

I Read this article and answer the questions below.

Experts warn of the danger of “the substitution of machinery for human labor.” They worry that “the discovery of this mighty power” has come “before we knew how to employ it rightly.” Such fears are expressed today by those who worry that advances in artificial intelligence (AI) could destroy millions of jobs and pose a *Terminator*-style threat to humanity. But these are in fact the words of commentators discussing mechanization and steam power two centuries ago. Back then, the controversy over the dangers posed by machines was known as the “machinery question.” Now, in our own time, a similar debate is taking place.

After many false dawns, AI has made extraordinary progress in the past few years, thanks to a technique called “deep learning.” Given enough data, large (or “deep”) neural networks, modeled on the brain’s architecture, can be trained to do all kinds of things. They power Google’s search engine, Facebook’s automatic photo tagging, Apple’s voice assistant, Amazon’s shopping recommendations, and Tesla’s self-driving cars. But this rapid progress has also led to concerns about safety and job losses. Stephen Hawking, Elon Musk, and others wonder whether AI could get out of control, sparking a science-fiction conflict between people and machines. Others worry that AI will cause widespread unemployment by automating knowledge-based tasks that could previously be done only by people. After 200 years, the machinery question is back. It needs to be answered.

The most alarming scenario is of AI turning evil, as seen in countless sci-fi films. It is the modern expression of an old fear, going back to *Frankenstein* (1818) and beyond. But although AI systems are impressive, they can perform only very specific tasks: a general AI capable of outsmarting its human creators remains a distant and uncertain prospect. Worrying about it is like worrying about overpopulation on Mars before colonists have even set foot there, says Andrew Ng, an AI researcher. The more urgent aspect of the machinery question is what impact AI might have on people’s jobs and way of life.

This fear also has a long history. Panics about “technological unemployment” struck in the 1960s (when firms first installed computers and robots) and the 1980s (when PCs landed on desks). Each time, it seemed that widespread automation of skilled workers’ jobs was just (A).

Each time, in fact, technology ultimately created more jobs than it destroyed, as the automation of one task increased demand for people to do the related tasks that were still beyond machines. Replacing some bank tellers with ATMs, for example, (B), creating many more new jobs in sales and customer service. Similarly, e-commerce has increased overall employment in retailing. As with the introduction of computing into offices, AI will not so much replace workers directly as require them to gain new skills to support and complement it. Although an influential paper suggests that up to 47% of American jobs face potential automation in the next decade or two, other studies estimate that less than 10% will actually go.

Even if job losses in the short term are likely to be more than made up for by the creation of new jobs in the long term, the experience of the 19th century shows that the change can be stressful and upsetting. Economic growth took off after centuries of living standards that did not improve, but decades passed before this was fully reflected in higher wages. The rapid shift of growing populations from farms to urban factories contributed to discontent across Europe. Governments took a century to respond with new education and welfare systems.

This time the shift is likely to be faster, as technologies spread more quickly than they did 200 years ago. Income inequality is already growing, because high-skill workers benefit much more than low-skill workers when technology complements their jobs. This poses two challenges for employers and policymakers: how to help existing workers acquire new skills; and how to prepare future generations for a workplace filled with AI.

As technology changes the skills needed for each profession, workers will have to adjust. That will mean making education and training flexible enough to teach new skills quickly and efficiently. It will

require a greater emphasis on lifelong learning and on-the-job training, and wider use of online learning and video-game-style simulation. AI may itself help by personalizing computer-based learning and by identifying workers' skills gaps and opportunities for retraining.

Social and character skills will matter more, too. When jobs do not last, technologies come and go, and people's working lives are longer, social skills are a foundation. They can give humans an advantage, helping them do work that calls for human and emotional interaction—characteristics that are beyond machines.

And welfare systems will have to be updated, to smooth the transitions between jobs and to support workers while they pick up new skills. (C) This allows benefits, pensions, and health care to follow individual workers rather than being tied to employers.

Despite the march of technology, there is little sign that industrial-era education and welfare systems are yet being modernized and made flexible. Policymakers need to get going now because the longer they delay, the greater the burden on the welfare state. John Stuart Mill noted in the 1840s that nothing was more worthy of a lawmaker's attention than looking after those whose lives are disrupted by technology. That was true in the era of the steam engine, and it remains true in the era of artificial intelligence.

Adapted from <http://www.economist.com/news/leaders/21701119-what-history-tells-us-about-future-artificial-intelligenceand-how-society-should>

- 1 Choose the most suitable answer from those below to complete the following sentence.
The writer notes that the technique of “deep learning”
 - (a) eliminates the need to continue educating humans in schools.
 - (b) has contributed little to technological progress at firms like Google.
 - (c) is based on the patterns of thought processes in the human brain.
 - (d) promises to end the conflict between people and machines.
 - (e) was developed by Stephen Hawking to reduce unemployment.

- 2 Choose the most suitable answer from those below to complete the following sentence.
The writer seems most concerned about the way AI might
 - (a) create a monster like the one in *Frankenstein*.
 - (b) influence our lifestyles and work practices.
 - (c) lead to a population explosion on the earth.
 - (d) reduce the basic level of human intelligence.
 - (e) use humans to gain control over the world.

- 3 Choose the most suitable answer from those below to fill in blank space (A).
 - (a) around the corner
 - (b) behind the curtains
 - (c) on the ground
 - (d) out of order
 - (e) over the edge

- 4 Use the seven words below to fill in blank space (B) in the best way. Indicate your choices for the second, fourth, and sixth positions.

(a) branches	(b) cheaper	(c) it	(d) made
(e) new	(f) open	(g) to	

- 5 Choose the most suitable answer from those below to complete the following sentence.
According to the writer, the challenges of AI can be met by
- (a) allowing AI to control workplace training programs.
 - (b) ensuring that low-skill workers are paid as much as high-skill workers.
 - (c) guaranteeing that over half of future jobs will be given to human beings.
 - (d) requiring workers themselves to have improved technological skills.
 - (e) shifting more knowledge-based jobs to rural areas.
- 6 Choose the most suitable order of sentences from those below to fill in blank space (C).
- (a) A more practical approach is Denmark's "flexicurity" system, which lets firms hire and fire easily, while supporting unemployed workers as they retrain and look for new jobs.
 - (b) But such a scheme would not make sense without strong evidence that this technological revolution, unlike previous ones, is decreasing the demand for labor.
 - (c) One scheme widely promoted as an ideal solution is a "basic income," paid to everybody regardless of their situation.
- 7 Choose the most suitable answer from those below to complete the following sentence.
The writer concludes that to match the AI era,
- (a) lawmakers will have to be supported by computerized systems of decision making.
 - (b) policymakers need to focus on updating social welfare and education.
 - (c) technological development ought to be delayed to prevent serious social problems.
 - (d) the arguments of John Stuart Mill about technology should be questioned.
 - (e) the government must be freed from the burden of supporting human workers.

II Read this article and answer the questions below.

For many people, the great paradox of the Cold War was that it was at once utterly terrifying and strangely glamorous. One example tells a wider story. Almost exactly 50 years ago, the dust was still settling after the high-risk confrontation of the Cuban Missile Crisis, when the world had come closer than ever before to nuclear destruction. A year later, the print media reported a new twist in the nuclear game with the news that France's Mirage 4 bombers had just come into operation. Yet the newspapers in October 1963 devoted rather more attention to a very different story—a second cinematic appearance for a secret agent who, as one critic put it, “acts out our less respectable fantasies without ever going too far.” The film was *From Russia With Love*; the hero, of course, was that supreme representative of British heroism, James Bond—Agent 007.

Today, Bond has become such a familiar personification of British style that it is easy to lose sight of his Cold War origins. In Ian Fleming's early novels, Bond was explicitly an instrument for bashing the Communists. On the screen, however, Bond's Cold War connections were (A): his early enemies, for example, work for the fictional international crime network SPECTRE, not (as in the books) the Soviet intelligence agency SMERSH, while the films' obsession with novelty, fashion, and design felt a long way from Fleming's unbending conservatism. Yet in its way, even the aggressive product placement of the Bond films was a weapon in the wider Cold War.

As novelist and former spy John le Carré, one of Bond's biggest critics, remarked, the films promoted nothing so much as the “consumer-goods ethic”—a central element of the economic miracle that had transformed everyday life in Britain during the 1950s and 1960s. For le Carré, Bond's gadgets, “the things on our desk that could explode, our ties that could suddenly take photographs, give to a colorless and materialistic existence a kind of magic.” But for many ordinary people, the life le Carré dismissed as tastelessly materialistic actually represented an amazing advance towards comfort and prosperity—something the backward Communist economies could never provide. In that respect, Bond's gadgets really did make a difference.

The West's cultural offensive was not, of course, limited to the cinema. Even modern art did not (B) political pressures: during the 1950s and 1960s, American abstract-expressionist painters such as Jackson Pollock, Mark Rothko, and Willem de Kooning were heavily sponsored by the CIA, who hoped to advertise the freedom and creativity of the capitalist system. For my money, though, the most powerful British expressions of the Cold War came on the small screen.

The conflict came at the same time as the rise of TV as a mass medium; indeed, millions of ordinary people experienced it above all as a television phenomenon. It was the BBC's groundbreaking adaptation of George Orwell's novel *Nineteen Eighty-Four*, for example, that fixed in many people's minds the feel of a totalitarian society: the greyness, the strict social order, the atmosphere of fear. Conservative Party politicians warned that “many of the inhuman practices depicted in *Nineteen Eighty-Four* are already in common use under totalitarian regimes” and praised “the sincere attempts of the BBC to bring home to the British people the logical and soul-destroying consequences of the surrender of their freedom.”

Not all the BBC's contributions to the Cold War, however, went down quite so well with the politicians of the day. In 1965, the brilliantly talented director Peter Watkins made a 50-minute docudrama about the consequences of a nuclear attack, *The War Game*. Watkins pulled no punches: at the end, we see British soldiers burning dead bodies, while criminals clash with the police during food riots. But after talking to government officials, the BBC decided not to show it—a sign, many critics thought, of its surrender to Establishment interests. That the film won an Academy Award the following year only deepened the BBC's embarrassment, and to many viewers' intense frustration, *The War Game* was not shown on British television for 20 years.

By then, however, the BBC had regained its reputation with perhaps the most disturbing Cold War fiction of all—*Threads*, which explores the impact on two families in the city of Sheffield of a nuclear

attack. I was too young to watch it at the time, since in 1984 I was only 10, but I can still remember the terrifying cover of the *Radio Times*, which showed a shotgun-carrying traffic warden, his grim face wrapped in a bloody bandage. Indeed, even now I challenge anybody to watch *Threads* all the way through to its shocking science-fiction-style conclusion and sleep easily afterwards. Hundreds of viewers wrote to the BBC, many commending the film's writer, Barry Hines, and director, Mick Jackson, on their courage and honesty.

The great irony was that even as half the population were telling polls they expected to see World War Three in their lifetime, the end of the Cold War was only a few years away. For decades, (C) the Red Menace, with many people genuinely afraid that the Soviet version of modernity would prove more efficient, more ruthless, and more lasting than our own. Yet by the 1980s, the Communist model had proved ineffective. While millions of British consumers were shopping for new microwaves, video recorders, and compact-disc players, ordinary Soviet citizens were lining up for bread.

(D) It was little wonder, then, that the Soviet authorities regarded pop music with such complete fear.

In the Eighties, such popular musical artists as Judas Priest, 10cc, and Pink Floyd were criticized for racist anticommunism, neofascism, and "misrepresenting Soviet foreign policy." So when the West Berlin authorities organized a three-day concert to mark the city's 750th anniversary in June 1987, it was both appropriate and revealing that the headliners were British: David Bowie, Eurythmics, and, on the final night, Genesis, whose lead singer, Phil Collins, had memorized a few German phrases for the occasion.

On the other side of the Wall, hundreds of young East Berliners climbed trees, clambered up chimneys, and packed onto balconies to get a look at their Western idols. Some brave souls even danced in front of the Soviet embassy, leading to battles with the East German police. All across the city, crowds chanted: "The Wall must go." They did not have long to wait; just over two years later, the borders opened, the Wall came down, and the Cold War was over. Almost overnight, the shadow of the bomb had been lifted. Perhaps it is only a slight exaggeration, then, to say that the man who really ended the Cold War was not Ronald Reagan or Mikhail Gorbachev—but Phil Collins.

Adapted from <http://www.telegraph.co.uk/culture/10441108/How-pop-culture-helped-win-the-Cold-War.html>

1 Choose the most suitable answer from those below to fill in blank space (A).

- (a) criticized by the CIA
- (b) expressed by his criminal behavior
- (c) pushed into the background
- (d) reflected in his fashionable suits
- (e) revealed by Soviet agents

2 Choose the most suitable answer from those below to complete the following sentence.

The writer notes that John le Carré criticized James Bond's spy gadgets because he considered them to be

- (a) childish devices with no practical purpose.
- (b) outdated examples of modern technology.
- (c) shallow symbols of Western materialism.
- (d) too expensive for ordinary consumers.
- (e) too important to be shown in a popular film.

- 3 Choose the most suitable answer from those below to fill in blank space (B).
- (a) account for
 - (b) deal with
 - (c) depend on
 - (d) escape from
 - (e) respond to
- 4 Choose the most suitable answer from those below to complete the following sentence.
One point that the writer makes about the TV docudrama *The War Game* is that
- (a) British politicians thought that it too closely resembled the novel *Nineteen Eighty-Four*.
 - (b) food riots broke out in Britain soon after the BBC showed the program.
 - (c) some critics thought that the BBC gave in to government pressure not to show it in Britain.
 - (d) the director was strongly criticized for expressing totalitarian political views.
 - (e) the program only received an Academy Award 20 years after it was shown on TV.
- 5 Use six of the seven words below to fill in blank space (C) in the best way. Indicate your choices for the second, fourth, and sixth positions.
- | | | | |
|-------------|-------------|----------|---------|
| (a) Britain | (b) favored | (c) fear | (d) had |
| (e) in | (f) lived | (g) of | |
- 6 Choose the most suitable order of sentences from those below to fill in blank space (D).
- (a) Ever since the days of the Beatles, for example, British pop and rock music had been finding their way into the Soviet bloc, if only in the form of second-rate cover versions by the state-approved record label Melodiya.
 - (b) Meanwhile, thanks partly to the worldwide success of our pop culture, Western capitalism had become a guiding light for the oppressed peoples of Eastern Europe.
 - (c) To young people starved of liberty and eager for a better life, British music represented not just freedom and fun, but modernity and self-expression.
- 7 Choose the most suitable answer from those below to complete the following sentence.
Regarding the 1980s, the writer suggests that
- (a) fear of nuclear weapons increased rapidly after the concert in West Berlin.
 - (b) increasing admiration for Western culture helped decide the outcome of the Cold War.
 - (c) the Cold War ended as a result of a military clash between the U.S. and the Soviet Union.
 - (d) the East German police were too gentle with participants in the 1987 protest.
 - (e) the West won the Cold War because of its superiority in material resources.

III Read this article and answer the questions below.

I am not sure that we know what the internet *is*, for whenever we think we've grasped it, a new function appears that extends its possibilities further than ever imagined. But whatever it is, it is surely a source of addiction, just as drugs and alcohol can lead to addiction. Its terminology is itself appealing: "cyberspace" hints at a place somewhere far away, while "surfing" recalls the skill and grace of those who can ride the sea. But I believe the internet mostly appeals to human needs for activity: the delight on the face of a small child feeding pigeons is the thrill of making something happen, affecting the world. When you read on the web you are not held in place by an author's (A); you can always decide to click, click again. It's activity that can feel exciting, but also extremely intense, and its relation to real action is no different than the relation between fast food and a warm, well-cooked stew. For user activity is there, but it is less (B). We no longer notice how being online takes our days out of our hands, leaving us waiting for news that might send us in another direction, if only to respond to an ad or an email. Nicholas Carr explains:

Whenever we, as readers, come upon a link, we have to pause, for at least a split second, to allow our brain to evaluate whether or not we should click on it. The redirection of our mental resources, from reading words to making judgments, may escape our notice—our brains are quick—but it's been shown to block comprehension and memory, particularly when it's (C). (*The Shallows*, p. 132)

Of course, it's possible to be influenced by an old-fashioned letter or a chance meeting, but the speed and volume of electronic communication leaves us much more vulnerable to the wishes of others. Even a day off the web will make this clear: try getting up in the morning and planning your time without hoping for, or dreading, a message that could change what you will think and do until evening.

The Greek philosopher Plato condemned the invention of writing, which he feared would ruin our memories. How very good their memories must have been can be seen by recalling that we have no texts by Homer: *The Iliad* and *The Odyssey*, the first two great works of Western literature, are recorded versions from poets who sang (D) were composed. Still, I'm not about to echo Plato. I spend hours most days in cyberspace, and am grateful for many of its resources; I even click on most of the links I receive from Amnesty International or the activist organization Avaaz, and no longer mind receiving endless mails that thank me for taking action. I am simply suggesting you limit your time in cyberspace, and experience action more significant than making a cursor click. Even a week off the web can work wonders for your imagination and your sense of being in the world. It always leaves me feeling that my brain has been washed clean.

A whole week without the internet?

A month is even better. When I've spoken of the good it's done me, most people have expressed doubts. *Nice work if you can get it, but mine depends on the web.* So does much of mine. Thankfully, most of us have some form of vacation, but studies show that most of us stay connected even then. In fact, work often serves as an excuse; these days, you're lucky if only half of the mail you receive is spam. For the rest of it, there are internet cafés most everywhere if you need to send a sign of life to whomever you left behind, but you needn't stay much longer than it takes to drink a coffee. This usually means simply ignoring the magazines in your inbox that contain the promise of helping you understand something important. How often does that promise turn out to be a false one that keeps you hooked on empty stories of crime and romance? Unless you're the foreign minister of a major country, even real news can go on without you for a while.

And my job? Scientific investigation is hardly required to prove that the web is not only a means to productivity; honest self-examination will do. But scientific investigations do exist. A recent German study estimated that we waste, on average, two working days each week writing emails that nobody needs; a recent American study concluded that 80 percent of work time spent online is unproductive; and a recent British study estimated the annual cost of web surfing to be billions of pounds. (This is apart from the time spent supporting the billion-dollar industry that's devoted to games.) (E) The first cigarette of the day with a cup of strong coffee, the last one of the evening with a glass of red wine; the nervous cigarette before a difficult meeting, the celebratory one when the meeting turns out well. I understand what it's like to be ruled by a habit one knows is no good.

Once again, just for emphasis: I'm not suggesting that we do without the web entirely, just that we refuse to let it rule. You can only find out how much it rules your life if you do without it on occasion. Doing so will leave your thoughts more focused, and lead you to acknowledge that Jean-Jacques Rousseau's lesson still holds true: less is necessary, and more is possible, than we are ever led to believe.

Adapted from Susan Neiman, Why Grow Up? Subversive Thoughts for an Infantile Age

- 1 Choose the most suitable pair of words from those below to fill in blank spaces (A) and (B).
 - (a) accomplishments—self-explanatory
 - (b) intentions—self-determined
 - (c) justifications—self-taught
 - (d) recommendations—self-motivated
 - (e) simplifications—self-centered

- 2 Choose the most suitable answer from those below to fill in blank space (C).
 - (a) abandoned quickly
 - (b) counted accurately
 - (c) ignored continuously
 - (d) recommended warmly
 - (e) repeated frequently

- 3 Use the six words below to fill in blank space (D) in the best way. Indicate your choices for the second, fourth, and sixth positions.
 - (a) after
 - (b) centuries
 - (c) from
 - (d) memory
 - (e) them
 - (f) they

- 4 Choose the most suitable answer from those below to complete the following sentence.

The writer does not fully agree with Plato because she

 - (a) believes that poems are easier to remember than tales.
 - (b) has doubts about people who neither read nor write.
 - (c) knows that memories are essential when conducting research.
 - (d) prefers reading to memorizing when she is in a hurry.
 - (e) recognizes the value of both writing and memorizing.

- 5 Choose the most suitable answer from those below to complete the following sentence.

The writer's statement that "even real news can go on without you for a while" means that

 - (a) it is mistaken to say that only educated people pay attention to real news.
 - (b) no one can stay connected 24 hours a day, seven days a week.
 - (c) our worries over not being connected all the time are unreasonable.
 - (d) the internet will do you more harm than good unless your job depends on it.
 - (e) we often find it difficult to distinguish real news from fictional stories.

- 6 Choose the most suitable order of sentences from those below to fill in blank space (E).
 - (a) I myself didn't *want* to quit smoking, and parts of my brain and body still miss what smokers desire.
 - (b) Let's face it: the claim that we need to stay connected for work is often a poor excuse to satisfy a guilty pleasure.
 - (c) Yet denying oneself that pleasure often leads to better outcomes.

- 7 Choose the most suitable answer from those below to complete the following sentence.

According to the writer, we admit Rousseau's lesson to be true when we

 - (a) accept what others believe to be true.
 - (b) choose to have less instead of more.
 - (c) do less thinking and more acting.
 - (d) lose control over other people's lives.
 - (e) take little pleasure in what we do.

IV Read this dialogue and answer the questions below.

Kate: Hey, Matt, can I ask you about your vacation plans this year? Daryl and I are gathering information so we can plan our own trip.

Matt: Actually, Tamara and I learned about this great beach resort in the Caribbean—blue sky, white sand, and night life (A).

Kate: Sounds like the perfect spot.

Matt: You couldn't ask for better. That reminds me—both you and Daryl like to snorkel, right?

Kate: Yeah, but...

Matt: And I remember that last year you and the Jennings spent the vacation together at that lake in the mountains. Had a great time, too, from what I hear.

Kate: (B) But we hadn't planned on it. We just happened to meet them there and ended up matching our schedule to theirs. Spent the entire week doing exactly the same things.

Matt: The resort I mentioned has these private cabins just for couples. Since you're looking for a good vacation spot, how about joining us? The more the merrier, right?

Kate: Um, well...

Matt: Just think of (C) together. It'd be just like with the Jennings! What do you say?

Kate: Thanks, but that's not exactly (D). To tell the truth, I was only asking because this year we wanted to go somewhere we won't meet anyone we know.

1 Use the six words below to fill in blank space (A) in the best way. Indicate your choices for the second, fourth, and sixth positions.

- (a) earth (b) like (c) no (d) on
(e) other (f) place

2 Choose the most suitable answer from those below to fill in blank space (B).

- (a) All the best.
(b) For the moment.
(c) Hardly likely.
(d) Tough luck.
(e) True enough.

3 Use the six words below to fill in blank space (C) in the best way. Indicate your choices for the second, fourth, and sixth positions.

- (a) could (b) fun (c) great (d) have
(e) the (f) we

4 Choose the most suitable answer from those below to fill in blank space (D).

- (a) what we had in mind
(b) when we found the time
(c) where we came from
(d) who we bumped into
(e) why we took the chance

V **Read the statement below and write a paragraph giving at least two reasons why you agree or disagree with it. Write your answer in English in the space provided on your written answer sheet.**

(It is suggested that you spend no more than 15 minutes on this section.)

“A law should be passed in Japan establishing a minimum percentage of women in key positions in the government and major corporations.”

[END OF TEST]