

## Sample interview questions

These sample interview questions come direct from the tutors who conduct the interviews. We hope they'll make you think, and help you understand why we ask the questions that we do.

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### Biochemistry

*Interviewer: Mark Wormald, Corpus Christi College*

**Here is a list of three compounds, A, B and C. Which one is most soluble?**

**(A, B and C will be specific simple compounds which the candidates should recognise.)**

We expect most candidates to say that they don't know and that's completely fine – what we are looking for is how the candidate works through the problem. (If someone does already know the answer, we'd move on to another line of questioning.)

I'd help the candidate to try to work out the answer by building a hypothesis that could then be tested. This usually involves a discussion about the factors that might affect solubility, looking at the bonds that hold the solid together. This will call on the students' knowledge of the specific compounds in the list, the nature of the bonding, and how to predict which types of bonding are stronger than others. This requires the students to provide more detailed chemical analysis, which reveals the depth of their understanding.

Once the student has reached a hypothesis that predicts the order of solubility (eg  $A > C > B$ ) I may tell them that the correct order is actually something else, and then discuss the possible reasons for the discrepancy. It's not about the accuracy of the student's thinking, since we don't actually expect them to get the right answer. It's more about how they react to getting the answer wrong, and how motivated they are to identify all the possible sources of error so that they can then test and eliminate each one in turn. We want them to question their assumptions and find ways to test those assumptions.

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This might lead in to a conversation about ways you might test the strength of the chemical bonds in different solids. For example, you could heat the solid but then heating might have other unwanted effects. I want the students to demonstrate their understanding of those other effects, and to call on a wide range of knowledge of Chemistry when answering each question.

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## **Biological Sciences**

*Interviewer: Owen Lewis, Brasenose College*

### **Why do some habitats support higher biodiversity than others?**

This question encourages students to think about what high-diversity habitats such as rainforests and coral reefs have in common. In many cases, patterns or correlations can help us to identify the underlying mechanisms. For example, a student might point out that both rainforests and coral reefs are found in hot countries and near the equator. The best answers will attempt to unravel exactly what it is about being hot or near the equator that might allow numerous types of plant and animal to arise, persist and coexist. Do new species evolve more frequently there, or go extinct less frequently? Once students have come up with a plausible theory, I'd follow up by asking them how they would go about testing their idea. What sort of data would they need?

*Interviewer: Martin Speight, St Anne's College*

### **Why do many animals have stripes?**

The main aim of the question is to get applicants to think about biological topics and put them in the context of successful adaptations to life on earth. So I might expect students to start by thinking of some stripey animals, then move on to thinking about categories of striped animals – for

example those that are dangerous (such as wasps, tigers, and snakes), those that have stripes for camouflage (such as zebras but also tigers), and those whose stripes are harmless mimics of dangerous ones. They might think of specific examples for detailed comparison: tigers and zebras for example both have stripes for camouflage and blending in with background, one to hide from prey and the other to hide from predators.

Other things that would be worth considering include whether stripes may only occur in the young of a species; whether the colour of the stripes matters rather than just the contrasting stripe pattern, and why do stripe size, shape, width and pattern vary in different species. There are no right or wrong specific answers to the questions – I'm just interested in candidates' speculations about the advantages of having stripes.

### **Here's a cactus. Tell me about it.**

We wouldn't actually phrase the question this way – we give the student a cactus in a pot and a close-up photo of the cactus's surface structure and ask them to describe the object in as much detail as possible using the plant and the photo. We are looking for observation, attention to detail, both at the large and micro scale. We ask them to account for what they see – this means they don't have

to use memory or knowledge about cacti (even if they have it) but to deduce the uses and functions of the shapes, sizes, structures that they have just described. So for example, why be fat and bulbous, why have large sharp spines, surrounded by lots of very small hair-like spines? Why does it have small cacti budding off the main body? There will frequently be more than one logical answer to these questions, and we are likely to follow one answer with another question – for example:

‘The big spines are to stop the cactus being eaten, yes, but by what sort of animals?’ We would also bring in more general questions at the end of the cactus discussion, such as what are the problems faced by plants and animals living in very dry habitats such as deserts.

**If you could save either the rainforests or the coral reefs, which would you choose?**

I'd expect students to be able to use their general knowledge plus their common sense to come up with an answer – no detailed knowledge is required. Students might then be asked about the importance of natural features, such as biodiversity and rare species, and human interests, such as the fuel and food, ecotourism and medicines we get from rainforests or reefs. Finally there are impacts to consider from climate change, soil erosion, pollution, logging, biofuel replacement, overfishing, etc. The final answer doesn't matter – both reefs and rainforests must be managed sustainably to balance conservation and human needs.

**Is it easier for organisms to live in the sea or on land?**

Firstly candidates should define 'easier' – does it mean less complexity, less energy expenditure, less highly evolved, less likely to be eaten etc? Then candidates could think of problems caused by living in the sea, such as high salinity, high pressure, lack of light etc. Problems living on land include extra support for the body, avoiding desiccation, the need for more complex locomotory systems (legs, wings etc) and hence better sensory and nervous systems etc. Then ask in which of the two ecosystems have animals and plants been more successful? So now they have to define 'successful'...

*Interviewer: Owen Lewis, Brasenose College*

**Why do lions have manes?**

Some of the best interview questions do not have a 'right' or a 'wrong' answer, and can potentially lead off in all sorts of different directions. Applicants might have picked up ideas about the function of a lion's mane from independent reading or from watching natural history documentaries. That's fine – but I'd follow up their response by asking how they would test their theory. When I've used this question in interviews I've had all sorts of innovative suggestions, including experiments where lions have their manes shaved to investigate whether this influences their chances with the opposite sex or helps them win fights over territory.

**Ladybirds are red. So are strawberries. Why?**

Many Biological Sciences tutors use plant or animal specimens – often alive – as a starting point for questions and discussion, so applicants shouldn't be surprised if they are asked to inspect and discuss an insect or a fruit. Red can signal either 'don't eat me' or 'eat

me' to consumers. I'm interested in seeing how applicants attempt to resolve this apparent paradox.

### **Would it matter if tigers became extinct?**

This question is not about hoping students will display their expert knowledge of tigers. Most applicants would instinctively answer 'Yes...'; but it is the 'because....' that interests me, and can help to distinguish critical thinkers. I might follow up this question by asking if it would matter if less glamorous creatures – like fungi – went extinct.

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## **Biomedical Sciences**

*Interviewer: Robert Wilkins, St Edmund Hall*

### **Why is sugar in your urine a good indicator that you might have diabetes?**

This question builds on general knowledge and material studied at school in biology and chemistry to assess how students approach a clinically-relevant problem. It's commonly known that diabetes is associated with sugar (glucose) in the urine; this question asks students to think about why this occurs. Students have usually have learnt that the kidneys filter blood to remove waste products, such as urea, that must be eliminated from the body but many other useful substances which must not be lost – including glucose – are also filtered. Given that glucose is not normally found in the urine, students are asked to speculate as to how it can all be recovered as the urine passes through the kidney's tubules.

The process involves reabsorption by a carrier protein that binds the glucose molecules and moves them out of the renal tubule and back into the blood. Students should appreciate that, in binding glucose, the carrier will share properties with enzymes, about which they will have learned at school: the capacity to reabsorb glucose is finite because once all of the carriers are working maximally, no further glucose reabsorption can occur. A successful applicant will make the connection that an elevated level of glucose in the blood in diabetes leads to increased filtration of glucose by the kidneys and saturation of the carriers that perform the reabsorption, resulting in 'overspill' of glucose in the urine.

*Interviewer: Jan Schnupp, St Peter's College*

### **Why do a cat's eyes appear to 'glow' in the dark?**

This question builds on commonly held knowledge and on material covered in Biology at school about visual processes. The question assesses criteria such as scientific curiosity (has the applicant ever wondered this themselves? Have they formulated any theories?) and scientific reasoning, based on information provided by the interviewer as the interview progresses. After establishing that the applicant understands that light is detected by photoreceptors in the eye (and exploring and explaining this concept if it is a new one), the discussion would consider how the glow might be advantageous to the cat, seeing whether the applicant can appreciate that it may help the animal to see in the dark. Possible explanations for the glow would be discussed with an expectation that applicants might recognise that the light could be generated within the eye or

alternatively that light entering the eye is in some way reflected back out. Having established the second possibility as more being more plausible, the interviewer would probe to see whether the candidate recognises the significance of giving photoreceptors two chances to capture light as rays pass into and then out of the eye and why at night this might enhance vision.

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## Classics

*Interviewer: Gail Trimble, Trinity College*

### **Why do you think Dido kills herself in *Aeneid 4*? Couldn't she just have gone back to her old life?**

I would never ask a question like this without the student mentioning the text first, as we don't assume that all applicants will have read the same things. Many candidates have never studied Latin or Greek before at all, so we certainly wouldn't assume that they had any particular knowledge. I would open this part of the interview by asking the applicant to choose a Classical text that they have enjoyed. This could be something they have read at school/college or on their own, in the original or in translation – it just needs to be something that they found interesting and that they would be happy to discuss.

A good answer to this question about *Aeneid 4* might point out that the work contains hints that Dido's sister and the people she rules will be devastated by her death: she actually has a lot to live for. The answer might look for things Dido says that suggest she's killing herself because she has lost her self-respect, and perhaps ask whether this rather obsessive focus on self-respect is a typical characteristic of ancient heroes.

Other typical questions might be about why so much of the *Odyssey* is about Odysseus' return to Ithaca, rather than the adventures at sea that everyone remembers, or whether Achilles or Hector is the real hero of the *Iliad*? It really depends on what the applicant says they have read. We're looking for candidates to be able to pick out details in the text that support the argument they want to make - and opposing arguments, too. The questions allow us to see whether candidates are open-minded and able to see how others, both today and, crucially, in the ancient world, might put the evidence from the texts together to draw different conclusions. And we would hope that candidates would think about how, although literary texts often encourage us to react to their characters as if they were real people, actually these characters are constructed by an author, and what we see of them always reflects that author's choices.

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## Computer Science

*Interviewer: Brian Harrington, Keble College*

### **How do pirates divide their treasure?**

A group of 7 pirates has 100 gold coins. They have to decide amongst themselves how to divide the treasure, but must abide by pirate rules:

- The most senior pirate proposes the division.

- All of the pirates (including the most senior) vote on the division. If half or more vote for the division, it stands. If less than half vote for it, they throw the most senior pirate overboard and start again.
- The pirates are perfectly logical, and entirely ruthless (only caring about maximizing their own share of the gold).

So, what division should the most senior pirate suggest to the other six?

This is a standard logic problem and is a good example of the type of question that could be asked. I like to see how students can take directions, and if they can break problems into smaller subsets, and work through a complex concept applying a solution in an algorithmic way. If students have any questions, I want them to ask – not to sit in silence feeling stuck!

See the solution to this problem ([#asolution](#)). There is a wide range of other example interview questions on the Computer Science website ([http://www.cs.ox.ac.uk/admissions/ugrad/Sample\\_interview\\_problems](http://www.cs.ox.ac.uk/admissions/ugrad/Sample_interview_problems)).

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## **Economics and Management**

*Interviewer: Brian Bell, Lady Margaret Hall*

### **Do bankers deserve the pay they receive? And should government do something to limit how much they get?**

This is a very topical question in light of the recent financial crisis. A simple answer might be that since banks are generally private firms and workers are free to work where they wish, then the pay they receive is just the outcome of a competitive labour market. In this story, bankers earn a lot because they are very skilled and have rare talents. It is hard to see a reason for government intervention in this case – though on equity grounds one may want to have a progressive income tax system that redistributes some of this income. A good candidate would wonder why it is that seemingly equivalently talented people can get paid so much more in banking than in other occupations. Do we really believe that bankers are so much better than other workers in terms of skill? An alternative story is that the banking industry is not competitive and generates profits above what a competitive market would produce. This would then allow workers in that industry to share some of those profits and so earn much more. In this case, there is a role for government intervention - making the market more competitive. The key point about this question is trying to get candidates to think about the economics of pay rather than just whether they think it is fair or not.

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## **Engineering**

*Interviewer: Steve Collins, University College*

**Place a 30cm ruler on top of one finger from each hand so that you have one finger at each end of the ruler, and the ruler is resting on your fingertips. What happens when you bring your fingers together?**

This would never be the opening question in an interview - we usually start with a first question that gives the candidate an opportunity to get comfortable by discussing something familiar. We then ask more technical questions based on material in the GCSE and A-level syllabi. This question would come later in the interview, when we present candidates with an unfamiliar scenario and ask them to use what they know about familiar concepts (such as friction) to explain something.

Almost everyone in this example will expect the ruler to topple off the side where the finger is closest to the centre of the ruler because they expect this finger to reach the centre of the ruler first. They then complete the 'experiment' and find both fingers reach the centre of the ruler at the same time and the ruler remains balanced on two fingers. We like to see how candidates react to what is usually an unexpected result, and then encourage them to repeat the experiment slowly. This helps them observe that the ruler slides over each finger in turn, starting with the finger that is furthest from the centre. With prompting to consider moments and friction, the candidate will come to the conclusion that moments mean that there is a larger force on the finger that is closest to the centre of the ruler. This means that there is more friction between the ruler and this finger and therefore the ruler slides over the finger furthest from the centre first. This argument will apply until the fingers are the same distance from the centre. The candidate should then be able to explain why both fingers reach the centre of the ruler at the same time as observed. In some cases, particularly if we have not done a quantitative question already, we might then proceed with a quantitative analysis of forces and moments. We might even discuss the fact that the coefficient of static friction is higher than the coefficient of dynamic friction and therefore the 'moving' finger gets closer to the centre than the static finger before the finger starts to move over the other finger.

*Interviewer: Byron Byrne, Department of Engineering Science*

### **How would you design a gravity dam for holding back water?**

This is a great question because the candidate first has to determine the forces acting on the dam before considering the stability of the wall under the action of those forces. Candidates will probably recognise that the water could push the dam over. The candidate would then be expected to construct simple mathematical expressions that predict when this would occur. Some may also discuss failure by sliding, issues of structural design, the effects of water seeping under the dam, and so on. The candidate will not have covered all the material at school so guidance is provided to assess how quickly new ideas are absorbed. The question also probes the candidate's ability to apply physics and maths to new situations and can test interest in and enthusiasm for the engineered world.

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### **English Literature**

*Interviewer: Lucinda Rumsey, Mansfield College*

**JK Rowling has just published a book for adults after the hugely successful Harry Potter series. In what ways do you think that writing for children is different to writing for adults?**

Candidates who have grown up on Harry Potter might have read Rowling's new book and have thought both about Rowling's change of audience and their own change as readers from child to adult. But even without knowing Rowling's work at all candidates could say something about themselves as readers, and how as readers they approach different kinds of books, and how writers develop a body of work and write for different audiences. Mainly I always want to know that whatever they are reading, candidates are reading thoughtfully and self-consciously, and are able to think as literary critics about all the books they read. I worry that not all candidates might have the same access to a wide range of literature, and I am careful to judge them on what they know, not on what they don't know. If I asked that question about Shakespeare some candidates might have a view of his literary output, but many wouldn't. If I start with Harry Potter, everyone at least has a starting point of recognition. And I think Rowling deserves a mention as I am sure that there are many people applying to study English at university this year who became avid readers because of her books.

*Interviewer: Emma Smith, Hertford College*

**Tell me about [this literary work you have mentioned in your UCAS personal statement]**

I'd want to start with something the candidate has already identified as something they want to talk about (so be honest on your personal statement!). I'd want to get a sense of what the candidate picks out about it, and perhaps to try to move the discussion onto matters of form (*how* the text is written) rather than content (*what* it is about). That might include - how does the author choose to begin or end the work and why? is it a first-person or a third-person narrator, and what effect does that have? what kind of vocabulary and writing style are chosen? what assumptions does it make about its readers? There might be other questions too: does the biography of the author have any relevance to our interpretation? do we need to know something about the historical context to understand it differently? how would we evaluate whether it is 'good' or not, and does that matter? where might its meaning be ambiguous? can it be compared to one of the other texts mentioned or studied to clarify any one of these aspects? All of these approaches are intended to develop a discussion - like a tutorial - and to work with something the candidate is already familiar with - something they have read and/or studied and enjoyed - but to ask some more sideways or expansive questions about it, moving away from the character or close-reading focus which is often prominent at A-level but is supplemented or challenged by other reading methods during university study.

*Interviewer: Lynn Robson, Regent's Park College*

**Why do you think an English student might be interested in the fact that Coronation Street has been running for 50 years?**

First and foremost this brings popular culture into the mix and also shows that techniques of literary analysis can be applied to other media. It could also open up discussion about things such as techniques of storytelling; mixing humorous and serious storylines/characters; how a writer might keep viewers or readers engaged; collaborative writing; the use of serialisation, and how writers/texts might move from being perceived as 'popular' (like Dickens, say) to be 'canonical'.



## Geography

*Interviewer: Lorraine Wild, St Hilda's College*

### **If I were to visit the area where you live, what would I be interested in?**

The question gives candidates an opportunity to apply concepts from their A level geography course to their home area. They might discuss urban planning and regeneration, ethnic segregation and migration, or issues of environmental management. The question probes whether they are able to apply 'geographical thinking' to the everyday landscapes around them. It reveals the extent to which they have a curiosity about the world around them. By asking specifically about their home area the question eliminates any advantage gained by those who are more widely travelled and have more experience of a variety of geographical contexts.

## History

*Interviewer: Stephen Tuck, Pembroke College*

### **Imagine we had no records about the past at all, except everything to do with sport – how much of the past could we find out about?**

I would say this to a candidate who had mentioned an interest in sport on their personal statement, though it could equally be applied to an interest in something else – like film, drama, or music. What I would be looking for is to see how the candidate might use their imagination, building on something they know about (probably much more than I do) to tackle questions of historical research.

Answers could relate to the racial/class/gender relations in society (who played the sports, and which sports, at any given time); international politics/empire (which countries were involved, did groups of countries play the same sport); economic development (the technological development of sports, how sport was watched); the values within a society (bloodthirsty sports to more genteel sports); health (participation rates); or many other issues – the list is long. I would usually ask supplementary questions, to push the students further – and often, I would have no answer in my mind, but would simply be interested in seeing how far the student could push their analysis.

### **Which person (or sort of person) in the past would you most like to interview, and why?**

Candidates know that this is not a right/wrong type question. The question is not so much about which person the candidate wants to meet, but what sort of issues the candidate wants to find out about (which can be quite revealing) and then working out the best way to do so. 'Meeting' Elizabeth I or Winston Churchill might be exciting, but if the candidate wants to find out about, say, their leadership style, they might be better off asking questions of a courtier or member of the war cabinet. Or if they wanted to find out what we don't know about any given period, they might want to interview people who didn't leave any written records. Sometimes we might

encourage the candidate to think through whether the person they selected would be willing or able to reveal the information they sought (and we allow plenty of time for the candidate to change the issue they want to find out about, and reconsider their choice of person).'

*Interviewer: Ian Forrest, Oriel College*

**Is violence always political? Does 'political' mean something different in different contexts?**

This pair of questions allows the interviewer to deal with historical material from any period the candidate is studying or knows about from more general reading. It could also be answered extremely well from contemporary or current affairs knowledge. The aim of the question is to get the candidate to challenge some received notions about what constitutes politics, and to think about how political history might be studied away from the usual kings, parliaments etc. A good candidate would, with assistance, begin to construct categories of when violence looks more and less political. A very good candidate would, with assistance, begin to construct a useful definition of 'political', but this is challenging. The main aim would not be to solve these problems, but to use them to find some new interest in a subject that the candidate already knows something about.

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**History of Art**

*Interviewer: Geraldine Johnson, Christ Church*

**Do you recognise this image?**



William Holt Hunt's 'The Afterglow in Egypt'. ()

Courtesy the Ashmolean Museum (<http://www.ashmolean.org/ash/objects/makedetail.php?pmu=730&mu=732&gty=qsea&sec=&dtm=15&sfn=Artist%20Sort,Title&cpa=1&rpos=0&key=WA1894.3>).

This is the first question we ask History of Art candidates in interviews when they are shown images of artworks like this one. And it is the only question for which there is a single, correct answer, which is 'No' – though if the answer happens to be 'Yes,' then we simply pull out another image to show them. The interviewers obviously know what the picture being shown is, and the point isn't to quiz candidates on what they may or may not have stumbled across in a book, online or in a gallery. Instead, we want our candidates, many of whom have never studied Art History, to show us how they would begin to approach an image they have not previously encountered. We want to find out what questions a candidate would ask about a particular image: what is it made of? What is being depicted? What size might it be? For what purpose might it have originally been made? How could we try to figure out when it might have been produced, and by whom?

We are less interested in hearing a “correct” answer than in seeing the thought process a candidate goes through in trying to analyze something he or she has never seen before. In fact, we have had candidates who have been off by several centuries and entire continents when assessing an unknown image, but who have really impressed us at interview because of the potential they showed in the kinds of questions they asked. In trying to tackle these questions, we hope that the interview will resemble a tutorial in establishing a two-way conversation rather than being just an exercise in question and answer.

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## Law

*Interviewer: Ben McFarlane, Faculty of Law*

### **What does it mean for someone to ‘take’ another’s car?**

There is no right answer to this question. For example, can you take a car without driving it, or even without moving it? Our focus is on the candidate's reasoning – how he or she formulates an initial definition, and how he or she then applies and refines that initial definition in response to hypothetical examples provided by the interviewers. One example might be: 'I am walking along the street when it starts to rain. I open the door of an unlocked car and sit there for 15 minutes until the rain passes. Have I ‘taken’ the car?' The aim of the interview is to give the candidate a chance to show his or her application, reasoning ability, and communication skills.

*Interviewer: Liora Lazarus, St Anne’s College*

### **If the punishment for parking on double yellow lines were death, and therefore nobody did it, would that be a just and effective law?**

Candidates are not meant to give a right or wrong answer to this question. They need to demonstrate that they have recognised the various issues that arise. The candidate who distinguishes between 'just' and 'effective' does best. The issues are different once that distinction is made. A just law might not be effective, or vice versa. The issues of how proportionate the punishment is to the crime refer to the justness of the law. The answer to its effectiveness is already in the question: 'and therefore nobody did it.'

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## Materials Science

*Interviewer: Steve Roberts, St Edmund Hall*

### **How hot does the air have to be in a hot air balloon if I wanted to use it to lift an elephant?**

When I actually used this question in interviews, no-one actually got as far as an actual 'X degrees C' answer in the ten minutes or so we allowed for it, nor did we expect them to. We use this sort of question to try to find how applicants think about problems, and how they

might operate within a tutorial. We make this clear to interviewees before even giving them questions of this type. Things we are looking for include how readily they can see into the core of a problem (what's the essential physics in this? – what concepts and equations might be useful?); how they respond to hints and suggestions from us (can they take a hint or two and run with it, or do they have to be dragged through every step?); their approach to basic concepts (how does a hot air balloon work, anyway? What else operates like one?); estimates (typical size of balloon, weight of elephant) and sorting out what's important (what about the weight of the balloon itself?); and how they use 'rough maths' to get a quick idea of the likely sort of answer, using sensible approximations in working through formulae, and keeping track of units.

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## Medicine

*Interviewer: Robert Wilkins, Department of Physiology, Anatomy and Genetics*

### Why does your heart rate increase when you exercise?

The simple answer, which all students can provide, is because you need to deliver more oxygen and nutrients to muscles and remove metabolic products. But follow-up questions would probe whether the student appreciates that there must be a way for the body to know it needs to raise the heart rate, and possible ways for achieving this. Answers might include sensing lowered oxygen or raised carbon dioxide levels. In fact, gas levels might not change much, so students are further asked to propose other signals and ways in which those possibilities could be tested. This probes selection criteria such as problem-solving and critical thinking, intellectual curiosity, enthusiasm and curiosity, and the ability to listen.

### Why do we have red blood cells?

Initial answers to this question are likely to centre on why the cells are red (the presence of pigmented haemoglobin) and what red cells do (the transport of oxygen, bound to haemoglobin, from the lungs to cells throughout the body). The real point of this question, however, is to see whether students can offer suggestions as to why haemoglobin is required and why the haemoglobin needs to be contained within red cells and is not free in the plasma.

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## Modern Languages

*Interviewer: Helen Swift, St Hilda's College*

### Should poetry be difficult to understand?

This question arose out of discussion of a few poems that a candidate said he had read, and we were talking through how these poems were conveying meaning (through things such as tone and the imagery they used). We wanted to push the candidate into more conceptual thinking to test his intellectual curiosity and how he would handle moving from familiar particulars (the poems he knew) to less familiar ways of approaching them. What's important for candidates to realise is that we don't expect a single correct answer to such a question; it's a starting point for a new direction of discussion: what sorts of

'difficulties' might we have in mind? Are these specific to poetry or do they also feature in other types of writing? And so on.

What most interests us is that candidates are willing to venture down a new path, however uncertain this may feel: to have a go and show that they have the potential to develop their thinking further – and thus thrive on the sort of course we offer. Literature forms an important part of a Modern Languages degree at Oxford, but we know that most candidates won't have studied literature formally before in the language for which they're applying. What we want to know isn't that they've read a certain number of texts to prove their interest, but that they have the aptitude for studying texts: that they're able to think carefully and imaginatively about whatever they've had chance to read (poems, prose, drama) that's interested them, in any language.

### **What is language?**

Although I would never launch this question at a candidate on its own, it might grow out of a discussion. Students sometimes say they like studying Spanish, for example, because they 'love the language'. In order to get a student thinking critically and analytically, the question would get them to consider what constitutes the language they enjoy – is it defined by particular features or by function (what it does)? How does form relate to meaning? And so on.

### **What makes a short story different from a novel?**

To further their subject interest and to discover whether the Oxford Modern Languages course is a good fit for them, candidates are encouraged to try reading some literary texts in the foreign language. We know that most won't have studied literature formally before in the language for which they're applying, so this will be reading that they've undertaken independently. In that respect, short stories, such as those by Guy de Maupassant, are a good and a popular place to start: they're engaging, memorable and can feel quite approachable. So if a candidate mentions s/he has read a few short stories, we might begin by asking them which they found the most engaging (or, for instance, the most challenging) and why. After developing this discussion for a short while, we might then push outwards from particular narratives to broader, conceptual issues, such as 'what is a short story?' or, differently posed, 'what makes a short story different from a novel?'

This isn't a question on which we'd necessarily have expected the candidate to have reflected already; it would be the beginning of a conversation, which would start by breaking down the question itself and building up an answer gradually: what might we want to think about in making such a comparison? What elements of plot design or structure or character presentation might differ? Are there, in fact, salient differences? Is it a valid opposition to make? We'd be looking for a willingness to try out new ways of thinking and an aptitude for thinking carefully and imaginatively through a perhaps initially unfamiliar issue. That we'd been speaking about one or two particular stories before posing this 'bigger picture' question would mean that the candidate would have ready to hand material to illustrate her/his responses. In asking such a question, I as interviewer don't have in my mind a fixed answer or set of expected points as the candidate starts to respond; the follow-up on any question depends on how s/he sets about thinking her/his way through it.

*Interviewer: Stephen Goddard, St Catherine's College*

### **In a world where English is a global language, why learn French?**

I might use this question early in an interview in order to set the candidate thinking, and to elicit some idea of their motivation before moving on to more specific questions. Given the nature of the Modern Languages course, I would be interested in responses about the French language as a 'window' into French culture/literature/history, knowledge of which is valuable in itself/essential to understanding today's world, etc.; but would also be happy to see candidates investigate some of the assumptions underlying the question: Is English a global language? What about Mandarin Chinese, Spanish, etc.? Can we not in fact still consider French a global language? And so on.

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### **Music**

*Interviewer: Dan Grimley, Merton College*

### **If you could invent a new musical instrument, what kind of sound would it make?**

This question is really very open-ended, and I'm interested in answers which demonstrate a critical imagination at work--what kinds of sounds do instruments/voices make now, and how might these be imaginatively extended/developed? Are there new ways of producing sound (digital media) which have transformed the way we listen or understand sound? Is the idea of an 'instrument' somehow outdated these days, and can we imagine more symbiotic/hybrid ways of generating/experiencing musical sound? It's by no means limited to classical music – I'd welcome answers which deal with musical styles and tastes of all kinds (and which are produced/consumed in all places).

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### **Oriental Studies**

*Interviewer: Alison Salvesen, Mansfield College*

### **Can archaeology 'prove' or 'disprove' the Bible?**

Candidates in my subject come from a wide variety of backgrounds and qualifications, so we generally try to tailor the interview questions to the individual according to what they have on the UCAS form or wrote about in their submitted work, in order to find out whether they have a genuine interest in the subject area and an aptitude for the course.

For this particular question I would be looking for an answer that showed the candidate could appreciate that the Bible was a collection of documents written and transmitted over several centuries, and containing important traditions that have a bearing on history, but that academic study of the Bible means that it has to be examined carefully to see when and where these traditions had come from and for what purpose they had been written. Whereas they should recognise that archaeology relies on non-literary sources preserved from ancient periods such as the remains of buildings and tools. These can often be dated by scientific means (and so appear more

objective than literature), but we still frequently need additional information such as inscriptions or evidence from other similar sites in order to make sense of the ancient remains. In the end I would hope the candidate would work towards a realisation of the very different nature of these types of evidence, which sometimes gives a complementary picture, while in others it may be contradictory. Both require very careful interpretation, and just arguing that ‘The Bible says’ or that ‘Archaeology proves’ is much too simplistic. (The same kind of thing applies to archaeology, the Quran, and non-Islamic historical sources for a study of the early Arab conquests.)

### **Philosophy, Politics and Economics**

*Interviewer: Brian Bell, Lady Margaret Hall*

#### **Why is income per head between 50 and 100 times larger in the United States than in countries such as Burundi and Malawi?**

The question is focused on perhaps the most important economic question there is: why are some countries rich and some countries poor? As with most economics questions, there is no simple or unique answer. Candidates need to think about all the potential reasons why such income gaps exist. A good starting point is to think about whether the amount of capital and technology available to workers in different countries is the same and if not, why not? US workers are much more productive because they have access to the best technology - the US is at the technological frontier. But why do poor countries not just buy the same technology and be as productive? Possibly, the education levels are too low to allow for the use of such technology or perhaps there are insufficient savings to purchase the technology or the infrastructure might not exist. Good candidates should recognise that institutions matter a lot - respect for property rights and the rule of law appear to be pre-requisites for sustainable development. Other factors might include trade restrictions by the rich world on poor countries exports, civil wars, disease (eg AIDS, malaria) etc. The trick is to think widely and not try and fit the answer to some lesson that has been learnt in school.

*Interviewer: Dave Leal, Brasenose College*

#### **When I was at school in the 1970s, there was talk of a pensions crisis that would one day hit. The talk persisted in the 1980s, and the 1990s – and then there was a pensions crisis, and little had been done politically to prepare us for it. Is there a fault with the British political system that means we can't sensibly address serious medium and long-term problems when they are identified?**

This question was an invitation to think about democracy and its limitations – it's a big question, but an important one. I have had candidates come up with good discussions about voting methods – for example, how having proportions of parliament voted in for much longer terms might promote more long-term policy thinking. Another approach might be to reflect on the responsibility of the electorate; if they do not think in long-term ways, it may not be politicians who are to blame, and the problem may be down to education. One might reflect upon the importance of having an unelected second chamber to which all really important business could be delegated. One candidate suggested that no one should be



allowed to stand for parliament unless they have dependent children, with the thought that this would ensure a personal motivation towards longer term thinking on a variety of matters.

There is no single 'right answer' to the question; most answers given serve as the basis for further elaboration. For example, in the case of longer parliamentary terms: What would be the wider consequences of that change? Would they be desirable? We are testing the capacity to begin to locate the source of a problem, and try out solutions through discussion. The precise solution students suggest matters much less than evidence of the refining of ideas and of self-correction where necessary.

**I'm having trouble with the meaning of three words: Lie, Deceive, Mislead. They seem to mean something a bit similar, but not exactly the same. Help me to sort them out from each other.**

When I used this question, candidates adopted a number of strategies. One was to provide definitions of each of them - which turned out to be less easy than one might think without using the other words in the definition. Or they could be contrasted in pairs, or, like a good dictionary, examples might be given of sentences where they are used. No particular strategy was 'correct', and a variety of interesting discussions developed. A few candidates were inclined to think that it might be possible to lie without intending to; most reckoned that one could unintentionally mislead. A fertile line of discussion centred on misleading someone by telling them the truth. When Lucy tries to console Mr Tumnus, the faun, in Narnia, she tells him that he is 'the nicest faun I've ever met'. Which does sound comforting. She's only ever met one faun, though - him - so he's also the nastiest faun she's ever met. If he had felt comforted by her remark, would he have been deceived? And, in saying something true, had she deceived him, or had he deceived himself?

Questions of this sort help us to test a candidate's capacity to draw nuanced distinctions between concepts, and to revise and challenge their own first moves in the light of different sentences containing the key words. Discussion may well lead into areas which could crop up during a degree in philosophy, including questions in ethics, the philosophy of mind and of language. It's not, though, a test of 'philosophical knowledge', and the content of the discussion begins from words which candidates should have a good familiarity with. Until asked this question, they would probably think that they knew their meanings pretty well. Those for whom English isn't a first language might be thought to be at a disadvantage, but they often do strikingly well at such questions, better indeed than native speakers. There may well be reasons for this, which could form the basis of a different interview question.

## Physics

*Interviewer: Jeffrey Tseng, St Edmund Hall*

**A ball, initially at rest, is pushed upwards by a constant force for a certain amount of time. Sketch the velocity of the ball as a function of time, from start to when it hits the ground.**

Physics interview questions often start with a question like this which looks as though it could have come from the Physics Admissions Test. In this example, I've asked the student to sketch a graph, and then I'd help him or her to get through the problem. Students do make mistakes, and that's fine as I don't expect them to know all the material, especially as the interview progresses. It's not assumed that a less-talented student will need more help on any given problem, and for this reason it can be difficult for students to judge how well they're doing during the interview.

If a student gets things correct straight away, I just move on, either to further aspects of the original question, or to others. For instance, the above line of questioning could easily result in a discussion of satellites, orbits, weightlessness or dark matter. It's usually a guided discussion rather than a matter of getting answers right or wrong straight away. I want to see how students respond to guidance and how they correct themselves, hopefully less by guessing than by thinking through what they know and what I've told them. Or in other words, while I am looking for a correct answer in the end, I'm even more interested in rigorous thinking.

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## Psychology

*Interviewer: Nick Yeung, University College*

**Imagine that 100 people each put £1 into a pot for a prize that will go to the winner of a simple game. Each person has to choose a number between 0 and 100. The prize goes to the person whose number is closest to  $\frac{2}{3}$  of the average of all of the numbers chosen. What number will you choose, and why?**

I like this as a question for Experimental Psychology because answering it brings in a range of skills relevant to the subject. Partly it involves numerical and analytical skills: the question implies that the answer will be  $\frac{2}{3}$  of some other number, but which one? Some people's first guess is  $\frac{2}{3}$  of 100, i.e., 66 or 67, in which case I'd ask them what numbers everyone else would have to pick for them to win. In this case, everyone else would have to choose 100, which is unlikely. More often people first guess  $\frac{2}{3}$  of 50 (= 33), which seems intuitively more likely. At this point, and usually without prompting, the recursive nature of the solution becomes clear: If there is good reason for me to choose 33, then maybe everyone else will choose 33 too, in which case I should choose  $\frac{2}{3}$  of 33... but then everyone will think this and choose  $\frac{2}{3}$  of 33 too, so I should choose  $\frac{2}{3}$  of that number.. and so on. Assuming everyone thinks like this, then everyone will eventually settle on 0 as their choice – this is the formal 'game theory' solution. At this point, I'd ask questions that bring out the candidate's broader reasoning skills in terms of thinking how we could define what it is *rational* to do in this game. Game theory gives one definition of rationality, but does it give a plausible winning answer – that is, is it likely that everyone, all 100 of them, will go through exactly the thought process we've just described? If not, is 0 really a rational answer? The question also has a psychological angle in thinking about reasons for people's behaviour and choices: Will everyone put in the same effort? Will everyone be motivated to win? When I've used this question in live audiences, sometimes people say they'd pick the number 100 just because it'd throw a spanner in the works for everyone playing the

game rationally. How should this affect your choice of answer? What if the stakes were increased so that everyone put £1000 into the pot at the start?

What's clear from all of this is that we're not looking for a single answer. Rather, we're interested in seeing how people think through a problem, figure out what are the relevant factors, respond when new information is provided, and so on.

*Interviewer: Nick Yeung, University College*

**An experiment appears to suggest Welsh speakers are worse at remembering phone numbers than English speakers. Why?**

This would never be given as a one-line question out of context – it is one of a set of questions I ask students after showing them a psychology experiment case study with data about short-term memory in English and Welsh speakers. The key point is that numbers are spelled differently and are longer in Welsh than in English, and it turns out that memory (and arithmetic) depend on how easily pronounced the words are. I would hope the student would pick out this connection between memory and how easy to spell or pronounce a word is, and how that relates to spelling and pronunciation in Welsh versus in English. The interview is structured so that further hints and guidance are provided if the student doesn't immediately see this problem with the design of the experiment described in the problem sheet. This basic question can then lead to interesting discussion about the role of language in other cognitive abilities, such as memory or maths. This question is meant to be deliberately provocative, in that I hope that it engages candidates' intuitions that Welsh people aren't simply less clever than English people!

*Interviewer: Dave Leal, Brasenose College*

**What is 'normal' for humans?**

We're keen to point out to potential psychology applicants that primarily psychology is the study of normal human beings and behaviour; in part this is because of a suspicion that potential undergraduates are attracted to psychology to help them study forms of human life they find

strange (neuroses, psychoses, parents). There are various ways that this question might be approached, but some approach that distinguishes the normal from the statistical average is a good start. Issues such as whether normality is to be judged by 'biological' factors that might be held to be common to humans, or whether it's normal within a particular culture or at a particular period of history, might also be worth addressing. We are mainly looking for a line of thinking which could be developed and challenged. Once candidates show a defensible position regarding what might serve as the basis of normality, we extend the discussion to (for example) the relation between abnormality and eccentricity.

*Interviewer: David Popplewell, Brasenose College*

**Why do human beings have two eyes?**

This question may result from a more general discussion about the human senses. It can develop in a number of different directions,

partly depending upon the knowledge and expertise of the interviewee. For example, two eyes are important for three-dimensional (3D) vision. Why is it that we can still see in 3D when only looking through one eye? What determines the optimum position and distance between the two eyes? Why is it that we see a stable view of the world even though we are constantly moving our head? How can an understanding of mathematics, physics and biology help us explain 3D vision? The discussion may develop into a consideration of the different senses and the role they play in us interacting in our environment, including interacting with other people, and the nature of perceptual experience.

*Interviewer: Miles Hewstone, New College*

### **Should interviews be used for selection?**

This question could come out of a discussion of errors and biases in human judgement – that we sometimes overlook some information, while attaching too much weight to other information; and we are often over-confident about the decisions we make. What sources of information might be used to select, for example, Oxford students? Why? How do we know that information is valid? What does validity even mean? Once we have chosen what information we will consider, how can we combine it? And what are we trying to predict? (What is the criterion?). How would you design a research study to see how well different sources of information do, in fact, predict how well we can select Oxford students? What would your study need to measure? Would there be a control group? If so, what kind of control group? What would you need to control for?

### **Theology and Religion**

*Interviewer: Andrew Teal, Pembroke College*

#### **Is someone who risks their own life (and those of others) in extreme sports or endurance activities a hero or a fool?**

Theology and Religion doesn't require A-level Religious Studies, so we always want to find issues that enable us to see how a student is able to handle and unpick a question, relating the particular to more general concepts. This question appeared to work well because there really isn't a single answer – it's open not least because we could state the opposite case and observe how flexible, reasoned and committed each student was. The question is properly approached from many perspectives and opens up many topics – is there something distinctively human about going beyond boundaries? Is this impulse selfish, or does it contribute to the whole of humanity's attainment? Is the heroism of those who respond to the needs of the sportsperson more heroic still? What debts do individuals owe to society, and society owe to individuals? What is a hero, and is that category in opposition to folly? What we found with this question is that it did manage to open what is a stressful occasion into a real discussion, and we want to offer places to gifted candidates who are willing to think out loud with us in tutorials, and in a college community, whilst they are still explorers into truths.

### **Other subjects**

If your course isn't listed here, please refer to the questions for other courses which are most similar to yours. The questions are intended to give you an insight in to the type of questions that may be asked, rather than to give specific examples of topics that will come up. You may also like to refer to the Interviews Guide (there's a link on the right hand side of this page) and the selection criteria for your course, which you can find on your course page (<http://www.ox.ac.uk/admissions/undergraduate/courses>).

### **() Solution to the 'pirate problem (#acomputer\_science) '**

The solution involves looking at what happens with only 2 pirates, and working up from there.

(We assume that the most senior pirate has the letter A. Others will be B, C, D etc, depending on how many there are in the group.)

#### 2 Pirates

Pirate A suggests he gets all the gold. He votes for it, so it carries.

Pirate A gets 100 coins, pirate B gets 0.

#### 3 Pirates

Pirate A knows that if he's thrown overboard, pirate C would get nothing (as the situation would revert to the two pirate example above, with pirate C promoted to pirate B). So if pirate A bribes pirate C with 1 coin, pirate C will vote in favour.

Pirate A gets 99 coins, pirate B gets 0, pirate C gets 1.

#### 4 Pirates

Pirate A knows that if he dies, then pirate C gets nothing (again, it will become the 3 pirate case, and pirate C will be promoted to pirate B), so he needs 1 coin to bribe him.

Pirate A gets 99 coins, pirate B gets 0, pirate C gets 1, pirate D gets 0.

#### 5 Pirates

Now Pirate A needs 3 votes, so he must bribe each of the pirates who would get 0 coins if he dies with 1 coin each.

Pirate A gets 98 coins, pirate B gets 0, pirate B gets 1, pirate D gets 0, pirate E gets 1.

#### 6 Pirates

Same story: bribe pirate B and pirate D.

Pirate A gets 98 coins, pirate B gets 0, pirate C gets 1, pirate D gets 0, pirate E gets 1, pirate F gets 0.

#### 7 Pirates

In this final stage (although you can continue indefinitely!) the senior pirate has to get 4 votes, so must bribe 3 pirates... might as well bribe the 3 that have the most to lose if he dies (ie, pirates C, E and G). Pirate A gets 97 coins, pirates C, E and G get 1 coin each, and the others get nothing.

