Chapter 6

Neuroaesthetics: Insights into the Aesthetic Experience of Visual Art

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ABSTRACT

The aesthetic experience has been discussed throughout the history of mankind by philosophers and art historians, becoming a universal part of human experience, which leads us to some great interdisciplinary questions. It has been the subject of study by neuroscientists and neuro-psychologists since the 2000s. This recent evolution of neurology studies in the field of art, is due to in vivo brain imaging techniques, especially functional neuroimaging. Furthermore, recent research has provided evidence of cognitive interaction during the perception of an artwork indicating that the perceptual experience of art is not merely a passive one. This article reviews important studies in neuroaesthetics of visual art that point out that the aesthetic experience is related to the distribution in the neural architecture, suggesting the involvement of sensory-motor areas, emotional centers, reward system, memory and language.

INTRODUCTION

A painter is revealing something which no one has ever seen before and translates it into the absolute concepts of painting. That is, into something other than reality. (Paul Cézanne)

The relationship between perception and scientific knowledge is one of appearance to reality. It befits our human dignity to entrust ourselves to the intellect, which alone can reveal to us the reality of the world...(Descartes)

DOI: 10.4018/978-1-5225-0510-5.ch006
Humans are the only animals that create art. The evolutionary role that this ability plays is not yet fully understood. After all, why do we express ourselves by creating art? And why do we appreciate art? Considering the quoted statements by Cézanne and Descartes at the opening of this chapter, we can certainly come to the realization that one same object observed by us and by an artist takes on new meaning when painted with specific shadowing, light volume and coloring techniques, and not only that, this new form becomes an additional stimulus to our senses and as it is perceived by our mind it can potentially contribute to changing our worldview. Perception modulates our reality? This and the previous questions were the main underlying theme for studies in philosophy, history and aesthetics for many years. For example, the French phenomenological philosopher Merleau-Ponty argues that perception is the key component in the production of the artistic object and in its consideration by the viewer:

Suffice it to say that even when painters are working with real objects, their aim is never to evoke the object itself, but to create on the canvas a spectacle, which is sufficient unto it. The distinction, which is often made between the subject of the painting and the manner of the painter, is untenable because, as far as aesthetic experience is concerned, the subject consists entirely in the manner in which the painter on the canvas constitutes the grape, pipe or pouch of tobacco. Does this mean that, in art, form alone matters and not what is said? Not in the slightest. I mean that form and content – art and the world of perception what is said and the way in which it is said – cannot exist separately from one another. (p.45)

These issues were also addressed by experimental aesthetics in the nineteenth century in the works of Gustav Fechner (as cited by Shimamura, 2012). One can definitely argue that art and aesthetic experience have been objects of those research fields and that there is a clear interest in the influence of perception on the relationship between the art object, the artist and the viewer.

In the late 90s, with the advancement of scientific research on the brain and mind, a new scientific field starts to emerge: neuroaesthetics. Neuroaesthetics was a term created by Semir Zeki in 1999, in his article “Art and the brain” and it refers to the study of the neural basis of aesthetics. Zeki’s approach to art is based on understanding how the “visual brain” works, in order to obtain a true knowledge about the world. Neuroaesthetics is a relatively young field within cognitive neuroscience and is concerned with identifying the neural basis of aesthetic experience in various works of art, such as painting, music, photography and sculpture. Since the late twentieth century and early twenty-first century, many studies focus on our response to beauty to understanding the neural basis of perception. Chatterjee (2010) pointed out the study of beauty in art has helped the advancement of this research field and it surely remains incontrovertible that art is not always concerned with beauty, and visual artists do not always aim to create beautiful artwork. Another question in this field is the investigation of meaning and emotional representation in art. This article will explore the neuroaesthetic approach to the experience of art.

As we shall see, researchers have not reached a consensus regarding the definition of aesthetic experience, but it is clearly a concept tied to art behavior. Shimamura (2012) devised a model for aesthetic experience known as I-SKE, an acronym where I stands for Intention, S for Sensation, K for Knowledge and E for Emotion. The model deals with all those four elements that are implicated in the aesthetic experience: the starting point in this framework is the artist’s intention when producing an artwork that will be aesthetically appraised. The outcome of this intention is the artwork that will in turn elicit mental effects that are involved in the artwork’s appreciation and fall in three categories: sensation, knowledge and emotion. According to Shimamura (2012) I-SKE framework’s main contributions are taking the artist’s intention and beholder’s knowledge (culture, world view and personal experience) into account,