hit the sub-Saharan region with terrible suffering and mortality, and resulted in coordinated global action in the form of the 1977 UN Conference on Desertification. Fear of desertification, though, has driven global dryland policy for much longer, dating to the mid-twentieth century with UNESCO's Arid Zone Program and to various colonial adventures in the world's drylands long before that.

Indeed, before the word "desertification" was invented in the 1920s by a French colonial forester, western imperial powers had executed many different programs to try to restrain the perceived spread of desert regions and also to try to "restore" the drylands to productivity according to capitalist goals. Underlying these attempts was a complex, long-standing, and primarily Anglo-European understanding of deserts which equated them with ruined forests much of the time. Examining how these ideas about deserts have changed over the long duration will reveal that many of the worst cases of degradation in the

drylands have been the result of policies based on the old ideas that deserts are without value and that desertification is caused primarily by "traditional" uses of the land by local populations. Societies in arid lands have, in fact, lived successfully in these unpredictable environments for thousands of years using ingenious techniques. (c)The assumption that the world's drylands are worthless and deforested landscapes has led, since the colonial period, to programs and policies that have often systematically damaged dryland environments and marginalized large numbers of indigenous peoples, many of whom had been using the land sustainably.

(1)　下線部(a)の指す内容を具体的に日本語で述べなさい。

(2)　下線部(b)を，"As such"の指す内容が具体的にわかるように和訳しなさい。

(3)　下線部(c)を和訳しなさい。

【6】2016 京都大学 2/26,前期 総合人間　文　教育　法　経済　理　医　薬　工　農

次の文章を読み，下の設問(1)(2)に答えなさい。

In the dry red soil of Chimayo, New Mexico, there is a hole in the ground that some call holy. They intend no pun, no play on words. The hole is a serious matter; the locals who tend to it would no more joke about their humble opening in the earth than they would a hole in the head, or the heart.

Though it has a long and eclectic spiritual history, the hole sits today in the back corner of a Roman Catholic Church, El Santuario de Chimayo, which is among the most frequently visited religious pilgrimage sites in America. Hundreds of thousands of true believers and curious souls visit every year to line up in a small side chapel strewn with pictures of loved ones lost. They crowd into a closet-sized space around the hole, bend at the knees, dip their hands into the cool of the gap below, and pull up big handfuls of dirt. Visitors to Chimayo believe that eating the dirt brings miracles.

Some would call it folk religion — not the real or legitimate practice of a Christian church but an indigenous corruption of the sanctioned sacrament of Communion*. Others might suggest it is in fact something more complicated: a distinctly American form of religious syncretism, a blending of faith traditions so complete that it is difficult to separate one from the other. Implicit in each of these explanations is a more obvious physical truth. (1)<u>The church was built over a hole in the ground that has history both connected to and independent of the structure around it. To extend the symbolic story: In thinking about religion in American history, we have too often focused only on the church standing above the hole and not on the hole itself, nor on the people lining up to make the soil within a part of their blood, their bones</u>. The United States is a land shaped and informed by internal religious diversity — some of it obvious, some of it hidden — and yet the history we have all been taught has mostly failed to convey this. (2)<u>We have learned history from the middle rather than the margins, though it is the latter from which so much of our culture has been formed</u>.

We need only look to the point often seen as the beginning to know this is true. It is the story we memorized in school: *In fourteen hundred and ninety-two, Columbus sailed the ocean blue* . . . and he did so, we all have been taught, on orders and at the expense of Ferdinand and Isabella, the Catholic monarchs of Spain. The largest of his ships was named for the mother of the Christian savior. In his journal, which begins in the form of a prayer, “In the Name of Our Lord Jesus Christ,” Columbus writes of standards bearing the cross brought onto the lands he was soon to conquer.

Less well known are the men who sailed with Columbus who did not call this symbol their own. No less than America would be, Europe at the time was a place endlessly conflicting over its multi-religious past.

Having shaped so much of Iberian culture, practitioners of Judaism and Islam provided Spain's Catholics with a daily reminder that their world was not made by the church alone. Whether this reminder was mere embarrassment or existential threat, it was reason enough to force them out. Columbus devotes the first words of his diary to praising Spain for evicting its religious minorities in the same year he began his voyage, and yet his own adventure could not have been accomplished without men drawn from the very peoples he was so pleased to see driven from their homes. It was precisely their connections to exiled faiths that led several of his crewmen to join a mission that was less likely to end in riches than a watery grave.

*sacrament of Communion　ミサで聖体を受け取ること

(1)　下線部(1)を和訳しなさい。

(2)　下線部(2)の中の"the middle"と"the margins"は，それぞれ具体的にどのようなことを指しているかを，新大陸発見の事例を用いて，それぞれ日本語 60～80 字で述べなさい(句読点を含む)。

【7】2015 京都大学 2/26,前期日程 総合人間　文　教育　法　経済　理　医　薬　工　農

次の文章を読み，下の設問(1)～(3)に答えなさい。

The properties of a piece of matter are defined not by the basic building blocks themselves but by the way they are organised into hierarchies. This paradigm — where structure defines function — is one of the overarching principles of biological systems, and the key to their innate ability to grow, self-repair, and morph into new functions. Spider silk is one of the most remarkable examples of nature's materials, created from a simple protein spun into fibres stronger than steel.

As we begin to appreciate the universal importance of hierarchies, engineers are applying this understanding to the design of synthetic materials and devices. They can gain inspiration from a surprising source: music.

In the world of music, a limited set of tones is the starting point for melodies, which in turn are arranged into complex structures to create symphonies. Think of an orchestra, where each instrument plays a relatively simple series of tones. (1)Only when combined do these tones become the complex sound we call classical music. Essentially, music is just one example of a hierarchical system, where patterns are nested within larger patterns — similar to the way words form sentences, then chapters and eventually a novel.

Composers have exploited the concept of hierarchies for thousands of years, perhaps unknowingly, but only recently have these systems been understood mathematically. This maths shows that the principles of musical composition are shared by many seemingly diverse hierarchical systems, suggesting many exciting avenues to explore. From the basic physics of string theory* to complex biological materials, different functions arise from a small number of universal building blocks. I call this the universality-diversity-paradigm.

Nature uses (2)this paradigm to design its materials, creating new functions via novel structures, built using existing building blocks rather than fresh ones. Yet through the ages humans have relied on a totally different approach to construct our world, introducing a new building block, or material, when a new function is required.

It is not the building block itself that is limiting our ability to create better, more durable or stronger materials, but rather our inability to control the way these building blocks are arranged. To overcome this limitation, I am trying to design new materials in a similar way to nature. In my lab we are using the hidden structures of music to create artificial materials such as designer silks and other materials for medical and engineering applications. We want to find out if we can reformulate the design of a material using the concept of tones, melodies and rhythms.

Our brains have a natural capacity for dealing with the hierarchical structure of music, a talent that may unlock a greater creative potential for understanding and designing artificial materials. For example, in recent work we designed different sequences of amino acids based on naturally occurring ones, introducing variations to create our own materials with better properties. However, the way in which the different sequences of amino acids interact to form fibres is largely a mystery and is difficult to observe in an experiment. To gain more understanding, we translated the process by which sequences of amino acids are spun into silk fibres into musical compositions.

In this translation from silk to music, we replaced the protein's building blocks (sequences of amino acids) with corresponding musical building blocks (tones and melody). As the music was played, we could "listen" to the amino acid sequences we had designed, and deduce how certain qualities of the material, such as its mechanical strength, appear in the musical space. (3)Listening to the music improved our understanding of the mechanism by which the chains of amino acids interact to form a material during the silk-spinning process. The chains of amino acids that formed silk fibres of poor quality, for example, translated into music that was aggressive and harsh, while the ones that formed better fibres sounded softer and more fluid, as they were derived from a more interwoven network. In future work we hope to improve the design of the silk by enhancing those musical qualities that reflect better properties — that is, to emphasise softer, more fluid and interwoven melodies.

*string theory　ひも理論

(1)　下線部(1)を和訳しなさい。

(2)　下線部(2)が指している内容を，本文の主旨に照らして日本語 30～50 字で述べなさい(句読点を含む)。

(3)　下線部(3)を和訳しなさい。

【８】2014 京都大学 2/26,前期日程 総合人間　文　教育　法　経済　理　医　薬　工　農

次の文章の下線をほどこした部分(1)～(3)を和訳しなさい。

Scientists often ask me why philosophers devote so much of their effort to teaching and learning the history of their field. Chemists typically get by with only a rudimentary knowledge of the history of chemistry, picked up along the way, and many molecular biologists, it seems, are not even curious about what happened in biology before about 1950. My answer is that the history of philosophy is in large measure the history of very smart people making very tempting mistakes, and if you don't know the history, you are doomed to making the same mistakes all over again. (1)That's why we teach the history of the field to our students, and scientists who cheerfully ignore philosophy do so at their own risk. There is no such thing as philosophy-free science, just science that has been conducted without any consideration of its underlying assumptions. The smartest or luckiest of the scientists sometimes manage to avoid the pitfalls quite adroitly (perhaps they are "natural born philosophers" — or are as smart as they think they are), but they are the rare exceptions. (2)Not that professional philosophers don't make — and even defend — the old mistakes too. If the questions weren't hard, they wouldn't be worth working on.

Sometimes you don't just want to *risk* making mistakes; you actually want to make them — if only to give you something clear and detailed to fix. Making mistakes is the key to making progress. Of course there are times when it is really important not to make any mistakes — ask any surgeon or airline pilot. But it is less widely appreciated that there are also times when making mistakes is the only way to go. Many of the students who arrive at very competitive universities pride themselves in not making mistakes — after all, that's how they've come so much farther than their classmates, or so they have been led to believe. I often find that I have to encourage them to *cultivate the habit* of making mistakes, the best learning opportunities of all. They get "writer's block" and waste hours forlornly wandering back and forth on the starting line. "Blurt it out!" I urge them. Then they have something on the page to work with.

We philosophers are mistake specialists. (3)While other disciplines specialize in getting the right answers to their defining questions, we philosophers specialize in all the ways there are of getting things so mixed up that nobody is even sure what the right *questions* are, let alone the answers. Asking the wrong questions risks setting any inquiry off on the wrong foot. Whenever that happens, this is a job for philosophers! Philosophy — in every field of inquiry — is what you have to do until you figure out what questions you should have been asking in the first place. Some people hate it when that happens. They would rather take their questions off the rack, all nicely tailored and pressed and cleaned and ready to answer. We philosophers have a taste for working on the questions that need to be straightened out before

they can be answered. It's not for everyone. But try it, you might like it.

【９】2013 京都大学 2/26,前期日程 総合人間　文　教育　法　経済　理　医　薬　工　農

次の文章の下線をほどこした部分(1)～(4)を和訳しなさい。

A quarter of a century ago, moral psychology was part of developmental psychology. Researchers focused on questions how children develop notions of fairness. The basic question behind this research was where morality came from. There are two obvious answers: nature or nurture. If you pick nature, then you are a nativist. You believe that moral knowledge is pre-loaded in our minds, or perhaps even inscribed by God. If you choose nurture, then you are an empiricist. You believe that children are morally neutral at birth, as John Locke would put it, and learn it particularly from adults.

However, there is a third possible answer: rationalism. (1)It assumes that morality varies around the world and across the centuries, and thus cannot be inborn. It also doubts the idea that whatever morals we have as grown-ups must have been learned during our childhood experience of adults telling us what is right and wrong. Instead, the rationalist approach asserts that children figure out morality for themselves. This third answer is now a major focus of moral psychology.

This new approach owes much to Jean Piaget, the greatest developmental psychologist of all time. He came up with this insight based on his early career in zoology. (2)He was fascinated by the stages that insects went through as they transformed themselves. Later, when his attention turned to children, he brought with him this interest in stages of development.

Piaget focused on the kinds of errors children make. For example, he put water into two identical drinking glasses and asked children to tell him if the glasses held the same amount of water. They answered yes. Then he poured the contents of one of the glasses into a tall skinny glass and asked them to compare the new glass to the one that had not been touched. Children younger than six or seven often said the tall glass now held more water, because the level was higher. They did not understand the total volume of water was preserved when it moved from glass to glass. (3)He also found it pointless for adults to explain that the volume of water was exactly the same until the youngsters reached an age and cognitive stage when their minds were ready to grasp it. Once the little ones were ready, they figured it out for themselves just by playing with glasses of water.

Piaget argued children's understanding of morality was like their understanding of those water glasses. We cannot say that it is inborn, and we cannot say that children learn it directly from adults. It is, rather, self-constructed. (4)Taking turns in a game is like pouring water back and forth between glasses. No matter how often you do it with three-year-olds, they are just not ready to digest the concept of fairness, any more than they can understand the idea of volume conservation. After surpassing the age of five or six,

the children will play games, have arguments, and work things out together, thereby develop notions of fairness without the help of adults.

【１０】2012 京都大学 2/26,前期日程 総合人間　文　教育　法　経済　理　医　薬　工　農

次の文章の下線をほどこした部分(1)～(4)を和訳しなさい。

During his failed attempt to reach the North Pole on foot in the spring of 1895, Norwegian explorer Fridtjof Nansen encountered several sets of fox footprints on the ice north of the 85th parallel, several hundred kilometers from the nearest dry land. “What in the world was that fox doing up here?” he wrote in his journal. “It is incomprehensible what these animals live on up here, but presumably they are able to snap up some small crabs in the open waterways. But why do they leave the coasts? That is what puzzles me most. Can they have gone astray?”

Early attempts to solve some of these riddles only added to the mystery. During the 1970s a research team spent several years trying to track the winter movements of Arctic foxes in northern Alaska. (1)The animals were fitted with numbered ear tags, released, and their whereabouts were then recorded. Although next to nothing was revealed about how they got to various places, due to limitations of the techniques being employed, deep into the high Arctic, more than 2000 kilometers away, is where some were recovered. In a valiant effort to learn more, the team decided to try out radio telemetry, the technology that had revolutionized wildlife tracking in the early 1960s. (2)The target may be followed to wherever it goes via a radio collar that is fitted to the animal being investigated, which transmits a signal that researchers on foot or in a plane can detect with precision. “We learned absolutely nothing,” says one of the researchers. “The place is simply too big and the foxes are too mobile. We would catch one and put a collar on it and then we would never hear the signal again. They just disappeared — gone outside the ability of the plane to keep track of them.”

The thought of an Arctic fox wandering around for months on end, under such harsh conditions, continues to raise many questions. (3)Is there some preordained pattern that the animals follow or are the journeys random? If not the latter, how do they navigate in an icescape that offers no permanent landmarks, that drifts and spins at the mercy of the currents, melts and freezes according to the weather, and seemingly has not much to offer in the way of a scent trail to follow for satisfying their appetites?

Even the advent of satellite-based tracking in the early 1990s did not provide an immediate answer. The first collars, which required large batteries, were far too heavy for Arctic foxes. (4)But now, at last, the technology has caught up, in the form of light, battery-powered devices tailored for the Arctic fox, including one equipped with an antenna laced with red pepper to discourage animals from gnawing it off. Last year, a Canadian team published results of a satellite-tracking study of the Bylot Island foxes. The findings provide more evidence that Arctic foxes regularly travel enormous distances. Although it is too

early to say for sure, it is possible that foxes decide to go onto the ice based partly on how much food is available on land in the autumn.

【解答１】2021 京都大学 2/26,前期 総合人間　文　教育　法　経済　理　医　薬　工　農

(1)　歴史は特定の事柄を描写して起きた具体的な出来事に集中するが，詩は普遍的な事柄を描写して偶然の事柄が入り込まないようにする。だから，詩は正当化される。

(2)　「ノンフィクションを読む際には警戒する。批判的で懐疑的になる。だが，フィクションに没頭している際には知的な警戒を解く。心を動かされ，これによって柔軟になり変わりやすくなるようである。」

(3)　これらの人たちは，たちまち相手の感情を把握して，それに基づいて行動して，商談をまとめたり裁判に勝ったりすることができる。おそらくその結果，相手は苦々しい思いをしたり，敗北感を味わったりする。これに対して，フィクションを読むのが大好きな，内向的な人たちで，他人の感情を理解するのがうまくない，あるいは，理解できても，相手に関して理解したことに基づいて行動する能力がない人たちがいることもよく知られている。

【解答２】2020 京都大学 2/26,前期 総合人間　文　教育　法　経済　理　医　薬　工　農

(1)

・水が中に入るときの屈折を補正して獲物に水を命中させることができること。

・獲物との距離を測定して，獲物に最大の力で水が当たるようにできること。

・獲物の軌道を予測して，水を命中させることができること。

(2)　ミツバチは脊椎動物よりずっと少ないが約 96 万個のニューロンを持っていることと，脊椎動物と同様の高度な認知能力を持っていて，学習，記憶，概念形成などができることとで，非常に小さな脳を持っていると言えるということ。

(3)　ともかく，哺乳類と比べるとミツバチの脳はずっと小さいからといって，その分だけ認知の過程，いや少なくとも，認知の実行において根本的な制約があるということではなさそうである。哺乳類とミツバチの共通点は驚くべきものであるが，同じように神経が発達したためであると考えることはできない。ミツバチの神経構造が解明されない間は，両者に共通点がある原因を特定することはできない。

【解答３】2019 京都大学 2/26,前期 総合人間　文　教育　法　経済　理　医　薬　工　農

(1)　仮想現実のすべての構成要素は，これまでのメディア機器とは違って，人体の動きを正確に再現したものでなければならない。したがって，仮想現実の研究者は名詞よりも動詞を多用することになるということ。

(2)　自分が見ている相手の人との間には，注意深く観察すると気づく相手の頭のわずかな動きによって，さまざまなメッセージがやりとりされているとこうこと。

(3)　人の神経系は科学の世界とやや似た活動をする。それは，非常に好奇心が旺盛で，世の中に存在

するものについてさまざまな考え方を検証しているからである。「世界」を一時的に説得して別の仮説を支持させることができれば，仮想現実のシステムは成功を収める。予想をするときの土台として仮想世界をみなすことができるような十分な手がかりを神経系がいったん与えられると，仮想現実はリアルなものと感じられ始める。

(4)　ア　make　　イ　benefits　　ウ　surpass　　エ　forgetting

【解答４】2018 京都大学 2/26,前期 総合人間　文　教育　法　経済　理　医　薬　工　農

(1)　どんなことにも自分は答えを出すことができて何をしたらよいかを分かっていると考えて，困っている人たちは自分のような救世主となる達人が現れるのを待っているのだと考えてしまう，人助けをする人が陥りやすい自己本位の誤った認識。

(2)　つまり，どのように手助けするかは，実際に手助けすることと全く同じぐらい重要であり，それゆえ「何かお手伝いしましょうか？」とまず尋ねることは不可欠である。この質問から始めるならば，相手に謙虚に指示を求めていることになる。そうすれば，他者もその人の人生の達人であることを認めて，たとえ何らかの手助けをしたとしても，相手が主導し続ける機会を与えることになる。

(3)　ア　④　　イ　①　　ウ　⑤　　エ　②　　オ　⑥

【解答５】2017 京都大学 2/26,前期 総合人間　文　教育　法　経済　理　医　薬　工　農

(1)　地球上の乾燥地と半乾燥地の 70%までもが，程度の差はあるが，砂漠化していること。

(2)　地球規模で起きていると認識された最初の環境問題として，「砂漠化の危機」がどのように政策問題として概念化され，枠組みが作られ，取り組まれるかが，その後に起きる，森林破壊，生物多様性の損失，気候変動などの環境危機に対する我々の受けとめ方をさまざまな点で方向づけた。

(3)　世界の乾燥地は，価値のない，森林が伐採された地形であるという思いこみのせいで，植民地時代以来，しばしば組織的に，乾燥地の環境に被害を与え，先住民を軽視する計画や政策がとられてきたが，先住民の多くは持続可能な形で土地を利用してきたのである。

【解答６】2016 京都大学 2/26,前期 総合人間　文　教育　法　経済　理　医　薬　工　農

(1)　その教会は地面に空いた穴の上に建てられたが，その穴には周りの建物と関係した歴史と，それとは別個の歴史とがある。この比喩を続けるならば，アメリカ史における宗教について考える際に，我々は穴の上に立っている教会にだけ注目して，穴自体にも，その中の土を自らの血や骨の一部とするために並んでいる人々にも注目してこなかった。

(2)

the middle…新大陸発見は，スペインのカトリック君主の命を受けた，聖母マリアの名がつけられた船に乗ったコロンブスによって行われたということ。

the margin…新大陸発見は，スペインから追放されかけていたユダヤ教やイスラム教の乗組員たちがいたおかげで達成できたということ。

【解答７】2015 京都大学 2/26,前期日程 総合人間　文　教育　法　経済　理　医　薬　工　農

(1)　このような音が結びついて初めて，クラシック音楽と呼ばれる複雑な音になる。本質的には，音楽は階層的な体系の一例にすぎないもので，さまざまなパターンがより大きなパターンの中に組み込まれている。これは語が文に，次には章に，最終的には小説になるのと同様である。

(2)　既存の少しの普遍的な基本的要素を組み合わせて，さまざまな新たな機能を生み出すという枠組み。

(3)　アミノ酸鎖が相互作用をして，絹を紡ぐ過程で１つの物質を形成するという仕組みを，我々はその音楽を聴くことによって，よりよく理解できるようになった。たとえば，品質の悪い絹の繊維を形成したアミノ酸鎖はつっかかるような不快な音楽になる一方で，より品質の高い繊維を形成したアミノ酸鎖は，より緻密に織り込まれた組織からできていたので，より柔らかくてよりなめらかな音楽になっていた。

【解答８】2014 京都大学 2/26,前期日程 総合人間　文　教育　法　経済　理　医　薬　工　農

(1)　そういう訳で我々は哲学の歴史を学生に教えるのであって，平然と哲学を無視する科学者は自己責任でやっているということになる。哲学のない科学などというものはない。ただ，科学の基礎となっている前提を全く考慮しないで行われてきた科学はある。

(2)　だからといって，哲学者もまた，古くからある間違いを犯さない，さらには間違いを擁護しない，というわけではない。問題が難しいものでなければ，それに取り組む価値はないはずだからである。

(3)　他の学問はその分野の重要な問題について明確な正解を得ることを専門としているが，我々哲学者は正しい答えどころか正しい問題が何であるかさえ誰にもはっきり分からないほど，物事をひねくりまわすありとあらゆる方法を研究することを専門としている。間違った問いかけをすれば，どんな研究でも出だしからつまずく危険を冒すことになる。こうした事態になったときは，哲学者の出番である。

【解答９】2013 京都大学 2/26,前期日程 総合人間　文　教育　法　経済　理　医　薬　工　農

(1)　この考え方は，道徳は世界中で様々なものがあり，また時代によっても異なり，我々が持って生まれてくるようなものではないと仮定する。また，大人として我々が持っている道徳は，幼少時代に大人から善悪を教えてもらうという体験の中で身につけたもののはずだという考え方に疑問を呈する。

(2)　彼は，昆虫が変態するときの変化の段階に強く引きつけられた。後に，彼の関心が子供に向けら

れるようになった時，彼はこの発展段階の興味を持ち込んだのだ。

(3)　彼はまた，子供の知性がそのことを把握できるだけの年齢や認識段階に至るまでは，大人がいくら水の量は全く同じだと説明しても，それは意味がないことだということも知った。

(4)　交代でゲームを行うことは，コップ間で水を移し替えることに似ている。3 歳児を相手にいくらそれを試みようと，彼らはただ公正さという概念を受け入れる段階にないのであり，それは彼らが体積保存の法則を理解できないのと同じことなのである。

【解答１０】2012 京都大学 2/26,前期日程 総合人間　文　教育　法　経済　理　医　薬　工　農

(1)　北極ギツネの耳に番号を振ったタグを付けて放し，その後その居場所を記録した。当時の技術の限界ゆえに，キツネたちがさまざまな場所へどうやって到達するのかはほとんど何も解明されなかったが，2000km 以上離れた北極点にごく近い場所で，何頭かのタグを付けた北極ギツネが確認された。

(2)　調査対象となるキツネの首に取り付けた電波発信機によって，徒歩で調査中の研究者も，飛行機を使った調査を行う研究者も，キツネの所在を知らせる信号を正確に検知することが可能となった。

(3)　キツネの移動には何かあらかじめ決まった行動パターンがあるのだろうか，それともキツネたちは，ただ行き当たりばったりの移動をしているだけなのだろうか。もし，決まったパターンがあるとするならば，変わらぬ道標もなく，天候次第で溶けたり凍りついたりし，流れのなすままに漂い動きまわる氷景の中で，そしてまた，自分たちの食欲を満たすための獲物のにおいの痕跡もほとんどない中で，果たして彼らはどうやって自分たちの行く手を判断しているのであろうか。

(4)　しかし現在，技術もようやく追いつき，北極ギツネ用に軽量化されたバッテリー方式の装置も登場してきている。その中には，装置を動物たちに噛み切られないようにするために，アンテナに唐辛子を塗りこんだものもある。