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You are going to read a review of a book. For questions 31–36, choose the answer (A, B, C or D) which you think fits best according to the text.

Mark your answers on the separate answer sheet.

# Book review: Jesse Prinz's Beyond Human Nature

Jesse Prinz's book Beyond Human Nature: How Culture and Experience Shape the Human Mind is a valuable exploration of the age-old 'nature or nuture' debate – whether individual human beings are the product of the genetic features they are born with or of what they experience as they grow up. The book is also firmly part of what we might call the 'neuro-backlash'. In the last decade or so, a host of accessible books have appeared which are fun and provocative, and supplied startling messages about psychology and neuroscience that promised to empower us by decoding the inner workings of human life. But it was really only a matter of time before the re-evaluation of this popular science writing took off.

The controversy over the work of the American journalist Jonah Lehrer only accelerated the widespread reaction. The discovery that, in writing his celebrated books and magazine pieces on neuroscience, Lehrer had been a bit too careless with his facts, quotes, arguments, and conclusions gave way to cries that the simplification of science, in particular of neuroscience, often by science journalists, was once again to blame. The truth is, though, this trend was due to run out of steam. Even some of the best of these books — and there are certainly many worthwhile ones — have begun to seem formulaic.

With any luck, we will now get more books like Jesse Prinz's. While too many of the popular neuroscience authors write as though they are angling for more high-profile speaking work, Prinz is clearly only interested in trying to leave his mark on the nature-versus-nurture debate. Obviously, as Prinz says, we are shaped by both nature and nurture. But while Steven Pinker's influential book, *The Blank Slate*, provides a compelling defence for 'team nature', Prinz identifies himself as an unashamed 'nurturist'.

As such, he is committed to demonstrating that our interactions with our environment — our upbringing, early experiences, culture — have a lot more to do with the way we think, learn language, acquire knowledge, and make moral judgments than anything we are born with. This position has real implications for such big issues as the influence of genetics on intelligence and the effect of biology on gender inequality. And while it might not seem an exciting approach in the manner we have come to expect from recent popular cognitive science books, in the academic world today, it is a minority view—and in terms of certain established theories, very controversial.

Take the debate about language. For years, the field of linguistics has been heavily influenced by Noam Chomsky's notion of a *universal grammar*. Kids might learn a particular language from experience, Chomsky and his followers say, but they are drawing on a set of pre-programmed grammatical rules that we are all born with. It's why, even at a very young age, we are able to create an impressive array of unique, grammatically correct sentences. It's also a prime example of a 'nature' rather than 'nurture' argument.

Prinz takes us through the research that has been done, meticulously examining the logic behind the conclusions of Chomsky and his supporters, and suggests a different explanation. He defends a lesser-known theory that 'children might learn language statistically,' by unconsciously remembering the patterns in the sentences they hear and 'using these to generalise to new cases.' Instead of going for the hard sell, Prinz admits that all he hopes to do is raise the possibility that this alternative theory might be true. This lends his work an air of maturity.

This book should be seen as a notable example of science writing done right. Before discussing the role of genes in the manifestation of different traits, for instance, Prinz spends several pages explaining what genes are, how they work, and how we should think about them. We also get a useful walk through intellectual history as he shows how the nature/nurture pendulum has swung back and forth over thousands of years, and how Prinz's particular approach to these issues descends directly from the 18th-century philosopher David Hume. Although the author seems to want to win the argument, he's generous when it comes to providing evidence for the opposing side – making sure that readers will finish the book with a more thorough understanding of some major debates in science.

### Essential tips

- Remember in this part of the exam you need to understand the writer's opinion, attitude and purpose in a text. You also need to understand details of a text not just what it says but also how it is organised and how different parts of the text relate to each other.
- Either skim read the text first before you read the questions, or read the questions first before you skim the text.
- Then read the questions carefully. There should be something in each question to help you locate which part of the text it is about. For example, Question 31 here refers to the first paragraph, Question 32 here mentions 'Johan Lehrer's work' and it should be easy to find Johan Lehrer in the second paragraph.

Question 31: This is an example of a question focusing on understanding the organisation of the text. The inverted commas around neuro-backlash and the options indicate that these phrases are in the text. It may help you to underline or highlight them in the text. If you do not know what this word means, look in the text for clues to help you. For example, the word neuroscience comes halfway through the third sentence. Secondly, what can the word back mean? Think about the meaning of go back or give back. Is this sense of back suggested in any of the options? The read the first paragraph care ally and think about how it is organised.

Question 33: This question focuses on understanding a different kind of detail – the attitude expressed by the writer

- 31 What does the 'neuro-backlash' in the first paragraph refer to?
  - A a host of accessible books
  - B the inner workings of human life
  - C a new vocabulary of buzz words
  - D the re-evaluation of this popular science writing
- 32 According to the reviewer, the discovery of problems in Jonah Lehrer's work
- A stemmed from a wider access to information about science.
  - B triggered a new way of thinking about neuro-science.
  - **C** confirmed a shift in many people's opinions.
  - D led to exaggerated criticism of him.
- **33** In which of these phrases from the third paragraph does the writer express disapproval?
  - A 'angling for high-profile speaking work'
  - B 'trying to leave his mark'
  - C 'provides a compelling defence'
  - D 'identifies himself as an unashamed 'nurturist'
- 34 The reviewer refers to 'Chomsky's notion of a universal grammar' as an example of
  - A a big issue
  - B an exciting approach
  - C a minority view
  - D an established theory
- 35 What view of Prinz's work does the reviewer express in the sixth paragraph?
  - A He shows appropriate caution in putting forward his own ideas.
  - B He spends too much time challenging other people's work.
  - **C** His explanation of difficult concepts is very clear.
  - D His analysis goes into too much detail at times.
- 36 What point does the reviewer make in the final paragraph?
  - A The book reveals new information about the issues it covers.
  - B Certain theories have always gone in and out of fashion.
  - C The views Prinz puts forward are rather old-fashioned.
  - D Science writers should consider their readers more.

in his choice of certain words. Questions like this may well include vocabulary you do not know (e.g. angling, leave his mark, compelling, unashamed). To find out the attitude expressed in a word, you should read the text around each phrase (you should do this even if you think you know the word). For example, you may not know

unashamed nurturist in option D, but there is an explanation of the word nurture earlier in the text, so you should be able to work out what a nurturist is. Then, consider what the writer says about Prinz elsewhere in the text and whether he is likely to describe him with a word that expresses disapproval.

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You are going to read four contributions to a debate about whether economic growth is always a good thing. For questions **37–40**, choose from the contributions **A–D**. The contributions may be chosen more than once.

Mark your answers on the separate answer sheet.

## **Economic growth and prosperity**

Will more economic growth deliver prosperity and well-being? Or, with natural resources running out and the threat of climate change, should developed countries abandon the idea of endless growth?

Four economists give their views.

#### Α

In the advanced economies of the world, there is mounting evidence that ever-increasing consumption adds little to human well-being. In fact, increasing stress levels, obesity and other social ills suggest it positively impedes it. More urgently, it is now clear that the ecosystems which sustain our economies are collapsing under the impact of this consumption. Economists argue that the environmental impact of an economy, relative to its income, falls as it gets richer – wealthier nations tend to have stricter environmental regulations, for example. There is no alternative but to opt out of further growth. However, the bottom line is that economic growth inevitably leads to increases in greenhouse gas emissions, which accelerates climate change. The implications are complex but include a need to fundamentally rethink the uses to which we put our technological expertise and much tighter regulation of advertising, which incites wholly superfluous consumption.

#### В

It has become received wisdom that prosperity and economic growth do not go together. More 'stuff', we are told, damages the environment and makes us miserable. Hence, we should limit growth, raise taxes to redistribute affluence, invest in welfare rather than wealth creation, and control or even eliminate commercial advertising, a key trigger of consumption. Frankly, it is tragic that growth has such a bad name. In the space of about two centuries, substantial increases in economic output have brought enormous benefits: longer, healthier lives, shorter working hours, miraculous inventions, the ability to reshape the environment for our own benefit and, surely, greater general well-being. The world is not perfect, of course, and climate change is an issue. But to tackle it, we need more resources and technology, rather than less. We should invest in high-tech energy production, sea walls to resist flooding and other engineering-based solutions, rather than cheap moralising.

#### C

Economic progress has brought huge benefits for humanity, but in some countries, we appear to have reached the stage where the costs of growth have started to outweigh the benefits. The more we have, the less satisfied we are, and we are running up against natural limits on a finite planet as resources are depleted, biodiversity falls sharply and climate change threatens to destroy us. Should we now give up on economic progress and focus instead on well-being and protecting the planet? While the idea has a certain utopian appeal, the reality for the majority is unimaginable. Even wholesale reform of aspects of modern economies like advertising, the cheerleader for consumerism, is unlikely to be accepted. There is a middle way: to pursue, determinedly, existing environmental policies and to apply our technological expertise to overcome our difficulties, with massive projects to harness solar, wind and wave power, for example.

### D

The world is heading for catastrophic climate change, and life in some of the world's most technologically advanced nations, while abounding in consumer products, has evidently not been enhanced in terms of personal relationships, meaningful work and other key values for well-being – indeed, it's quite the opposite. So, should the growth model be dropped? In *The Moral Consequences of Economic Growth*, Benjamin Friedman convincingly argues that rising standards of material prosperity foster opportunity, tolerance, fairness and democracy, and to give up on growth is unlikely to lead to the sort of open, friendly society we want. The way forward, then, is to tackle excessive consumerism and its associated ills by various reforms, such as greater control of advertising, and to strengthen measures to keep global warming and resource depletion within reasonable limits, while the world economy carries on growing.

### Which writer

has a different view to the others about continuing to aim for economic growth?	37
expresses a different opinion from the others on the link between continued economic growth and happiness?	38
takes a similar view to writer B's opinion about economic growth and the use of technology?	39
shares writer A's opinion about what the consequences of economic growth imply for advertising?	40

## **Essential tips**

- Remember that you need to decide whether four different writers have similar or different views on the same subject.
- Go through each text carefully in turn, highlighting the sections relating to each question. Write the question numbers next to the parts you highlight.
- Starting with Question 37, compare the views expressed in all four texts.

Question 37: The key words in this question are different view from the others and about continuing to aim for economic growth. Writer A says: There is no alternative but to opt out of further growth. Writer B says it is tragic that growth has such a bad name and calls for more resources and better technology rather than less, so B appears to be in favour of continued economic growth. Look carefully at texts C and D, and decide whether they share A or B's view.

Question 39: The key words here are: similar view to writer B's and economic growth and the use of technology. Writer B says: we need more resources and technology rather than less. We should invest in high-tech energy production, sea walls to resist flooding and other engineering-based solutions.

Writer A says we need to fundamentally rethink the uses to which we put our technological expertise, and talks about superfluous consumption so writer A's view on this issue seems different from B's. What about writers C and D?

You are going to read a magazine article. Six paragraphs have been removed from the article. Choose from the paragraphs **A–G** the one which fits each gap (**41–46**). There is one extra paragraph which you do not need to use.

Mark your answers on the separate answer sheet.

### The lost civilisations of Peru

An expedition in the mountainous regions of southern Peru has found some important remains from the Inca civilisation. Their discovery came when the expedition stumbled across a small, flat area cut into a forested mountainside. At first, it looked like nothing in particular, but then the explorers realised it could have been a platform where Inca priests stood and watched the path of the sun.

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Qoriwayrachina, as the site they discovered is known, is of outstanding importance. In fact, it became clear that this was one of the most significant historical finds in South America since the unearthing of Machu Picchu, the fabulous lost city of the Incas, in the 20th century.

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For example, recent archaeological work near the Peruvian capital has revealed another ancient city, dating back to well before the Incas. This has reinforced the feelings of many archaeologists that there are many more hidden remains buried for hundreds (or even thousands) of years, still waiting to be found.

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But it is the mountains of the Vilcabamba range that perhaps hold the most promise. Vilcabamba, which means 'sacred valley', was the hub of the vast Inca civilisation. In the 16th century, when the Spanish conquest led to the demise of this ancient way of life, this area was the last part of the Inca empire to fall. Hundreds of years later, it slowly began to yield its secrets to archaeologists, Macchu Picchu perhaps being the most notable of a series of impressive finds. By no means everything there has been unearthed, however.

Knowing that there is more to be found is important, because although many valuable Inca sites have been discovered and researched, we still know surprisingly little about the Inca way of life. What's more, studying remains will be of great value, as many are in danger of being ruined forever, either by thieves on the hunt for ancient treasure, or by modern developments such as the building of roads or new towns.

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It is not all action-man excitement, however. The best explorers spend time reading the accounts of the Spanish conquerors, studying maps and talking to local people who know their own area and are often willing to reveal the whereabouts of previously unidentified remains. Raising funds to pay for the work is also part of the challenge.

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Peter Frost, one of the group which discovered Qoriwayrachina, knows this. As a tour guide, photographer, and travel writer working in the region for 30 years (though not an archaeologist), he has become an expert on the lncas. Since his initial work at Qoriwayrachina, he has led two lengthy expeditions to the area, and has uncovered the ruins of 200 structures and storehouses, an intricately engineered aqueduct, colourful pottery and several tombs, all valuable evidence for the study of the region's past.

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- A Far from it. Archaeologists know from having found traces of homes and infrastructure, that there are several potentially major sites still waiting for proper investigation.
- B The importance of this kind of preparation is underlined by Hugh Thompson in his recent book about exploring for Inca ruins, *The White Rock*. According to him, anyone can go into the jungle and look for ancient remains. However, they may cause a great deal of damage in the process and indeed, the history of Peruvian exploration is littered with failures.
- C According to these experts, what we now know as Peru has hosted advanced civilisations for as long as almost anywhere else in the world. The likelihood, therefore, of making further discoveries almost anywhere in the country, is high.
- D These worries mean it is fortunate that the urge to discover ruins swallowed by the jungle is still as strong as ever. Many archaeologists feel a keen sense of adventure, seeing themselves in an Indiana Jones fantasy, hunting for lost

- civilisations. The thought of finding a lost city, hidden by the jungle for hundreds of years, and containing unimaginable treasures from a mysterious people is, for some, difficult to resist.
- E The previous year, 1989, saw a number of expeditions to the region in search of the mythical lost city, but the end result was similarly disappointing. Undeterred, the courageous explorer refuses to abandon his attempts to raise money for one last try.
- F But that staggering discovery took place over 100 years ago, and so many explorers, archaeologists and tourists have been in the region since then that one might assume all its secrets have been surrendered. But the mountains of Peru are still full of hidden ruins, as are other parts of the country.
- **G** So, a decision was made to battle on through the thick jungle. Their reward was to uncover significant evidence of the civilisation that once lived there: tombs, a water system, and traces of many other buildings.

### **Essential tips**

**Question 42:** The last sentence of the previous paragraph mentions a discovery made in a particular period. Which gapped paragraph has a time reference which might relate to this?

**Question 44:** The last sentence of the previous paragraph contains a negative structure which emphasises that not all the ancient remains have been discovered (*By no means everything* 

has been unearthed, however.) Which gapped paragraph starts by agreeing with this idea?

Question 46: The previous paragraph describes things explorers do before they go on expeditions. Which gapped paragraph refers to this? PAPER 1 Reading and Use of English

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You are going to read an article in which four people talk about careers involving foreign languages. For questions 47–56, choose from the people (A–D).

Mark your answers on the separate answer sheet.

### Which student

gained an awareness of how frustrating scientific work can be?	47
gained in confidence as a result of the work experience?	48
particularly valued the opportunity to discuss ideas with professional scientists?	49
experienced difficulties in understanding scientific ideas?	50
was impressed by the way their volunteer work resembled a real job?	51
realised the importance of choosing an area of personal interest for voluntary work?	52
discovered something of immediate practical benefit in their research?	53
believes it is wise to volunteer in areas of science that are well-publicised?	54
made the most of a personal misfortune?	55
made a discovery that contradicted expectations?	56

### **Essential tips**

Question 47: When people say that work is 'frustrating', they mean that they are not making the progress they had hoped for. Which student describes a situation like this?

Question 51: All four students volunteered in order to gain experience of work, but which of the four specifically mentions the similarities with 'a real job'?

Question 53: All four students carried out research that would probably be of benefit in some way. But which research led to a discovery with 'immediate' and 'practical' consequences?

# Volunteering in science laboratories

#### A Eric Martens

A talented athlete, Eric Martens trained so hard in his final year at school that he sustained knee injuries, which kept him off the track for months. Rather than becoming discouraged, however. Eric turned to science and landed a voluntary stint in a sports research unit in his summer holidays. 'There are people there who are particularly interested in how human joints develop and function,' says Eric. 'It was brilliant being able to ask them about their work - and challenge it sometimes.' Eric assisted on a number of projects, and eventually was allowed to conduct an experiment himself. Barefoot jogging has become fashionable among some amateur runners. Eric observed a number of experienced joggers running barefoot on treadmills and found that that they still ran as if they were wearing shoes, landing heel-first rather than on the balls of their feet. The impact sustained could easily lead to injury. The implications for runners were obvious and the findings were soon made known more widely. 'It was a great experience,' says Eric. 'I'm definitely thinking of going into research when I finish university."

### **B** Angela Michaelis

In her final year at school, Angela Michaelis had become fascinated by human behaviour. So, she emailed various people involved in brain research and was eventually offered a placement with a well-known psychologist called Carmen Gago. With Dr Gago's help, Angela wound up investigating trust and turned to a group of people for whom trust is crucial – skydiving instructors. Angela assumed that learners would base the degree of trust they placed in an instructor on levels of experience and perhaps appearance. What novices reported, though, was that it mainly related to the way the instructors talked. 'Dr Gago was impressed,' says Angela. 'And I was pleased because the whole thing was a real challenge. We made several false starts. One skydiving group agreed to take part and then pulled out. Then we had trouble recording the interviews and organising the data. At one stage I wasn't sure it would ever happen. I suppose it's good to know that research can be like this, and I'm glad I was working on something I was curious about. If I hadn't been, I wouldn't have got nearly so much out of it.'

### C Katie Oldham

Katie Oldham is also very interested in the human brain. She spent two months helping a neuroscientist, Frank Hebble, explore how the brain reacts to sudden changes in the environment. such as sounds or touches. She mapped how brain activity shifts when these changes occur, using a technique that measures electrical pulses in the brain. Such maps may help doctors who study children with certain medical conditions. 'It was intimidating at first,' Katie says. 'This is quite advanced science and the people working on it are seriously clever. I did eventually feel part of the team, though. It was good to know they valued my contribution and respected me. They didn't pay me but I was expected to show up on time and do an eight-hour day, just like everyone else.' There is no resentment in Katie's comments, however, She believes she has a head start on some of her fellow students in having had an authentic taste of life as a scientist.

### D Tariq Bashir

Tariq Bashir won a placement with medical scientists working on new ways to treat malaria. 'It's such an important thing,' says Tarig. 'So many people around the world are affected by malaria, and if we could come up with solutions, it would make such a difference.' Tariq regards himself as fortunate to be interested in a subject that attracts a lot of attention in the media at large, as well as scientific circles. It means the research is wellfunded, and scientists involved have the money and time to dedicate to students like Taria. It also means the competition for student places tends to be stiff, however. 'I did lots of preparation before I applied', Tarig says. 'I read all the research I could. Some of it went over my head, of course, but I asked a friend of my dad's, who's a doctor, to simplify some of it. But I think the malaria team were impressed that I invested time finding out about what they're doing.'

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#### PAPER 2: Writing

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Essential tips

You don't need to have had experience of working from home to be able to answer this question well. Think of times from your own experience (e.g. when you were at school or university) of the advantages and disadvantages of being able to stay at home.

You must answer this question. Write your answer in 220-260 words in an appropriate style on the separate answer sheet.

Your class has attended a lecture by a careers tutor about the advantages of joining a company whose employees work online from home. You have made the notes below.

### The advantages of working from home:

- no travelling
- flexibility
- comfort

Some opinions expressed after the lecture:

'There are too many distractions.'

I could work whatever part of the day I wanted.'

'You would miss the company of fellow workers.'

Write an essay for your tutor discussing two of the advantages in your notes. You should explain which advantage you think is more important, and provide reasons to support your opinion.

You may, if you wish, make use of the opinions expressed after the lecture, but you should use your own words as far as possible.