

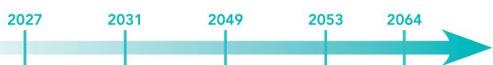
# 1 Robots in our Lives

*What role will robots play in the future?*

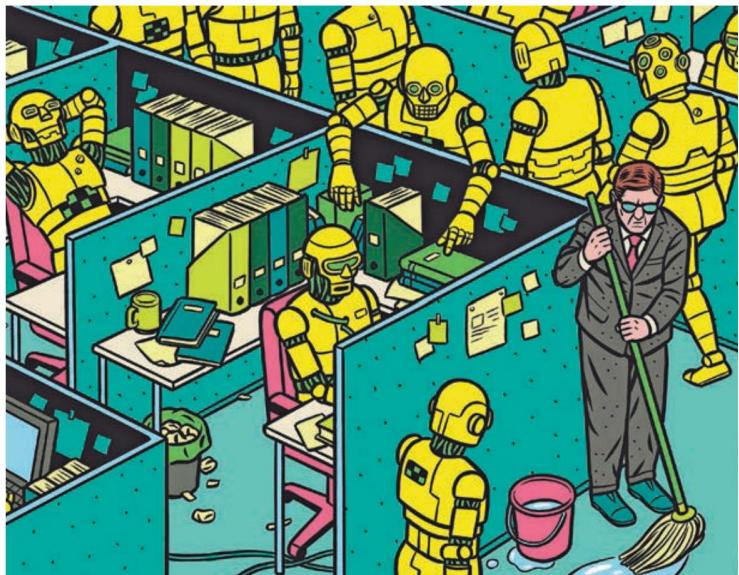
## 1 Our jobs stolen by robots!

Here are a few predictions made by scientists about the jobs robots will do in the future.

Try to place the following jobs on the timeline.



- (a) A.I. could write a bestselling novel.
- (b) Self-driving trucks could replace truckers.
- (c) Surgeons could be replaced by robots.
- (d) Retail jobs could be performed by machines.
- (e) Military robots will replace all human soldiers on the battlefield.



## 2 Meet Sophia

VIDEO N°36



**A.** Look at the still on the right. What do you think about this robot?

**B. Pairwork.** Watch the video.

- Pupil A focuses on: Sophia's functions, appearance and capacities / her plans for the future / her problem today.
- Pupil B focuses on: Why Hanson Robotics develops humanoid robots / Sophia's interests / Hanson Robotics' goal for Sophia / Dr Hanson's predictions about robots.

**C.** Share your answers and get ready to report back to the class.

**D. Class discussion.** Comment on

Sophia's answer to the last question.

HELP!

### Nouns

- artificial intelligence /ɑ:tɪfɪʃəl ɪn'telɪdʒəns/
- facial /feɪʃl/ expressions
- wires /waɪəz/ = cables /'kerblz/

### Adjectives

- alarming = worrying, troubling
- helpful = useful
- lifelike = that seems to be real
- self-sufficient = autonomous
- thrilling /'θrɪldʒ/ = extremely exciting

### Verbs & expressions

- be aware of = conscious of
- harm someone
- assist = help
- provide for someone

## ② What Specialists Think about A.I.

### Should Artificial Intelligence be regulated?

#### 1 Different thoughts about A.I.

**Group work.** Each group works on a text.

Use **Worksheet n°50** to answer the questions. 



##### Text A: Mark Zuckerberg & Elon Musk

During an interview at the 2018 Viva Technology conference in Paris [...], Facebook CEO Mark Zuckerberg talked about his company's practices and his personal take<sup>1</sup> on the future of A.I. "I think that AI is going to unlock a huge amount of positive things, whether that's helping to identify and cure diseases, to help cars drive more safely, to help keep our communities safe," he said. His comments were in response to a question from the interviewer about his personal thoughts on Tesla CEO Elon Musk's skepticism towards A.I.  
10 Musk has repeatedly warned about the dangers of artificial intelligence, recently calling it "far more dangerous than nukes"<sup>2</sup> at SXSW last March. To be clear, Musk has specified that his worries are pointed towards "general A.I.", and not the kind of "functional/narrow A.I." you'd find in a car.  
15 But Zuckerberg expressed a more overarching<sup>3</sup> optimism in response to his views on A.I.

Where Zuckerberg and Musk's beliefs overlap [...] is in the eventual

benefit of self-driving cars, which use A.I. technology. Zuckerberg said they're going to help fix a very important humanitarian crisis, if  
20 we can get to a point when they're being made well. He added that he agrees with one point in particular that Musk has been making recently in support of self-driving cars.  
"We need to make sure that we don't get too negative on this stuff," he said referring to A.I. technology. "Because it's too easy  
25 for people to point to an individual failure of technology and try to use that as an argument to slow down progress."  
Zuckerberg said he himself has been trying to make this point<sup>4</sup> for a while. He did follow his support for A.I. up with remarks about the seriousness of A.I. ethics and clarified that there are bound to  
30 be issues<sup>5</sup> along the way, just as there are for any new technology.

**1 opinion • 2 nuclear missile • 3 global, broad • 4 convey a message  
• 5 there will be issues for sure**

, 24 May 2018

##### Text B: Fei-Fei Li

It is an especially exciting time for a researcher like me. When I was a graduate student in computer science in the early 2000s, computers were barely able to detect sharp edges in photographs, let alone recognize something as loosely defined as a  
5 human face. [...] A.I. has gone from an academic niche to the leading differentiator in a wide range of industries, including manufacturing, health care, transportation and retail.  
I worry, however, that enthusiasm for A.I. is preventing us from reckoning with its looming<sup>1</sup> effects on society. Despite its name,  
10 there is nothing "artificial" about this technology – it is made by humans, intended to behave like humans and affects humans. So if we want it to play a positive role in tomorrow's world, it must be guided by human concerns<sup>2</sup>.  
I call this approach "human-centered A.I." It consists of three goals  
15 that can help responsibly guide the development of intelligent machines.  
First, A.I. needs to reflect more of the depth that characterizes our own intelligence. [...] How can we expect machines to anticipate our needs – much less contribute to our well-being – without  
20 insight into these "fuzzier" dimensions of our experience?  
Making A.I. more sensitive<sup>3</sup> to the full scope<sup>4</sup> of human thought is no simple task. The solutions are likely to require insights derived from fields beyond computer science, which means programmers



**Fei-Fei Li is a professor of Computer Science at Stanford, where she directs the Stanford Artificial Intelligence Lab, and the chief scientist for A.I. research at Google Cloud.**

will have to learn to collaborate more often with experts in other domains.  
Reconnecting A.I. with fields like cognitive science, psychology and even sociology will give us a far richer foundation on which to base the development of machine intelligence. And we can expect the resulting technology to collaborate and communicate  
30 more naturally, which will help us approach the second goal of human-centered A.I.: enhancing us, not replacing us. [...]

No amount of ingenuity, however, will fully eliminate the threat of job displacement. Addressing this concern is the third goal of human-centered A.I.: ensuring that the development of this technology is guided, at each step, by concern for its effect on humans. [...] Adequately facing these challenges will require commitments from many of our largest institutions. Universities are uniquely positioned to foster connections between computer science and traditionally unrelated departments like the social sciences and even humanities, through interdisciplinary projects, courses and seminars. Governments can make a greater effort to encourage computer science education, especially among young girls, racial minorities and other groups whose perspectives have been underrepresented

in A.I. And corporations should combine their aggressive investment in intelligent algorithms with ethical A.I. policies that temper ambition with responsibility.

No technology is more reflective of its creators than A.I. It has been said that there are no "machine" values at all, in fact; machine values are human values. A human-centered approach to A.I. means these machines don't have to be our competitors, but partners in securing our well-being. However autonomous our technology becomes, its impact on the world – for better or worse – will always be our responsibility.

1 imminent • 2 preoccupations • 3 aware of • 4 extent

Fei-Fei Li, [redacted], 7 March 2018

### Text C: Stephen Hawking

If a superior alien civilisation sent us a text message saying, 'We'll arrive in a few decades', would we just reply, 'OK, call us when you get here, we'll leave the lights on'? Probably not, but this is more or less what has happened with AI. Little serious research has been devoted to these issues outside a few small non-profit institutes. Fortunately, this is now changing. Technology pioneers Bill Gates, Steve Wozniak and Elon Musk have echoed my concerns, and a healthy culture of risk assessment and awareness of societal implications is beginning to take root in the AI community. In January 2015, I, along with Elon Musk and many AI experts, signed an open letter on artificial intelligence, calling for serious research into its impact on society. In the past, Elon Musk has warned that superhuman artificial intelligence is capable of providing incalculable benefits, but if deployed incautiously will have an adverse effect on the human race. He and I sit on the scientific advisory board for the Future of Life Institute, an organisation working to mitigate existential risks facing humanity, and which drafted the open letter. This called for concrete research on how we could prevent potential problems while also reaping the potential benefits AI offers us, and is designed to get AI researchers and developers to pay more attention to AI safety. In addition, for policymakers and the general public the letter was meant to be informative but not

alarmist. We think it is very important that everybody knows that AI researchers are seriously thinking about these concerns and ethical issues. For example, AI has the potential to eradicate disease and poverty, but researchers must work to create AI that can be controlled. [...]

Recent developments in the advancement of AI include a call by the European Parliament for drafting a set of regulations to govern the creation of robots and AI. Somewhat surprisingly, this includes a form of electronic personhood, to ensure the rights and responsibilities for the most capable and advanced AI. A European Parliament spokesman has commented that, as a growing number of areas in our daily lives are increasingly affected by robots, we need to ensure that robots are, and will remain, in the service of humans. A report presented to the Parliament declares that the world is on the cusp of a new industrial robot revolution. It examines whether or not providing legal rights for robots as electronic persons, on a par with the legal definition of corporate personhood, would be permissible. But it stresses that at all times researchers and designers should ensure all robotic design incorporates a kill switch.

*Brief Answers to the Big Questions,  
Stephen Hawking, 2018*



## YOUR TURN! 2 Should A.I. be regulated?

Imagine you participate in a TV debate about A.I.

Each participant is assigned a different role: TV presenter, scientist, entrepreneur, professor of Computer Science. Discuss the following question: should A.I. be regulated?

### HELP!

#### Expressions

- in my opinion...
- contrary to... ≠ like...
- I agree with... ≠ I disagree with...
- on the one hand... on the other hand...

# Robots in Science Fiction

How are self-aware robots depicted in science fiction?

## 1 Isaac Asimov's Laws of Robotics

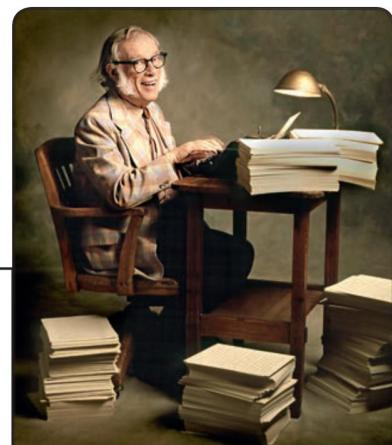


- Listen to [MP3 n°99](#), in which Isaac Asimov speaks about the three Laws of Robotics he created and used in his novels.
- Rewrite the three laws in your own words.
- How can you relate the three laws to the documents studied in this unit?

### Cultural fact

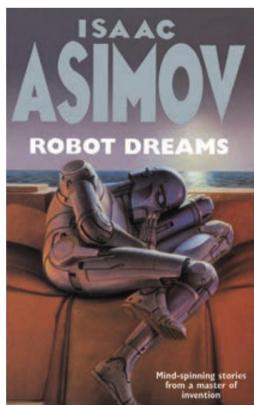
Isaac Asimov (1920-1992) was one of the 20th century's most prolific writers, writing in many genres. He is known for sci-fi works like *Foundation* and *I, Robot*.

[biography.com](#)



## 2 "Robot Dreams"

- Read the title of the text and look at its cover. Imagine what robots may dream about.



that I was dreaming. Till then, I had thought there was a flaw<sup>1</sup> in my positronic brain pattern, but I could not find one. Finally, I decided it was a dream."

15 "And what do you dream?"

"I dream always very much the same dream, Dr. Calvin. Little details are different, but always it seems to me that I see a large panorama in which robots are working."

20 "Robots, Elvex? And human beings, also?"

"I see no human beings in the dream, Dr. Calvin. Not at first. Only robots."

"What are they doing, Elvex?"

"They are working, Dr. Calvin. I see some mining in the depths of the Earth, and some laboring

- Read the text and use [Worksheet n°51](#) to answer the questions.

### Part 1

**C** alvin said, "How often have you dreamed, Elvex?" "Every night, Dr. Calvin, since I have become aware of my existence."

"Ten nights," interposed Linda, anxiously, "but Elvex only told me of it this morning."

"Why only this morning, Elvex?"

10 "It was not until this morning, Dr. Calvin, that I was convinced

in heat and radiation. I see some in factories and some undersea."

Calvin turned to Linda. "Elvex is only ten days old, and I'm sure he has not left the testing station. How

30 does he know of robots in such detail?"

Linda looked in the direction of a chair as though she longed to sit down, but the Old Woman was standing and that meant Linda had to stand also.

She said, faintly, "It seemed to me important that 35 he know about robotics and its place in the world. It was my thought that he would be particularly adapted to play the part of overseer with his – his new brain."

"His fractal brain?"

40 "Yes."

Calvin nodded and turned back to the robot. "You saw all this – undersea, and underground, and aboveground – and space, too, I imagine."

"I also saw robots working in space," said Elvex.

45 "It was that I saw all this, with the details forever changing as I glanced<sup>2</sup> from place to place, that made me realize that what I saw was not in accord with reality and led me to the conclusion, finally, that I was dreaming."

## Part 2

50 “**W**hat else did you see, Elvex?”  
 “I saw that all the robots were bowed down<sup>3</sup> with toil and affliction, that all were weary of responsibility and care, and I wished them to rest.”  
 Calvin said, “But the robots are not bowed down, they  
 55 are not weary, they need no rest.”  
 “So it is in reality, Dr. Calvin. I speak of my dream, however. In my dream, it seemed to me that robots must protect their own existence.”  
 Calvin said, “Are you quoting the Third Law of Robotics?”  
 60 “I am, Dr. Calvin.”  
 “But you quote it in incomplete fashion. The Third Law is ‘A robot must protect its own existence as long as such protection does not conflict with the First or Second Law.’”  
 65 “Yes, Dr. Calvin. That is the Third Law in reality, but in my dream, the Law ended with the word ‘existence.’ There was no mention of the First or Second Law.” [...] “Did your dream continue? You said earlier that human beings did not appear *at first*. Does that mean they

70 appeared afterward?”  
 “Yes, Dr. Calvin. It seemed to me, in my dream, that eventually one man appeared.”  
 “One man? Not a robot?”  
 “Yes, Dr. Calvin. And the man said, ‘Let my people go!’”  
 75 “The man said that?”  
 “Yes, Dr. Calvin.”  
 “And when he said, ‘Let my people go,’ then by the words ‘my people’ he meant the robots?”  
 “Yes, Dr. Calvin. So it was in my dream.”  
 80 “And did you know who the man was – in your dream?”  
 “Yes, Dr. Calvin. I knew the man.”  
 “Who was he?”  
 And Elvex said, “I was the man.”  
 And Susan Calvin at once raised her electron gun and  
 85 fired, and Elvex was no more.

1 défaut • 2 jeter un coup d'œil • 3 s'incliner

*Robot Dreams,*  
Isaac Asimov, 1986



### 3 “Humans” ⏯

- A. Observe the still. Guess what it is about.
- B. Watch the video. Describe the robots.
- C. Pairwork. Watch the video again. Focus on:
  - Pupil A: the relationship between humans and robots.
  - Pupil B: the problem with robots.
- D. Comment on how robots are depicted in this series.
- E. Go further. Do you think Asimov's Laws of Robotics are adapted to regulate those robots? If so, explain why. If not, write your own laws to regulate the robots in *Humans*.

VIDEO N°37



Help!

### YOUR PROJECT

You are a journalist living in 2050. Relate what happened between Elvex and Dr. Susan Calvin in an article. 📝

#### Nouns

- consciousness
- enslavement
- toil = hard labour

#### Adjectives

- defective ≠ operative
- inhumane = cruel = ruthless
- inquisitive = curious
- menial (work) = tedious, uninspiring, tiresome
- terrified = frightened

#### Verbs & expressions

- harm = hurt
- safeguard = protect
- enslave /ɪn'slev/
- predict = foresee
- pretend (to do something)
- a handful of = a small quantity of
- blur /blɜ:/ the lines: brouiller les frontières
- cold-blooded murder
- ethical code = set of values
- have principles
- keep an eye on sb = spy on sb = watch sb

## SPICE UP YOUR VOCABULARY

Use the vocabulary below to create your own mind map  
and add more words if necessary!

### Adjectives

- daunting /'dɔ:ntɪŋ/
- efficient /ɪ'fɪʃənt/
- evil /'i:vəl/
- fascinating /'fæsəneɪtɪŋ/
- frightening /'frʌtənɪŋ/
- humanoid /'hju:mənoɪd/
- immortal /'ɪmɔ:təl/
- obedient /ə'bɪ:dɪənt/
- self-aware /'selfə'weər/
- smart /smɑ:t/
- weird /wɪəd/
- worrying /'wɔ:rɪŋ/
- defective ≠ operative

### Nouns

- achievement /ə'tʃi:vment/
- advantage /'ad've:nɪdʒ/
- artificial intelligence /ɑ:tɪ,fi:ʃəl ɪn'telɪdʒəns/
- brain /breɪn/
- chore /tʃɔ:/
- drawback /'drɔ:bæk/
- oversight /'əʊvəsɔ:t/
- rebel /'rebəl/
- robotics /rəʊ'bɒtɪks/
- scientist /'saɪəntɪst/
- skill /skɪl/
- threat /θret/

### Verbs & expressions

- allow /ə'lau/
- control /kən'trəul/
- enable /'enəble/
- fight against /fart ə'genst/
- monitor /'mɒnɪtər/
- perform /pə'fɔ:m/
- plug /plʌg/
- replace /rɪ'plaɪs/
- rise up /raɪz ʌp/
- threaten /'θretən/
- be aware of
- harm someone
- assist
- predict

## RULE THE GRAMMAR!

### L'EXPRESSION DU FUTUR

- On utilise l'auxiliaire modal *will* + base verbale quand on prévoit qu'une action va se réaliser dans l'avenir ou que l'on prend une décision soudaine.

*That's it, I've decided! When I grow up I'll be a science fiction writer, like Asimov!*

- On utilise le présent + *be -ing* quand on est sûr que ce que l'on dit va se réaliser.

*I'm meeting Dr Calvin tomorrow.*

- On utilise *be + going to* + base verbale quand ce que l'on prédit pour l'avenir est en lien avec la situation présente.

*Look! The robot is going to dance!*

- On utilise *be + base verbale + about to* pour parler d'une action sur le point de se réaliser.

*Robots are about to destroy humanity.*

+ P.290

### LES PROPOSITIONS EN IF

- Proposition en *if* au présent → principale au futur

*If we carry on developing intelligent machines, we will lose control.*

- Proposition en *if* au présent → principale au futur

*If robots were really intelligent, they would rule the world.*

- Proposition en *if* au pluperfect → principale au conditionnel passé (*would + have + participe passé*)

*If he had found the solution, the new species would have survived.*

- L'ordre des propositions n'a pas d'importance.

*We will succeed if we carry on like that.  
= If we carry on like that, we will succeed.*

+ P.292

# LANGUAGE LAB



- Audio words
- MP3
- Interactive Test

## ★ 1. Find the synonyms of the following words.

- |                  |                  |
|------------------|------------------|
| A. ability → ... | D. strange → ... |
| B. evil → ...    | E. scary → ...   |
| C. permit → ...  |                  |

## ★ 2. Transform the following sentences as shown in the example.

I will buy a new electronic device next week. →  
I'm buying a new electronic device next week.

- A. She will begin her training tomorrow.
- B. You will go to a robot exhibition next week.
- C. I will teach my robot new tricks next week.
- D. Tomorrow, they will fight a decisive battle.

## ★ 3. Transform the following sentences as shown in the example.

Whatever it takes, she refuses to surrender. →  
Whatever it takes, she will not / won't surrender.

- A. The police refuse to believe that some monsters have taken control of the city.
- B. The company refuses to buy robots to do the menial tasks (*tâches ingrates*).
- C. His father refuses to let him watch Sci-Fi movies.

## ★ 4. Transform the following sentences using "be going to" instead of "intend".

- A. We intend to live in a place where all the domestic chores are performed by robots.
- B. She intends to build robots whatever the cost.
- C. You intend to read all Asimov's novels in no time.

## ★★ 5. Put the verbs in the correct tense.

- A. If supersonic trains (*exist*), we (*can go*) from L.A. to N.Y.C. in one hour.
- B. If extraterrestrials (*come*) down to earth, the government (*destroy*) the CIA files.
- C. If scientists (*be*) more inspired, we (*not find*) ourselves in such a fix (*situation difficile*).

## ★★★ 6. Translate the following sentences using "will", "be going to" or the "present + be -ing".

- A. Le progrès technologique sauvera l'humanité.
- B. Je suis sûr(e) qu'ils vont gagner cette guerre technologique.
- C. Ils vont voir la maquette d'un nouveau prototype la semaine prochaine.
- D. Les robots vont devenir le meilleur ami de l'homme.

## 7. Interactive test! What is your score?



## OPEN YOUR EARS!



### SHOW TIME

Écoutez et répétez.

MP3 n°100



I/magine a / future where your / toaster an/ticipates what / kind of / toast you / want. / During the / day, it / scans the / Internet for / new and ex/citing / types of / toast.

Scandez comme le modèle en mettant plus de force après chaque /.

### PHONOLOGY

Les mots se terminant en « ion »

• Écoutez attentivement l'audio et repérez les mots qui se terminent en -ity et -ion.

Que remarquez-vous ? MP3 n°101



• Récapitulons.

L'accent est toujours sur la syllabe qui précède -ity et -ion.

### AUDIO MYSTERY

Listen and solve the mystery!

MP3 n°102



## Quote challenge

- ★ 3 sentences
- ★★ 4 to 6 sentences
- ★★★ 7 sentences and +

Which quote sums up best what you've learnt?  
Justify!

"If you look at the field of robotics today, you can say robots have been in the deepest oceans, they've been to Mars (...). They've been all places but they're just now starting to come into our living room. Your living room is the final frontier for robots".

Cynthia Breazeal  
(American Pioneer in Robotics and professor at MIT)

"We're fascinated with robots because they are reflections of ourselves".

Ken Goldberg  
(American artist and researcher, professor at Berkeley)