

Proposal for PhD Research
Jesús Cabrera Hernández 2012

PRELIMINARY TITLE

Emotions and Installation Art.
An empiric research
measuring affect using portable computing systems.

BRIEF ABSTRACT

“It is frequently said that what matters in art is emotion, both the feeling of the artist and the emotional impact of a work on its audience.”

[\(Graham, 2001\)](#)

This research project explores the complex and shifting interconnections between visual arts practice and the theory of emotions. Combining philosophy of art, science, and art practice, it’s main goal is to develop new methodological approaches in order to improve the understanding of the complex relationship between viewer, artwork and artist. A variety of aesthetic and creative experiential strategies will be employed throughout the research to produce art installations that provoke emotional and cognitive responses. These responses will be measured both in the body of the artist during the production of artworks and in the body of the viewers during its exhibition

using portable computing systems such as body gesture detection, facial affect detection or portable physiological monitoring.

RESEARCH OVERVIEW

Philosophy of Art

Aristotle attributes to art the ability to induce *“emotional catharsis”*. Art gives the audience the possibility to experience, explore and purge emotions. By watching tragedy the audience learns how to feel and experience strong emotions like pity and fear and to avoid these emotions to appear at inconvenient times in ordinary life. (Graham, 2001; Wartenberg, 2007)

Tolstoy defines art as *“communication of emotions”*. For him artists are inspired by an experience of emotion. They transform this emotion into an artwork which stimulates the same emotion in the audience. (Graham, 2001) Unlike other forms of communication (e.g. language), which are *“a means to conveying one person’s thoughts to another”*, the primary focus of art, for Tolstoy, is to share emotions or feelings. *“Through the use of such devices as color, sound, and movement, art communicates to its audience a feeling of emotion that the artist has previously experienced”*. (Wartenberg, 2007: 102) Graham explains that it is possible for a work of art to be created as a result of an emotional experience and its reception to be arousing emotion on part of the audience, but he doubts this means the emotion was embodied in the work of art. He clarifies that *“it relies upon the idea that a work of art might alter our understanding of emotions, not that it makes us feel them”*. (Graham, 2001: 28) Tolstoy claims art has a social function; for him sharing feelings is essential to humankind because it contributes to human solidarity and spiritual evolution. Following Graham’s explanation, it is not sharing emotions, but

understanding these emotions that would lead to a spiritual progress of human beings.

R.G. Collingwood claims that art is the *“expression of emotions”*. However, the artist’s intention is not only to communicate, but to understand his own emotions. (Wartenberg, 2006) For him, as for Tolstoy, art is socially important: *“Art is the community’s medicine for the worst disease of mind, the corruption of consciousness”*. (Collingwood, 1938: 304 quoted by Graham, 2001: 33) Moreover, he supports the idea of the audience as an active public *“Art is not contemplation, it is action”*, (Ibid.: 304 quoted by Ibid.) and the function of the audience is *“not a merely receptive one, but collaborative”*. (Ibid.: 324 quoted by Ibid.)

For Lev Vygotsky *“art is indissolubly associated with a complex play of emotions”*. (Vygotsky, 1925) He asserts that *“art is based upon the union of feeling and imagination”* (Ibid.) showing the connection between emotion and cognition in the experience of artworks. Vygotsky shares with Collingwood the idea of art’s social function. He explains how emotions are individually experienced and only through art become social or generalized. He defines art as a *“social technique of emotion, a tool of society which brings the most intimate and personal aspect of our being into the circle of social life”*. (Ibid.) He claims that through art an individual finds equilibrium in *“his world and in the most critical and important stages of his life”*. (Ibid.)

Kristeva defines artworks as modes of estrangement, as means of social transformation. She considers art and psychoanalysis as practices which may allow individuals to confront social and symbolic order. Both have the potential to transform the subject, change the perception of concepts and might lead to social change. She explains that art *“gives form to drives and affects so that*

these emerge from the psychic prison of individual suffering and gain meaning for, and in support of, a social group". (Beardsworth, 2005: 49) Kristeva claims that the exploration of the unconscious as practiced by psychoanalysis and art will be a protection against the commodification of human emotions. Sensory experience, emotions and affectivity is for her a resource to resist the aggression of consumer society suffered by individuals during the twentieth century and beyond. (Sjöholm, 2009: 192)

Art is for Deleuze and Guattari "*a bloc of sensations, (...), a compound of percepts and affects*"; they assert "*We paint, sculpt, compose, and write with sensations. We paint, sculpt, compose, and write sensations*". (Deleuze and Guattari, 2000: 466) They claim that works of art are present sensations in which the perception or affect is preserved in itself. Humans evolve through art in a process of becoming: "*we are not in the world, we become the world, we become by contemplating it. Everything is vision, becoming. We become universes. Becoming animal, plant, molecular, becoming zero*". (Ibid.: 468) Deleuze and Guattari explain: "*The affect goes beyond affections no less than percept goes beyond perceptions. The affect is not the passage from one lived state to another but man's nonhuman becoming*". (Ibid.: 470) They differentiate between affections and affect; one is the result of an action of a body by or upon another, the other is the process of continuous transformation by individuals: affect as becoming. (Seigworth G.J., 2005: 166) Deleuze and Guattari, as Kristeva, understand art as a medium of resistance against the dominant mainstream society and dominant subjectivity. They propose art as a "war machine", as an instrument able to produce new collective subjectivities. Art "*understood as the name for a function, a magical and aesthetic function of transformation, less involved in a making sense of the world and more involved in exploring the possibilities of being in – and becoming with – the world*". (O'Sullivan, 2006: 52)

Emotions Theory

Darwin claims that some emotional expressions, such as surprise, remain functional in humans: *“As surprise is excited by something unexpected or unknown, we naturally desire, when startled, to perceive the causes as quickly as possible: and we consequently open our eyes fully, so that the field of vision may be increased, and the eyeballs moved easily in any direction.”* (Darwin, 2009: 259) Darwin declares the function of emotional expressions to be communicative and regulative of social behavior. (Chevailier-Skolnikoff, 1973: 20 quoted by Lewens, 2007: 134) For him the expression of emotions is universal as demonstrates recent work by Paul Ekman. (Lewens, 2007: 157) Darwin’s work and recent research following his theories apply an evolutionary perspective to the theory of emotions and *“make social change part of the evolutionary process, and they make social organization part of organic organization”*. (Ibid.: 262) Human emotions are perceived *“as the result of an evolutionary processes of adaptation”*, (Schwab & Schwender, 2010: 21) which *“help humans to make decisions in highly relevant situations”*. (Ibid.: 21) Regarding art, *“evolutionary psychology characterizes the enjoyment of art and entertainment as being either a byproduct of evolution (1997, Pinker) or else a consequence of adaptation (2006, Schwender)”*. (Ibid.: 23)

Aaron Ben-Ze’ev argues artworks can generate intense emotions because they allow to prepare to emotional situations we may have the opportunity to experience. (Ben-Ze’ev, 2001: 129) For him art relies on imagination which reinforces the ability to create emotions. (Ibid.: 191&192) He attributes to art and artists a remarkable ability to describe emotions: *“the ability of art to describe emotions stems, among other things, from the fact that the specific*

cases described by artists have implications for other cases, specially with which the reader can identify". (Ibid.: 532)

Dissanayake points out that "*various forms of art have developed in all known societies*", (Dissanayake, 2000 quoted by Schwab & Schwender, 2010: 24) and asserts that the primary function of art is to "*manufacture social cohesion*". (Döveling, 2005 quoted by Ibid.: 25) For Schwab & Schwender "[art] can be employed to bring social ideas and ideals into a form that is more easily grasped, remembered and communicated". (Ibid.: 26) Emotions, particularly positive emotions, can induce "*a mental state receptive to the acquisition of new behavior and knowledge*", (Ibid.: 28) allowing to develop social affective capabilities and skills.

Neuroscience

Robert L. Solso defines Art as a "*physical material that affects a physical eye and conscious brain*", he explains how the brain interprets art stimuli in the "*light of socialized experiences and long evolutionary history*". (Solso, 2002: 13) He describes how emotions involved in the perception of artworks are difficult to measure empirically. To overcome this problem Solso develops methods that can contribute to the viewing and understanding of art by increasing awareness. (Ibid.)

Ramachandran and Hirstein suggest experiments to empirically investigate the question of how the brain responds to art. They propose eight principles trying to identify the biological factors that make individuals designate objects as works of art. To them art stimulates certain areas of the brain more than other natural stimuli. (Ramachandran and Hirstein, 1999)

Brown and Dissanayake define *Neuroaesthetics* as “*the scientific study of neural aspects of the perception of artworks*”. (Brown & Dissanayake, 2009: 43) They agree with Ramachandran and Hirstein that aesthetic emotions activate responses in certain areas of the brain (in the orbitofrontal cortex) and name “*social affiliation*” as one of the most significant emotions of art. They advocate, in line with the emotion theories supported by Dissanayake, a social function of art: “*one of the most important functions of the arts is to create and reinforce a sense of social unity so as to promote cooperation and cohesion within social groups*”. (Ibid.: 52)

Semir Zeki explains how functions of art are related with functions of the brain. He understands the functions of art as extensions of the visual brain, these functions are a “*seeking of knowledge in an ever-changing world*”. (Zeki, 1999: 80) Zeki argues the essential attributes of art - color, form or motion - are separately mapped in the cerebral-cortex. (Zeki, 1997) He explains how the activity in certain areas of the brain is very similar, at least at an elementary level, when people are viewing works of art. (Zeki, 1999)

KEY RESEARCH QUESTIONS AND OBJETIVES

The central purpose of this investigation is the study of emotional experiences during practice and reception of artworks. Based on philosophy of art, emotions-theory and neuroscience, this research explores the connections between emotions in art and social transformation. The research suggests that gaining knowledge about emotions taking place during the production of art works, can lead to a more profound art practice. Moreover, a better understanding of emotions occurring during the experience of artworks can

produce richer encounters with art and lead to a transformation of both individuals and society.

The main objective of the investigation is to establish a methodology based on portable computer systems that measure the emotions occurring both in the creation and the viewing of artworks. It will be necessary to identify which emotions are suitable to measure, select and develop the adequate portable computer systems to use and establish the adequate methods to interpret the information obtained.

Key questions this research is based on:

1. Which are the most relevant emotions taking place during the production of artworks ?
2. Which are the most relevant emotions taking place during the reception of artworks ?
3. What portable systems can be developed to measure these emotions?
4. How can the obtained information be interpreted and put into context with the theory reviewed?

METHODOLOGY

A practice-led research and a combination of qualitative and quantitative methods will be used in this research project. Carole Gray defines practice-led research as a *“research strategy [which] is carried out through practice, using predominantly methodologies and specific methods familiar to us as practitioners in the visual arts (or relevant creative fields).”* (Carole Gray, 1996: 3) Barbara Bolt stresses *“the innovative and critical potential of*

practice-led research [which] lies in its capacity to generate personally situated knowledge and new ways of modeling and externalizing such knowledge while at the same time, revealing philosophical, social and cultural contexts for the critical intervention and application of knowledge outcomes”.
 (Barrett & Bolt, 2007: 2)

The research procedure is divided in three stages - the production of artworks, their exhibition and the personal reflection and conclusion.

METHODOLOGY AND TENTATIVE TIMETABLE

| During the production of the artworks | |
|--|---|
| Y e a r . 1 | Review literature to identify relevant emotions taking place in the production of artworks. |
| | Review literature to identify suitable portable computer systems to measure emotions. |
| | Review literature to establish references to the artworks to produce. |
| | Develop a table with suitable emotions to measure. |
| | Develop and test suitable computer systems to measure emotions. |
| | Plan and produce the artworks. |
| | Test emotions to measure, measure systems and artworks. |
| | Develop artworks. |
| | Document process of developing artworks and emotions that arouse. |
| | Write project report I |

| During the exhibition of the artwork | |
|---|---|
| Y e a r . 2 | Review literature to identify relevant emotions taking place during the experience of artworks. |
| | Develop a table with suitable emotions to measure. |
| | Develop and test suitable computer systems to measure emotions. |
| | Plan and produce the exhibition. |
| | Test the measure systems in the exhibition space. |
| | Produce surveys, interviews and questionnaires. |
| | Exhibition. |
| | Collect data. |
| | Analyze data. |
| | Write project report II. |

| During personal reflection and conclusions | |
|---|-----------------------------------|
| Y e a r . 3 | Self-reflection |
| | Organize findings and conclusions |
| | Write PhD thesis. |

PRELIMINARY RESEARCH

Basic Emotions:

Fear – Anger – Sadness – Happiness – Disgust - Surprise. (Piccard, 1997: 168)

Physical manifestations of emotion:

Apparent to others: Facial expression, Voice intonation, Gestures, Movement, Posture and Pupillary dilation.

Less apparent to others: Respiration, Heart rate, pulse, Temperature, Electrodermal response, perspiration, Muscle action potentials and Blood pressure. (Ibid.: 27)

| Emotion | Physiological reactions | Expressive behaviors |
|----------------|---|---|
| JOY | Warm temperature Accelerated heartbeat | Laughing / Smiling Approach behavior Long utterances Melody change in voice |
| FEAR | Accelerated heart rate Tense muscles Breathing change Perspiration Cold Temperature Lump in throat | Silence Facial expression |
| ANGER | Accelerated heart rate Tense muscles Breathing changes Hot temperature | Facial expression General vocal changes Long utterances Aggression Tempo change |
| SADNESS | Lump in throat Tense muscles | Silence Crying / Sobbing Avoidance behaviors Facial expression |
| DISGUST | (No particular symptoms indicated) | Silence Facial expression |
| SHAME | Hot temperature Accelerated heart rate | Silence Facial expression |
| GUILT | Lump in throat | Silence |

(Extracted from Guerrero L.K, Andersen P.A & Trost, M.R, 1998: 12)

Portable computing systems (data collection systems):

1. Neurological Responses: (EEG). Electroencephalogram.
2. Autonomic Activity: systems that measure: heart rate, blood pressure, blood-pulse volume, respiration, temperature, pupil dilation, skin conductivity, and muscle tension (as measured by electromyography (EMG)).

3. Facial Expression: Facial Action Coding System (FACS), which identifies by facial-recognition systems, facial electromyography (EMG).
4. Voice. systems that measure rhythm, amplitude or duration changes.
5. Self-report measures. Post-interaction questionnaires.

(Adapted from Brave and Nass, 2008)

Examples of Artists experimenting with computing systems in order to obtain information from their own body

Sterlac: *Amplified Body, Third Hand projects*; Paras Kaul: *Mind Garden*;
Naoko Tosa: *The Flow*; Bruce Gilchrist and Johnny Bradley: *Sleeping mind*;
Catherine Richards: *Charged Hearts*; Ulrike Gabriel: *Terrain 02*; Werner Cee
and Horst Prehn: *Braindrops*; Atau Tanaka: *Sensorband performance*; Janine
Antoni: *Slumber*; Nina Sobell: *Brainwave Drawing*; John Tchalenko: *The
Painters Eye Movement*.

(Extracted from Wilson, 2002)

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