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12.1 DEVICES AND GADGETS



There is no reason anyone would want a computer in their home.
Ken Olsen, 1926–, Chairman, Digital Equipment Corp. (quote from 1977)

VOCABULARY: technology

1 Discuss these questions.

- 1 What are the three items of technology you use most often?
- 2 Are you technologically minded or are you a technophobe?
- 3 What do you think is the greatest technological innovation? Give your reasons.

2a Look up the following words in a dictionary. Check if they are countable or uncountable. What are the common collocations?

apparatus appliance device engine
equipment gadget machine

2b Complete the questions with some of the words from Exercise 2a.

- 1 How many household _____ can you name?
- 2 How often should you upgrade your computer _____?
- 3 How often do you use a cash _____ to get money?
- 4 What do you think is the most useful labour-saving _____?
- 5 What other clever _____ can you think of, e.g. satellite navigation system, compass, can opener, MP3 player?
- 6 What is the name of the breathing _____ which divers use so they can stay underwater?

2c Work in pairs to ask and answer the questions.**3a** Find two adjectives in the box which match each of these concepts.

- | | | |
|---------------------|----------------|-----------------|
| 1 non-polluting | 2 very new | 3 old-fashioned |
| 4 simple to operate | 5 long-lasting | 6 useful |

cutting edge durable easy to use environmentally friendly
green handy hard-wearing obsolete out-of-date
practical state-of-the-art user-friendly

3b Look at the objects below. Use some of the adjectives to describe them.



3c Think about some items of technology you own. Which of the qualities listed in Exercise 3a does each one have?

LISTENING

4a **3.20** Listen to three people describing technological equipment and answer the questions.

- 1 What piece of technology is mentioned by each speaker?
- 2 What do they like/dislike about the technology they mention?

4b Discuss a piece of technology you like or dislike, giving your reasons.

READING

5 What inventions do you associate these names with?

Alexander Graham Bell	W.H. Hoover
King Camp Gillette	Lazlo Biro
John Boyd Dunlop	Elisha Otis
Orville and Wilbur Wright (the Wright brothers)	

6a Work in groups of three. Each of you reads the introduction and one of the texts on this page or on pages 166 and 168. Answer the questions.

- 1 Who is the text about?
- 2 What did the person do?
- 3 When did they do it?
- 4 Why did they fail?
- 5 What recent developments have there been?

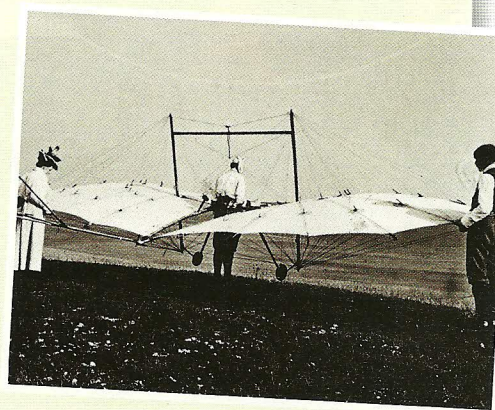
6b Exchange information about your texts.

The Nearly men

Technological advance is not a smooth process. Often the pioneers don't get the credit they deserve, or they pay the price for being first. Sometimes they fail to protect their ideas by taking out a patent. In this short article our correspondent celebrates three of these unsung heroes responsible for some of the most important pieces of communication technology.

Up in the air

Percy Pilcher was an English engineer and pioneer aviator. In the 1890s he built and flew a glider called 'the Hawk'. However, Pilcher's dream was to achieve powered flight. He built another 'soaring machine', this time with an engine. In September 1899, he was ready to make his first test flight. Unfortunately, the engine broke, and not wanting to disappoint the audience, he decided to fly his 'Hawk' glider instead. Tragically, he crashed and died of his injuries two days later. As there was no one to carry on his work, his designs were lost. The American Wright brothers were to achieve the first powered flight four years later on 17 December 1903. In 2003, at the time of the centenary of powered flight, a replica of Pilcher's plane was built and flown, achieving a controlled flight of one minute and 26 seconds, significantly longer than the Wright brothers' first flight of 59 seconds.



SPEAKING AND WRITING

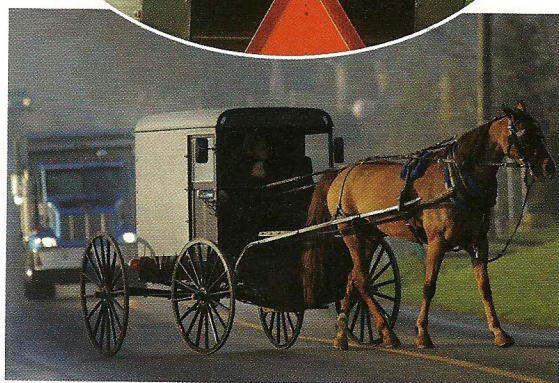
7 Work in small groups to discuss the following statements. Think of arguments for and against each one.

- 1 People rely on technology too much these days.
- 2 The pace of technological change is too fast in some countries.
- 3 Inventors of new technology should share ideas, not protect them.
- 4 Technology can solve all the world's problems.
- 5 Technology often leads to social and environmental problems.

8 Write a short text (100–150 words) giving your opinion (for or against) about one of the above statements.

READING

1 Look at the photos on these pages which were taken recently. What is unusual about them? Why?



2a Look at these questions from a website about the Amish community in North America. Read the website and match the questions with the answers.

- 1 I'm going to Pennsylvania next month and may meet some Amish. Why do people say they are so different?
- 2 Is there any way I can find out more about them?
- 3 Do they ever use modern technology? I mean, imagine one of them had to go to hospital for an operation – would that be OK?
- 4 Why do they live in such an old-fashioned way?

2b Answer the questions in Exercise 2a.

3 Read the website again. Do the Amish value or reject the following ideas?

simplicity self-sufficiency equality
close-knit community privacy
independence from the outside world
material comforts modern technology

4 What do you think of the Amish's attitude to modern technology?

VOCABULARY: opposites

5a Find the opposites in the text of these words.

appropriate convenient efficient equality like likely trust

5b What other opposites can you think of beginning with *in-*, *dis-*, *mis-* or *un-*?

6 Complete the following text using the opposites of the words in the box.

able accurate effective efficient equality
management necessary sensitive

Various problems have been found in the US health service in a recent report. It stated that US citizens spend around \$300 billion on 1 *ineffective*, inappropriate and 2 _____ treatments. It suggested that the failure to use information technology properly was due to 3 _____ administration, poor coordination and 4 _____. It is 5 _____ to say the expertise in health information technology is not there. The US health care system leads the world in innovation. However, the system has been accused of 6 _____, with some people 7 _____ to afford private health care insurance. Patient feedback, however, is more concerned with over-long waiting times, customer service and 8 _____ staff.

Lancaster County, Pennsylvania

Amish FAQs • Amish-made furniture • Amish quilts

Amish: Frequently

A _____

People say they are different because of their plain style of dress, limited use of technology, such as cars and electricity, and their simple way of life. If you visit an Amish area, you'll see women in long dresses and people travelling in buggies drawn by horses. And if you pass an Amish farm, you'll notice farm equipment being pulled by horses. You're unlikely to get to know any of the Amish, but if you were invited into an Amish home, you'd find no televisions, no telephones and no kitchen appliances run by electricity. The Amish are different and wish to separate themselves from mainstream society. They do not join the military, pay social security or accept financial assistance from the government.

B _____

The Amish value simplicity and self-sufficiency. They are not inefficient. They just do not wish to depend on the outside world or on modern technology. The conveniences that we take for granted, such as electricity, television, cars and tractors are thought to create inequality and to lead the Amish away from their close-knit community. They are considered inappropriate and are not encouraged or accepted. The Amish believe in equality and they are not attracted by material comforts. They live in a separate world, with its own values, the most important of which is a mistrust of anything modern, especially modern technology.

GRAMMAR: conditionals (1)

7a Complete the following sentences, then check them in the text.

- 1 If you visit an Amish area, you _____ women in long dresses ...
- 2 If you _____ invited into an Amish home, you _____ no televisions ...

7b Which of these is a first conditional? Which is a second conditional? Find other examples of these two conditionals in the text.

7c Which conditional describes an imaginary or unlikely situation? Which describes a future possibility?

→ Language reference and extra practice, pages 156–157



Amish faith • History of the Amish • Amish videos

Asked Questions

C

The Amish do compromise with the modern world, as long as it is strictly necessary. They dislike the telephone as it interferes with their separation from the world. It brings the outside world into their home and is an intrusion into their privacy. But, supposing that an Amish had to make an important telephone call, they would go to a small outbuilding usually located at an inconvenient distance from their home. And, to answer the second part of the question, if they had to go to hospital, they would be able to ride in cars and travel in planes. One final example: the Amish will even allow the use of modern farm equipment, provided that it is pulled by teams of horses and not tractors.

D

You can search the Internet. But another way to find out more about the Amish is to watch the film *Witness*, starring Harrison Ford. Many think the film portrayed Amish lifestyle fairly accurately, although it showed a limited segment of Amish lifestyle. A lot of Amish had reservations about the film because it was filmed in the geographical area of the Amish but not on a real Amish farm, and obviously the actors were not Amish.

8 Put the verbs into the correct conditional form according to the likelihood of the condition.

- 1 He's always late. If he _____ (be) late again this week, I _____ him (fire).
- 2 If you _____ (wait) a moment, I _____ the technician (call). He'll come immediately.
- 3 If I _____ (have) enough money, I _____ (buy) a Ferrari – what a dream!
- 4 Look, if you _____ (buy) this computer now, I _____ (give) you a free MP3 player.
- 5 Are you around later? If I _____ (have) enough time, I _____ (call) you.
- 6 If I _____ (know) the answer, I _____ (tell) you, but I don't.

9a Find the following conjunctions in Part C of the website (including the question). Which word can they all replace in conditional sentences?

as long as imagine provided that supposing that

9b Which two of the conjunctions introduce a strict condition (*only if X happens ...*)? Which two introduce imaginary situations?

10 Correct the following sentences. (Some can be corrected in two ways.)

- 1 I'd buy you an MP3 player as long as you agree to study harder.
- 2 Would you be interested in investing in more technology, if you have the chance?
- 3 If I start this technology course again, I think I'd do it differently.
- 4 Imagine you had a million pounds – what will you do with it?
- 5 Supposing that the computer crashed, who will you phone?
- 6 You can borrow my MP3 player provided that you would bring it back tomorrow.

11 In pairs, write sentences based on the following prompts. Think about whether the situation is possible or unlikely.

- 1 ice cap melt / next 20 years / coastal towns / flood
- 2 scientists find / cure for cancer / people / live longer
- 3 government / not invest in medicine / patients / suffer
- 4 computer games / ban / children / happier
- 5 fewer people drive / roads / safer
- 6 sun / get much hotter / Earth / in danger

SPEAKING

12 In small groups, discuss how you would manage without technology. What would you miss? What would you find most difficult?

READING

1 What is your opinion of genetically modified food? What about the use of chemicals in food production?

2a Read the first paragraph of the article. Which statement is closest to the author's opinion, do you think? Which is what many other people think?

- a) Technical innovation is frightening and goes against human nature.
- b) The technological rate of change is different now from 40 years ago.
- c) Technological innovation is good news for human development.

2b Now read the whole article and check your answers.

3 Read the article again and answer the questions.

- 1 What took half a century to be used by 25 percent of people in the US?
- 2 What are commonly used in computers nowadays?
- 3 How big is the gadget that destroys cancer cells?
- 4 What would be the advantage of removing gossypol from cotton?
- 5 What is 'golden rice'?
- 6 When would it be impossible to regulate certain technologies?

4 Look at the article and find an example of the following ways the author shows his opinion.

The author:

- 1 uses an imperative to appeal to the reader to agree with him (paragraph 2) ... *imagine that now*.
- 2 asks a rhetorical question which he immediately answers (para. 2)
- 3 states his opposition to others' opinions and gives a reason for it (para. 3)
- 4 comments forcefully on the call to reject new technologies (para. 4)
- 5 uses an inclusive pronoun to draw the audience in (para. 5)
- 6 uses a negative modal verb to show his strength of feeling (para. 5)

5 Look at the text again and find sentences that are pro-technology and anti-technology.

GRAMMAR: conditionals (2)

6 Look at the following example and complete it. Check your answers in the text, then answer the questions.

If these groups _____ not opposed its development so strongly, it _____ been produced ...

- 1 Did the groups oppose the development?
- 2 Did scientists produce 'golden rice'?
- 3 Which conditional is this?
- 4 When do we use it?

7a Look at these sentences from the article and answer the questions.

- 1 If [these groups] *had been* less critical, thousands of children in poorer areas *would not be* blind today.
- 2 If we *devoted* more resources to modern technology, we *could have avoided* many modern-day problems.
- a) Which conditional sentence looks at a present condition with a past result?
- b) Which conditional sentence looks at a past condition with a present result?

No going back to nature

Ray Kurzweil

- 1 The times, they are a-changing – and a lot more quickly today than when Bob Dylan sang those words 40 years ago. We are doubling the rate of technological innovation every ten years. Great news for human development, you'd have thought. Not everyone thinks so. Many people are fearful of this pace of progress in science and technology, and the way it is challenging basic ideas about the nature of human life. As a result, they are doing their best to hold it up.
- 2 The modern world must be an alarming place for anti-technology movements, given the extraordinary pace of development. Whereas the telephone took 50 years to be adopted by a quarter of the US population, the cellphone did that in just seven. Five years ago most people didn't use search engines; imagine that now. Greater changes are on the way, such as the use of RNA interference, which can turn genes off, and gene therapy, which can add new ones. Scientists at the Massachusetts Institute of Technology have designed a device the size of a blood cell that can find and destroy cancer cells in the bloodstream; within 20 years, each of us could have millions of them in our bodies keeping us healthy. By the 2030s, we will be more non-biological than biological. Will that make us less human? I don't believe so. We have always extended our mental and physical reach with technology in a way no other species has.

7b Now complete the formation rules.

In sentence 1 we use *if* + _____, + *would/should/might/could* + infinitive.

In sentence 2 we use *if* + _____, + *would/should/might/could* + *have* + _____ participle.

➔ Language reference and extra practice, pages 156–157

8 Match the parts of the conditional sentences, 1–7 with a–g. Some are third conditional, some mixed (both types).

- 1 If Sir Alexander Fleming hadn't discovered penicillin in 1928,
 - 2 If we didn't like the professor,
 - 3 If he didn't believe in his research proposal,
 - 4 If I had studied harder,
 - 5 If we'd bought a satellite navigation system for the car,
 - 6 If I'd wanted to,
 - 7 If Sir Tim Berners-Lee hadn't invented the Internet,
- a) we would know where we are now.
 - b) he wouldn't have started his doctorate.
 - c) we'd find it difficult to treat infections.
 - d) I could have gone to university to study technology.
 - e) I might have passed the technology exam.
 - f) we would find it much more difficult to get information.
 - g) we wouldn't have invited him to lecture here.

9 Complete the prompts, in more than one way if possible, then discuss them with a partner.

- 1 If I had won the lottery last week, ...
I'd be rich now. / ... I'd have bought a Ferrari.
- 2 If I'd told my friend the truth, ...
- 3 If we hadn't gone to live abroad, ...
- 4 If we wanted to have solar panels, ...
- 5 If we had had more money when we were growing up, ...
- 6 If we didn't take life so seriously, ...

SPEAKING

10 Hold a class debate on the motion: *The rapid rate of technological development has improved our lives.* Discuss the motion first in two groups.

Group A: you are for the motion; turn to page 160.

Group B: you are against the motion; turn to page 165.

3 Anti-technology groups do not think this way. For an example of why they are dangerous, consider their opposition to the genetic engineering of cotton to remove the toxin gossypol from the seeds so that they can be eaten. This advance could help feed millions of people in climates where other food is hard to grow. A similar example is 'golden rice': a variety of rice produced through genetic engineering to be used in areas where there is a shortage of dietary vitamin A. Some groups have been against the use of 'golden rice' and it is currently not available for consumption. If these groups had not opposed its development so strongly, it would have been produced in many countries. And if they had been less critical, thousands of children in poorer areas would not be blind today. Such attitudes are unfortunate because they are a major obstacle to relieving suffering.

4 The democratisation of technology and its inevitable consequence – giving anyone the means to find the equipment and know-how to produce bio-weapons – has encouraged the call to reject technologies such as biotechnology, nanotechnology and artificial intelligence. This is a bad idea: if we didn't develop such technologies, we would not receive the important benefits they will bring. Also, most importantly, it



would drive these developments underground, where they would be impossible to regulate.

5 Rather than stop this kind of research, we need to speed it up. If we devoted more resources to modern technology, we could have avoided many modern-day problems. We need to reassure people of the profound benefits that today's rapid advances in technology will bring, while developing defences against their abuse. We should not let anti-technologist groups hold us back.

Adapted from *New Scientist*, March 2007

SITUATION

1 Read the article from a newspaper about European Breakdown Services (EBS) and discuss the questions.

- 1 How serious is the situation? Explain your answer.
- 2 What do you think Richard Makepiece means by the phrase 'intelligent building'?
- 3 If you were head of EBS, what action would you take after reading the newspaper article?

2a ^{3.21} Listen to some comments by staff about the building and working conditions. Which comment is about each of these complaints?

- a) the area provided for food and drink
- b) a piece of equipment which is too complicated for its purpose
- c) a problem concerning insufficient space
- d) the temperature inside the offices at different times of the year

2b Listen again and note down the details of each complaint.

34 Business

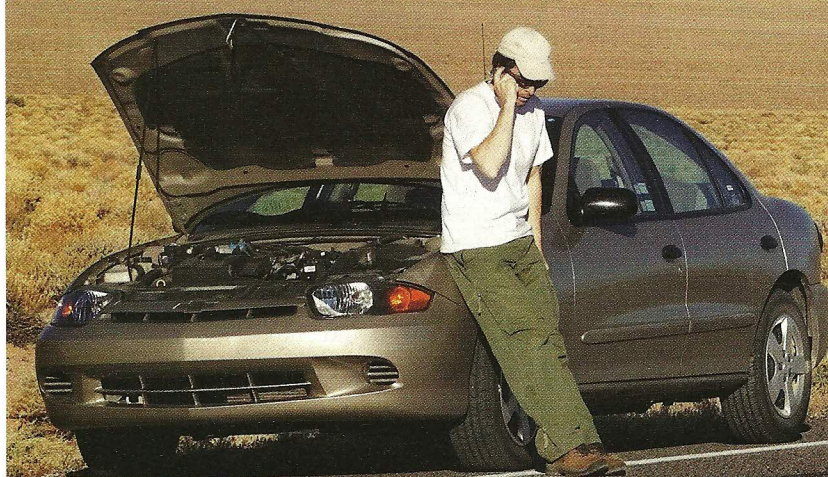
Is EBS a falling star?

What's going wrong at EBS? Consumer magazine *On the Watch* reports that European Breakdown Services (EBS) has fallen from first place to fourth place in terms of customer satisfaction. EBS's services are rated as 'poor' and 'not value for money'.

EBS operates a vehicle breakdown service. Based in the UK, they provide support and help for drivers throughout Europe. Twelve months ago, they moved to a new state-of-the-art building, and introduced a new computer system which controls the building facilities, such as the heating and lighting, the fire prevention devices, and car parks. It also controls

the databases, allowing office staff to deal with new subscribers, customer records, billing and other administrative matters. When staff moved into their new premises, the head of EBS, Richard Makepiece, said, 'The building's ahead of its time. It's a truly "intelligent building". It will greatly benefit our staff and customers.'

Unfortunately, this has not been the case. At present, the staff are extremely unhappy and demotivated because the computer systems are not working properly. Some key staff have already left the company, customer complaints have risen sharply and many have switched to rival firms. EBS is clearly facing a crisis.



3a A number of problems affect the admin staff and patrolmen/women (who deal with car breakdowns on the road). Work in pairs to rank the problems below in order of their importance. (1 = the most serious problem.)

- 1 Staff are often unable to find customers in the database system.
- 2 Bills have been sent late to some customers. Other customers have been overcharged.
- 3 Details of subscribers are often incorrect.
- 4 The computer crashes at least once a month.
- 5 There have been over 45 minor problems with the computer system since it was introduced, causing work to be delayed.
- 6 Staff are not confident about using the computer because there was a gap of five months between their training and the introduction of the new system.
- 7 The patrolmen/women often cannot locate drivers who have broken down. This is either because the computer doesn't work properly or because the Satellite Navigation System (installed in all vans and trucks) is not reliable.

3b Discuss and compare your ranking with another group.

KEY LANGUAGE: reassuring and encouraging

4a **3.22** Listen to a director talking informally to one of the office staff and answer the questions.

- 1 What is Rosa worried about?
- 2 What is she unhappy about?
- 3 What happened to the computer system last week?
- 4 How did the team leader react to the incident?
- 5 What's going to happen on Wednesday evening?

4b Listen again and fill in the gaps with words/phrases from the conversation.

- 1 You can be frank with me, Rosa. I _____, it won't go any further.
- 2 Look, I _____ you feel.
- 3 But I can _____, we're going to put things right.
- 4 Mmm, that doesn't sound _____ to me.
- 5 Anyway, _____, Rosa, we know you're one of the best workers in the company.
- 6 And I _____ sort out the problems.
- 7 You won't be out of a job, you _____ that.
- 8 I can see _____ and we're going to do something about it, I promise.
- 9 And stop worrying about your job. Things'll get better, _____.

4c Check your answers by looking at Track 3.22 on page 189.

TASK: problem-solving meeting

5 Work in groups of four. Choose one of the following roles. Read the role card and prepare to hold the meeting between the staff listed below.

Head of Human Resources: turn to page 160.

Representative of admin staff: turn to page 166.

Representative of the team leaders: turn to page 168.

Representative of the patrol staff: turn to page 170.

6 The Head of Human Resources leads the meeting. Discuss what needs to be done to improve customer service and staff morale. Note down any decisions.

7 Compare the results of your discussions as a class. Agree on which decisions should be put into practice and which require further research. Are there any decisions which should NOT be implemented?

OTHER USEFUL PHRASES

Asking for more information

Can you tell me a little more about that?

Can you give me an example?

Asking a polite question

Do you mind if I ask you something?

Could I (just) ask you ... (how do you feel about ...)?

STUDY SKILLS: plagiarism – what it is and how to avoid it

1 In groups, discuss which of the following is plagiarism.

- 1 Quoting from a text without acknowledging the author
- 2 Rewriting a sentence from another text in your own words
- 3 Including someone else's ideas in your own work without acknowledging the source
- 4 Copying material from another student for an essay or report
- 5 Downloading text from the Internet and inserting it in a written assignment
- 6 Rephrasing an idea from another source without acknowledgment

2a **3.23** Listen to part of a lecture about plagiarism. Check your answers to Exercise 1.

2b **3.24** Listen to Part 2. Tick the correct points the lecturer makes about quotations.

- 1 You should not use too many quotations.
- 2 Lecturers value the ideas of other writers more than your own ideas.
- 3 You should usually paraphrase a quote.
- 4 Always use quotation marks to identify a quote.

2c Listen again and answer the questions.

- 1 What three reasons does the lecturer give for people plagiarising?
- 2 Why is it likely that a lecturer will find out if you have plagiarised material?

3 These examples show the difference between acceptable paraphrasing and plagiarism. In pairs, discuss whether each version on the right is an example of plagiarism.

Original

Both movements are anti-technology so the modern world must be an alarming place for them. There is no denying the extraordinary pace of development. Whereas the telephone took 50 years to be adopted by a quarter of the US population, the cellphone did that in just seven. Five years ago most people didn't use search engines; imagine that now.

(R. Kurzweil, (2007), 'Let's not go back to nature', *New Scientist*, March 2007, page 19)



Version A ▼

The modern world is a frightening place for opponents of technology because of the extraordinary pace of development. The telephone took 50 years to be adopted by 25% of people in the US, but the cellphone took just seven. In the past, most people didn't use search engines; imagine the situation now.

Version B ▼

Technology has grown at a very fast rate in recent years, which is unsettling for a lot of people. Examples of this include the speed at which the cellphone came into common use, and the fact that we can't imagine living without search engines now.

Version C ▼

R. Kurzweil (*New Scientist*, March 2007, page 19) points out that it took 50 years for the telephone to be used by a quarter of the US population. However, the cellphone achieved the same use in just seven years. Furthermore, the use of search engines has become common after only five years. These examples illustrate the very fast growth of technology in recent times.

Version D ▼

Technology is developing so fast now that it isn't surprising to find people taking stands against it. Even everyday gadgets are developing faster: 'Whereas the telephone took 50 years to be adopted by a quarter of the US population, the cellphone did that in just seven. Five years ago most people didn't use search engines; imagine that now.'

WRITING SKILLS: an article

4 A friend is asked to write an article for an academic journal on technology. What advice would you give him/her?

Do some research and quote your sources.

5a The magazine *Science Today* has invited articles on the question *Has technology improved human life or made it worse?* In pairs, think of the following and note your arguments.

- three arguments that technology has improved human life
- three arguments that technology has made human life worse

5b What examples can you think of to illustrate both viewpoints? Compare your arguments with other students.

6 The article on the right appeared in *Science Today*, vol. 10/4, page 118. Read the article and answer the questions.

- 1 Which statement indicates the writer's purpose?
- 2 What is the writer's opinion regarding the issue?

7 Identifying the writer's position The writer shows his position concerning the issue by using the techniques below. Find other examples in the article which show the writer's position.

emphatic statements, e.g. 'it is important also to be aware ...' (paragraph 1)

strong adverbs, e.g. 'Surely' (para. 3)

strong adjectives, e.g. 'dangerous effects' (para. 4)

strong language/images, e.g. 'like zombies' (para. 3)

rhetorical questions, e.g. 'does the technology benefit people in those countries?' (para. 5)

8 Write your own article on the above topic. It should be between 250 and 300 words. Use information from this article and from the one on pages 126–127. Use at least two references in your text and include a short bibliography.

Technology:

always a force for good?



FRANCIS NOBLE

- 1 Technology has undoubtedly brought great benefits to human beings. However, it is important also to be aware of the dangers of technology. This article will present some of the disadvantages of technological advances.
- 2 People often mention the social benefits of the Internet. For example, users can communicate with people from all over the world and make friends with them. But what is the result of 'chatting' with friends over the Internet for hours? People lose opportunities of meeting real people and having face-to-face contact.
- 3 Technology such as television, the Internet, mobile phones and email speeds communication but also creates isolated people who interact with machines rather than with other human beings. Young people sit for hours in front of their computers, like zombies, playing Internet games. Surely they could find a more useful and rewarding way to spend their time.
- 4 One of the most dangerous effects of technology is that we have no privacy any more. Big Brother is constantly watching us and recording what we are doing. For example, CCTV (closed circuit television) is ubiquitous – it tracks our movements everywhere these days. In addition, many companies nowadays check up on their employees to find out what they are uploading on websites such as YouTube. Someone is always spying on us.
- 5 Throughout the world, rich countries are using technology to dominate poor countries. Multinational companies introduce advanced machines and computers into poor countries. However, does the technology benefit people in those countries? Often the result is that many workers lose their jobs and slip into a life of extreme poverty.
- 6 In conclusion, technology is developing at much too fast a pace. It should be our servant rather than our master. It is essential to control technology before it is too late – before it controls us.