

The Neuroaesthetics of Art and Happiness

Professor Atara Grenadir, 2018

What is Neuroaesthetics?

Neuroaesthetics is a new scientific discipline that combines traditional aesthetics – the investigation of the nature of beauty and artistic taste – with the latest research in brain science. Recent advances in neuroimaging techniques can measure changes in the brain resulting from creating and viewing art. One technique, functional magnetic resonance imaging (fMRI) measures neural activity by detecting metabolic changes such as the level of blood flow. This technique relies on the fact that when an area of the brain is in use, blood flow to that region also increases.

Your Brain on Art

Belkofer, Van Hec and Konopka analyzed quantitative EEG's and found that increased alpha waves in the brain during drawing produced relaxation effects similar to meditation or exercise. They concluded that brain functions including self-regulation, relaxation, memory and spatial-temporal and visual processing are activated when people make art.¹

According to a study performed by Prof. Zeki², when people viewed art that they considered beautiful, there was increased blood flow in the orbito-frontal cortex, a pleasure and reward center in the brain, as measured by fMRI brain images. This was accompanied by a surge of dopamine, the “feel good” neurotransmitter, resulting in feelings of intense pleasure and well-being.

Art Therapy Improves Mood

A study in the February 2018 issue of *The Arts in Psychotherapy* looked at almost 200 people hospitalized for a medical issue or surgery. The researchers found that participation in art therapy for an average of 50 minutes lowered their levels of pain and anxiety. Significant improvements in pain, mood and anxiety levels were demonstrated for all patients regardless of gender, age or diagnosis.³

“Art therapy does not replace the need for pain medication, but it can be used as an effective complement and reduce perceptions of pain experiences,” says Kelsey A. Skerpan, an art therapist with Harvard-affiliated Massachusetts General Hospital. “It can help people better manage the symptoms of stress and anxiety that accompany pain, which assists with the recovery process and improves quality of life.” Art therapy helps lower the perception of pain by moving your mental focus away from the painful stimulus. It is not simply a distraction, but rather a way to teach you how to relax and alter your mood, so the pain doesn’t control your emotional state.⁴

Positive Psychology and Art

The mission of positive psychology is to understand and foster the factors that allow individuals, communities, and societies to flourish.⁵ Positive emotions serve as markers of flourishing, or optimal well-being. The overall balance of people's positive and negative emotions has been shown to predict their judgments of subjective well-being.⁶ Happiness – a composite of life satisfaction, coping resources, and positive emotions – predicts desirable life outcomes in many domains.⁷

Can we determine the specific aspects of art that correlate with happiness?

The Art Elements that are Associated with Happiness

Most artists agree that we associate *lines* that are curved or rounded with happiness. *Curved shapes* offer rhythm, happiness and pleasure. Recently neuroscientists have shown⁸ that this affection for curves isn’t just a matter of personal taste; it’s hard-wired into the brain. Roundness seems to be a universal human pleasure.

A brain imaging study conducted several years ago by Moshe Bar⁹ of Harvard Medical School found that viewing objects with sharp angle-contours, such as square watches and the like – activated the amygdala, the part of the brain that processes fear. We prefer curves because they signal lack of threat, i.e. safety.

The degree of light or darkness of a surface (the art element called value) affects the mood of the viewer. Light tones often suggest happiness, light, joy, and airiness. The intensity (brightness versus dullness) of pure colors (primary/secondary) evokes heightened energy and elevated mood.

Applications in my Artwork

In my recent series of abstractions using acrylic paint on unprimed canvas called “The Science of Happiness”, I have experimented with upward curved bands combined with dots of various sizes of pure hues. Painting these artworks stimulated in me feelings of renewed energy and enthusiasm. Viewers who have viewed these paintings have responded that these artworks elicit positive emotions.

Happiness expands the mind and promotes healing in the body. My hope is that viewers will be inspired by my artwork to thoughts of authentic happiness. Our thoughts create our reality!

Sources

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Figure 1 – Trumpets – Cerulean Blue, 24" x 24"



Figure 2 – Trumpets – Gold, 20" x 20"



Figure 3 – Trumpets – Green, 24" x 24"



Figure 4 – Trumpets – Orange, 20" x 20"



Figure 5 – Trumpets – Yellow, 36" x 36"