英　　　語

1 (A) 以下の英文を読み，10 代の若者の気質の変化について，70〜80 字の日本語で要約せよ。句読点も字数に含める。

Consider a study of thousands of Dutch teenagers — the youngest were aged 12 at the start — who completed personality tests each year for six or seven years, beginning in 2005. The results seemed to back up some of the stereotypes we have of messy teen bedrooms and mood swings. Thankfully this negative change in personality is short-lived, with the Dutch data showing that the teenagers' previous positive features rebound in later adolescence.

Both parents and their teenage children agree that changes occur, but surprisingly, the perceived change can depend on who is measuring, according to a 2017 study of over 2,700 German teenagers. They rated their own personalities twice, at age 11 and age 14, and their parents also rated their personalities at these times. Some revealing differences emerged: for instance, while the teenagers rated themselves as declining in ability to get along with adults, their parents saw this decline as much sharper. Also, the teens saw themselves as increasingly friendly to each other, but their parents saw them as increasingly withdrawn. "Parents, as a whole, see their children as becoming less nice," was the researchers' interpretation. On a more positive note, the parents saw their children's declines in honesty as less striking than their children did.

This mismatch may seem contradictory at first, but can perhaps be explained by the big changes underway in the parent-child relationship brought on by teenagers' growing desire for autonomy and privacy. The researchers point out that parents and teens might also be using different

reference points — parents are measuring their teenagers' features against a typical adult, while the teenagers are comparing their own features against those displayed by their peers.

This is in line with several further studies, which also reveal a pattern of a temporary reduction in advantageous features — especially niceness and self-discipline — in early adolescence. The general picture of the teenage years as a temporary personality conflict therefore seems accurate.

(B) 以下の英文を読み，(ア)，(イ) の問いに答えよ。

　　Many artists are turned off by artificial intelligence. They may be discouraged by fears that A.I., with its efficiency, will take away people's jobs. They may question the ability of machines to be creative. Or they may have a desire to explore A.I.'s uses — but aren't able to understand its technical terms.

　　This all reminds me of when people were similarly doubtful of another technology: the camera. In the 19th century, with the invention of modern photography, cameras introduced both challenges and benefits. (1) . Some felt this posed a threat to their jobs.

　　But for those artists willing to explore cameras as tools in their work, the possibilities of photography proved inspiring. Indeed cameras, which became more accessible to the average user with advancements in technology, offered another technique and form for artistic endeavors like portrait-making.

　　Art matters because as humans, we all have the ability to be creative. (2) . History has shown that photography, as a novel tool and medium, helped revolutionize the way modern artists create works by expanding the idea of what could be considered art. Photography eventually found its way into museums. Today we know that cameras didn't kill art; they simply provided people with another way to express themselves visually.

　　This comparison is crucial to understanding the potential for artificial intelligence to influence art in this century.

　　As machine learning becomes an increasing part of our everyday lives — incorporated into everything from the phones we text with to the cars we drive — (3) . This question becomes even more relevant as machines step into the artistic realm as *creators* of art. In summer 2019, the Barbican

Centre in London presented A.I.-produced pieces in a show called "A.I.: More Than Human." And in November later that year, over one million people attended an exhibition exploring art and science at the National Museum of China in which many works were created using computer programs.

I founded the Art and Artificial Intelligence Laboratory at Rutgers University in 2012. As an A.I. researcher, my main goal is to advance the technology. For me, this requires looking at human creativity to develop programs that not only understand our achievements in visual art, music and literature, but also produce or co-produce works in those fields. After all, it is our capacity to expand our creative skills beyond basic problem-solving into artistic expression that uniquely distinguishes us as humans.

Human creativity has led to the invention of artificial intelligence, and now machines themselves can be forces of creativity. Naturally we are curious to see what A.I. is capable of and how it can develop. During the past eight years at the lab, our researchers have realized that A.I. has great potential for solving problems in art. For example, as a tool, machine intelligence can help distinguish authentic paintings from fake ones by analyzing individual brush strokes.

A.I. can also make sense of art by helping uncover potentially similar influences among artworks from different periods. In one test, machine learning was able to identify works that changed the course of art history and highlight new aspects of how that history evolved.

       (4)   — nearly entirely on their own — that viewers are unable to distinguish from works made by human artists. A.I. is even able to compose music that you can listen to on your mobile phone.

Artists have long integrated new technologies into their practices. A.I. is no exception, yet there is a fundamental difference. This time, the machine is its own source of creativity — with the ability to search through vast

◇M7(774—216)

amounts of historical and social data, artificial intelligence can produce imagery that is beyond our imagination. This element of surprise is the force that can advance artistic mediums in new directions, with the machines functioning not only as tools for artists, but also as their partners.

But can an artificially intelligent machine be an artist in its own right? My answer is no.

While the definition of art is ever-evolving, at its core it is a form of communication among humans. Without a human artist behind the machine, A.I. can (　イ　), whether that means manipulating *pixels on a screen or notes on *a music ledger. These activities can be engaging and interesting for the human senses, but they lack meaning without interaction between artist and audience.

I've noticed that new technologies are often met first with doubt before eventually being adopted. I see the same path emerging for artificial intelligence. Like the camera, A.I. offers a means for artists and non-artists alike to express themselves. That makes me confident that $\boxed{\quad (5) \quad}$. The future of art looks promising.

注

pixel　ピクセル，画素

a music ledger　五線譜

（ア）　空所 (1) ～ (5)に入れるのに最も適切な文を以下の a) ～ h) より一つずつ選び，マークシートの (1) ～ (5) にその記号をマークせよ。ただし，同じ記号を複数回用いてはならない。また，文頭であっても小文字で表記してあるので注意せよ。

a)　beyond digesting information, machines have also been able to create novel images

b)　but this is an age of harmony between humanities and technologies

c)　it's only natural to ask what the future of art in such an A.I.-dominated society will be

d)　smart machines can only help, not hurt, human creativity

e)　the machine would not contribute to human creativity

f)　the problem is whether art will overcome the limit of photography

g)　while some artists embraced the technology, others saw them as alien devices that required expertise to operate

h)　with time, the art we create evolves, and technology plays a crucial role in that process

（イ）　下に与えられた語を正しい順に並べ替え，空所 (イ) を埋めるのに最も適切な表現を完成させ，記述解答用紙の 1 (B) に記入せよ。

do　　form　　little　　more　　play　　than　　with

— 9 —

2 (A)　あなたにとって暮らしやすい街の，最も重要な条件とは何か。理由を添え
て，60〜80 語の英語で述べよ。

(B) 以下の下線部を英訳せよ。

　　私が遊び好きだと言うと，欺^{だま}されたような気になる方がおられるかもしれない。たしかに，ギリシア語やラテン語をモノにするには，一日七，八時間，八十日間一日も休まずやらなければならなかった。基本的テキストを読むときは，毎日四，五ページ，休まずに読みつづけなければならなかった。それでは遊ぶ暇なんかないじゃないか。何が遊び好きだ，と。

　　いや，別に嘘をついているわけではない。たしかに，大学に入ってしばらくのあいだ，語学を仕込む期間はこんなふうにやらなければならなかった。<u>だが，語学の習得は自転車に乗る練習のようなもので，練習しているあいだは大変でも，一度乗れるようになってしまえばなんでもない。あとはいつも乗ってさえいればいいのだ。</u>

<div align="right">（木田元『新人生論ノート』を一部改変）</div>

3 放送を聞いて問題 (A), (B), (C) に答えよ。(A) と (B) は内容的に関連している。(C) は独立した問題である。(A), (B), (C) のいずれも 2 回ずつ放送される。

- 聞き取り問題は**試験開始後 45 分**経過した頃から約 30 分間放送される。
- 放送を聞きながらメモを取ってもよい。
- 放送が終わったあとも，この問題の解答を続けてかまわない。

(A) これから放送するのは，絵画の贋作について，美術研究者 Noah Charney に行ったインタヴューである。これを聞き，(6) ~ (10) の問いに対して，それぞれ最も適切な答えを一つ選び，<u>マークシートの (6) ~ (10)</u> にその記号をマークせよ。

(6) What is "craquelure"?

a) Faults caused by covering a painting over time.

b) Lines produced by paint expanding and contracting.

c) Marks produced by spiders on the surface of a painting.

d) Patterns produced by worms eating through a painting.

e) Stains on a painting produced by artists.

(7) Of all the people Charney writes about, why is Eric Hebborn his favorite?

a) Because he has the same level of skill as the artists whose work he copies.

b) Because he has written several books on the subject of faking art.

c) Because he invented numerous techniques for imitating paintings.

d) Because he is the most famous.

e) Because he is the only person to successfully reproduce craquelure.

(8) Which of the following statements about wormholes is NOT true?

  a)   They are difficult to reproduce mechanically.

  b)   They are not regularly shaped.

  c)   They are one of the most difficult aspects of a painting to copy.

  d)   They are produced by insects eating the painting.

  e)   They can easily be reproduced by using the right kind of tools.

(9) According to Charney, the reason many fake paintings are not recognized as such is that

  a)   few works of art undergo close examination.

  b)   specialists seldom look at the frame of a painting.

  c)   the fakers have too many ways to imitate paintings.

  d)   there are not enough effective ways to identify fake paintings.

  e)   we have too little knowledge about how paintings change over time.

(10) We can distinguish an imitation from an authentic work most clearly

  a)   by checking that the style matches other known works by the artist.

  b)   by identifying the precise material used in the painting.

  c)   by looking at the writing and other marks on the back of the painting.

  d)   by studying the documented history attached to the painting.

  e)   by using the latest scientific techniques to test the painting.

(B) これから放送するのは，司会者と Noah Charney による，(A) と内容的に関連した会話である。これを聞き，(11) ～ (15) の問いに対して，それぞれ最も適切な答えを一つ選び，マークシートの (11) ～ (15) にその記号をマークせよ。

(11) Which of the following is NOT mentioned by Charney as a feature of the fake Rothko painting?

a) It is a large painting.

b) It is an abstract painting.

c) It is painted in Rothko's style.

d) It is painted on a canvas once used by Rothko.

e) It uses red and black.

(12) According to the dialogue, the painting resembles a work of Rothko so much that it deceived

a) Noah Charney.

b) the chairman of Sotheby's.

c) the columnist who first wrote about it.

d) the judge in a Manhattan court.

e) the reporter covering the trial.

(13) Where is the painting now?

a) It has been destroyed.

b) It is being used for education.

c) It is in a courtroom.

d) It is in a museum collection.

e) It is in Noah Charney's possession.

(14) Which of the following does the art world usually rely on to decide whether a painting is authentic?

a) Analysis of style.

b) Documented history.

c) Expert opinion.

d) Record of ownership.

e) Rigorous testing.

(15) Which of the following statements is an opinion shared by Noah Charney about art fakes?

a) They bring shame on people who are tricked by them.

b) They should be destroyed to prevent anyone from making a profit from them.

c) They should be preserved for educational purposes.

d) They should be tested scientifically to reveal how they were produced.

e) They should be treated like any other work of art and displayed in a museum.

(C) これから放送する講義を聞き，(16) ～ (20) の問いに対して，それぞれ最も適
切な答えを一つ選び，マークシートの (16) ～ (20) にその記号をマークせよ。

注

Mayan　マヤの

ecosystem　生態系

Sumer　シュメール

(16) Which of the following statements does NOT match the collapse of the
Mayan civilization?

a) An increasing number of people died as the civilization declined.

b) Some areas continued to flourish in spite of the downfall of the
civilization.

c) Some cities were deserted because of the drop in population.

d) Some cultural activities continued until the arrival of the Spanish.

e) The Mayan civilization was destroyed relatively quickly.

(17) Which of the following statements about civilizational collapse is NOT
mentioned in the lecture?

a) It is like a forest fire in which an entire ecosystem is forever lost.

b) It is part of a natural process of growth and decline.

c) It made it possible for the nation-state to emerge in Europe.

d) It tends to be seen in negative terms because we usually see history
from the viewpoint of elites.

e) We have few records of what happened to the poorest members of a
society.

(18) According to the lecture, the collapse of Sumer in ancient Mesopotamia

   a) is an example of a decline that only affected cities.

   b) led to heavy taxation.

   c) took place at the end of the second millennium BCE.

   d) was a relief to the lower classes of Sumerian society.

   e) was the best thing that could have happened to land owners.

(19) Choose the statement that best matches the lecturer's observations on the blackout in New York in the 1970s.

   a) A lot of people were injured by accidents in the subways.

   b) Civilizational collapse can take place anywhere and at any time.

   c) New York City should have taken more action to reduce crimes.

   d) Our reliance on technology is now greater than at any other time.

   e) The loss of electricity allowed criminals to escape from prisons.

(20) According to the lecture, modern societies are more likely to collapse than earlier ones because

   a) climate change poses an urgent threat.

   b) people are anxious about the possibility of a dark future.

   c) the world is more interconnected than ever before.

   d) their political structures are more fragile.

   e) wars now have much greater destructive potential.

4 (A) 以下の英文の段落 (21) ～ (25) にはそれぞれ誤りがある。修正が必要な下線部を各段落から一つずつ選び，マークシートの (21) ～ (25) にその記号をマークせよ。

(21) First came the dog, (a)followed by sheep and goats. Then the floodgates opened: pigs, cows, cats, horses and birds (b)made the leap. Over the past 30,000 years or so, humans have *domesticated all manner of species for food, hunting, transport, materials, to (c)control savage beasts and to (d)keep as pets. But some say that before we domesticated any of them, we first (e)had little to domesticate ourselves.

(22) Started by Darwin and even Aristotle, the idea of human domestication (a)has since been just that: an idea. Now, for the first time, *genetic comparisons between us and *Neanderthals suggest that we really (b)may be the puppy dogs to their savage wolves. (c)Not only could this explain some long-standing mysteries — (d)but also including why our brains are strangely smaller than those of our Stone Age ancestors — (e)some say it is the only way to make sense of certain twists of human evolution.

(23) One major insight into what happens (a)when wild beasts are domesticated comes from a remarkable experiment that began in 1959, in Soviet Siberia. There, Dmitry Belyaev (b)took relatively wild foxes from an Estonian fur farm and bred them. In each new generation, he chose the most cooperative animals and (c)encouraged them to mating. Gradually, the foxes began to behave more and more like pets. But it (d)wasn't just their behaviour that changed. The gentler foxes also looked different. Within 10 generations, white patches started to appear on their fur. A few generations later, their ears became more folded. Eventually their skulls (e)began to shrink to a smaller size.

(24) These were precisely the features that Belyaev (a)was looking for. He had noticed that many domesticated mammals — most of which (b)weren't

selectively bred, but gradually adapted to live alongside humans — have similarities. Rabbits, dogs and pigs often have patches of white hair and folded ears, for instance, and their brains (c)are generally smaller like those of their wild relatives. Over the years, the collection of physical features associated with loss of wildness (d)has been extended to smaller teeth and shorter noses. Together, they (e)are known as the domestication syndrome.

(25) Many creatures carry aspects of the domestication syndrome, (a)including one notable species: our own. We too have relatively short faces and small teeth. Our relatively large brains (b)are smaller than those of our Neanderthal cousins — something that (c)has puzzled many an evolutionary biologist. And like many domesticated species, young humans (d)are also programmed to learn their peers for an unusually long time. Some of these similarities between humans and domesticated animals were noted early in the 20th century, but there was no follow-up. It was only after Belyaev made public his experiments (e)that a few evolutionary biologists once more began to consider the possibility that modern humans might be a domestic version of our *extinct relatives and ancestors.

注
domesticate　家畜化する(飼い慣らす)
genetic　遺伝子に基づく
Neanderthal　ネアンデルタール人
extinct　絶滅した

(B)　以下の英文を読み，下線部 (ア)，(イ)，(ウ) を和訳せよ。

　　We do not tell others everything we think. At least, this applies to most people in (perhaps) a majority of social situations. A scholar even concludes that "we lie — therefore we think." Perhaps, one would also want to reverse this saying ("we think, therefore we sometimes lie"). In any case, there is a constant struggle between revealing and hiding, between disclosure and non-disclosure in communication. We are more or less skilled in suppressing the impulses to express all kinds of responses. (ア)If we were to make everything we think public by saying it aloud, it would sometimes be quite embarrassing, or face-threatening, not only for the speaker, but for both (or all) parties. Another researcher points out that narration in social contexts often involves circumstances that promote non-disclosure such as silent resistance and secret alliances. (イ)Accordingly, some things get said, others not.

　　One may argue that we need a dialogical theory of inner dialogue to account for the struggle between disclosure and non-disclosure. Surely, ecological psychologist Edward Reed suggests that "one could argue that (ウ)the primary function of language is for concealing thoughts, diverting others' attention from knowing what one is thinking." *Monological theories of communication, with their conception of external dialogue as a mechanical transfer of messages produced by the individual, do not seem to be capable of developing the point.

注

monological theory　　聞き手を前提としない monologue（個人発話）に基づく
　　　　　　　　　　　理論

5 以下の英文を読み，(A)〜(D)の問いに答えよ。

Have you ever been eating in a restaurant — just an ordinary café or dining room, ア(26) by the rush of waitresses, the buzz of conversation, and the smell of meat cooking on a grill — and when you take up the salt to sprinkle it over your eggs, you're struck by the simple wonder of the shaker, filled by unseen hands, ready and awaiting your pleasure? For you, the shaker exists only for today. But in reality it's there hour after hour, on the same table, refilled again and again. The evidence is visible in the threads beneath the cap, worn down by ア(27) twisting — someone else's labor, perhaps the girl with the pen and pad waiting patiently for you to choose an ice cream, the boy in an apron with dirty sneakers, perhaps someone you'll never in your life see. This shaker is work, materially realized. And there you are, undoing it.

Or you might have wandered through a department store, looking at neat stacks of buttoned shirts. The size or color you prefer is at the bottom of the stack, and though you're as gentle as can be lifting the shirts, extracting only the ア(28) one, the pile as you leave it is never quite as tidy, and it won't be again until the invisible person returns to set things right.

Cash in an ATM machine. Hotel towels on the floor. The world is full of (A)this kind of work, always waiting to be done and then undone, so it can be done again.

This morning, I gathered up all the cans and bottles thrown about the apartment by my boyfriend and put them in a bag to carry down to the building's rubbish area. He hasn't slept here in a week, but I'd been staying late at the university library and only managed to lift myself out of bed in time to bathe and run to my secretary job in an office in downtown Kobe, where every day I perform my own round of boring tasks. I'm fairly good at it, though. I'm careful to put the labels on file folders so they are

— 24 —

perfectly centered, perfectly straight, and I have a system of the colors of ink and sticky notes that keeps everything ア(29) . I never run out of pens or paper clips. When anyone needs an aspirin or a piece of gum or a cough drop, I'm the one who has it in her desk drawer. Always. Like magic.

Today is Sunday and both the office and the university library are closed. My boyfriend texted he'd arrive at one o'clock, so I have all morning to straighten up the apartment and shop. Around eleven last night I finished my final paper of the year, and there won't be another until classes begin again in a few weeks. It's a comfortable feeling.

Besides the cans and bottles, there are the containers of takeout yakisoba, with dried spring onion stuck on them, from our dinner together last weekend. The oily paper bags that once held pastries I pick up half-price from the bakery in *Sannomiya before it closes. I eat these on weeknights, alone, in bed. Sometimes in the morning, I discover bits of pastries or spots of cream on my pillow. My boyfriend would be ア(30) .

After throwing away the containers and bags into the overflowing rubbish box, I strip the bed sheets and leave them in a pile beside the bed. There are many other things to do, but the sky is threatening rain and I decide to do the shopping before it starts to pour.

To go out, I put on a salmon-pink raincoat and hat my boyfriend gave me on my birthday. He mentioned, modestly, that it came from a special shop in Tokyo. Not long after, I spotted the same set in an ordinary clothing store in *Umeda. (B)It's possible the Tokyo salesgirl took advantage of him; she probably convinces every customer what he purchased was one-of-a-kind. Then, after he left, she simply brought out another from the back.

I didn't tell my boyfriend about the second coat, or that the shade of pink was exactly like the smocks worn by the small boys and girls in the daycare down the road. The first time I wore it, I found myself in a narrow

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alley with the daycare attendants and a long line of small children, moving like a grotesque pink worm. The attendants grinned at me as I pressed my back against the wall, trying to disappear, then hurried off the other way.

On a Sunday, though, the children should all be at home.

With my purse, shopping bag, and the collection of cans and bottles, I leave the apartment and lock the heavy metal door behind me. The apartment is on the top floor, so there are three flights of stairs before I reach the parking lot level. I rarely meet anyone going up or down. For several years, this building has been ア(31) by foreigners: English teachers from the neighborhood conversation schools, Korean preachers, now and then a performer from an amusement park. None of them stay very long. My apartment was the home of the former secretary in my office, and when she left to get married she offered her lease to me. That was five years ago. I am now the building's most イ tenant.

The rubbish area is in a sorry state. Despite the clearly marked containers for different types of glass and plastic, and the posted calendar of pick-up days, the other tenants leave their waste where and whenever they choose. I place my cans and bottles in the proper boxes, and with my foot attempt to move the other bundles toward their respective areas. Some of the tenants combine unlike items into a single bag, so even this small effort on my part doesn't clear up the mess. I feel sorry for the garbage collectors, the people (C)＿＿＿ one by one.

注

Sannomiya（三宮）　神戸を代表する繁華街

Umeda（梅田）　大阪の二大繁華街の一つ

(A)　下線部 (A) の内容を説明せよ。

(B)　下線部 (B) の内容を具体的に説明せよ。

(C)　下に与えられた語を正しい順に並べ替え，下線部 (C) を埋めるのに最も適
　　切な表現を完成させよ。

　　　is　　　it　　　pieces　　　sort　　　task　　　the　　　to　　　whose

(D)　以下の問いに解答し，その答えとなる記号をマークシートにマークせよ。

(ア)　空所アの (26) ～ (31) には単語が一つずつ入る。それぞれに文脈上最も適
　　切な語を次のうちから一つずつ選び，マークシートの (26) ～ (31) にその記号
　　をマークせよ。ただし，同じ記号を複数回用いてはならない。

　　a)　chosen　　　　b)　encouraged　　c)　horrified　　　d)　occupied

　　e)　organized　　　f)　realized　　　g)　repeated　　　h)　surrounded

(イ)　空所　　イ　　に入れるのに最も適切な語を次のうちから一つ選び，
　　マークシートの (32) にその記号をマークせよ。

　　a)　boring　　　　　b)　difficult　　　　c)　egocentric

　　d)　faithful　　　　　e)　popular

（ウ）本文の内容と合致するものはどれか。最も適切なものを一つ選び、マークシートの (33) にその記号をマークせよ。

a) The author does not like her boyfriend who has no taste in clothes.

b) The author focuses on the necessary labor which is done unnoticed.

c) The author has a good friend in her office who always helps her like a magician.

d) The author has an ambition to reform the local community and public welfare.

e) The author is fed up with her domestic household routine and her job as a secretary.

問題 A

DAVE DAVIES, HOST: If you had the artistic talent to create impressive paintings, could you imagine devoting that skill to copying the work of past artists? Our guest is art scholar Noah Charney, whose new book looks at the techniques, interesting characters and consequences of faking art, dating back to the Renaissance.

Noah Charney, welcome to the program. So what physical things would you look for in a painting to help determine its authenticity?

NOAH CHARNEY: Well, for an oil painting, one of the things that has to be copied is called craquelure.

DAVIES: Can you tell us what craquelure is?

CHARNEY: Craquelure is the web of cracks that appears naturally in oil paint over time as it expands and contracts, and it has a pattern on the surface like a spider web. What you can do is study that pattern and determine whether it was artificially produced to make it look old quickly or whether it appeared naturally.

DAVIES: How do you create craquelure?

CHARNEY: Some of the characters in my book gave accounts of their own recipes because they wanted to be famous, and one of them is Eric Hebborn—and if I'm allowed to have a favourite, it would be him.

DAVIES: Why is that?

CHARNEY: He's the only one who I would argue was at the same artistic level as the people he imitated. In his recent book, he explains how to cover an oil painting in something like butter, and then you literally bake the painting like cookies in an oven and it produces something that looks like craquelure. This takes time and effort but he was able to successfully achieve it.

DAVIES: What else matters—labels, letters, the material that it's painted on?

CHARNEY: Well it's very important to look at the back of paintings and prints. There's a lot of information there that people tend not to look at, like old stamps from auctions or previous owners. There might be information on the frame itself—where the canvas was purchased, for instance. These sorts of details are very important, but people tend to look at the front of a painting and not

1

turn it over.

DAVIES: And wormholes also tell a story, right?

CHARNEY: Yes, and that is one of the most difficult things to reproduce. These are literally holes that tiny insects make. They eat their way through paintings and it's incredibly difficult to do anything that looks organic and irregular if you're trying to reproduce it by hand using tools like small drills or screws.

So for each means used by someone faking art, there's a way we can spot it. But the trick is that it rarely gets to the point of deep analysis. The nature of the art trade is that, if it looks pretty good and experts agree on it and if the documented history looks credible, then nobody bothers with scientific testing. And it probably shouldn't be that way but it's been that way for a very long time.

問題B

MARY LOUISE KELLY, HOST: In a Manhattan court, a trial is taking place that has attracted the art world's attention. The trial is about a painting that was believed to be by the famous artist Mark Rothko and valued at more than eight million dollars. Or at least it was right up to the moment it was discovered that the painting is not by Rothko but is in fact a fake and worth, well, a lot less than eight million dollars. To learn more we called up Noah Charney. He's the author of a new book on art fakes. Mr. Charney, describe the painting for us if you would. I gather it's actually in the court room there, propped up next to the witness stand?

NOAH CHARNEY: It is. It's a large-scale work on canvas. It's red and black. And it's abstract the way we think of most of the Rothko works. Certainly, in terms of style, it looks like an authentic painting by Rothko.

KELLY: Now, it must be an awfully good fake. I was reading through some of the reports of the trial, and one columnist wrote, it's so good it almost looks as though Rothko was guiding the painter's hand. Apparently it was good enough to fool the buyer, who is none other than the chairman of Sotheby's, the best-known art auction house in the world.

CHARNEY: It's an interesting question because knowing whether an artwork is fake is a centuries-old problem. Sometimes, painters of fakes become more famous than the original artists whose style they have copied. And so as an object, it's an absolutely beautiful one.

KELLY: Are fakes getting better?

CHARNEY: Fakes might be getting better, but they wouldn't have to be. And this is where it's a little

bit complicated. There has always been too much dependence on expert opinion, which is subjective. It's not good, but that's what people still rely on. So when experts say that this is original, people are inclined to believe them.

KELLY: You mean an expert like the owner of the gallery that sold this painting?

CHARNEY: Exactly. And so there's a dependence and a sort of general agreement within the art world that has existed for centuries now that says, you know, if we say this is genuine, it is to the best of our knowledge, and that's that. There are two other things to consider, though. You can do research that looks at the documented history of the object to see if it matches what we see on the surface. And then there's scientific testing. And very few fakes would pass scientific tests. But they don't have to, and painters of fakes know this. If it looks pretty good, and if the history of the artwork appears convincing enough, then it will almost never be tested scientifically.

KELLY: Any idea what will happen to this painting at the end of the trial?

CHARNEY: I would like to see it survive and be put on display in a museum as a fake, for educational purposes. But some countries require that fake artworks be destroyed. And that's a shame because it's a beautiful object and it's something we can learn from as long as it does no harm and doesn't trick anyone in the future.

KELLY: All right. That's art historian Noah Charney. Thank you so much.

CHARNEY: Thanks for having me.

問題C

In our history, the end of a civilization has rarely been sudden and unexpected. Usually the process is long, slow and leaves society and culture continuing for many years. The collapse of the Mayan civilization in Central America, for example, took place over three centuries between 750 and 1050 CE. It was marked by a 10 to 15 per cent increase in death rate and some cities were abandoned, but other areas flourished, and writing, trade and urban living remained until the arrival of the Spanish in the 1500s.

The collapse of civilizations can also provide benefits for some. The emergence of the nation-state in Europe wouldn't have happened without the end of the Western Roman Empire many centuries before. This has led some scholars to speculate that collapse is like a forest fire—an act of creative destruction that provides resources for evolution and space for reorganization.

Our visions of past collapses are typically seen through the eyes of its most privileged victims: the elite,

whose lives, unlike those of the poor, remain comparatively well documented. But for the peasants of Sumer in ancient Mesopotamia, for instance, the political collapse that took place at the beginning of the second millennium BCE was the best thing that could have happened. Researchers have known for some time that early states had to restrict the freedom of much of their population. The end of the Sumerian civilization and the disappearance of harsh rulers from cities meant that the peasants could escape from hard labor and heavy taxation.

None of this means, however, that we should not be concerned about the prospects for a future fall. We are more dependent than ever on state infrastructure; lack of this can cause chaos. Take the near-total loss of electricity that affected New York City in 1977. Crime and destruction surged; 550 police officers were injured, and 4,500 people were arrested. This was the outcome of the financial crises in the 1970s as well as a simple loss of electricity. By contrast, a power cut in 1877 in New York City probably wouldn't even have been noticed.

Modern civilizations might be less capable of recovering from deep collapse than earlier ones. Individual hunter-gatherers knew how to live off the land—yet people in industrial society lack basic survival skills. Knowledge is increasingly held not by individuals but by groups and institutions. It is not clear if we could recover if our present society collapsed.

Finally, it's significant that the world has become more interconnected and complex. This enhances our capabilities but interconnected systems are more prone to random failure than isolated ones. Interconnectedness in financial systems can initially provide protection, but after a certain point it can actually cause everything to collapse. Historically this is what happened to Bronze Age societies in the Mediterranean. The interconnectedness of these people increased the prosperity of the region, but also set up a row of dominoes that could be knocked down by a powerful combination of earthquakes, warfare, climate change and rebellions.

Collapse, then, is a double-edged sword. Sometimes it's a chance to revive decaying institutions, yet it can also lead to loss of population, culture and political structures. If in the past, collapse has had both positive and negative consequences, in the modern world it might only lead to a dark future.