

## Exercise 4 - Verbal Reasoning

### Writing MCAT Questions

**Imagine that you are an MCAT writer. As a generative exercise for creating the Verbal Reasoning section, read the passage below and review the questions which follow concerning the passage. Write one correct answer and one incorrect answer for each question. Try to make the incorrect answer a tricky one.**

To suppose that the eye with all its inimitable contrivances for adjusting the focus to different distances, for admitting different amounts of light, and for the correction of spherical and chromatic aberration, could have been formed by natural selection, seems, I freely confess, absurd in the highest degree. When it was first said that the sun stood still and the world turned round, the common sense of mankind declared the doctrine false; but the old saying of *Vox populi, vox Dei*, as every philosopher knows, cannot be trusted in science. Reason tells me, that if numerous gradations from a simple and imperfect eye to one complex and perfect can be shown to exist, each grade being useful to its possessor, as is certainly the case; if further, the eye ever varies and the variations be inherited, as is likewise certainly the case; and if such variations should be useful to any animal under changing conditions of life, then the difficulty of believing that a perfect and complex eye could be formed by natural selection, though insuperable by our imagination, should not be considered as subversive of the theory. How a nerve comes to be sensitive to light, hardly concerns us more than how life itself originated; but I may remark that, as some of the lowest organisms, in which nerves cannot be detected, are capable of perceiving light, it does not seem impossible that certain sensitive elements in their sarcode should become aggregated and developed into nerves, endowed with this special sensibility.

In searching for the gradations through which an organ in any species has been perfected, we ought to look exclusively to its lineal progenitors; but this is scarcely ever possible, and we are forced to look to other species and genera of the same group, that is to the collateral descendants from the same parent-form, in order to see what gradations are possible, and for the chance of some gradations having been transmitted in an unaltered or little altered condition. But the state of the same organ in distinct classes may incidentally throw light on the steps by which it has been perfected.

The simplest organ which can be called an eye consists of an optic nerve, surrounded by pigment cells and covered by translucent skin, but without any lens or other refractive body. We may, however, according to Mr. Jourdain, descend even a step lower and find aggregates of pigment cells, apparently serving as organs of vision, without any nerves, and resting merely on sarcode tissue. Eyes of the above simple nature are not capable of distinct vision, and serve only to distinguish light from darkness. In certain star fishes, small depressions in the layer of pigment which surrounds the nerve are filled, as described by the author just quoted, with transparent gelatinous matter, projecting with a convex surface, like the cornea in the higher animals. He suggests that this serves not to form an image, but only to concentrate the luminous rays and render their perception more easy. In this concentration of the rays we gain the first and by far the most important step towards the formation of a true, picture forming eye; for we have only to place the naked extremity of the optic nerve, which in some of the lower animals lies deeply buried in the body, and in some near the surface, at the right distance from the concentrating apparatus, and an image will be formed on it.

from Darwin, Charles, *The Origin of the Species*, 1859



**Review the following questions concerning the above passage. Write one best and one second best (incorrect) answer.**

According to the author, what does the proposition that the eye could have been formed by natural selection have in common with the discovery that the earth orbits the sun?

Which of the following does the passage suggest was the most critical step in the evolution of the image forming eye?

For the author, what is the relationship between common sense and reason in the understanding of scientific discoveries?

How would the author of the above passage interpret the existence of a species of organism with eyes lacking a lens which can be shown to have descended from a species with eyes in possession of such a structure?

