Archaeology Admissions Assessment

Time allowed: one hour

Rubric

The Archaeology Admissions Assessment will involve reading one passage of text of around 500 words (selected from two options) and answering two related questions (chosen from a list of four questions).

Answers should be typed, in a format readable in MS Word, and the use of word-processing apps is permitted. There is no word limit but markers will reward quality over quantity.

While no restriction is placed upon you as to the resources you may use, it is important to note that we are not looking for prior or acquired knowledge in your answer. The task is designed to assess comprehension and the ability to read closely, deploy arguments effectively, and write clearly – all skills which archaeologists will need to use continuously throughout their undergraduate studies. You should remember that the more time you spend using other resources will mean less time for planning and writing your answer.

We will be looking in answers for

- the ability to think analytically
- the ability to produce a coherent argument
- the ability to select and use evidence appropriately
- the ability to address the question directly and clearly
- precision, clarity and facility of writing under time pressure

Not all answers will demonstrate these qualities equally, but the best answers will show signs of all, or nearly all, of them.

The assessment does not presume that you have encountered this material or these topics before; it is simply a self-contained exercise in reading comprehension, thinking and writing.

The answer you provide must be your own. Papers may be checked using anti-plagiarism software, and you should not discuss your answers or the paper with anyone else.

Burke, A., et al. (2021). 'The archaeology of climate change: The case for cultural diversity'. *Proceedings of the National Academy of Sciences*

Current efforts to curb global warming have been largely ineffective and future climate scenarios predict that global temperatures will rise from +2.6 to + 4.8 °C (and as much as +8 °C in the Arctic) by the end of the century. The scope of the ecological transformations that could occur beyond 2100 CE under prevailing emission rates is truly alarming. Planning a sustainable response to climate change requires us to identify the critical climate thresholds capable of disrupting social, economic, or political systems and culturally appropriate strategies for countering such disruptions.

Natural climate archives (e.g., pollen data, sediment records, ice cores) and the paleontological and archaeological records offer unique opportunities for observing, measuring, and understanding how humans have responded to a wide range of climate events in the past, forming a sound basis for predicting how climate change could transform our lives in the future and offering a range of possible solutions. The archaeological record is a valuable source of information that has been largely overlooked in climate research until comparatively recently, however. As a result, the sensitivity of human systems to the full range of conditions predicted under different future climate scenarios remains largely untested. We contend that a multidisciplinary science of the past—an "archaeology of climate change"—provides a solid foundation for assessing the implications of climate change across cultures and helps design sustainable development strategies. […]

For the most part, current public discourse about climate warming revolves around Western, industrialized societies despite the fact that nonindustrialized societies will likely bear the brunt of climate change. The loss of contemporary cultural diversity could represent an existential threat for our species. Natural selection operates on biological variation, but the archaeological record shows us that the long-term survival of our species also hinges on our ability to find cultural solutions to environmental challenges. Given the diversity of biomes currently inhabited by humans and the likelihood that they will respond differently to climate change, a range of cultural responses will be required. Cultural diversity, therefore, is the key to long-term human resilience. It is worth reflecting on the future of Western, industrialized economic/social systems and considering the possibility that other forms of social and economic organization may prove more resilient in the long run.

Respecting, documenting, and conserving cultural diversity, as well as biodiversity, is therefore an essential step toward building up the resilience of human systems. Because the archaeological record captures the breadth of past human adaptations, the archaeology of climate change is well situated to highlight alternative strategies that have worked in the past and address the social and economic ramifications of global warming for a diverse global community.

Answer TWO questions

1. What could be the difficulties in using evidence from the past to address climate change in the present?

2. What might the authors mean when they write that “the long-term survival of our species also hinges on our ability to find cultural solutions to environmental challenges”? Illustrate your answer with one or more examples that you know of.

3. In your opinion, what is the most important challenge that an “archaeology of climate change” should address?

4. Why might it be a problem that “current public discourse about climate warming revolves around Western, industrialized societies”?

Adapted from Lieberman, D. 2013. The Story of the Human Body: Evolution, Health and Disease. Penguin.

There are fundamental contrasts between human and chimp bodies. Apart from the obvious anatomical differences such as fur, snouts, and walking on all fours, chimps' spectacular hunting skills underscore how athletically pathetic humans are in many ways. Humans almost always hunt with weapons because no person alive could possibly match a chimp for speed, power, and agility, especially in the trees. I find it impossible not to admire the inhuman acrobatic capabilities of these chimps with which we share more than 98 percent of our genetic code.

Humans are comparatively poor athletes on land as well. The world's speediest humans can sprint about 23 miles (37 kilometers) per hour for less than half a minute. For most of us plodders, such speeds seem superhuman, but numerous mammals, including chimps and goats, easily run at twice that speed for many minutes without the help of coaches or years of intense training. I can't even outrun a squirrel. Running humans are also unwieldy and unsteady, unable to make rapid turns. Even the slightest bump or nudge can cause a runner to tumble to the ground. Finally, we lack power. An adult male chimp weighs 15 to 20 kilograms (33 to 44 pounds) less than most human males, yet efforts to measure their strength indicate that a typical chimp can muster more than twice as much muscle force as the brawniest of elite human athletes.

As we start our exploration of the human body's story in order to ask what humans are adapted for, a key first question is: why and how did humans become so ill adapted to life in trees, as well as feeble, slow, and awkward? The answer begins with becoming upright, apparently the first major transformation in human evolution. If there was any one key initial adaptation, a spark that set the human lineage off on a separate evolutionary path from the other apes, it was likely bipedalism, the ability to stand and walk on two feet. In his typically prescient fashion, Darwin first suggested this idea in 1871. Lacking any fossil record, Darwin made his conjecture by reasoning that the earliest human ancestors evolved from apes; by becoming upright, they emancipated their hands from locomotion, freeing them for making and using tools, which then favored the evolution of larger brains, language, and other distinctive human features.

A century and a half later, we now have enough evidence to suggest that Darwin was probably right. Thanks to a peculiar set of contingent circumstances—many of them initiated by climate change—the oldest known members of the human lineage developed several adaptations to stand and walk on just two legs more easily and frequently than apes. Today, we are so thoroughly adapted to being habitually bipedal, we rarely give our unusual way of standing, walking, and running much thought. But look around you: how many other creatures, apart from birds (or kangaroos if you live in Australia), do you see tottering or hopping about on just two legs? The evidence suggests that of all the human body's major transformations over the last few million years, this adaptive shift was one of the most momentous, not only because of its advantages, but also because of its disadvantages. Therefore, learning about how our early ancestors became adapted to being upright is a principal starting point for recounting the human body's journey.

A male western chimpanzee (from Biomedical Primate Research Centre via livescience.com)

Answer TWO questions

1. If humans are so 'feeble, slow, and awkward', what do you think are the key human characteristics that have made us such a successful species?

2. Explain what you think are the key advantages for humans of being a biped (walking on two legs)? Draw on ideas from the text and your own thoughts on this question.

3. Biological anthropologists often compare humans to chimpanzees and bonobos, our closest living relatives in the animal kingdom. What do you think are the potential strengths and pitfalls of using this comparison to make inferences about human evolution?

4. How might understanding how climate changes influenced human evolution and history help us to deal with the challenges of climate change today?