

I. 次の文章に関して、空欄補充問題と読解問題の二つがあります。まず、[1]から[20]の空所を埋めるのに、文脈的に最も適切な語を1から3の中から選び、その番号を解答欄(1)から(20)にマークしなさい。次に、内容に関する[21]から[30]の設問には、1から4の選択肢が付されています。そのうち、文章の内容からみて最も適切なものを選び、その番号を解答欄(21)から(30)にマークしなさい。

1 After Hurricane Sandy devastated the US Atlantic coast, the debate over climate change recaptured the public imagination. The record heat wave and drought across the United States in 2012 seems also to have convinced more people that global warming is a real phenomenon, even though it makes little sense to [1](1. engage 2. attribute 3. instill) a single weather event—no matter how extreme—to an upward trend in temperature.

2 Research proves global warming exists and scientists typically point to results from independent studies and meta-analyses to try to sway people's views. But people seem to rely on factors other than data to inform themselves about the likelihood of global warming. "Data cannot move people to imagine," says professor Jane Risen. Her research suggests that it is people's ability to imagine the [2](1. affects 2. effects 3. efforts) of global warming, not the statistics or data, that determine belief in global warming.

3 Risen and Clayton Critcher propose in a recent paper that the physical experience of heat can make it easier for people to visualize a hot, arid world plagued by global warming. [3](1. Moreover 2. In contrast 3. Notwithstanding), having that vivid picture in mind can make the idea of a warming planet seem much more plausible.

4 Physical sensations of warmth, hunger, or thirst can influence people's beliefs by helping them form clear mental images [4](1. in 2. of 3. on) a world where those sensations are more common. The results of the study suggest that ordinary people—including bright and educated ones—may think of global warming and other pressing environmental and social concerns in intuitive rather

than [5](1. intellectual 2. interpretive 3. intelligible) ways. Scientists may be more successful in communicating their findings about climate change if they make it easier for people to imagine the urgency and consequences of this issue.

5 In an experiment, students were taken outside on different days and asked questions, one of which [6](1. fabricated 2. mirrored 3. solicited) the strength of their views on global warming. Risen and Critcher found that students tended to believe more in global warming when it was hotter outside. Of course, their answers may have been related to factors other than their mental images of a hotter planet. [7](1. Blemishing 2. Bruising 3. Blistering) heat outdoors could lead people to think that the earth's average surface temperature is indeed rising. They may think it reasonable to [8](1. imply 2. infer 3. induce) that the global climate is changing, forgetting that global warming actually entails a gradual elevation in the earth's average temperature.

6 But even when Risen and Critcher took the experiment indoors, they found that students who were asked to complete a survey in a cubicle that had been heated were more likely to believe in global warming. Furthermore, students were asked in another experiment [9](1. to what extent 2. on what grounds 3. on whose authority) they felt the room was warm or cold before responding to the global warming question. Calling attention to the temperature in the room should have led students to "correct" their views if those had been unintentionally based on the room's temperature. But the feeling of heat continued to have a significant [10](1. collision 2. hit 3. impact) on belief. These results suggest that the experience of heat—rather than the information it conveyed—influenced how strongly the students felt about global warming. The actual physical experience of heat was more powerful than the [11](1. solitary 2. mere 3. only) mention of it.

7 In another experiment, the authors found that exposing students to sentences such as "the room is hot" or "the bacon is [12](1. sizzling 2. growling 3. banging)" successfully summoned the concept of heat but did not influence their beliefs in global warming.

8 Risen and Critcher expanded their analysis to look at the effect of thirst on the belief in another environmental problem: drought and desertification. They had some participants eat pretzels to become thirsty, while they showed other participants a [13](1. subversive 2. substandard 3. subliminal) message about thirst—they flashed the word “thirst” on a computer screen for 17 milliseconds, and had a third group of participants complete a neutral task that was unrelated to thirst. They found that the students who physically experienced thirst were more likely to believe in the threat of desertification. Feeling thirsty led people to think about thirst more (as did the quickly flashed presentation of the word), but the actual physical experience was necessary to affect people’s views. “Jumping in the process midway, by activating the thought without having the physical experience, did not lead to a change in belief,” says Risen.

9 To test the idea that feeling warm leads people to form sharper mental images of a world becoming hotter, Risen and Critcher used a new technique that measured how easily participants in a warm room imagined a picture of a hot landscape. Students who participated in this experiment were randomly assigned to heated or room-temperature cubicles. [14](1. As 2. Though 3. While) in the cubicles, they were first shown a series of pictures on a computer screen that included hot and cold outdoor scenes. The hot scenes, with yellow and red tones, showed parched landscapes that depicted the world as affected by global warming. Using Microsoft Office’s picture editing features, the researchers had adjusted each image’s clarity so that the pictures were semitransparent and somewhat blurry.

10 In the next task, they showed the students these same images, but this time with the transparency set [15](1. all 2. by 3. on) the way to 100 percent, so they started off completely invisible. They asked the students to adjust the transparency of each photo until they matched the level of clarity of the photo that they had seen before. Participants stopped when the images in front of them matched the images they remembered.

11 Students who performed the experiment in the hot room made the images of hot landscapes appear sharper, while those who were in the room-temperature room remembered the images being [16](1. firmer 2. furrier 3. fuzzier). This result suggests that students who felt warm were able to form clearer mental images of a hot world. To further test the idea that mental images intensify a belief in global warming, Risen and Critcher conducted another experiment in which students were shown [17](1. likewise 2. nonetheless 3. otherwise) identical landscape pictures that were either clear or blurry. They found that students who were shown clear images of hot landscapes were more likely to believe that the earth was heating up.

12 In all of these experiments, Risen and Critcher found that regardless of participants' political views, participants believed more in global warming when asked about their views in a warm environment. In other words, although political [18](1. funding 2. orientation 3. ecology) predicted people's beliefs on global warming (liberals were more likely than conservatives to believe in global warming), feeling warm still had a significant impact on their beliefs. Both liberals and conservatives were better able to imagine global warming occurring when they felt warm.

13 The fact that liberals and conservatives responded similarly in the experiments is in sharp contrast to the response people often have when presented with explicit claims about an issue. Previous studies have shown that after people are given mixed evidence about a topic, those who are [19](1. inclined 2. declined 3. reclined) to favor a position will come to believe in it even more, while those who are skeptical will tend to become even more skeptical. Risen claims that trying to convince people of something by simply delivering facts can sometimes be polarizing because it gives people something to react to. The experience of heat seems to elicit a more [20](1. universal 2. dependent 3. accidental) intuitive response.

—Based on Jane L. Risen (2013). "Sensing Global Warming," *Capital Ideas*.

[21] Which of the following is true, according to the 1st paragraph?

1. After Hurricane Sandy, the term global warming was coined.
2. After Hurricane Sandy, the worst drought in American history hit the Atlantic coast.
3. Prior to Hurricane Sandy, Americans were unaware of global warming.
4. Prior to Hurricane Sandy, there was a period of lessened interest in global warming.

[22] Which of the following is included among the “factors other than data” as mentioned in the 2nd paragraph?

1. Imaginative capacity.
2. Numerical inconsistency.
3. Statistical accuracy.
4. Temperature fluctuation.

[23] What would be a logical application of the findings of Risen and Critcher to effectively change people’s opinions about world hunger?

1. Produce documentary films that graphically show the difficulties of poverty.
2. Create situations wherein participants are hungry while learning about the issue.
3. Separate liberals and conservatives into different groups with different presentations.
4. Quickly flash words such as “hunger,” “famine,” “poverty,” and “deprivation” in between slides.

[24] Why did the researchers move the experiment indoors as mentioned in the 6th paragraph?

1. To avoid unforeseen circumstances.
2. To increase the number of eligible participants.
3. To control for the rapid increase of external temperature.
4. To clarify the results of the earlier experiment.

[25] The reason that the researchers called attention to the room's temperature in the 6th paragraph is

1. to see if the participants could discount physical sensations when forming opinions.
2. to subliminally suggest that the world was getting hotter.
3. to make it difficult for the participants to focus on the activities in the experiment.
4. to create a situation where people felt irritable and negative.

[26] Why was bacon mentioned in the experiment described in the 7th paragraph?

1. To make the participants hungry.
2. To evoke images of heat in the participants' minds.
3. To make an authentic atmosphere for the experiment.
4. To distract the participants from the topic.

[27] What can be said to be a goal of Risen and Critcher's research?

1. To teach people how to be more intuitive.
2. To create political policies that reduce global warming.
3. To understand how physical sensation affects belief.
4. To increase people's awareness of their physical condition.

[28] What is the purpose of asking students to adjust the transparency of photos in the 9th, 10th, and 11th paragraphs?

1. To incorporate a common indoor activity into the study.
2. To investigate the connection between heat and human vision.
3. To understand how much the heat is affecting their recollections.
4. To explore how the clarity of photos determines the accuracy of memory.

[29] Politics is included as a variable in the discussion in the 12th and 13th paragraphs because it is generally understood that

1. belief in global warming falls along political lines.
2. political debate shifts as science proves new things.
3. collaboration between political groups leads to solutions for global warming.
4. liberals want to convince conservatives of the dangers of global warming.

[30] According to the authors, what is one problem with relying on facts to convince people?

1. Facts are easily manipulated to support or refute any position.
2. People perceive that the “facts” in any given situation frequently change.
3. Most people lack the appropriate background to understand the science.
4. Simply offering data tends to strengthen existing opinions, rather than change them.

II. 次の文章に関して、空欄補充問題と読解問題の二つがあります。まず、[31]から[50]の空所を埋めるのに、文脈的に最も適切な語を1から3の中から選び、その番号を解答欄(31)から(50)にマークしなさい。次に、内容に関する[51]から[60]の設問には、1から4の選択肢が付されています。そのうち、文章の内容からみて最も適切なものを選び、その番号を解答欄(51)から(60)にマークしなさい。

- 1 For all of measurable human history up until the year 1750, nothing happened that mattered.
- 2 This isn't to say history was stagnant, or that life was only grim and blank, but the well-being of average people did not perceptibly improve. All of the wars, literature, empires, and exploration took place on a scale too small to register, too minor to much improve the lot of ordinary human beings. In England before the middle of the eighteenth century, where industrialization first began, the pace of progress was so slow that it took 350 years for a family to double its standard of living. By the middle of the eighteenth century, the state of technology and the luxury and quality of life afforded the average individual were little better than they had been two millennia earlier, in ancient Rome.
- 3 Then two things happened that did matter, and they were so grand that they [31](1. stretched 2. fattened 3. dwarfed) everything that had come before and encompassed most everything that has come since: the first industrial revolution, beginning in 1750 or so, in England, and the second industrial revolution, beginning around 1870, mostly in America. That the second industrial revolution happened just as the first had begun to [32](1. dissipate 2. propagate 3. agitate) was an incredible stroke of good luck. It meant that during the whole modern era from 1750 onward, human well-being accelerated at a rate that could barely have been contemplated before. Instead of permanent stagnation, growth became so rapid and so seemingly automatic that by the 1950s the average American would [33](1. hardly 2. roughly 3. vastly) double his or her parents' standard of living. In the space of a single generation, for most everybody, life was getting twice as good.

4 At some point in the late sixties or early seventies, though, this great acceleration began to taper off. The shift was modest at first, and it was concealed in the hectic up-and-down of yearly data. [34](1. So 2. But 3. Or) if you examine the growth data since the early seventies, and if you are mathematically astute enough to fit a curve to it, you can see a clear trend: The rate at which life is improving has slowed.

5 If you are like most economists, you are not greatly troubled by this story. The machinery of innovation, [35](1. in retrospect 2. nevertheless 3. after all), is now more organized and sophisticated than it has ever been, human intelligence is more efficiently [36](1. mobilized 2. minimized 3. measured) by spreading education and expanding global connectedness, and the examples of the Internet and artificial intelligence suggest that progress continues to be rapid.

6 But if you are prone to a more radical sense of what is possible, you might begin to [37](1. follow 2. avoid 3. reject) a different line of thought. If nothing like the first and second industrial revolutions had ever happened before, [38](1. how 2. why 3. what) is to say that anything similar will happen again? This line of thinking would make you a supporter of a 72-year-old economist at Northwestern University named Robert Gordon, and you would probably share his view that it would be crazy to expect something on the scale of the second industrial revolution to ever take place again.

7 “Some things,” Gordon says, “can happen only once.”

8 Gordon’s [39](1. complaint 2. argument 3. rebuttal) is that the forces of the second industrial revolution were so powerful and so unique that they will not be repeated. The consequences of that breakthrough took a century to be fully realized, and as the internal combustion engine gave [40](1. rise 2. lift 3. height) to the car and eventually the airplane, and electricity to radio and the telephone and then mass media, they came to [41](1. restrict 2. retrench 3. rearrange) social forces and transform everyday lives. Mechanized farm equipment permitted

people to stay in school longer and to leave rural areas and move to cities. Electrical appliances allowed women of all social classes to leave behind housework for more productive jobs. The introduction of public sewers and water sanitation reduced illness and infant mortality. The car, mass media, and commercial aircraft led to a liberation from the [42](1. wide expanses 2. narrow confines 3. unbound spaces) of geography and an introduction to a far broader and richer world. Education beyond high school was made accessible to the middle and working classes.

9 These are all consequences of the second industrial revolution, but it is hard to imagine how those improvements might be [43](1. extended 2. delayed 3. deteriorated): Women cannot be liberated from housework to join the labor force again, travel is not getting faster, and educational attainment has plateaued. The classic example of the scale of these transformations is Nobel-laureate economist Paul Krugman's description of his kitchen: The modern kitchen, except for a few surface improvements, is the same one that existed half a century ago. But go back half a century before that, and you are [44](1. speaking 2. talking 3. telling) about no refrigeration, just huge blocks of ice in a box, and no gas-fired stove, just piles of wood. If you take this perspective, it is no wonder that the productivity gains have diminished since the early seventies. The social transformations brought by computers and the Internet cannot match any of this.

10 But even if they could, that would not be enough. "The growth rate is a heavy taskmaster," Gordon says. The math is [45](1. invigorating 2. encouraging 3. punishing). The population is far larger than it was in 1870, and far wealthier to begin with, which means that the innovations will need to be more transformative to have the same economic effect. "We need innovations that are eight times as important as those we had before," he says.

11 Among those who are worried about growth—or, rather, the lack thereof—there is a science-fiction [46](1. streak 2. stripe 3. band). I don't

think I have had a single conversation about long-term economic growth that did not involve a detour into the matter of robots, and what they will mean for society.

12 I called Erik Brynjolfsson, an expert in the economics of technology and an optimist about future breakthroughs, at his office at MIT to try to get a better sense of what a roboticized society might look like. It turns out the optimist's case is darker than I expected. "The problem is jobs," he said. Sixty-five percent of workers occupy jobs whose basic tasks can be classified as information processing. If you are trying to find a competitive advantage for people over machines, this does not [47](1. bode 2. bid 3. bide) well: "The human mind did not evolve to multiply triple-digit numbers," he told me. The robot mind has. In other words, the long history of Marx-inflected literature and film that claims that office work is dehumanizing may have been [48](1. into 2. onto 3. up to) something. Those jobs were never really designed for the human mind. They were designed for robots. The existing robots just weren't good enough to take them. At first.

13 At opposite ends of the pay scale, however, there are jobs that seem safe from the robot menace, Brynjolfsson said—high-paying creative and managerial work, and non-routine physical work, like gardening. As for the 65 percent of us who are employed in "information processing" jobs, Brynjolfsson said, the challenge is for us to integrate human skills with machine capacities—his phrase is "racing with machines."

14 There is a whole set of behaviors that depends upon an expectation that things will always get better: our laissez-faire-ism, our can-do-ism, our cult of the individual. For that reason, we think of the darkening social [49](1. spin 2. curve 3. turn) that happened in the early 1970s as having something to do only with the social energies of the sixties collapsing in on themselves. In Gordon's description, however, something more mechanistic was happening: the second industrial revolution had simply [50](1. run 2. plotted 3. served) its course, and so, in many ways, had its social implications.

15 It is at about this point in the discussion that Gordon will grin mischievously and say: “So, how do you like your smartphone now?”

—Based on Benjamin Wallace-Wells (2013). “The Blip,” *New York Magazine*.

[51] As used in the 1st paragraph, “nothing happened that mattered,” is referring to

1. artistic development.
2. population increase.
3. quality of life.
4. fair trade.

[52] Why wasn’t the socioeconomic slowdown of the late sixties or early seventies noticed originally, according to the 4th paragraph?

1. Society was in a state of upheaval.
2. Technological advancement continued unabated.
3. Annual fluctuations in growth statistics are to be expected.
4. Computational technology was not sufficiently advanced to model the data.

[53] Why does Robert Gordon believe that another industrial revolution is unlikely?

1. We have already experienced two in the history of mankind.
2. The population is no longer at the ideal density.
3. Automation is unable to replace a sufficient portion of the workforce.
4. Increased global connectedness hampers competition.

[54] Which of the following is the reason for listing inventions such as airplanes and the mass media in the 8th paragraph?

1. They demonstrate the influence of American ingenuity.
2. They illustrate the problems associated with mechanization.
3. To argue that they were the natural result of the second industrial revolution.
4. To argue that these seemingly positive developments have actually harmed society.

[55] According to the article, what was the effect of women joining the workforce?

1. Development of the home-appliance market.
2. An increase in women's sense of fulfillment.
3. Reduced dependency on unskilled male labor.
4. Increased economic productivity.

[56] Advancements in which of the following areas are cited in the 8th paragraph as having a positive effect on public health?

1. Transportation.
2. Communications.
3. Agriculture.
4. Infrastructure.

[57] Which of the following can be inferred from the comparison between kitchens and computers at the end of the 9th paragraph?

1. If computers and the Internet had been developed 100 years earlier, the modern kitchen would not be so different from that of those days.
2. Despite the changes to lifestyle that computers and the Internet have brought about, they are smaller than those evidenced by improvements in kitchens seen even 50 years ago.
3. Without the rapid technological changes evidenced by the development of the modern kitchen, neither computers nor the Internet would have ever come to pass.
4. Although there was a great deal of advancement in productivity between 50 and 100 years ago, productivity gains stagnated until the more recent development of computers and the Internet.

[58] Why do “we need innovations that are eight times as important as we had before,” as is claimed in the 10th paragraph?

1. Growth is limited by the rules of mathematics.
2. People must work harder for the same gains their parents made with less.
3. The natural resource needs of today’s larger population outstrip what the planet can produce.
4. Given the high degree of development we enjoy today, increasing it further will require much more than it did before.

[59] Which of the following groups seem to be most worried about the prospect of roboticization?

1. Those who believe that economic growth has peaked.
2. Those who believe that technological advances will preserve growth.
3. Those who are employed as skilled craftspeople.
4. Those whose jobs involve the management of workers.

[60] Why does Gordon ask the author of the article if he likes his smartphone in the final paragraph?

1. He wants to call attention to how far we have come since the 1970s.
2. He is joking that the smartphone may become the author’s competition.
3. He is implying that there will be no better smartphones in the future.
4. He is suggesting that consumer demand may be the key to restarting growth.

2014(平成26)年度 環境情報学部 一般入学試験問題 訂正

教科・科目	ページ	設問	誤	→	正
英語	14	Ⅱ [57]	2. 2行目 they are are smaller	→	2. 2行目 they are smaller