

## Humans vs. self-driving cars?

### 1 Warmer

#### a. Discuss with a partner.

1. Have you ever ridden in or driven a self-driving or partially self-driving car? If so, how did you feel while you were in the car?
2. In your opinion, what are some of the advantages and disadvantages of self-driving vehicles?
3. Based on the discussion in 2, are you in favor of or against self-driving vehicles?

### 2 Key words

#### a. Read the definitions and find key words in the article that match the definitions. The paragraph number is given in brackets to help you. Note that a word in the text may be in a different form from the word in the box. Check your answers and your understanding of how the words are used by using the same word to complete the example sentence immediately after each definition. Then read the complete article to see how each of the key words is used in context.

1. to take action in order to solve a problem \_\_\_\_\_ (paragraph 10)  
*It's better to **deal with** \_\_\_\_\_ a problem right away because it may become more difficult if you wait.*
2. an idiomatic phrase for something that combines features of two other things  
\_\_\_\_\_ (paragraph 3)  
*This proposal is a kind of **half-way house** \_\_\_\_\_ between the old system and a future, updated system.*
3. to use your power to force someone to do something \_\_\_\_\_  
(paragraph 9)  
*Sometimes salespeople will try to **bully** \_\_\_\_\_ customers into buying something they don't really need.*
4. to pass the middle stages to get from a beginning stage to an end stage very quickly  
\_\_\_\_\_ (paragraph 12)  
*Jack was able to **leapfrog** \_\_\_\_\_ over a whole year of university because he passed some exams without taking the courses.*
5. a long, continuous look at something \_\_\_\_\_ (paragraph 8)  
*Lions watch their prey with a steady **gaze** \_\_\_\_\_ before they attack.*
6. an area of business or of the economy \_\_\_\_\_ (paragraph 3)  
*The manufacturing **sector** \_\_\_\_\_ has been reduced by automation.*

7. to stop being involved in or paying attention to something \_\_\_\_\_  
(paragraph 7)

*If a lecture is boring, many students disengage.*

8. a feeling of calm or security that causes you not to worry about possible problems or dangers  
\_\_\_\_\_ (paragraphs 4, 7, 11)

*We hadn't had any tornadoes for some time, so people felt a sense of complacency and weren't prepared when an enormous tornado hit our town.*

9. what your mind does when you think about other things and not about what you should be focusing on \_\_\_\_\_ (paragraph 5)

*When I have to do the same type of work for a long time, I get bored and my mind starts to wander.*

10. something that is happening but that you are not focusing on \_\_\_\_\_  
(paragraph 11)

*When I study, I often play music in the background to help me stay awake.*

11. to experience something, usually problems or difficulties \_\_\_\_\_  
(paragraph 6)

*Companies often encounter problems when they test new drugs.*

12. an idiomatic phrase that means to stop paying attention or noticing things around you  
\_\_\_\_\_ (paragraph 6)

*My sister talks all the time, and sometimes I just zone out and stop listening to her.*

## How safe are self-driving cars?

*THE BETTER AN AUTOMATED SYSTEM PERFORMS, THE MORE COMPLACENT — AND DANGEROUS — WE BECOME*  
BY SARAH O'CONNER

- 1 As I climbed under the kitchen table with my five-year-old this weekend, she explained that we were in a car, but, "It can drive itself, so we can just relax, OK?" We settled down for a pretend nap on the way to the pretend beach.
- 2 I didn't tell her that grown-ups are really struggling to turn this vision into reality. Even Waymo, the company that is furthest ahead, still only has self-driving taxis in a handful of US cities.
- 3 In the meantime, carmakers are packing many of their new models with so-called "Level 2" partial automation features instead, which can do a certain amount of driving in some circumstances, but require the human driver to pay attention and take over when necessary. Yet this halfway-house, which relies on humans and machines, is proving troublesome. And it is trouble worth noting, even if you have no interest in cars, because other sectors are also beginning to embrace the concept of automated "co-pilots" to help everyone from coders to doctors.
- 4 The big problem is known as "automation complacency". People have been studying the phenomenon for decades in all kinds of partially automated systems, from aviation to manufacturing processes.
- 5 When you ask humans to supervise automated systems, their attention starts to wander, which means they don't always notice in time when a problem does arise, nor are they aware enough of the context to immediately take over. And the better an automated system performs most of the time, the more complacent we humans become.
- 6 Mica Endsley, a former chief scientist of the US Air Force, has made a career of studying these issues after first encountering them in the 1980s. "The public don't quite understand the subtle ways that automation affects their attention [but] it's like giving people a sedative," she told me. "They're going to find something else to do or they're going to zone out, and neither is good."
- 7 Car drivers, it turns out, are not immune. Studies of various partial-automation systems have found drivers become increasingly likely to disengage the longer they use them. In the US, the National Transportation Safety Board has blamed automation complacency for a number of car crashes.
- 8 If humans are notoriously poor monitors, the solution, apparently, is to monitor the monitors. Safety bodies and regulators have pushed for steering wheels that detect whether people are holding them, and driver-facing cameras that detect the direction of the driver's gaze and head posture at all times. Most provide visual, audio and even seat-vibration alerts that increase in intensity to warn distracted drivers to return their attention to the road. Tesla cars have a disciplinary system whereby, if drivers accumulate too many "strikeouts", the partial-automation system is suspended for a week.
- 9 But bullying drivers to pay attention doesn't seem to be sufficient. When Mikael Ljung Aust, a driver-behaviour specialist at Volvo Cars, ran a study on a test track with employees, he found that distraction alerts did successfully make people keep their eyes on the road and their hands on the wheel. But even then, almost 30 per cent of them allowed the car to crash straight into an object in the road.
- 10 In follow-up interviews, the drivers said they saw the object coming, but they trusted the car to deal with it, at least until it was too late. "Even if you write very clearly in the manual, 'The car cannot see these objects', and you show them pictures, once they get out on the road — for some people ... it seems like they can't help trusting the car."
- 11 He and several other safety experts said the best solution to the dangers of automation complacency seemed to be to keep the driver more actively involved in the steering and driving, with the partially automated system on in the background, gently guiding when necessary rather than taking over.

*Continued on next page*

12 In other words, if you imagine automation as a scale, with humans doing everything on one end and machines doing everything on the other, the best course might actually be to edge back slightly towards maintaining more human control, at least until the technology is good enough to leapfrog over to the other end of the scale.

13 Otherwise, we face a partially automated middle, where a car journey looks less like having a nap and more like watching the road anxiously with your eyes wide open and your neck straight, for fear that your car will shout at you again to pay attention. Is that the kind of future any five-year-old ever dreamt about?

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## 3 Understanding the article

a. Answer the questions. Give details or further information where possible.

- How does the writer catch the reader's attention at the beginning of the article?  
**She tells a story about her young daughter**
- Why does the writer say that the topic of partially automated cars is important even if the reader is not interested in cars?  
**Automation complacency could be dangerous in many sectors.**
- The writer first mentions 'automation complacency' in paragraph 4. How does she go on to explain the concept?  
**Humans can relax and trust automation too much.**
- What kinds of safety features have regulators recommended for partially automated cars?  
**Steeringwheels that alert you when you're not paying attention.**
- Why did almost one-third of drivers allow their cars to crash into objects on a test track?  
**They trusted the automation too much and took control too late**
- What does the writer recommend as a way to make partially automated cars safer?  
**She thinks cars should have less automation until they are safer.**

## 4 Business language – collocations

a. Match these words to form collocations from the article. Then find them in the article to read them in context.

- |                  |             |
|------------------|-------------|
| 1. follow-up     | studies     |
| 2. worth         | processes   |
| 3. prove         | interviews  |
| 4. edge          | a concept   |
| 5. manufacturing | bodies      |
| 6. run           | troublesome |
| 7. embrace       | back        |
| 8. safety        | noting      |

b. Complete the sentences with phrases from the previous activity.

- We think we should **edge back** from full automation until there are better safety features.
- Pharmaceutical companies have to **run studies** many before a new drug is approved.

3. In most industries, manufacturing process have become much more automated in the last 50 years.
4. We think we've found the right candidates for the jobs, but we're going to do some follow-up interviews.
5. It is worth noting that although the new product seems to work perfectly, more studies still have to be done.
6. Some aspects of automation prove troublesome when they are put into practise, and changes have to be made.
7. In the US, some of the safety bodies are the National Transportation Safety Board and the Federal Food and Drug Administration.
8. Most big companies now embrace the concept of diversity among the employees.

## 5 Discussion

### a. Discuss these ideas from the article and give reasons for your opinions.

- 'The use of partial automation in business sectors other than the automotive sector could be dangerous.' Give some possible examples of problems that could occur in different sectors.
- 'The partially automated systems that function the best are the most problematical ones.' Try to think of at least one example of a disaster involving a partially- or fully-automated system.
- 'Sometimes human control is better than automation.' Why might this be a true statement?

## 6 Wider business theme – The pros and cons of automation

- a. There are a number of arguments both for and against automation in business and industry. Read the lists and decide whether you think there are better arguments for or against automation. Do some research on the effects that automation has had on specific businesses or industries. Prepare a debate with one team arguing for and the other team against large-scale automation. When you are preparing for your debate, remember to support your ideas with examples.

## Pros

1. Automation means increased productivity. This means that companies can produce more of a product for less money, so prices may be cheaper for consumers.
2. More consistency in the quality of products. Machines eliminate human error, so companies don't waste money throwing out defective products or returning money to dissatisfied customers.
3. Better safety. If humans don't have to do dangerous jobs, there are fewer accidents or deaths. This also lowers a company's insurance costs.
4. Flexibility. With automation, companies can easily make more products in high sales seasons like Christmas and fewer products during slow sales periods. This eliminates the need to hire and fire employees during the year. It is also easier to adjust machines to change products than to retrain people to make a product in a different way.

## Cons

1. Job loss and higher unemployment. With automation, there are fewer jobs in general and a lot fewer jobs in lower-skilled jobs like product assembly. This can result in high unemployment in a region or country.
2. The cost of starting a business. While machines can save money in the long run, it is very expensive to start a business if it is necessary to buy a lot of machinery. This makes it more difficult for average people to start businesses.
3. Technical problems and limitations. Machines make production very fast until they break down. There may be long delays in production while a company waits for a machine to be repaired. Furthermore, some jobs require human judgment and creativity, and a machine does not have those functions.
4. Less human interaction. Many customers would prefer dealing with a human and not a machine. People miss chatting with employees or customers, and to some extent, this makes society lonelier. Furthermore, automated systems are not always able to answer a customer's questions or solve a particular problem.

## Here is a suggested structure for your presentation:

- If you are for automation, list some of the arguments against it. Then list your reasons for arguing for it (vice-versa if you are against automation).
- For each point, try to give at least one example from a specific business or industry.
- Conclude with a summary or restatement of your arguments.

## Useful language

*Today, I am going to tell you why I believe ...*

*One example of this is ...*

*It is true that ..., but ...*

*According to my research, in our country ...*

*First, ... Next, ... Finally, ...*

*In conclusion, I think ...*