

Neuroaesthetics

Neuroaesthetics is an emerging discipline seeking to bring scientific objectivity to the study of art, and has already given us a better understanding of many masterpieces. For instance the brain's amygdala seems to be stimulated by the blurred imagery of impressionist paintings. That finding might explain why many people find these pieces so moving since the amygdala plays a crucial role in our feelings.

Could the same approach also shed light on abstract 20th century pieces, from Pollock's seemingly haphazard arrangements of splashed paint on canvas to Mondrian's geometrical blocks of colour? Sceptics believe that because they are famous people claim to like such works. We always have an inclination to follow the crowd. When asked to make simple perceptual decisions, for example matching a shape to its rotated image, people often choose the wrong answer if they see others choosing it. It is easy to imagine that this behaviour would have even more effect on a fuzzy concept where there is no right or wrong answer, like art appreciation.

Angelina Hawley-Dolan, of Boston College, Massachusetts, asked volunteers to view pairs of paintings - either the doodles of chimps, infants and elephants or the creations of famous abstract artists. They then had to tell which they liked. No captions were given to one-third of the paintings, while many were labelled incorrectly. Volunteers were actually seeing an acclaimed masterpiece but they thought they were seeing a chimp's messy brush strokes. In each set of trials, even when they believed it was by an animal or a child, volunteers generally preferred the work of renowned artists. Even if they can't explain why, it seems that the viewer can sense the artist's vision in paintings.

Artist Robert Pepperell from Cardiff University, creates ambiguous works that are neither clearly representational nor entirely abstract. Pepperell and his collaborators in a study asked volunteers to tell how authoritative they felt an artwork to be, and whether they viewed anything familiar in the work. The longer they took to answer these questions, the greater their neural activity and the more highly they rated the piece under scrutiny. It looked like the brain sees these images as puzzles. The harder it is to decipher the meaning, the more rewarding the moment of recognition.

And what about artists such as Mondrian, whose paintings are created exclusively of vertical and horizontal lines enclosing blocks of colour? Mondrian's works are deceptively simple, but eye-tracking studies confirm that they are carefully composed, and that simply rotating a piece radically changes the way we see it. With the altered versions they would flit across a piece more rapidly but with the originals, volunteers' eyes stayed longer on certain places in the image. As a result, when they later rated the work, the volunteers considered the altered versions less pleasurable.

Oshin Vartanian of Toronto University in a similar study, asked volunteers to compare original paintings with ones which he had altered by moving objects around within the frame. Whether it was a Van Gogh still life or an abstract by Miro, he found that almost everyone preferred the original work. Vartanian also found that when the composition of the paintings changed it reduced activation in those brain areas linked with meaning and interpretation.

Analysing the visual intricacy of different pieces of art, Alex Forsythe of the University of Liverpool, suggested that many artists use a key level of detail to please the brain. Too much detail makes it kind of a 'perceptual overload' but too little detail is boring, according to Forsythe. Appealing pieces both representational and abstract, show signs of 'fractals' - repeated motifs keep repeating in different scales, fractals are common throughout nature, for example in the branches of trees or shapes of mountain peaks. It is possible that our visual system finds it easier to process such patterns, which evolved in the great outdoors.

Like replaying the writer's moment of creation, the brain appears to process movement when we see a handwritten letter. Because the brain reconstructs the energetic actions the artist used as he painted it led some to wonder whether Pollock's works feel so dynamic. This may be because of our brain's 'mirror neurons', which mimic others' actions. It might even be the case that we could use neuroaesthetic studies to understand the longevity of some pieces of artwork, however the hypothesis will need to be tested thoroughly. Works best suited to our visual system may be the most likely to linger once the trends of previous generations have been forgotten while the fashions of the time might shape what is currently popular.

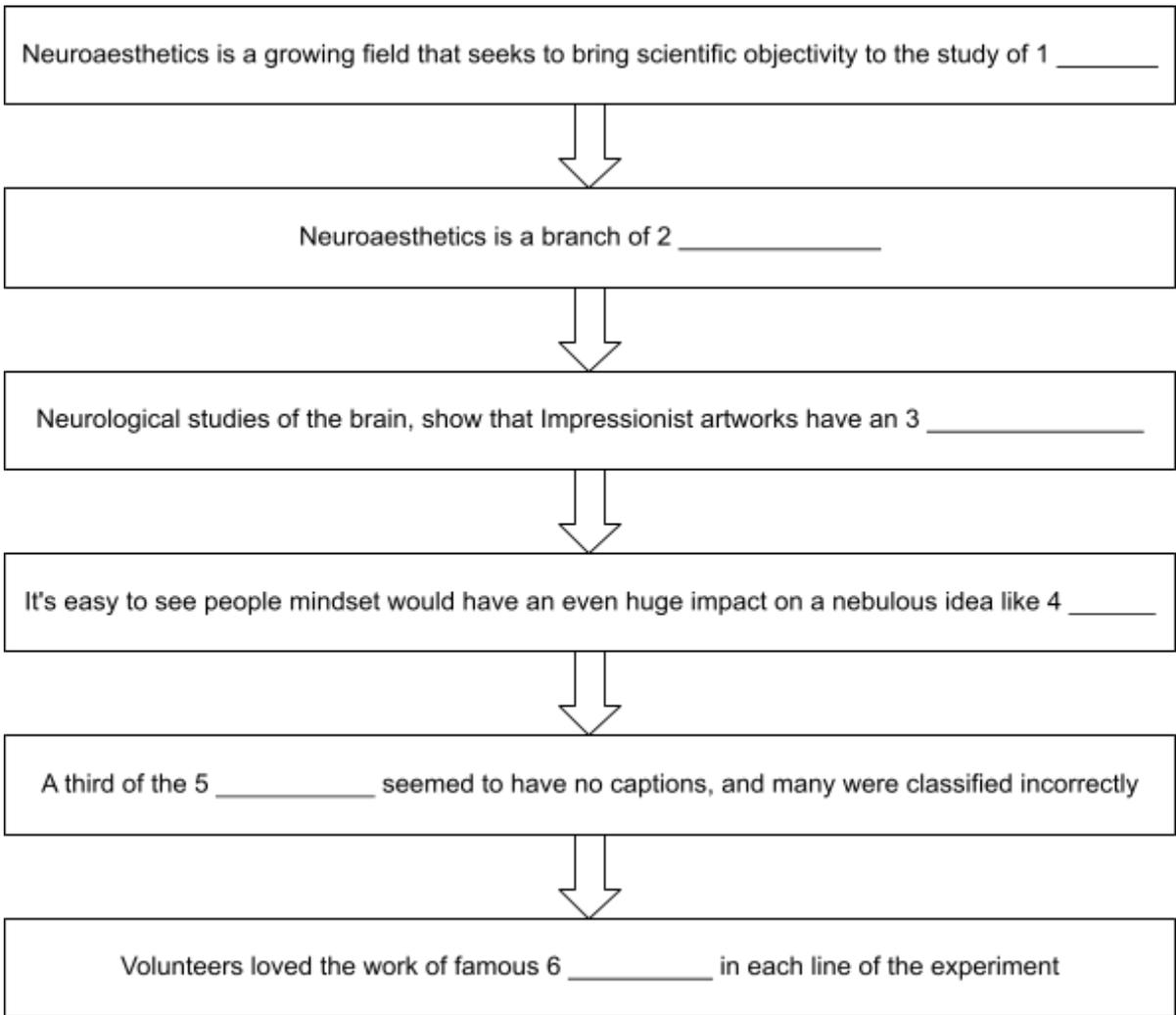
These studies are probably only a taste of what is to come and is still early days for the field of neuroaesthetics. However it would be stupid to reduce art appreciation to a set of scientific laws. We shouldn't underestimate the importance of the artistic environment, the style of a particular artist, and their place in history. Abstract art offers both the freedom and a challenge to play with different interpretations. Like science in some ways, we keep decoding meaning and looking for systems so that we can view and appreciate the world in a new way.

Neuroaesthetics IELTS Reading questions

Questions 1-6

Complete the flow chart below

*Choose **NO MORE THAN THREE WORDS** for each answer.*



Questions 7-10

Look at the following Questions 1-4 and the list of the statements below.

Match each statement with the correct one

Write the correct letter **A-E** on your answer sheet.

NB You may use any letter more than once.

- 7. Made volunteers see pairs of paintings - either the doodles of chimps, infants and elephants or the creations of famous abstract artists.
- 8. Created ambiguous works that are neither clearly representational nor entirely abstract.
- 9. Asked volunteers to compare original paintings with ones which he had altered by moving objects around within the frame.

10. Suggested that many artists use a key level of detail to please the brain.

- A. Angelina Hawley-Dolan
- B. Oshin Vartanian
- C. Robert Pepperell
- D. Mondrian
- E. Alex Forsythe

Questions 11-14

Complete the sentences below.

Choose **NO MORE THAN TWO WORDS AND/OR A NUMBERS** from the passage for each answer.

11. Neuroaesthetics is an emerging discipline seeking to bring scientific objectivity to the study of art, and has already given us a better understanding of many _____.

12. Mondrian's works are deceptively simple, but _____ studies confirm that they are carefully composed, and that simply rotating a piece radically changes the way we see it.

13. Like replaying the writer's moment of creation, the brain appears to process movement when we see a _____.

14. We shouldn't underestimate the importance of the _____, the style of a particular artist, and their place in history.

Neuroaesthetics IELTS Reading Answers with Explanation

(Note: The text in italics is from the reading passage and shows the location from where the answer is taken or inferred. The text in the regular font explains the answer in detail.)

1. art

Explanation: Paragraph 1 - *Neuroaesthetics is a growing field that seeks to bring scientific objectivity to the study of art, and it has already enhanced our knowledge of several masterpieces.*

2. psychology

Explanation: Paragraph 1 - *Neuroaesthetics is a branch of psychology that seeks to bring scientific objectivity to the study of art.*

3. emotional influence

Explanation: Paragraph 2 - Neurological studies of the brain, for instance, show that Impressionist artworks have an emotional influence on all of us.

4. art appreciation

Explanation: Paragraph 3 - It's easy to see how this mindset would have an even bigger effect on a nebulous idea like art appreciation, since there are no right or wrong answers.

5. paintings

Explanation: Paragraph 4 - A third of the paintings seemed to have no captions, and many were classified incorrectly, leading volunteers to assume they were searching at a chimp's scribbles when they were actually looking at an acclaimed masterpiece.

6. paintings

Explanation: Paragraph 4 - Volunteers liked the work of famous artists in each sequence of testing, even when they imagined it was made by an animal or a kid.

7. A. Angelina Hawley-Dolan

Explanation: Angelina Hawley-Dolan, of Boston College, Massachusetts, asked volunteers to view pairs of paintings - either the doodles of chimps, infants and elephants or the creations of famous abstract artists.

8. C. Robert Pepperell

Explanation: Artist Robert Pepperell from Cardiff University, creates ambiguous works that are neither clearly representational nor entirely abstract.

9. B. Oshin Vartanian

Explanation: Oshin Vartanian of Toronto University in a similar study, asked volunteers to compare original paintings with ones which he had altered by moving objects around within the frame.

10. E. Alex Forsythe

Explanation: Analysing the visual intricacy of different pieces of art, Alex Forsythe of the University of Liverpool, suggested that many artists use a key level of detail to please the brain.

11. Masterpieces

Explanation: Neuroaesthetics is an emerging discipline seeking to bring scientific objectivity to the study of art, and has already given us a better understanding of many masterpieces.

12. Eye-tracking

Explanation: Mondrian's works are deceptively simple, but eye-tracking studies confirm that

they are carefully composed, and that simply rotating a piece radically changes the way we see it.

13. handwritten letter

Explanation: *Like replaying the writer's moment of creation, the brain appears to process movement when we see a handwritten letter.*

14. artistic environment

Explanation: *We shouldn't underestimate the importance of the artistic environment, the style of a particular artist, and their place in history.*