

## 2.09 Lesson 5A, Exercises 3 and 5

1

- Boy** Have you seen this video? It's gone viral over the past couple of days. It's hilarious.
- Girl** What's it called?
- Boy** It's just called 'Man and dog'. Look, there have been over three million views.
- Girl** That's great! What are you typing?
- Boy** Just a comment.
- Girl** 'LOL – who says dogs are man's best friend?' Ha ha! Nice one! What have other people said? Let's scroll down and see what they've written underneath the video.
- Boy** Ha ha! Read that one!
- Girl** That's really unkind! He isn't that ugly. He just isn't the sort of man ...

2

- Man** Which is your coffee?
- Woman** That one – with chocolate on top.
- Man** OK. So, what time does the museum open?
- Woman** I don't know. But you've got your phone – why don't you look online?
- Man** I haven't got an Internet connection.
- Woman** You didn't enter the correct password.
- Man** What is the password?
- Woman** I'm not sure. Try the name of the café: Luigi.
- Man** No, that's not right either.
- Woman** Oh, wait. There's a sign over there. 'CONNECTME' is the password, all one word.
- Man** Thanks. Yeah, that works. Great, we're online. What were we going to search for? I've forgotten.

3

- Boy** It's great – look. I just click on this button and I've ordered it. I don't need to key in my card details. Or my home address. It should arrive tomorrow.
- Girl** And it's got your new address and everything, has it?
- Boy** Oh no! We've just moved house! I forgot!
- Girl** What will happen? They'll deliver it to the old address?
- Boy** Yes – I need to change it quickly!
- Girl** Click on that button.
- Boy** OK. Password ... I need my password. What is it? Oh yes ...
- Girl** 'Justin Bieber'. That's your password?
- Boy** Yes. Easy to remember! Now ... I just need to ... here. Name and address. I can change them ...

4

- Girl** Can we watch a video on your phone?
- Boy** Not right now. I'm in the middle of sharing some photos.
- Girl** Which ones?
- Boy** The ones I took at the end-of-term party. Look, this is a good one.
- Girl** What's that boy doing in the background?
- Boy** Which boy?
- Girl** That one. Zoom in so we can see him more clearly.
- Boy** Hang on. Oh dear. I don't think we want that photo on the website, do we? How do I stop it?
- Girl** Just swipe from left to right, then tap the red button with your finger.
- Boy** OK – it's stopped. Phew, that was close! Thanks for spotting it!

5

- Girl** How long do we have to wait before we can watch it?
- Boy** You can find out. Use the cursor to highlight the name of the film and then press the return key.
- Girl** OK. Wait a moment ... here we are.
- Boy** Let's see. Four hours and 53 minutes remaining? You're joking!
- Girl** We can't wait that long. How do we cancel the download?
- Boy** I'm not sure. Try pressing the delete key.
- Girl** That isn't working.
- Boy** Click on the back button, then.
- Girl** That doesn't work either.
- Boy** Fancy a game of cards?
- Girl** Yes, OK.

## 2.10 Lesson 5C, Exercises 2 and 4

**Speaker 1** It can be dangerous if you allow parents to choose. I mean, a lot of societies don't really value girls as much as they value boys. So if you give parents a choice, they'll choose to have boys all the time – and then how will the human race survive? It's true of people everywhere, in all societies, that if you give them too many choices, they choose badly. Look at all the choices of food we have on offer, for example, and look how unhealthy our diet is! In the old days, we didn't have fast food and we were much healthier. We should keep it simple. I don't think a technological advance is the same as progress. Do you see what I mean?

**Speaker 2** It's all about money, isn't it? Clinics invent new techniques, then they patent them. And who can afford to take advantage? The rich – as usual. So we could end up with two types of human being. The rich will pay technicians to genetically improve their babies. And then there will be 'natural' humans, with all their physical problems and flaws. It will be a divided world. And that will cause all kinds of conflicts in the future. You can imagine huge wars taking place between the rich, genetically-advanced humans and the savage, violent underclass. I think I've seen a film about that, actually, so, you know, it isn't just my opinion ...

**Speaker 3** I reckon in a few years' time, women won't get pregnant at all – nobody will be born in a natural way. I think all babies will be created in a test tube one day. The parents will specify exactly what kind of baby they want: hair colour, skin colour, height, intelligence ... It will be like ordering a new car – you can customise it, and pick it up when it's ready! I guess if that's where technology is heading, then what's the problem? We can't stop it so we'd better make the most of it.

**Speaker 4** I can see why parents want to make choices – say, they've got three sons already and they really want a daughter – but really, it's not natural, is it? I don't think scientists should interfere with nature. We don't understand it well enough, for a start. Scientists only found out about DNA in the 1950s. It's still new technology, so we should be careful. What if an experiment created a gene that damaged the human race? My friend's dad is a scientist and he says that could really happen. We shouldn't experiment with human embryos. What if it goes wrong? We could accidentally change human DNA forever.

**Speaker 5** I think people are a bit frightened of science, aren't they? There's the typical image of a mad scientist in his laboratory. You know, Frankenstein's monster – scientists desperate to create artificial life at all costs. But I think the reality is very different. It's just ordinary parents who want the best for their children. I think it's just a medical procedure like any other. I really don't think we should be scared of it – we should welcome it as an advance.

### 2.11 Lesson 5C, Exercise 6

#### Who's afraid of designer babies?

We now have the ability to ensure that children are born free of any one of hundreds of serious genetic disorders, from cystic fibrosis to early-onset cancers. But children continue to be born with these diseases.

All would-be parents should be offered screening to alert them to any genetic disorders they risk passing on to their children. Those at risk should then be offered IVF with tests to ensure embryos are healthy before they are implanted. Why isn't it happening? Because most people still regard attempts to influence which genes our children inherit as taboo. But fears of 'designer babies' are misplaced. You cannot select for traits the parents don't have, and the scope for choosing specific traits is very limited. But you can make sure children do not end up with disastrous genetic disorders.

Nearly 150 years after Darwin unveiled his theory of evolution, we have yet to grasp one of its most unsettling implications: having diseased children is as natural as having healthy ones. Thanks to technology, we are no longer entirely at the mercy of this callous process. Rather than regarding this ability with suspicion, we should be celebrating it and encouraging its use. But instead, we continue to allow children to be born with terrible diseases because of our collective ignorance and superstition.

## 2.12 Lesson 5D, Exercise 3

### Who are the jailbreakers?

Computer hackers rarely show their faces in public, allowing the stereotype of the socially awkward loner sitting in the dark in front of a computer screen to flourish. But the reality is rather different – at least when it comes to jailbreaking. Jailbreakers do not commit criminal acts like hacking into government computer systems or writing malicious viruses. Instead, they write code which removes the manufacturers' restrictions on everyday devices like smartphones and games consoles. A 'jailbroken' device can run unofficial software and be used in ways which the manufacturer did not intend. Some of the big technology companies have taken legal action against jailbreakers, but with little success.

James Whelton, a smooth-talking twenty-year-old from Cork, started messing around with computers at the age of nine and began programming soon afterwards. His introduction into the world of jailbreaking was accidental. It happened when he won a pink iPod Nano. 'Basically I was on a plane and I was bored, so I just started tinkering with it and found something interesting,' he explained.

He discovered a vulnerability in the iPod's software that could possibly be exploited to jailbreak the device. It was unusual enough that he wrote about it on his blog. Within a few days he was contacted by another hacker known as DarkMalloc – in reality, a sixteen-year-old from Wales called Joshua Tucker. He introduced Whelton to other hackers – big names in the hacking scene like Chronic and ih8sn0w. Chronic – a teenager from the United States called Will Strafach – is the founder of a jailbreaking team called Chronic Dev; while ih8sn0w, a sixteen-year-old called Steven from Canada, is the developer of several well-known jailbreaking tools.

Instead of taking up a place at university earlier this month, Whelton decided to use the exposure that his jailbreaking activities have earned him to help get investors for a software company called Disruptive Developments that he founded in June. 'I did my final exams on a Friday and became a chief executive on the Monday.'

Aaron Ash is another hacker-turned-entrepreneur. When Mr Ash was fourteen, he got his hands on a calculator which he programmed to do his homework. He mowed people's lawns near his home in Peachtree City, Georgia, to earn money to buy the parts for a computer he built. After teaching himself to programme it, he worked on video games before getting an Apple iPhone and turning his attention to that.

The young Mr Ash wanted to write apps for his phone, but it turned out that at seventeen he was too young to sign up to Apple's official iPhone development programme. That left him with no alternative but to become a hacker and write apps for jailbroken phones. 'This was actually even cooler to my mind, because it let me write programs that change the way the iPhone works,' he said. 'That's something you can't do if you are an official developer.'

Mr Ash started selling his programs, called Barrel and Multiflow, but at this point he came face-to-face with the darker side of the jailbreaking scene. 'My Barrel app is being used by three and a half million people, but the proportion of people who actually paid for it is now about one in a hundred,' he said.

Despite the rampant piracy, Ash has earned over \$100,000 from his applications. That is easily enough to cover his computer science education so far at the University of Georgia. The problem he faces now is that he knows more than most of the teachers. 'I'm actually considering leaving uni and starting a software contracting company with a friend I met in the jailbreaking scene.'

'Going straight' at an early age certainly seems to be the pattern in the jailbreaking world, and the scene has lost several of its senior figures to the lure of business. George Hotz, the 22-year-old hacker known as Geohot, who was responsible for programs that jailbreak Apple's devices as well as Sony's PS3, left the jailbreaking scene earlier this year to take up a full-time job with Facebook. And Nicholas Allegra – the nineteen-year-old jailbreaking guru better known in the hacking world as Comex – also found an alternative career. Apple was apparently so impressed with his jailbreaking skills that it persuaded him to join the company instead. It seems that the old notion of poacher turned gamekeeper still exists, even in our technology-oriented world.

### 2.13 Lesson 5E, Exercise 4

- 1 Google is the world's best-known search engine and is used by about 620 million people every day.
- 2 Google began as a research project, and was created by Larry Page and Sergey Brin in 1996.
- 3 The first Google storage unit was 4GB – less than a modern phone – and was made from LEGO bricks.
- 4 Today, Google's information is stored on more than 450,000 servers around the world.
- 5 Google has been criticised for storing too much information about the public without their consent.
- 6 In a survey for *Business Excellence* magazine, Google was named by British adults as the company they would most like to work for.

### 2.14 Lesson 5F, Exercises 3 and 5

There's something really appealing about the guitar factory. There seems to be an atmosphere of calm and concentration. And it's bright too. It looks to me as if there's some natural light, although I can't see the window. That makes it a nice place to work. Whereas in the other factory, there is just a lot of artificial light. The guitar factory is a far nicer environment, from my point of view. So my choice would be the guitar factory. That's because it looks calm and relaxing. The reason I wouldn't go for the other factory is that I would find it stressful to work under those very bright, artificial lights all day.

### 2.15 Lesson 5F, Exercises 6 and 7

The musical instrument factory looks like a pleasant place to work. But I wouldn't choose it. The reason I wouldn't go for the guitar factory is that I probably wouldn't earn very much there. It looks to me as though the work needs a lot of skill, and I haven't got that skill. I should imagine they've had a lot of training in order to do the job. I'd probably end up sweeping the floor. I think the other factory would be the better option because jobs in hi-tech factories are usually better paid. Judging by the protection they're wearing, I'd say it's quite a dangerous environment. More likely than not, there are toxic chemicals. All of that usually means more money! So my choice would definitely be the hi-tech factory.



### 2.16 Get Ready for your Exam 5, Exercise 2

**Presenter** Welcome to Science Now. We talk today with Dr Elaine Glover, one of a new generation of scientists with a fascination for Antarctica. Remote, isolated and frozen all year, Antarctica is one of the most pristine places on the planet. It is therefore one of the world's most important places to do scientific research. Only in the last 70 years have people started to really explore this vast unspoilt continent. So, Dr Glover, what drew you to science in general?

**Doctor Glover** Well, as a girl I was always outside studying insects and observing our garden pond. When we went to the seaside I collected seaweed, sea creatures and all sorts, really. I was fascinated by nature – especially water – but not so interested in socialising! Rather than on kids around me, I focused on science at school, eventually specialising in marine biology at university.

**Presenter** And what drew you to Antarctica?

**Doctor Glover** I realised how little we know about the Antarctic seas, but how vitally important they are to survival of the rest of our planet. Britain has a big research station there, where I've been for four years now. We are trying to understand the dynamics of Antarctic ice, and how climate change might affect the ice cap and sea levels. It's a truly fascinating and beautiful place.

**Presenter** What's life like on an Antarctic station?

**Doctor Glover** It's actually quite relaxing. There's plenty of time for research and few distractions! But you have to learn to ski and travel by dog sled. You also have to get on with other people because there are a lot of us in a rather confined area. And you have to be sure that you will manage living there as it's not easy to come back again if you change your mind!

**Presenter** And what does the future hold?

**Doctor Glover** We'll be working closely with geologists and meteorologists to get a more complete picture of the region. Locked up in Antarctica's 4-kilometre-thick ice sheet is a record of our climate for the last 500,000 years. We share data and are mapping changes in the area. And when I come back, I want to write a book for children about the hidden world of Antarctica.

**Presenter** Sounds fascinating. Many thanks, Dr Glover.