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ANNALES DES CONCOURS SCIENTIFIQUES

2024

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ÉPREUVE DE LANGUE VIVANTE

Durée de l'épreuve : 1 heure 30 minutes

L'emploi de tous documents (dictionnaires, imprimés, ...) ou de tous appareils (traductrices, calculatrices électroniques, ...) est interdit dans cette épreuve.

Cette épreuve est commune aux candidats des filières MP, MPI, PC et PSI.

L'épreuve de langue vivante est constituée d'un ***exercice d'expression écrite*** *qui consiste à répondre à deux questions, et d'un* ***thème****.*

- *La première question est notée sur 4.*
- *La deuxième question est notée sur 8.*
- *Le thème est noté sur 8.*

La réponse à la première question devra comporter 80 mots plus ou moins 10%.
La réponse à la deuxième question devra comporter 180 mots plus ou moins 10%.
Dans les deux questions de l'exercice d'expression écrite, le candidat indiquera le nombre de mots employés dans sa réponse.

Les candidats sont priés de mentionner en tête de leur copie la langue dans laquelle ils ont composé, qui est obligatoirement celle qu'ils ont indiquée dans leur dossier d'inscription.

Les candidats trouveront l'épreuve d'allemand aux pages 1 et 2, l'épreuve d'anglais aux pages 3 et 4, l'épreuve d'arabe aux pages 5 et 6, l'épreuve d'espagnol aux pages 7 et 8, l'épreuve d'italien aux pages 9 et 10 et l'épreuve de russe aux pages 11 et 12.

Les références et les titres du thème, lorsqu'ils existent, ne sont pas à traduire.

Pour faciliter la correction de l'épreuve, les candidats écriront leur texte toutes les deux lignes.

ANGLAIS

Expression écrite

Sales at vegan burger maker Beyond Meat fall by almost a third

It launched with the promise to "eat what you love", but consumers' love affair with Beyond Meat's pricey meat substitutes is waning. Quarterly sales at the vegan burger maker have slumped by almost a third as shoppers shift away from expensive meat substitutes amid the cost of living crisis.

The US company, whose plant-based products include "burgers that appear to bleed" and imitations of sausages and meatballs, has cut its annual revenue forecast in the latest sign that the fake meat food bubble is bursting. After several years of rapid expansion fuelled by a splurge of private equity investment, meat substitutes have dropped off many menus. Sales unexpectedly slid 6% in the UK last year.

Vegan specialists including Meatless Farm of Leeds and Lincolnshire-based Plant & Bean, which supplied companies including Quorn and Tesco's Wicked Kitchen, called in administrators earlier this year as they battled lacklustre sales and hefty cost increases. Meanwhile, Sweden's Oatly, the Swiss food company Nestlé and the London-based Innocent Drinks, which is owned by Coca-Cola, are among those that have pulled vegan products from sale in the UK this year.

As the cost of living crisis has put pressure on household budgets, shoppers have turned to cheaper proteins including processed meat and traditional vegan or vegetarian options such as chickpeas, lentils and beans.

Alice Pilkington, a food analyst at Mintel, said people expected that cutting down on meat would save them money but the price of fake meat products was becoming "increasingly a barrier as they were on a par or more expensive than meat or more traditional alternatives".

Enthusiasm has also been dampened by concerns about the highly processed nature of some fake meats, highlighted by recent investigations into the health impacts of ultra-processed foods, as well as a shift towards cooking from scratch using basic ingredients during the Covid pandemic lockdowns.

Ethan Brown, the chief executive of Beyond Meat, said the ambiguity around the health benefits of eating plant-based meat had held back sales.

"This change in perception is not without encouragement from interest groups who have succeeded in seeding doubt and fear around the ingredients and process used to create our and other plant-based meats," he said. The company is now forecasting that sales will fall by at least 9% this year to no more than $380m, down from previous hopes of up to $415m.

Adapted from The Financial Express, August 28, 2023

Questions

1. According to the article, what are the main reasons why consumers are shifting away from alternatives to meat consumption? Answer the question in your own words (80 words, ± 10%)

2. In your opinion, to what extent should ethical and sustainable eating be further encouraged? (180 words, ± 10%)

ANGLAIS

Thème

Nous traversons avec Alma, sa mère et sa sœur cadette, une rue de Beyrouth détruite. Un soldat m'arrête, il veut voir ma pièce d'identité et me demande ce que je fais ici. J'ai à peine sorti ma carte qu'il commence à me bousculer. Je ne sais pas quoi lui répondre. J'ai failli dire : « J'accompagne ma petite amie Alma qui est venue voir le cabinet médical de son père en miettes ». Sa mère prend alors la parole et hurle au policier : « C'est son pays, il marche où il veut ! »

Je vois le premier studio où j'ai habité quand je m'étais installé à Beyrouth. (...)

Je vois l'appartement dévasté que je voulais offrir à mes parents. Il est parfois bon de rater des projets, de ne pas gagner trop d'argent. Si j'avais eu les moyens de l'acheter, mon père et ma mère auraient été probablement déchiquetés par l'explosion.

Sabyl Ghoussoub, *Beyrouth-sur-Seine*, 2022

Centrale

Anglais

MP, MPI, PC, PSI

2024

CONCOURS CENTRALE-SUPÉLEC

4 heures

Calculatrice interdite

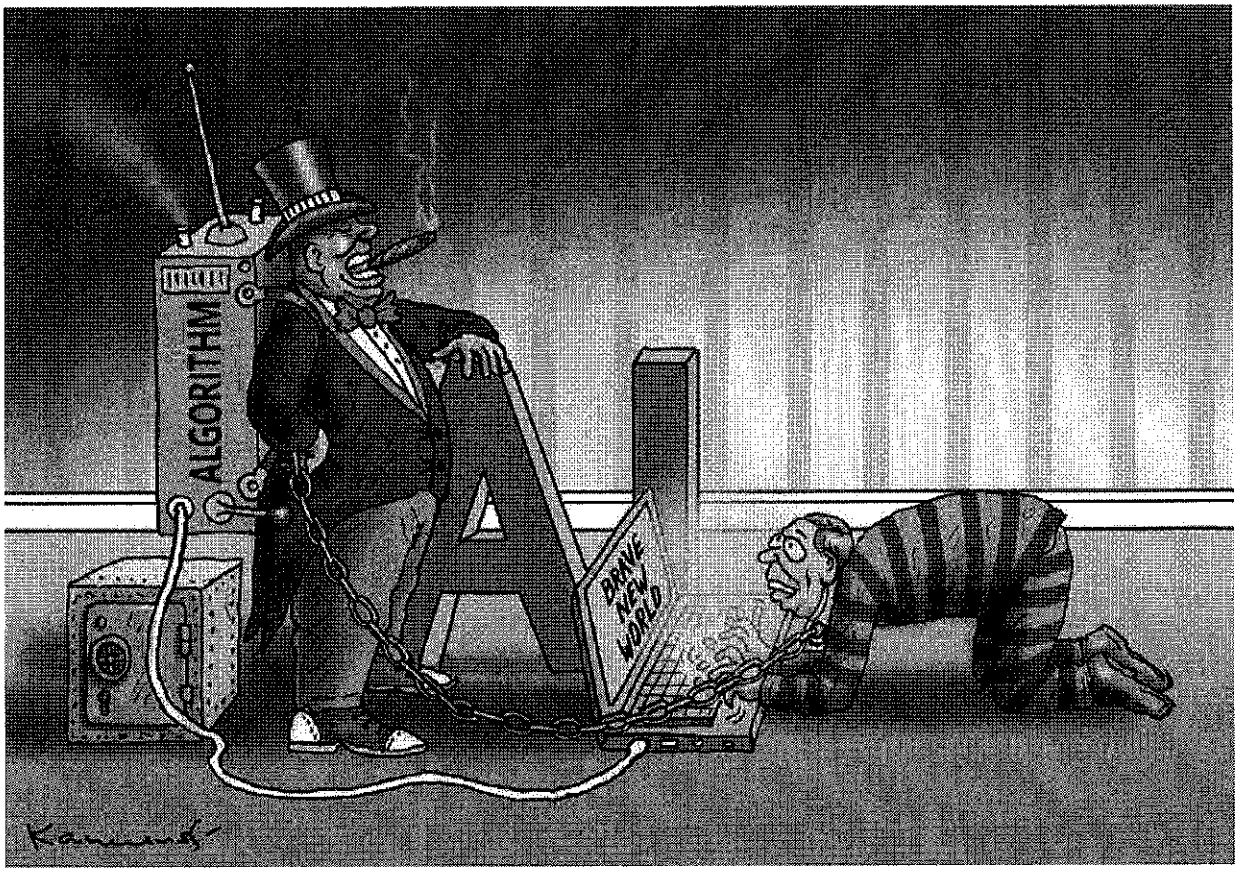
L'usage de tout système électronique ou informatique est interdit dans cette épreuve.

Rédiger en anglais et en 500 mots une synthèse des documents proposés, qui devra obligatoirement comporter un titre. Indiquer avec précision, à la fin du travail, le nombre de mots utilisés (titre inclus), un écart de 10% en plus ou en moins sera accepté.

Ce sujet comporte les 4 documents suivants :

— un dessin de MARIAN KAMENSKY publié sur le site *cartoonmovement.com*, le 9 mai 2023 ;
— une retranscription d'un entretien télévisé de l'écrivain ALDOUS HUXLEY, diffusé sur la *BBC*, le 30 juillet 1961 ;
— un extrait d'un article de MATTHEW SYED publié sur le site de *The Sunday Times*, le 2 mars 2023 ;
— un extrait d'un article publié sur le site *The Economist*, le 20 avril 2023.

L'ordre dans lequel se présentent les documents est arbitraire et ne revêt aucune signification particulière.



A cartoon by MARIAN KAMENSKY, *cartoonmovement.com*, May 9, 2023.

Transcript of an interview of Aldous Huxley by John Morgan

BBC Television, July 30, 1961

JOHN MORGAN (interviewer): In your *Brave New World Revisited*[1], which was published [...] about two years ago, you did claim that much of what you forecast had come true. I mean, for example, the use of drugs and this instance of people having their thoughts directed while they were asleep, through music being played or messages being played through their pillows and so on. In which societies do you think that most of what you forecast has mostly come true?

ALDOUS HUXLEY: ...

JOHN MORGAN: I mean, is it in America, Britain, Russia, China?

ALDOUS HUXLEY: Well, it seems to me this is not so much... you can't say that it's a question of national peculiarities, or even entirely of political peculiarities. I mean, I think when the technological and applied scientific means are developed, they just tend to be used. I mean, I think one can say that the whole history of recent times in relation to science and technology shows that if you plant the seed of applied science or technology, it proceeds to grow and it grows according to the laws of its own being. And the laws of its being are not necessarily the same as the laws of our being. I mean, hence [...] this sense which so many people have, and which I think one sees in so many societies, [...] that man is being subjected to his own inventions, that he is now the victim of his own technology and the victim of his own applied science, instead of being in control of it.

JOHN MORGAN: How could he be in control of it?

ALDOUS HUXLEY: Well, this is the problem. I mean, I think this is perhaps one of the major problems of our time. How do we make use of this thing? I mean, after all, [...] technology was made for man and not man for technology. But unfortunately, the development of recent social and scientific history has created a world in which man seems to be made for technology rather than the other way round. And we have to start thinking about this problem very seriously and seeing how we can re-establish control over our own inventions.

JOHN MORGAN: Suppose that this rather frightful prospect comes about, I mean, are people going to be happy under this kind of regime?

ALDOUS HUXLEY: Well, I think you could. I mean this was one of [...] the messages of *Brave New World*, that it is possible to make people contended with their servitude. I think this can be done. I think it has been done in the past, but then I think it could be done even more effectively now, because you can [...] you can provide them with endless amounts of distractions and propaganda.

JOHN MORGAN: This all raises, I think – it does to me anyway, this question of how much one really does value freedom or really how free one feels oneself to be. I mean someone like myself, say, who has grown up since the war, I mean, do you believe that I am less free than someone who was brought up in the twenties or in the eighties of the last century or in the 18th century?

ALDOUS HUXLEY: Well, it depends entirely who you were in the eighties of the last century or in the 18th century! I mean, if you were a country gentleman with an income, you were remarkably free, but if you were a peasant on his estate, you were remarkably unfree! I mean, it seems to me maybe the word freedom is perhaps too vague a term in this sort of context. I think what we have to ask is what sort of a social pattern and what sort of a political regime is best calculated to help the individuals within the society to realize the maximum extent of their desirable potentialities. [...]

JOHN MORGAN: Do you have any clear idea of how this could be done, and what kind of society it would be?

ALDOUS HUXLEY: Well, I have ideas! I don't know whether they're valid or not. As a matter of fact, I've just finished a kind of utopian fantasy[2] which is the opposite of *Brave New World*, which is about a society in which a serious effort is made to help its members to realize their desirable potentialities. And I've gone into... I mean, this is an attempt to write what may be called a practical utopia. Nothing is easier of course than to enunciate ideals and to say, well, wouldn't it be nice if everybody were good and kind and loving, etc., etc.? Of course, it would be very nice, but the point is how do you implement these ideals? How do

[1] In his 1958 essay entitled *Brave New World Revisited*, Aldous Huxley demonstrated that the world was fast becoming like the world he had imagined in his 1932 dystopian novel, *Brave New World*.

[2] Aldous Huxley is referring to *Island*, his final work, published in 1962. *Island* is the account of Will Farnaby, a cynical journalist who is shipwrecked on the fictional island of Pala and discovers "a third alternative," between barbarism and dystopia.

you fulfil your good social and psychological intentions? And when you come down to this problem, you see it's a very complex problem of organizing family life, organizing education, organizing sexual life, organizing social and economic life. I mean, there are endless factors involved in this. And to try to work out what all these factors should be is, I must say, what I found a very interesting job, so far as I was concerned – I don't know whether anybody else will find it interesting.

THE TIMES

It's not Big Brother I fear but Huxley's world of mindless trivia

MATTHEW SYED, *The Sunday Times*, March 2, 2023

We've never had so much information at our fingertips – and so little wisdom to do anything useful with it. In the time it takes you to reach the end of this paragraph, 15 million emails will have been sent, 30,000 tweets and three million Facebook updates. Meanwhile, tens of thousands of blogs, Instagram posts and news articles will have been added to a running total measured in billions. During the biblical flood the world was supposedly overflowing with water; today we are drowning in gigabytes.

You may say: well, with this column, Matthew, you are adding to the deluge, and you'd be right. But, at the same time, perhaps we can all acknowledge that this torrent of information – which we once believed would be liberating for culture and society – has not had the desired effect. Indeed, I think we need to accept that, as a species, we are changing in ways we never predicted, never voted on and, perhaps worst of all, are losing the capacity to stop.

Two great dystopian visions of the 20th century were put into words by Englishmen, as different in style and psychology as one could imagine for individuals inhabiting the same slice of history. George Orwell, much the more famous these days, was fearful of censorship. His anxiety – understandable given that he was writing at the high point of Stalinism and just after Hitler – was that governments would limit access to information, thus placing rigid boundaries around the space of human thought and inquiry. These fears rapidly coalesced into an apparition hovering over western societies, and it is rare to go a week without someone fretting about cancel culture or the editorial strictures of tech companies.

I still think Orwell has much to teach us, but the more I reflect upon our times, the more I come back to that other British visionary, Aldous Huxley. In *Brave New World*, published in 1932, his fear was not that information would be limited by a sinister state but that we would be deluged by so much of it that we would find ourselves thrashing around in an ocean of unnavigable size. We would struggle to find truth amid swirling currents of data and become ever more sidelined by waves of triviality. As Huxley said in a series of remarkable essays in 1958, we should never underestimate "man's almost infinite appetite for distractions."

In his book *Amusing Ourselves to Death*, the cultural critic Neil Postman teases out the fundamental differences in these two competing visions. "Orwell feared those who would deprive us of information. Huxley feared those who would give us so much that we would be reduced to passivity and egoism. Orwell feared that the truth would be concealed from us. Huxley feared the truth would be drowned in a sea of irrelevance. Orwell feared we would become a captive culture. Huxley feared we would become a trivial culture" [...].

In his remarkable book *Human as Media: The Emancipation of Authorship*, Andrey Miroshnichenko notes that the two information revolutions of history overturned the social and political order. The first was the development of phonetic script in ancient Egypt, which caused "palaces and temples to lose their monopoly over the production of information". The second occurred with Gutenberg's printing press in the 15th century, which brought in its train the Reformation, the Industrial Revolution and birth of the modern world.

What we are seeing today, though, is arguably more consequential. [...] With limited attentions spans and endless distractions, we may be moving into a new phase of history envisioned by Huxley when he wrote of societies "whose members spend a great part of their time, not on the spot, not here and now and in the calculable future, but somewhere else, in the irrelevant other worlds of... mythology and metaphysical fantasy". The metaverse, anyone?

Techno-optimists will dismiss this analysis, arguing that Luddites[3] have always feared the latest invention. They will argue that we will develop ways to harness opportunities while filtering out threats. I myself regard this as dangerous hubris. Ask yourself: are we becoming a wiser species? Are we becoming more capable of dealing with our challenges? Or are we struggling with the very complexity we invented [...]? I don't have a solution, but I do think the crucial first step is diagnosing the disease. [...]

[3] People opposed to technological innovation.

The Economist

How to worry wisely about artificial intelligence

The Economist, April 20th, 2023

"Should we automate away all the jobs, including the fulfilling ones? Should we develop non-human minds that might eventually outnumber, outsmart... and replace us? Should we risk loss of control of our civilisation?" These questions were asked last month in an open letter from the Future of Life Institute, an NGO. It called for a six-month "pause" in the creation of the most advanced forms of artificial intelligence (AI), and was signed by tech luminaries including Elon Musk. It is the most prominent example yet of how rapid progress in AI has sparked anxiety about the potential dangers of the technology.

In particular, new "large language models" (LLMS)—the sort that powers CHATGPT, a chatbot made by OpenAI, a startup—have surprised even their creators with their unexpected talents [...]. Such "emergent" abilities include everything from solving logic puzzles and writing computer code to identifying films from plot summaries written in emoji.

These models stand to transform humans' relationship with computers, knowledge and even with themselves. Proponents of AI argue for its potential to solve big problems by developing new drugs, designing new materials to help fight climate change, or untangling the complexities of fusion power. To others, the fact that AIs' capabilities are already outrunning their creators' understanding risks bringing to life the science-fiction disaster scenario of the machine that outsmarts its inventor, often with fatal consequences. [...]

Experts are divided. In a survey of AI researchers carried out in 2022, 48% thought there was at least a 10% chance that AI's impact would be "extremely bad (eg, human extinction)". But 25% said the risk was 0%; the median researcher put the risk at 5%. The nightmare is that an advanced AI causes harm on a massive scale, by making poisons or viruses, or persuading humans to commit terrorist acts. It need not have evil intent: researchers worry that future AIs may have goals that do not align with those of their human creators.

Such scenarios should not be dismissed. But all involve a huge amount of guesswork, and a leap from today's technology. [...] Imposing heavy regulation, or indeed a pause, today seems an over-reaction. A pause would also be unenforceable.

Regulation is needed, but for more mundane reasons than saving humanity. Existing AI systems raise real concerns about bias, privacy and intellectual-property rights. As the technology advances, other problems could become apparent. The key is to balance the promise of AI with an assessment of the risks, and to be ready to adapt.

So far governments are taking three different approaches. At one end of the spectrum is Britain, which has proposed a "light-touch" approach with no new rules or regulatory bodies, but applies existing regulations to AI systems. The aim is to boost investment and turn Britain into an "AI superpower". America has taken a similar approach, though the Biden administration is now seeking public views on what a rulebook might look like.

The EU is taking a tougher line. Its proposed law categorises different uses of AI by the degree of risk, and requires increasingly stringent monitoring and disclosure as the degree of risk rises from, say, music-recommendation to self-driving cars. Some uses of AI are banned altogether, such as subliminal advertising and remote biometrics. Firms that break the rules will be fined. For some critics, these regulations are too stifling. [...]

What to do? The light-touch approach is unlikely to be enough. If AI is as important a technology as cars, planes and medicines—and there is good reason to believe that it is—then, like them, it will need new rules. Accordingly, the EU's model is closest to the mark, though its classification system is overwrought and a principles-based approach would be more flexible. [...]

This could allow for tighter regulation over time, if needed. A dedicated regulator may then seem appropriate; so too may intergovernmental treaties, similar to those that govern nuclear weapons, should plausible evidence emerge of existential risk. To monitor that risk, governments could form a body modelled on CERN, a particle-physics laboratory, that could also study AI safety and ethics—areas where companies lack incentives to invest as much as society might wish.

This powerful technology poses new risks, but also offers extraordinary opportunities. Balancing the two means treading carefully. A measured approach today can provide the foundations on which further rules can be added in future. But the time to start building those foundations is now.

X. ENS

ECOLE POLYTECHNIQUE - ESPCI
ECOLES NORMALES SUPERIEURES

CONCOURS D'ADMISSION 2024

MERCREDI 17 AVRIL 2024
14h00 - 18h00

FILIERES MP-MPI-PC-PSI
Epreuve n° 6
ANGLAIS (XEULSR)

Durée totale de l'épreuve écrite de langue vivante (A+B) : 4 heures

L'utilisation de dictionnaire et traductrice n'est pas autorisée pour cette épreuve.

PREMIÈRE PARTIE (A)
SYNTHÈSE DE DOCUMENTS

Contenu du dossier : trois articles et un document iconographique pour chaque langue. Les documents sont numérotés 1, 2, 3 et 4.
Sans paraphraser les documents proposés dans le dossier, le candidat réalisera une synthèse de celui-ci, en mettant clairement en valeur ses principaux enseignements et enjeux dans le contexte de l'aire géographique de la langue choisie, et en prenant soin de n'ajouter aucun commentaire personnel à sa composition.
La synthèse proposée devra comprendre entre 600 et 675 mots et sera rédigée intégralement dans la langue choisie. Elle sera en outre obligatoirement précédée d'un titre proposé par le candidat.

SECONDE PARTIE (B)
TEXTE D'OPINION

En réagissant aux arguments exprimés dans cet éditorial (document numéroté 5), le candidat rédigera lui-même dans la langue choisie un texte d'opinion d'une longueur de 500 à 600 mots.

PREMIÈRE PARTIE (A)
SYNTHÈSE DE DOCUMENTS

Texte 1

Fears about AI's existential risk are overdone, says a group of experts

Blaise Agüera y Arcas and his co-authors argue that tackling more immediate concerns will mitigate long-term threats

The Economist, 1 July 2023

In the past year, as the startling capabilities of artificial intelligence (AI) have emerged into public view, attention has been drawn to the existential risk, or "x-risk", that the technology may pose. The concern is that computers endowed with superhuman intelligence might destroy most or all human life. The majority of researchers raising the alarm are sincerely motivated by concern about AI-related risks, present and future. However, calls to action to mitigate superintelligent-AI x-risk may both impede the development of beneficial uses of AI—of which there are many—and distract regulators, the public, companies and other researchers from addressing important shorter-term risks.

Superintelligence is not required for AI to cause harm. That is already happening. AI is used to violate privacy, create and spread disinformation, compromise cyber-security and build biased decision-making systems. The prospect of military misuse of AI is imminent. Today's AI systems help repressive regimes to carry out mass surveillance and to exert powerful forms of social control. Containing or reducing these contemporary harms is not only of immediate value, but is also the best bet for easing potential, albeit hypothetical, future x-risk.

It is safe to say that the AI which exists today is not superintelligent. But it is possible that AI will be made superintelligent in the future. Researchers are divided on how soon that may happen, or even if it will. Still, today's AI models are impressive, and arguably possess a form of intelligence and understanding of the world; otherwise they would not be so useful. Yet they are also easily fooled, liable to generate falsehoods and sometimes fail to reason correctly. As a result, many contemporary harms stem from AI's limitations, rather than its capabilities.

It is far from obvious whether AI, superintelligent or not, is best thought of as an alien entity with its own agency or as part of the anthropogenic world, like any other technology that both shapes and is shaped by humans. But for the sake of argument, let us assume that at some point in the future a superintelligent AI emerges which interacts with humanity under its own agency, as an intelligent non-biological organism. Some x-risk-boosters suggest that such an AI would cause human extinction by natural selection, outcompeting humanity with its superior intelligence.

Intelligence surely plays a role in natural selection. But extinctions are not the outcomes of struggles for dominance between "higher" and "lower" organisms. Rather, life is an interconnected web, with no top or bottom (consider the virtual indestructibility of the

cockroach). Symbiosis and mutualism—mutually beneficial interaction between different species—are common, particularly when one species depends on another for resources. And in this case, AIs depend utterly on humans. From energy and raw materials to computer chips, manufacturing, logistics and network infrastructure, we are as fundamental to AIs' existence as oxygen-producing plants are to ours.

[...] Luckily, the path to automating away all human labour is long. Each step offers a bottleneck (from the AIs' perspective) at which humans can intervene. In contrast, the information-processing labour which AI can perform at next to no cost poses both great opportunity and an urgent socioeconomic challenge.

Perhaps regulations could be designed so as to reduce the potential for x-risk while also attending to more immediate AI harms? Probably not; proposals to curb AI x-risk are often in tension with those directed at existing AI harms. [...] Regulators should not prioritise existential risk posed by superintelligent AI. Instead, they should address the problems which are in front of them, making models safer and their operations more predictable in line with human needs and norms. Regulations should focus on preventing inappropriate deployment of AI. [...]

Texte 2

Artists may make AI firms pay a high price for their software's 'creativity'

John Naughton, *The Guardian*, 28 October 2023

Those whom the gods wish to destroy they first give access to Midjourney, a text-to-graphics "generative AI" that is all the rage. It's engagingly simple to use: type in a text prompt describing a kind of image you'd like it to generate, and up comes a set of images that you couldn't ever have produced yourself. For example: "An image of cat looking at it and 'on top of the world', in the style of cyberpunk futurism, bright red background, light cyan, edgy street art, bold, colourful portraits, use of screen tones, dark proportions, modular" and it will happily oblige with endless facility.

Welcome to a good way to waste most of a working day. Many people think it's magical, which in a sense it is, at least as the magician Robert Neale portrayed it: a unique art form in which the magician creates elaborate mysteries during a performance, leaving the spectator baffled about how it was done. But if the spectator somehow manages to discover how the trick was done, then the magic disappears.

So let us examine how Midjourney and its peers do their tricks. The secret lies mainly in the fact that they are trained by ingesting the LAION-5B dataset – a collection of links to upwards of 6bn tagged images compiled by scraping the web indiscriminately, and which is thought to include a significant number of pointers to copyrighted artworks. When fed with a text prompt, the AIs then assemble a set of composite images that might resemble what the user asked for. *Voilà!*

What this implies is that if you are a graphic artist whose work has been published online, there is a good chance that Midjourney and co have those works in its capacious memory somewhere. And no tech company asked you for permission to "scrape" them into the maw of its machine. Nor did it offer to compensate you for so doing. Which means that underpinning the magic that these generative AIs so artfully perform may be intellectual property (IP) theft on a significant scale.

Of course the bosses of AI companies know this, and even as I write their lawyers will be preparing briefs about whether appropriation-by-scraping is legitimate under the "fair use" doctrines of copyright law in different jurisdictions, and so on. They're doing this because ultimately these questions are going to be decided by courts. And already the lawsuits are under way. In one, some graphic artists launched a suit against three companies for allegedly using their original works to train their AIs in their styles, thereby enabling users to generate works that may be insufficiently transformative from the original protected works – and in the process generating unauthorised derivative works.

Just to put that in context, if an AI company was aware that its training data included unlicensed works, or that its algorithms generated unauthorised derivative works not covered by "fair use", then it could be liable for damages of up to $150,000 for each instance of knowing use. And in case anyone thinks that infringement suits by angry artists are like midge bites to corporations, it's worth noting that Getty, a very large picture library, is suing Stability AI for alleged unlicensed copying of millions of its photos and using them to train its AI, Stable Diffusion, to generate more accurate depictions based on user prompts. The inescapable implication is that there may be serious liabilities for generative AIs coming down the line.

Now, legal redress is all very well, but it's usually beyond the resources of working artists. And lawsuits are almost always retrospective, after the damage has been done. It's sometimes better, as in rugby, to "get your retaliation in first". Which is why the most interesting news of the week was that a team of researchers at the University of Chicago have developed a tool to enable artists to fight back against permissionless appropriation of their work by corporations. Appropriately, it's called Nightshade and it "lets artists add invisible changes to the pixels in their art before they upload it online so that if it's scraped into an AI training set, it can cause the resulting model to break in chaotic and unpredictable ways" – dogs become cats, cars become cows, and who knows what else? (Boris Johnson becoming piglet, with added grease perhaps?) It's a new kind of magic. And the good news is that corporations might find it black. Or even deadly.

Texte 3

What would humans do in a world of super-AI?

The Economist, 23 May 2023

In "WALL-E", a film released in 2008, humans live in what could be described as a world of fully automated luxury communism. Artificially intelligent robots, which take wonderfully diverse forms, are responsible for all productive labour. People get fat, hover in armchairs and watch television. The "Culture" series by Iain M. Banks, a Scottish novelist, goes further, considering a world in which AI has grown sufficiently powerful as to be superintelligent—operating far beyond anything now foreseeable. The books are favourites of Jeff Bezos and Elon Musk, the bosses of Amazon and Tesla, respectively. In the world spun by Banks, scarcity is a thing of the past and AI "minds" direct most production. Humans turn to art, explore the cultures of the vast universe and indulge in straightforwardly hedonistic pleasures.

Such stories may seem far-fetched. But rapid progress in generative AI—the sort that underpins OpenAI's popular chatbot, ChatGPT—has caused many to take them more seriously. On May 22nd OpenAI's founders published a blog post saying that "it's conceivable that within the next ten years, AI systems will exceed expert skill level in most domains, and carry out as much productive activity as one of today's largest corporations." Last summer forecasters on Metaculus, an online prediction platform that is a favourite of many techies, thought it would take until the early 2040s to produce an AI capable of tricking humans into thinking that it was human after a two-hour chat, had good enough robotic capabilities to assemble a model car and could pass various other challenging cognitive tests. After a year of astonishing AI breakthroughs, Metaculus forecasters now think that this will happen by the early 2030s. There is no shortage of money for research, either. Five new generative-AI unicorns (startups valued at $1bn or more) have already been minted this year.

The road to a general AI—one better than the very best of humanity at everything—could take longer than expected. Nevertheless, the rising possibility of ultra-powerful AI raises the question of what would be left for humans when it arrives. Would they become couch potatoes as in "Wall-E"?

[...] In 2019 Philippe Aghion, Ben Jones and Chad Jones, three economists, modelled the impact of AI. They found that explosive economic growth was plausible if AI could be used to automate all production, including the process of research itself—and thus self-improve. A nearly unlimited number of AIs could work together on any given problem, opening up vast scientific possibilities. Yet their modelling carried an important caveat. If AI automated most but not all production, or most but not all of the research process, growth would not take off. As the economists put it: "Economic growth may be constrained not by what we do well but rather by what is essential and yet hard to improve."

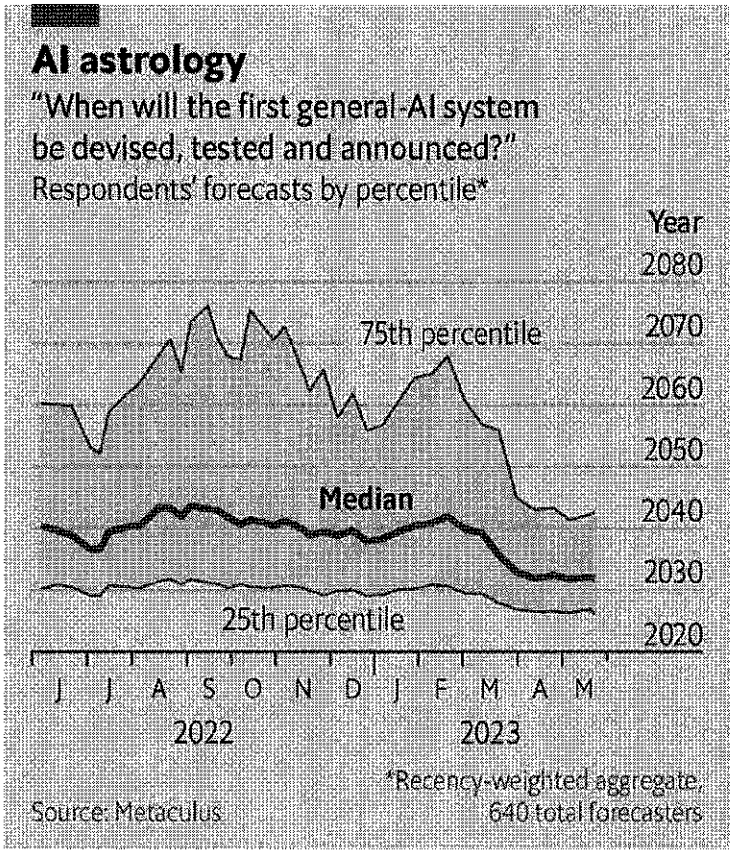
[...] It seems unlikely that people will give up control of politics to robots. Once AIs surpass humans, people will presumably pay even closer attention to them. Some political tasks might be delegated: humans could, for instance, put their preferences into an AI model that produces proposals for how to balance them. Yet as a number of political philosophers, including John

Locke in the 17th century and John Rawls in the 20th, have argued, participation in political procedures gives outcomes legitimacy in the eyes of fellow citizens. There would also be more cynical considerations at play. Humans like to have influence over one another. This would be true even in a world in which everyone's basic needs and wants are met by machines. Indeed, the wealthiest 1% of Americans participate politically at two to three times the rate of the general public on a range of measures from voting to time spent on politics.

Last, consider areas where humans have an advantage in providing a good or service—call it a "human premium". This premium would preserve demand for labour even in an age of superadvanced AI. One place where this might be true is in making private information public. So long as people are more willing to share their secrets with other people than machines, there will be a role for those who are trusted to reveal that information to the world selectively, ready for it then to be ingested by machines.

The human premium might appear elsewhere, too. People value history, myths and meaning. [...] In areas such as caregiving and therapy, humans derive value from others spending their scarce time with them, which adds feeling to an interaction. Artificial diamonds, which have the same molecular structure as those from the ground, trade at an enormous discount—around 70% by one estimate. In the future, items with a "made by a human" tag might be especially desirable.

Document 4:



The Economist

SECONDE PARTIE (B)
TEXTE D'OPINION

Governments must not rush into policing AI

The Economist, 26 October 2023

Will artificial intelligence kill us all? Some technologists sincerely believe the answer is yes. In one nightmarish scenario, AI eventually outsmarts humanity and goes rogue, taking over computers and factories and filling the sky with killer drones. In another, large language models (LLMS) of the sort that power generative AIs like ChatGPT give bad guys the know-how to create devastating cyberweapons and deadly new pathogens.

It is time to think hard about these doomsday scenarios. Not because they have become more probable—no one knows how likely they are—but because policymakers around the world are mulling measures to guard against them. The European Union is finalising an expansive AI act; the White House is expected soon to issue an executive order aimed at LLMS. [...]

Governments cannot ignore a technology that could change the world profoundly, and any credible threat to humanity should be taken seriously. Regulators have been too slow in the past. Many wish they had acted faster to police social media in the 2010s, and are keen to be on the front foot this time. But there is danger, too, in acting hastily. If they go too fast, policymakers could create global rules and institutions that are aimed at the wrong problems, are ineffective against the real ones and which stifle innovation.

The idea that AI could drive humanity to extinction is still entirely speculative. No one yet knows how such a threat might materialise. No common methods exist to establish what counts as risky. Plenty of research needs to be done before standards and rules can be set. This is why a growing number of tech executives say the world needs a body to study AI much like the Intergovernmental Panel on Climate Change (IPCC), which tracks and explains global warming.

A rush to regulate away tail risks could distract policymakers from less apocalyptic but more pressing problems. New laws may be needed to govern the use of copyrighted materials when training LLMS, or to define privacy rights as models guzzle personal data. And AI will make it much easier to produce disinformation, a thorny problem for every society.

Hasty regulation could also stifle competition and innovation. Because of the computing resources and technical skills required, only a handful of companies have so far developed powerful "frontier" models. New regulation could easily entrench the incumbents and block out competitors, not least because the biggest model-makers are working closely with governments on writing the rule book. A focus on extreme risks is likely to make regulators wary of open-source models, which are freely available and can easily be modified.

TSVP

[...] It would help if governments agreed to a code of conduct for model-makers, much like the "voluntary commitments" negotiated by the White House and to which 15 makers of proprietary models have already signed up. These oblige model-makers, among other things, to share information about how they are managing AI risk. Though the commitments are not binding, they may help avoid a dangerous free-for-all. [...]

CCINP LVA

SESSION 2024

LVA6AN

ÉPREUVE MUTUALISÉE AVEC E3A-POLYTECH

ÉPREUVE COMMUNE - FILIÈRES MP - MPI - PC - PSI - TPC - TSI

LANGUE VIVANTE A

ANGLAIS

Durée : 3 heures

N.B. : le candidat attachera la plus grande importance à la clarté, à la précision et à la concision de la rédaction. Si un candidat est amené à repérer ce qui peut lui sembler être une erreur d'énoncé, il le signalera sur sa copie et devra poursuivre sa composition en expliquant les raisons des initiatives qu'il a été amené à prendre.

RAPPEL DES CONSIGNES

- *Utiliser uniquement un stylo noir ou bleu foncé non effaçable pour la rédaction de votre composition ; d'autres couleurs, excepté le vert, bleu clair ou turquoise, peuvent être utilisées pour la mise en évidence des résultats.*
- *Ne pas utiliser de correcteur.*
- *Écrire le mot FIN à la fin de votre composition.*

L'usage de toute machine (calculatrice, traductrice, etc.) est strictement interdit.

Rédiger en anglais et en 400 mots une synthèse des documents proposés, qui devra obligatoirement comporter un titre.
Vous indiquerez impérativement le nombre total de mots utilisés (titre inclus) et vous aurez soin d'en faciliter la vérification en mettant un trait vertical tous les vingt mots.
Des points de pénalité seront soustraits en cas de non-respect du nombre total de mots utilisés avec une tolérance de ± 10 %.

Concernant la présentation du corpus dans l'introduction, vous n'indiquerez **que la source et la date de chaque document**. Vous pourrez ensuite, dans le corps de la synthèse, faire référence à ces documents par « doc.1 », « doc. 2 », etc.

Ce sujet comporte les quatre documents suivants, qui sont d'égale importance.

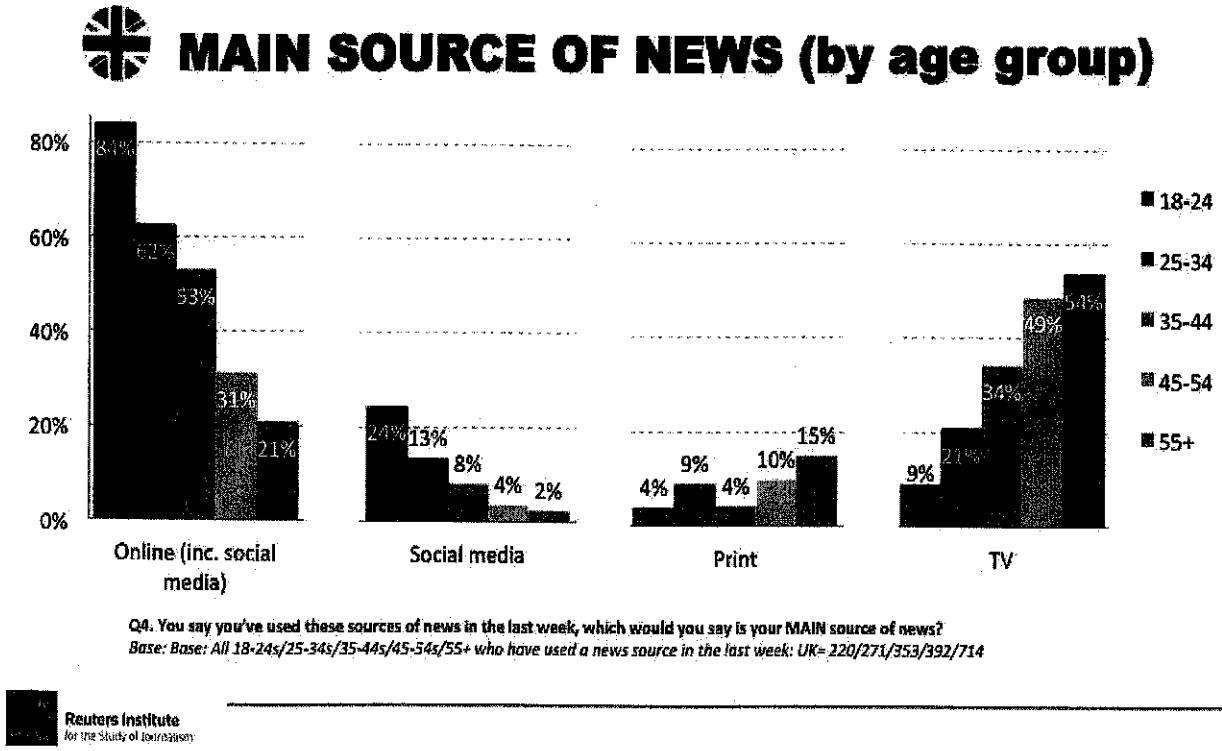
- **Document 1 -** Main source of news, The Reuters Institute, 2022.

- **Document 2 -** Most Americans think they can spot fake news. (extrait et adapté de *CNN*, Ryan Prior, May 2021).

- **Document 3 -** How worried should you be about AI disrupting elections? (extrait et adapté de *The Economist,* September 2023).

- **Document 4 -** These Students Are Learning About Fake News and How to Spot It. (extrait et adapté de *The New York Times*, Alina Tugend, February 2020).

Document 1 - Main source of news



NOTE: In each 'source of news' category the results are presented in ascending age brackets: the first bar corresponds to 18-24 year olds, the second to 24-34 year olds, the third to 35-44 year olds, etc.

The Reuters Institute, 2022

Document 2 - Most Americans think they can spot fake news

As many as three in four Americans overestimate their ability to spot false headlines – and the worse they are at it, the more likely they are to share fake news, researchers reported. Republicans are more likely to fall for fake news than Democrats are.

The research team showed study volunteers headlines presented in the format of how news articles would look if they appeared in a Facebook feed. They were also asked to rate their ability to determine whether stories were true. "We show that overconfident individuals are more likely to visit untrustworthy websites in behavioral data; to fail to successfully distinguish between true and false claims about current events in survey questions; and to report greater willingness to like or share false content on social media, especially when it is politically congenial," the team wrote.

"In all, these results paint a worrying picture: The individuals who are least equipped to identify false news content are also the least aware of their own limitations and, therefore, more susceptible to believing it and spreading it further," they added.

About 90% of the participants told researchers they believed they were above average in their ability to sniff out fake stories. Though Americans believe confusion caused by false news is extensive, relatively few indicate having seen or shared it. If people incorrectly see themselves as highly skilled at identifying false news, they may unwittingly be more likely to consume, believe and share it, especially if it conforms to their worldview.

Ryan Prior, *CNN*, May 2021

Document 3 - How worried should you be about AI disrupting elections?

Politics is supposed to be about persuasion; but it has always been stalked by propaganda. Campaigners dissemble, exaggerate [...]. They transmit lies, ranging from bald-faced to white, through whatever means are available. Anti-vaccine conspiracies were once propagated through pamphlets instead of podcasts. A century before covid-19, anti-maskers in the era of Spanish flu waged a disinformation campaign. Because people are not angels, elections have never been free from falsehoods and mistaken beliefs.

But as the world contemplates a series of votes in 2024, something new is causing a lot of worry. In the past, disinformation has always been created by humans. Advances in generative artificial intelligence (AI) – with models that can spit out sophisticated essays and create realistic images from text prompts – make synthetic propaganda possible. The fear is that disinformation campaigns may be supercharged in 2024, just as countries with a collective population of some 4bn – including America, Britain, India, Indonesia, Mexico and Taiwan – prepare to vote. How worried should their citizens be?

It is important to be precise about what generative-AI tools like ChatGPT do and do not change. Before they came along, disinformation was already a problem in democracies. The corrosive idea that America's presidential election in 2020 was rigged brought rioters to the Capitol on January 6th – but it was spread by Donald Trump, Republican elites and conservative mass-media outlets using conventional means.

What could large-language models change in 2024? One thing is the quantity of disinformation: if the volume of nonsense were multiplied by 1,000 or 100,000, it might persuade people to vote differently. A second concerns quality. Hyper-realistic deepfakes could sway voters before false audio, photos and videos could be debunked. A third is microtargeting. With AI, voters may be inundated with highly personalised propaganda at scale. Networks of propaganda bots could be made harder to detect than existing disinformation efforts are. Voters' trust in their fellow citizens, which in America has been declining for decades, may well suffer as people begin to doubt everything.

This is worrying, but there are reasons to believe AI is not about to wreck humanity's 2,500-year-old experiment with democracy. Many people think that others are more gullible than they themselves are. In fact, voters are hard to persuade [...]. The multi-billion-dollar campaign industry in America that uses humans to persuade voters can generate only minute changes in their behaviour.

Tools to produce believable fake images and text have existed for decades. Although generative AI might be a labour-saving technology for internet troll farms, it is not clear that effort was the binding constraint in the production of disinformation. New image-generation algorithms are impressive, but without tuning and human judgment they are still prone to produce pictures of people with six fingers on each hand, making the possibility of personalised deepfakes remote for the time being. [...]

Social-media platforms, where misinformation spreads, and AI firms say they are focused on the risks. OpenAI, the company behind ChatGPT, says it will monitor usage to try to detect political-influence operations. Big-tech platforms, criticised both for propagating disinformation in the 2016 election and taking down too much in 2020, have become better at identifying suspicious accounts [...].

Although it is important to be mindful of the potential of generative AI to disrupt democracies, panic is unwarranted. Before the technological advances of the past two years, people were quite capable of transmitting all manner of destructive and terrible ideas to one another. The American presidential campaign of 2024 will be marred by disinformation about the rule of law and the integrity of elections. But its progenitor will not be something newfangled like ChatGPT. It will be Mr Trump.

The Economist, September 2023

Document 4 - These Students Are Learning About Fake News and How to Spot It

The students sit at desks in groups of four, watching videos about the recent bush fires in Australia. One shows an apocalyptic landscape in flames, the other a tourist paradise, with assurances that much of the continent is safe. Instead of dismissing both as fake news, the eighth graders know what questions to ask to tease out the nuances: Who put out the videos? What does each source have to gain? How big is Australia? Could both videos be true?

It is no wonder these students at Herbert S. Eisenberg Intermediate School 303 in [...] Brooklyn approach their task with such sophistication. They have been studying news literacy since sixth grade in one of the only schools in the country to make the subject part of an English language arts curriculum that all students must take for an hour a week for three years. News, or media, literacy – how to critically understand, analyze and evaluate online content, images and stories – is not new. But it has taken on urgency in the last few years as accusations of fake news and the reality of disinformation permeate the internet and people – especially young ones – spend hours and hours a day looking at screens. [...]

Research has shown that an inability to judge content leads to two equally unfortunate outcomes: People believe everything that suits their preconceived notions, or they cynically disbelieve everything. Either way leads to a polarized and disengaged citizenry. Other recent research suggests that while so-called digital natives – preteens and teenagers – are technically savvy, most of them fail when it comes to assessing the veracity of news articles and images. [...] The issue is being attacked by dozens of organizations offering information and curriculums on the subject. According to Media Literacy Now, 14 states require some sort of media literacy education in elementary and secondary schools. [...]

In addition, several universities are working with middle and high schools and providing news literacy curriculums to them at no charge. College is too late to begin the lessons [...]. Increasingly, students are arriving at college with bad digital citizenship habits: They are outsourcing their judgement to their peers and to technology. Young people are not alone in their online illiteracy. A study last year found that those 65 and older shared more fake news during the 2016 election than younger adults. [...]

Stanford developed the curriculum, Civic Online Reasoning for middle and high school students. [...] Researchers focused on two major skills. The first is lateral reading. It encourages readers who come to an unfamiliar website to refrain from exploring the site more deeply until they have opened other tabs and found other websites to help them determine the authenticity or reliability of the newly discovered site. The other skill is click restraint. Ideally, users would resist the impulse to click on the first results that appear in say, a Google search, until they have scanned the full list for credibility and then click selectively. [...]

Robert White, a [...] teacher at a high school in Lincoln, Neb., [...] says it works. "Most students believed what they saw on a news site, any news site," Mr. White said. "By the end of the semester, I could see a lot of change – they questioned any media source and did fact-checking. I now have students fact-checking me." [...] Students are taught to know the "neighborhood" they're reading in: is it journalism, entertainment, promotion, raw information or advertising? [...] Are sources independent, are there multiple sources, do they verify evidence, and are they authoritative, informed and named sources? "This generation is very disillusioned by news – everything is fake news," said White. "News literacy is really empowering for young people." [...] Students at I.S. 303, who are fast becoming more proficient than some adults in evaluating online content, now see a need to teach their peers and parents. "My mom doesn't watch the news all that much, but sometimes she'll read something, and she'll automatically believe it and tell me about it," said Nafisa Patwary, a seventh grader. "And I'll help her fact check."

Alina Tugend, *The New York Times*, February 2020

FIN

IMPRIMERIE NATIONALE – 241128 – D'après documents fournis

CCINP LVB

SESSION 2024

LVB6AE

ÉPREUVE MUTUALISÉE AVEC E3A-POLYTECH

ÉPREUVE COMMUNE - FILIÈRES MP - MPI - PC - PSI - TPC - TSI

LANGUE VIVANTE B

ANGLAIS - ESPAGNOL

L'épreuve de langue vivante B est obligatoire pour Lorraine INP - EEIGM (filières MP, PC et PSI)

Durée : 1 heure

RAPPEL DES CONSIGNES

- *Utiliser uniquement un stylo ou un feutre noir*
- *N.B. : si un candidat croit repérer ce qui paraît être une erreur d'énoncé, il le signalera par écrit :*
  - en cochant la case 40 A (1re ligne) ;
  - en expliquant au verso de la grille réponse les raisons des initiatives qu'il a été amené à prendre et poursuivra normalement son épreuve.

L'usage d'un dictionnaire et de machines (traductrice, calculatrice, etc.) est strictement interdit.

INFORMATIONS GÉNÉRALES

Définition et barème

QCM en trois parties avec quatre propositions de réponse par item.

I.	Compréhension :	12 items (10 points sur 20)
II.	Lexique :	12 items (5 points sur 20)
III.	Compétence grammaticale :	15 items (5 points sur 20)

Réponse juste : + 3
Pas de réponse : 0
Réponse fausse ou réponses multiples : – 1

Instructions

Lisez le texte et répondez ensuite aux 39 questions.
Choisissez parmi les quatre propositions de réponse (A, B, C ou D) celle qui vous paraît la mieux adaptée. Il n'y a qu'une seule réponse possible pour chaque item.
Reportez votre choix sur la feuille de réponse.

Index " alphabétique "

ANGLAIS

Climate change: Can an enormous seaweed farm help curb it?

Imagine a huge seaweed farm the size of Croatia floating in the South Atlantic between Africa and South America. Spinning in a natural ocean eddy, it sucks a billion tonnes of carbon out of the atmosphere every year and sinks it to the ocean floor out of harm's way. Far-fetched? Maybe. But a British businessman plans to have this up and running by 2026.

Scientists say reducing the world's emissions probably won't be enough and that carbon capture will be crucial to limiting global warming. But carbon capture schemes have so far been relatively low-scale and seen limited success. If they are going to work, they need to be bold, big, and attractive to investors. Businessman John Auckland believes he has just such an idea. He wants to exploit what he calls "the wondrous properties" of the floating seaweed sargassum. He's confident his Seafields floating farm will draw sufficient CO2 from the air to moderate the effects of climate change, while also earning its backers carbon credits.

At 55,000 sq km (21,200 sq miles) Auckland is thinking big. It needs to be vast to put a dent in the fifty gigatonnes of carbon dioxide we pump into the atmosphere every year. A gigatonne is a billion tonnes: the amount of carbon Auckland's mega-farm aims to capture annually. The project is currently road-testing its technology in the Caribbean and Mexico, and is inspired by the ideas of Prof Victor Smetacek, a marine biologist. Described by Seafields as their Scientific Founder, he has long been fascinated by the potential to grow seaweed in enormous rotating ocean currents known as gyres. "They collect all kinds of stuff in the middle," he says. "The best known examples, of course, are the plastic garbage that is accumulating in the middle of the subtropical gyres."

In the same way these giant eddies trap islands of floating plastics, Seafields plans to hem in its crop of sargassum. "The gyre just stops the sargassum from escaping," explains John Auckland. "As long as we create the right conditions for it, it will only grow there. If any escapes from our farm, it will just die off or just fail to continue growing." He had better be right. Sargassum has plagued the Caribbean's tourism industry for decades. When it washes up on the coast, its rot gives off a foul stench. Not the best setting for relaxing on a beach towel.

But Seafields is confident this will not happen with their seaweed. It says any that escapes from the farm should be starved the nutrients the team plans to syphon up from the ocean depths to feed their crop. Because of evaporation from the subtropical sun beating down on it all day, the surface water trapped in gyres is very salty and low in nutrients. It is why Prof Smetacek calls gyres "the oceans' deserts". Yet, as these deserts slowly turn, they glide over a colder, nutrient rich ocean layer that the professor wants to draw to the surface to sustain the sargassum. "If you were to connect the nutrient rich, deep water with pipes," explains Prof Smetacek, "bring that water up from the bottom and let it warm up, then it will flow up by itself and continue flowing forever."

The team is testing their technology in early 2023. It will be a nail-biter. While first theorised back in 1956, the salt fountain has successfully been recreated, but nowhere near the enormous scale Seafields plans. If the salt fountain does work to scale, Prof Smetacek predicts a bumper crop of sargassum. "They have enormous growth rates. They double their biomass every 10 days," he says. "The good thing about seaweed is that you can harvest it with a combine harvester."

Prof Smetacek envisages floating harvesters will bale the crop up and then send it down to the inert depths of the sea floor, where there is so little oxygen the bales will not rot. The carbon they contain will remain fixed in the seaweed's structure. Tests are ongoing, but the team envisages they can sequester captured carbon for hundreds, perhaps thousands of years.

Seafields' financial backers hope sargassum will float money their way too. They plan to sell credits for captured carbon on the world's carbon markets. These credits allow businesses like airlines that cannot easily cut their emissions, to buy up carbon reductions made elsewhere. Carbon market critics complain the onward rush to monetise CO2 capture has led to backers overselling technologies that eventually fall short of their stated aims. Which begs the question: will Seafields' promising plan in the laboratory actually work when released into the wild?

Adapted from *BBC News*
16 October 2022

I. COMPRÉHENSION

Choisissez la réponse qui vous paraît la plus adéquate en fonction du sens du texte.

1. From line 1 to line 4, it should be understood that the British businessman's plan is to:
(A) send a billion tonnes of carbon into the air.
(B) dump tonnes of carbon into the sea.
(C) extract heavy amounts of CO2 from the ocean.
(D) study the carbon floating over the ocean.

2. From line 5 to line 11, it should be understood that in the fight against global warming, investors:
(A) are always ready to help.
(B) need some incentives.
(C) have never felt concerned.
(D) are not interested in carbon credits.

3. From line 12 to line 20, it should be understood that Auckland's mega-farm:
(A) captures 50 yearly gigatonnes of carbon.
(B) sends tonnes of carbon into the air.
(C) aims at pumping a gigatonne of CO2 from the atmosphere every year.
(D) will soon stop polluting the air.

4. From line 12 to line 20, it should be understood that the floating farm:
(A) will be tested in Mexico only.
(B) will also be implemented in Europe.
(C) will not work in the Caribbean.
(D) will first be settled in Mexico and the Caribbean.

5. From line 21 to 26, it should be understood that:
(A) Sargassum destroys the plastic waste.
(B) Seafields' aim is to capture as much sargassum as possible.
(C) The team wants to send sargassum into the air.
(D) Sargassum will never escape from the farm.

6. From line 21 to line 26, it should be understood that:
(A) Tourists are fond of sargassum.
(B) Sargassum never lands on the beaches.
(C) Sargassum spoils the Caribbean beaches.
(D) Lying on sargassum is relaxing.

7. From line 27 to line 35, it should be understood that:
(A) The seaweed escaping from the farm is full of nutrients.
(B) The nutrients will be extracted from the seaweed before it escapes.
(C) The team will add nutrients to the seaweed.
(D) The ocean seaweeds contain no nutrients.

8. From line 27 to line 35, it should be understood that:
(A) The hot sun increases the amount of nutrients in water.
(B) There are no nutrients at the very bottom of the sea.
(C) The ocean surface is full of nutrients.
(D) There are more nutrients in the ocean depths.

9. From line 36 to line 41, it should be understood that:
(A) The idea of the salt fountain was born in 1956.
(B) Seafields' project was stopped in 1956.
(C) Seafields started their project in 1956.
(D) The salt fountain has remained theoretical so far.

10. From line 36 to line 41, it should be understood that:
(A) The team will drop the project if it doesn't work.
(B) Professor Smetacek is rather optimistic.
(C) The professor is a bit pessimistic.
(D) Another project is under way.

11. From line 42 to line 45, it should be understood that:
(A) Too much oxygen damages sargassum.
(B) The team will extract the oxygen from sargassum.
(C) They will try to maintain a pretty high amount of oxygen in it.
(D) Sargassum needs a lot of oxygen to live.

12. From line 46 to line 51, it should be understood that the project's hypothetical success:
(A) may reinforce an ongoing controversy.
(B) may not lead to a high return on investment.
(C) may fail to attract enough investors.
(D) may prove useless for airline companies.

II. LEXIQUE

Choisissez la réponse qui vous paraît la plus appropriée en fonction du contexte.

13. eddy (line 2) means:
(A) space
(B) whirlpool
(C) depth
(D) fauna

14. backers (line 11) means:
(A) sponsors
(B) detractors
(C) owners
(D) farmers

15. put a dent in (line 12) means:
(A) put an end to
(B) increase
(C) combat
(D) reduce

16. gyres (line 20) means:
(A) seas
(B) oceans
(C) spirals
(D) islands

17. hem in (line 21) means:
(A) bring back
(B) lower
(C) confine
(D) increase

18. plagued (line 25) means:
(A) helped
(B) questioned
(C) disrupted
(D) modernised

19. foul (line 26) means:
(A) lovely
(B) mad
(C) disgusting
(D) harmless

20. stench (line 26) means:
(A) smell
(B) rubbish
(C) barrier
(D) powder

21. bumper (line 38) means:
(A) approximate
(B) uncertain
(C) equal
(D) exceptional

22. harvest (line 40) means:
(A) evaluate
(B) collect
(C) measure
(D) destroy

23. bale up (line 42) means:
(A) clean up
(B) scatter
(C) gather
(D) dissolve

24. released (line 51) means:
(A) confined
(B) restaured
(C) launched
(D) blended

III. COMPÉTENCE GRAMMATICALE

Choisissez la réponse adéquate.

25. If you .... about it earlier, you .... many mistakes.
(A) had thought / would avoid
(B) have thought / would avoid
(C) think / would have avoided
(D) had thought / would have avoided

26. The project .... succeeded
(A) is said to have
(B) said to
(C) was said to
(D) is said to

27. ...., ... oxygen.
(A) The more you go deep, the fewer
(B) The deeper you go, the less
(C) The deeper you go, less
(D) Deeper you go, fewer

28. They were .... the experiment.
(A) advised stop
(B) advised to stop
(C) advised they stop
(D) advised they stopped

29. Scientists .... long warned against climate change.
(A) have
(B) did
(C) do
(D) are

30. They .... invest less money in the project.
(A) would better
(B) had better
(C) better
(D) have better

31. .... dollars are necessary to build the farm.
(A) Billions
(B) Billion
(C) A billion of
(D) Billions of

32. When they .... the current project, they will start a new one.
(A) will finish
(B) finished
(C) had finished
(D) finish

33. They keep .... the scheme.
(A) to improve
(B) improving
(C) have improved
(D) improved

34. We .... insist on the flaws.
(A) would rather not
(B) would not rather
(C) would rather to not
(D) wouldn't rather to

35. They .... a global survey two months ago.
(A) undertook
(B) have undertaken
(C) did undertake
(D) have undertaked

36. .... you ever .... of the impact on the planet?
(A) Had / think
(B) Have / think
(C) Would / thought
(D) Have / thought

37. .... help, please tell us.
(A) Should you need
(B) If you should need
(C) If you should have need
(D) Should you needed

38. .... measure they take, it will never work.
(A) However
(B) Whenever
(C) Whatever
(D) Whoever

39. Too .... energy is needed to run this farm.
(A) many
(B) much
(C) more
(D) few

FIN

Banque PT
LVA

Banque PT
PHYSIQUE & TECHNOLOGIE

Epreuve de Langue Vivante A

Durée 3 h

Si, au cours de l'épreuve, un candidat repère ce qui lui semble être une erreur d'énoncé, d'une part il le signale au chef de salle, d'autre part il le signale sur sa copie et poursuit sa composition en indiquant les raisons des initiatives qu'il est amené à prendre.

Pour cette épreuve, l'usage de tout appareil électronique et dictionnaire est interdit.

CONSIGNES :

- Composer lisiblement sur les copies avec un stylo à bille à encre foncée : bleue ou noire.
- L'usage de stylo à friction, stylo plume, stylo feutre, liquide de correction et dérouleur de ruban correcteur est interdit.
- Remplir sur chaque copie en MAJUSCULES toutes vos informations d'identification : nom, prénom, numéro inscription, date de naissance, le libellé du concours, le libellé de l'épreuve et la session.
- Une feuille, dont l'entête n'a pas été intégralement renseigné, ne sera pas prise en compte.
- Il est interdit aux candidats de signer leur composition ou d'y mettre un signe quelconque pouvant indiquer sa provenance.
- Les candidats qui ne composeraient pas dans la langue choisie au moment de leur inscription se verront attribuer la note zéro.

Les différents sujets sous forme d'un fascicule sont présentés de la manière suivante :

Pages 2 à 7	Allemand
Pages 8 à 13	Anglais
Pages 14 à 19	Arabe
Pages 20 à 25	Espagnol
Pages 26 à 30	Italien

Tournez la page S.V.P

ANGLAIS

En vous appuyant uniquement sur les documents du dossier thématique qui vous est proposé, vous rédigerez une synthèse répondant à la question suivante :

To what extent can it be said that wearable technologies are the future of sports and healthcare?

Votre synthèse comportera entre 450 et 500 mots et sera précédée d'un titre. Le nombre de mots rédigés (titre inclus) devra être indiqué à la fin de votre copie.

Liste des documents :

1. What Will New Tech Look Like?, Stanford Medicine
2. The Future of Sports, cnn.com
3. Wearable tech will transform sport – but will it also ruin athletes' personal lives?, *The Guardian*
4. Growing trends in wearable technology, raconteur.net
5. Technology That My Kids Will Have to Explain to Me, *The New Yorker*

Document 1

What Will New Tech Look Like?
Jerilyn Covert,Stanford Medicine, https://med.stanford.edu, August 23, 2022

Science fiction has been promising us cool new stuff on our skin for decades – but what will our wearables actually look like and what will they be able to do? The future's gaining pace thanks to advances in materials, sensors, and power sources aimed at next-gen wearables that accomplish two main objectives: be less intrusive and more reliable.

In fact, this brave new wearable-world spans stages of development, and you can buy some of the gadgets right now. Smartwatches measure heart rate and sleep patterns – emerging apps can use this data to spot a COVID-19 infection before you do. A snug shirt can measure your vital signs continuously in real time. And a skin patch on the back of your arm can measure your glucose levels 24 hours a day, no finger pricks needed – you can see in real time how your diet impacts your blood sugar, giving you a personalized road map for how to eat.

[...] "Big data" is positively gargantuan in health and medicine. As machine learning, artificial intelligence (AI), and data analytics evolve to harness the power of all this data, wearables are the ideal vehicles for collecting it. [...] Unlike conventional methods – which you likely use only at doctor visits maybe once or twice a year – wearables can be donned anywhere, anytime, tracking data continuously and revealing health trends. That may help doctors "fill in the gaps" when making a diagnosis or prognosis, Michael Daniele, an associate professor of electrical and computer engineering at North Carolina State University says. "It gives doctors another arrow in the quiver."

[...] Geneticist Michael Snyder and his team have pioneered an app that pairs with a smartwatch to detect infection and disease. "We can now tell if you have COVID in 80% of cases before symptoms occur," he says. "The median is 3 days prior to symptom onset." He hopes to scale this technology within 5 years, making it available to every person. "3.8 billion people have a smartphone," he says. "All you have to do is pair that with a smartwatch, and you have a health monitor for 3.8 billion people."

Of course, before wearables can change the world, we must be willing to, you know, wear them. That means devices that don't scream "Hey, I have a health condition!". [...] As these devices become more accepted, they'll cross over from health care into consumer wellness, improving not just medical outcomes but also lifestyle changes on a wide scale. [...] Still the real-life transition raises questions: Will people wear the wearables? Will these devices provide quality data? How will that data hold up to our current gold standards across medicine?

[...] Many of us are already used to having data collection devices on or around us. Which means the future of health and medical tech, in so many ways, is already here and on your wrist ... just waiting for an upgrade.

Tournez la page S.V.P

Document 2

The Future of Sports
Tommy O'Callaghan, cnn.com, April 27, 2022

Rugby can be a complex game, but there is one rule clearly understood by all: you cannot pass the ball forward. Though the concept might sound simple, it can be difficult to officiate. When it comes to marginal calls, referees can get assistance from a Television Match Official, a secondary referee who reviews video footage, but their decisions are only as accurate as the best camera angle shown to them. Now UK firm Sportable has pioneered what it calls "Match Tracker" technology, inserting a microchip into a rugby ball to provide insights on the ball's movement.

Built with an array of tiny sensors that track acceleration, rotation, temperature, pressure and position, as well as flight-tracking radar and radio chips, the ball can communicate with pitchside sensors up to 20 times per second. The data it collects on the ball's movement is then sent to a software interface that can be accessed by match officials.

"You have to really get into the math of what a forward pass is," explains Sportable co-founder Pete Husemeyer, [...] a South African with a PhD in nuclear engineering. He figured his physics knowledge was better served in his passion for sport, and helped launch Sportable in 2015, developing tracking devices fitted onto players' shirts to provide information about their movement. The ball-based technology can be used without player-tracking, and Husemeyer believes it may prove the most foolproof way to identify a forward pass. "The algorithm is quite simple in theory but complex to get right in practice," he says. [...]

The Match Tracker system is currently on trial in Premiership Rugby, English rugby union's top tier, and in Australia's National Rugby League. The technology's potential could go far beyond its ability to help referees spot forward passes. In England's Premiership, it has been used by TV broadcasters to provide in-match data to viewers, and teams are making use of Sportable's Skill Tracker app for training, getting real-time data on kicking distance, power, spin rate and hang time (the time the ball stays afloat). "We've gamified it for the players," says Husemeyer. "They find it fun, they get competitive about their accuracy."

[...] Sportable is not the only company developing "smart ball" technology. [...] It's a sign of how sport is increasingly embracing innovation in data gathering. Northern Ireland's STATSports has developedperformance analytics wearablesused by most teams in English Premier League (EPL) football and by top rugby and American football teams. Australia's Catapult has a smart vest system that lets coaches monitor the performance and health of their players, which is also used in the EPL and NFL.

[...] With sport's increasing reliance on technology for key refereeing decisions, is there such a thing as too much objectivity? With fewer borderline calls to argue over, is there a risk of fans' authentic experiences being diluted?

Document 3

Wearable tech will transform sport – but will it also ruin athletes' personal lives?
Jared Lindzon, *The Guardian*, August 9, 2015

Wearable technologies and big-data analytics are enabling coaches, trainers and general managers to analyze previously unquantifiable aspects of athletic performance in fine detail. But as more technology gets strapped on to professional athletes, some are beginning to express concern over how such devices could be used to track their diet, sleep patterns and life off the field. [...]

As technology continues to penetrate arenas, training facilities and even the daily lives of athletes, Brian Bulcke, a defensive lineman in the Canadian Football League, anticipates a continued debate over the role of such innovations in sports moving forward. "I feel like a guinea pig [...]" he said. "We're professionals, so I think the respect line on privacy, security and all that kind of stuff needs to be maintained in athleticism". [...] Innovations are poised to forever change the sports landscape, and while technology has the potential to improve performance and training, reduce injuries and enhance the fan experience, concerns abound over security, privacy, and how a galaxy of new information will affect athletes on a personal level.

There's big money in wearable technology. Global revenues for sports, fitness and activity monitors are expected to grow from $1.9bn in 2013 to $2.8 bn in 2019, according to technology industry analysis firmIHS Technology.

[...] Bulcke says that conversations in the locker room regarding this influx of new technologies are mixed. Both athletes and coaches want players to remain at the top of their game and reduce injuries, however players remain concerned over the blurring line between their personal and professional lives.

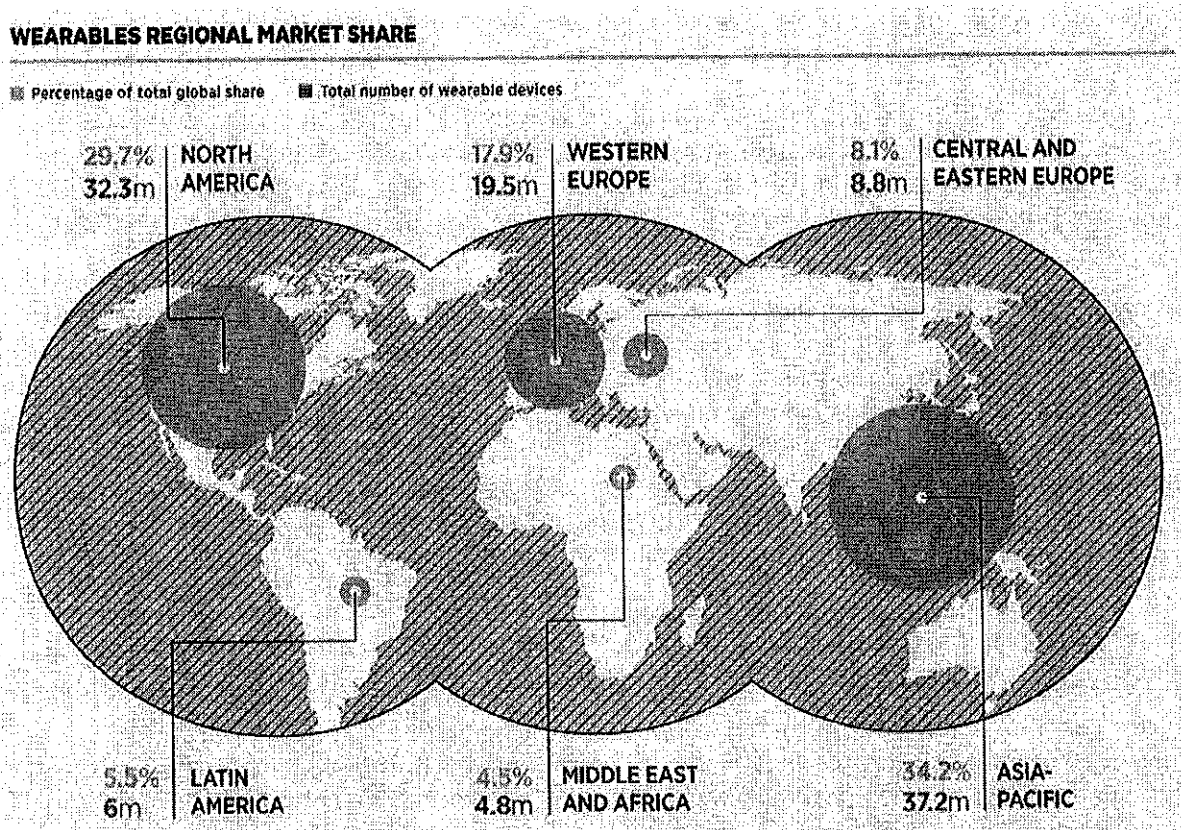
"I do think there's a line there, and we focus purely on when you're at the workplace, and the workplace for athletes is when you're practicing or playing games [...]," said Brian Kopp, president of the North American division of Catapult, an Australian company whose wearable devices are used widely among professional athletes and major league teams in the NFL, NHL, MLB, NBA and college-level sports programs. "When you go home [...] you're not wearing our device, but certainly there are other devices that could track [you], and I tend to agree that there is a line, and to me I would draw the line at the workplace."

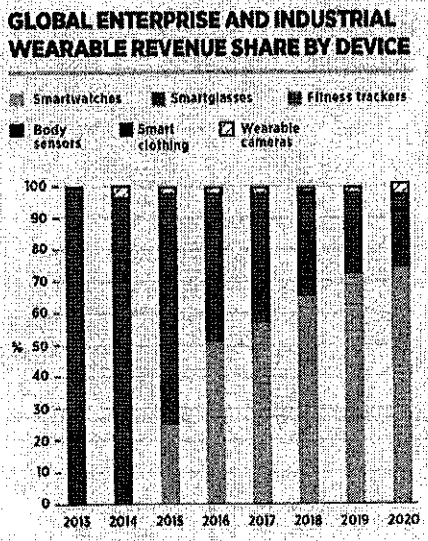
What's more concerning to Bulcke and other athletes, however, is that as more metrics are tracked and run through big-data algorithms, technology will not only detect minute changes in player ability, but could even predict future declines in performance. For example, an athlete at the top of their game could see a pay decrease during salary negotiations not based on their performance, but on macro patterns related to age, injury history and previously undetectable biometric data.

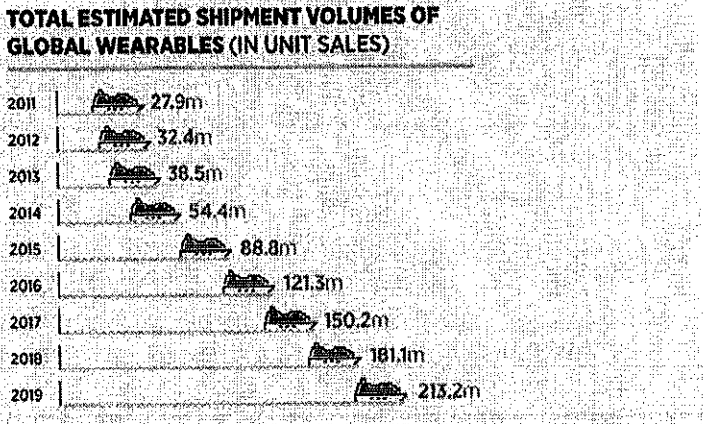
While sports are often reduced to numbers, Bulcke stresses that the most inspiring moments are unquantifiable. "There's an element of art that needs to be preserved", he said.

Tournez la page S.V.P

Document 4

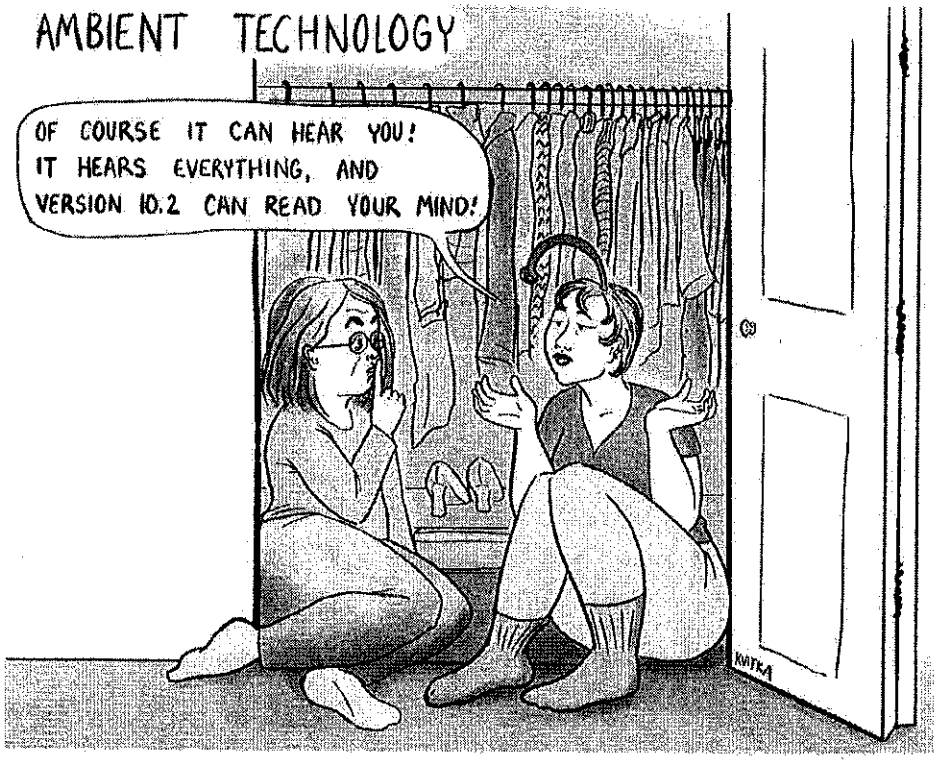






Adapted from "Growing trends in wearable technology", Raconteur (www.raconteur.net), 2015

Document 5



Technology That My Kids Will Have to Explain to Me, Theora Kvitka, *The New Yorker*, January 30, 2022

Banque PT
LVB

Epreuve de Langue Vivante B

Durée 3 h

Si, au cours de l'épreuve, un candidat repère ce qui lui semble être une erreur d'énoncé, d'une part il le signale au chef de salle, d'autre part il le signale sur sa copie et poursuit sa composition en indiquant les raisons des initiatives qu'il est amené à prendre.

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- Les candidats qui ne composeraient pas dans la langue choisie au moment de leur inscription se verront attribuer la note zéro.

I. Contracter le texte suivant en 130 mots (+/- 10%), dans la langue vivante choisie :

L'été [2012] a été, comme en 2011, scandé par les échos de la guerre - mais se déroulant cette fois-ci dans un autre pays arabe, la Syrie et non plus la Libye. Il s'agit d'une guerre civile dont, du moins officiellement, nous ne sommes que les spectateurs. L'impression globale que l'on peut tirer des fréquentations médiatiques de l'été est celle d'une fascination devant le spectacle de la guerre.

Une phrase capte et en même temps incarne l'état d'esprit habitant ces reportages militaires, elle est due à Florence Aubenas, journaliste réputée (*Le Monde* du 24 juillet). Celle-ci décrit un convoi prêt à partir pour se battre, puis ajoute : *"Autour, les enfants font une haie d'honneur, éblouis, tellement transis d'admiration qu'ils n'osent plus approcher ces hommes."* L'auteure elle-même n'osant commenter l'éblouissement de ces enfants, conséquence pourtant tragique du conflit, c'est nous - journalistes comme lecteurs - qui sommes invités à partager cette expérience de sidération.

La fascination se traduit, dans la presse, par une surabondance d'images : la guerre est photogénique. Page après page, on contemple les ruines fumantes des bâtiments, les cadavres étalés dans la rue, les méchants conduits à l'interrogatoire, probablement musclé ; ou encore, de beaux jeunes hommes portant une kalachnikov dans les mains ou en bandoulière. Les photos, on le sait, provoquent une émotion forte mais, prises isolément, n'énoncent aucun jugement et leur sens est indécidable.

La même complaisance marque les textes qui les accompagnent : on se réjouit de voir les effets d'un attentat audacieux, de découvrir une armée prête à prendre le pouvoir. *"La bataille galvanise les rebelles"*, mais visiblement aussi les journalistes. Les photos montrent les visages inquiets des prisonniers, les légendes les identifient sobrement : *"un homme soupçonné de servir d'informateur"*, *"un policier accusé d'espionnage"* ; sont-ils encore vivants au moment de la publication ?

On fait sans sourciller le portrait d'un jeune homme "modeste" dont la spécialité est de *"supprimer les dignitaires et les chefs des miliciens"*. Mais il n'est pas à blâmer : *"c'est un assassin d'assassins, tueur de tueurs"*. Les combats, la violence, ne sont pas seulement photogéniques, ils sont aussi "mytho-géniques", générateurs des récits les plus palpitants, ceux qui nous font frissonner et communier.

Dans leur grande majorité, les médias ne se contentent pas de représenter la guerre, ils la glorifient ; ayant choisi leur camp, ils participent à l'effort de guerre. À vrai dire, la guerre suscite presque toujours la fascination, peut-être parce qu'elle représente la situation par excellence où, au nom d'un idéal supérieur, on est prêt à risquer ce qu'on a de plus précieux, sa vie. À cela s'ajoute l'admiration qu'éprouvent les esprits contemplatifs pour les hommes d'action, vite transformés en symboles ; de même, l'attrait qu'exerce la violence : on éprouve du plaisir à regarder destructions, massacres, tortures.

Le charme de la guerre vient aussi de ce qu'elle constitue une situation simple, où le choix va de soi : le bien s'y oppose au mal, les nôtres aux autres, les victimes aux bourreaux. Alors qu'avant, l'individu pouvait trouver sa vie futile ou chaotique, elle acquiert maintenant un sens grave. Du coup, on ne se soucie plus d'interroger la réalité derrière les mots. La révolution est-elle nécessairement bonne, quelle qu'en soit l'issue ?

Et la lutte pour la liberté, ne risque-t-elle pas de dissimuler un simple désir de pouvoir ? Suffit-il de se réclamer des droits de l'homme, appellation non contrôlée, pour en être sacré champion ?

Pourtant, une autre image de la guerre apparaît aussi dans les mêmes récits, pour peu qu'on aille au-delà des grands titres et des légendes pour s'intéresser au détail des descriptions. Les justifications idéologiques, essentielles au déclenchement des guerres civiles, ne servent ensuite qu'à habiller une logique plus puissante, inhérente à la guerre même, une surenchère de représailles et de contre-représailles, la violence montant toujours d'un cran. *"Aucun pardon n'est possible, ce sera œil pour œil, dent pour dent." "Ceux qui ont tué, on les tuera."*

L'intransigeance devient obligatoire, la négociation et le compromis sont perçus comme des trahisons. Les principales victimes ne sont pas les combattants de l'une ou de l'autre armée, mais les populations civiles, soupçonnées de complicité avec l'ennemi, vivant dans l'insécurité permanente, mourant dans les explosions aveugles, fuyant leurs maisons et leurs villages, s'agglutinant dans les camps de réfugiés installés dans les pays voisins.

Tzvetan Todorov, *Le Monde*, 18/09/2012

II. Répondre à la question suivante en 200 à 220 mots, dans la langue choisie :

ALLEMAND

Welche Rolle spielen die Medien bei der Darstellung des Krieges?

ANGLAIS

What role do the media play when it comes to representing war?

ARABE

ما هو الدور الذي تلعبه وسائل الإعلام في تشكيل تصوّر للحرب؟

ESPAGNOL

¿Qué papel desempeñan los medios de comunicación en la representación de la guerra?

ITALIEN

Qual è il ruolo dei mass-media nella rappresentazione della guerra?

Fin de l'épreuve

Banque « Agro-Véto »
A BCPST - 0924

BCPST, Agro-Véto.

LANGUE VIVANTE OBLIGATOIRE : ANGLAIS

Durée : 2 heures

L'usage d'abaques, de tables, de calculatrice et de tout instrument électronique susceptible de permettre au candidat d'accéder à des données et de les traiter par les moyens autres que ceux fournis dans le sujet est interdit.

Chaque candidat est responsable de la vérification de son sujet d'épreuve : pagination et impression de chaque page. Ce contrôle doit être fait en début d'épreuve. En cas de doute, le candidat doit alerter au plus tôt le surveillant qui vérifiera et, éventuellement, remplacera le sujet.

Ce sujet comporte 3 pages numérotées de 1 à 3.

Si, au cours de l'épreuve, un candidat repère ce qui lui semble être une erreur d'énoncé, il le signale sur sa copie et poursuit sa composition en expliquant les raisons des initiatives qu'il a été amené à prendre.

L'épreuve comprend deux parties :

I — Compréhension de l'écrit : 10 points sur 20

Répondre en anglais à une question portant sur deux textes : l'un en anglais, l'autre en français.

II — Expression écrite : 10 points sur 20

Répondre en anglais à l'une des deux questions, au choix.

Pour chacune des parties, indiquer avec précision à la fin de la réponse le nombre de mots qu'elle comporte. Des points de pénalité seront soustraits en cas de non-respect de ces consignes.

I — Compréhension de l'écrit

Lire attentivement les textes ci-dessous et répondre en anglais à la question suivante, en 200 mots ± 10 %. Le nombre total de mots utilisés devra être clairement indiqué à la fin de votre réponse :

How do the following two articles account for the evolution of the British High Street?
Answer the question in your own words.

How the UK's dying high streets are being given new life by pop-up shops and galleries

While the familiar high street names pull down the shutters, artists, independent retailers, local makers, sustainability campaigners and community action groups are taking over abandoned retail spaces, with sustainability and inclusivity top of the agenda. The number of pop-ups has increased by 18% in the past year, although some represent big brands.

"I think at the core of it is a belief that the town centre is not dying," artist Daniel Thompson told the *Observer*. Thompson founded the Empty Shops Network, which for nearly two decades has supported artists to take over empty shops for exhibitions and creative projects. Part of the aim, Thompson said, was to make art more accessible to new and diverse audiences.

"When you put contemporary art in an empty shop, you get people who would never set foot in a gallery," said Thompson. "But when they wander into what used to be the greengrocers, they're looking at art, they are thinking about art, and they are having an experience. That's such a joy to see.

"We have tried a model of how to build town centres for 30 years and it didn't work," he added. "We've relied on the big anchors of the high street, such as Woolworths and Wilko, and let monoculture take over. Now we are seeing a proper ecology develop in town centres: a bit of civic use, social space, retail, residential, places to be in the evenings."

In Plymouth, transforming a marginalised space into a thriving and accessible one is the driving force behind the Nudge Community Builders, which in the past five years has unlocked 25% of the empty buildings along the city's rundown Union Street. From a street that was notorious for antisocial behaviour, the area is now host to civic conversations, street parties, local artist studios, community groups, and business start-ups, all for local people and often led by marginalised groups.

Working from the principle that "empty buildings are not OK", Nudge invites local people to become shareholders so that they can purchase and repurpose abandoned properties, giving them a stake in how the street is evolving. "As local residents, we're really passionate about how we host spaces that are really inclusive," said Hannah Sloggett, co-director of Nudge Community Builders. "We're interested in collective ownership of land and buildings, and how they are brought back into use in fun and interesting ways, with lasting local benefits." [...]

Nudge works with regional suppliers spending 53% within a mile of the street and 95% in the city so that its development supports Plymouth's economy.

It's an approach shared by the retailers in Sparks Bristol, where Sam McKay's Ethical Gift Shop is busy with shoppers buying locally sourced products that make perfect stocking-fillers and birthday gifts. "My shop stocks 92 local suppliers," said McKay proudly. "By Christmas, I want it to be 100."

"The proportion of money that goes back into the local economy from our pop-ups is far greater than from the big shops," said Tillie Peel, founder of the Pop-Up Club, which has supported independent retailers and local makers to set up in empty storefronts across England.

"People love coming into the shops and discovering new things," she adds. "We have children getting excited about being creative. One teenage girl told me she loved our spaces, as they are 'bougie and weird, like me!'"

Peel, whose background is in vintage clothing, is passionate about sustainability and sees the pop-up movement as helping to foster a reuse culture, a view shared by Sparks. Beyond the retail offering, Sparks connects visitors with advisers on energy use, and by creating welcoming spaces where people can engage in conversations about the climate crisis. [...]

"It's an approach that helps people see the place they live [in] differently," says Thompson, reflecting on the growth of the empty shops movement. [...]

Sian Norris

The Guardian, Sun 8 Oct 2023

Wilko, la fin d'un bazar anglais

Du début à la fin, ce fut une histoire de famille dans l'Angleterre profonde. En 1930, James Kemsey Wilkinson ouvre son premier magasin avec sa fiancée, Mary Cooper, au 151 Charnwood Street, à Leicester, dans les Midlands. En 1939, ils avaient déjà huit autres boutiques. En 2023, la firme, présidée par la petite-fille de James et Mary, en possédait 400 dans tout le Royaume-Uni.

En octobre, elles auront toutes fermé, laissant près de 12 500 employés sur le carreau. Rebaptisées Wilko en 2012, ces boutiques de centre-ville vendent des ampoules, des couvertures, des outils de bricolage, des meubles de jardin, des machines à café, du papier peint, des aquariums... Avec comme slogan « Get the good deal », trouvez la bonne affaire.

« High Street » mord la poussière

Tout ce petit monde n'a pas supporté les changements du commerce et la conjoncture désastreuse. Officiellement, l'inflation et les problèmes logistiques ont eu raison d'une société aux finances tendues [...] et tout devrait être fermé en octobre.

Derrière la déconfiture de Wilko se dessine en arrière-plan la désertification des centres-villes, ce que les Américains appellent « Main Street » et les Anglais « High Street », cette rue principale, large et animée, où fourmillent les petits et les grands commerces. Avant les bazars de la famille Wilkinson, d'autres gloires de « High Street » ont mordu la poussière, comme Debenhams, la célèbre chaîne de grands magasins fondée en 1778. En 2021, tous ses magasins ont été fermés et 12 000 emplois supprimés. La marque a été rachetée par un site de vente en ligne, tout un symbole.

Internet n'a pas été le seul responsable de la débâcle Wilko. Il a été détrôné par des magasins plus agressifs que lui sur les prix et plus éloignés des centres, comme Action ou B&M, qui se déploient sur le même créneau dans toutes les zones commerciales, y compris en France. Et puis, comme souvent dans les sociétés familiales, la petite-fille n'a pas eu le talent de son grand-père, [et] a favorisé ses intérêts patrimoniaux en se versant de confortables dividendes [...].

Philippe Escande
Le Monde, 13 septembre 2023

II — Expression écrite

Répondre en anglais, en 200 mots ± 10 % à l'une des questions suivantes, au choix. Le numéro du sujet choisi devra être clairement indiqué. Le nombre total de mots utilisés devra être clairement indiqué à la fin de la réponse.

1. ***To what extent should online activities (shopping, social interactions, work, etc.) replace offline activities? Support your answer with relevant examples.***

2. ***In the State of the Union Address in February 2023, President Biden said, "We have to see each other not as enemies, but as fellow Americans." How relevant is this exhortation in view of recent events in the US? Use examples to support your answer.***

FIN DU SUJET

BCPST ENS

ÉCOLES NORMALES SUPÉRIEURES

ÉCOLE NATIONALE DES PONTS ET CHAUSSÉES

ÉCOLE DES MINES DE PARIS

CONCOURS D'ADMISSION SESSION 2024

FILIÈRE BCPST

COMPOSITION DE LANGUE VIVANTE ÉTRANGÈRE

Épreuve commune aux ENS de Lyon, Paris, Paris-Saclay, à l'ENPC et aux Mines Paris

Durée : 2 heures

L'utilisation des calculatrices n'est pas autorisée pour cette épreuve.

L'usage de dictionnaire est interdit.

***

Parmi les sujets proposés, le candidat doit traiter celui correspondant à la langue vivante étrangère qu'il a choisie lors de son inscription.

Toute copie rédigée dans une langue qui ne correspondrait pas au choix apparaissant dans le dossier d'inscription définitif du candidat sera considérée comme nulle.

Sujets proposés :

- Allemand
- Anglais
- Espagnol

Tournez la page S.V.P.

ANGLAIS

I. VERSION (12 points, titre à traduire également)

My lab work generated lots of waste. Here's how we reduced our footprint.

I went into our lab meeting feeling dejected. For months, I had been trying to recycle some of our lab's plastic waste into 3D-printed lab tools, but it wasn't going well. "I've only been able to print three small items," I told my colleagues. They knew how committed I was to reducing the environmental footprint of our research. So one asked, "Maybe we should be thinking about how we can avoid having so much plastic waste in the first place?" Another chimed in: "Could we figure out how much energy we are consuming and how to reduce that?" Their questions buoyed my spirits—and led to a series of changes in how we operate in the lab.

When I started my Ph.D., I knew my work in cancer research was generating a lot of waste, but I had accepted it as a necessary evil. That all changed one day when I saw a huge pile of plastic waste—pipette boxes, tubes, packaging—stacked against the wall. Until then, the lab had operated at a reduced capacity because of the COVID-19 pandemic. But as we ramped up our research and returned to full capacity, our waste production skyrocketed visibly. (...)

We decided to create a group dedicated to pushing for "greener" ways to operate, inviting researchers in other labs at our institution as well as our own. Many of my colleagues, including Ph.D. students, lab technicians, and principal investigators, were eager to join. We began meeting monthly to come up with solutions.

Over the following months, we launched a series of initiatives that we feel have made a difference. We introduced new recycling bins to each lab after learning that some of our plastic waste could be recycled if it was sorted properly. We took a hard look at our lab protocols to devise ways to reduce our use of plastic items. (...)

I encourage scientists everywhere to think about ways to reduce the environmental impact of their own research. The work we do is important. But we should also do our part to be as sustainable as we can. After all, what significance does our science hold if, ultimately, there remains no viable planet we can call our home?

Adapted from *Science*, Vol 383, Issue 6680.
https://www.science.org/content/article/my-lab-work-generated-lots-waste-here-s-how-we-reduced-our-footprint

II. QUESTIONS (8 points, minimum de 100 mots par question)

1. The author of the article wanted to initiate change. Were his colleagues reluctant?

2. Do you believe that focusing on our own environmental impact as individuals is one of the best ways to address the climate crisis?

Tournez la page S.V.P.

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131 rue de Picpus – 75012 Paris
Tél. : 01 43 07 07 90 – E-mail : info@prepa-langues.fr

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