Alchimia: A Non-Touch Interactive Artwork

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ABSTRACT

This article provides insights on an experimental artwork using a non-touch interaction interface. It details the use of a generative figurative approach and describes the audio-visual psychological and relational impact on the target-audience, through direct trial, observation and adaptation, in a first-person account, since authorship is shared between article and artwork. Alchimia is an interactive installation in which a single viewer/interactor (i.e.: the one who interacts with the artefact) stands in front of a screen and a webcam, and by facial detection and simultaneous processing of pre-prepared images and sounds, a virtual mirror space of constant audio-visual stimuli is created. The artwork aims at questioning personal representation, focusing on the face, altering the expression and gender, assigning masks, making the facial traits diffuse, mixed, unexpected, in search of another self, while allowing for self-discovery and playfulness – or intimidation – by means of a simple, familiar and almost invisible interface: the webcam.

KEYWORDS

Dmad, Facial Detection, Generative Art, Positional Interaction, Processing, Webcam, Real-Time

INTRODUCTION

Humans have a long history of fascination with self-reflection (Epley & Whitchurch, 2008), documented back to the myth of Narcissus, through countless artistic renderings of all eras, the profusion of mirrored surfaces in modern architecture and interior design, and more recently embodied in the ever-present selfie (Frosh, 2015). Alchimia provokes the modern selfie-addicted audience with artistic renditions of their own faces, being stylised out of their aesthetic control, and yet still clearly portraying them. In an age where racism, migration, culture and ethnicity are still subject to debate and controversy, Alchimia presents its interactors with challenges, by assigning each detected face additional traits of different genders, ages, ethnical backgrounds or cultures, as portrayed in Figure 1. There will always be the original traits and expressions of the interactor, but there will also be traits of someone else, not necessarily beautiful, not necessarily within the expected demeanour, presenting several what if scenarios at a fast pace: what if you were a man, or a woman, or a pharaoh, or an Asian elder, and yet still you?

For many people interaction is a synonym of touching, in order to cause a response or reaction, and one of the pragmatic goals of this artwork was to test the webcam as a possible means of non-touch interaction with digital media artworks. The impact of other perception-altering stimuli, such as audio, text, and climax build-up were also considered in terms of the overall experience. The current

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version of Alchimia was first presented to an audience in July 2016, during the Paratissima festival in Lisbon, as part of the Digital Media Art PhD yearly gathering (retiro doutoral do Doutoramento em Média-Arte Digital – DMAD). The artefact is the result of a first experiment, shown at the Cerveira Art Biennial in July 2015, followed by evolutionary versions being presented at the opening of the multidisciplinary laboratory INVITRO, at Universidade Aberta’s main building in Lisbon, in October 2015; at the Eurographics Expressive 2016 conference in Lisbon, in May; at Ciência 2016 national gathering in Lisbon, in July; at the Heritales festival en Évora, in October 2016 and at the Artech 2017 conference in Macau, in September.

Over the next sections the artwork concept and implementation are presented and detailed, and the chosen options are justified. The exhibitions provided a new stream of important information and the corresponding section of this article explains what methods were used to collect audience feedback and how it impacted further developments and adjustments to the artwork. The text closes with final remarks and conclusions.

**CONCEPT**

Common human everyday visual perception is pragmatic, oriented toward the identification of objects and shapes in visual scenes, and the tendency to do so is so strong and automatic that individuals report perceiving objects in pictorial compositions even when those compositions are devoid of recognizable objects (Ishai, Fairhall & Pepperell, 2007). Humans are able to recognize faces from a very young age (Fagan III, 1976) and our own faces occupy a significant role in our recognition capabilities. Artworks, however, seek to provide the audience with more than an opportunity to engage in object or shape recognition. The aesthetic experience is viewed as a psychological process involving pleasurable attention focused on the artefact, and the suppression of everyday concerns (Cupchik, Vartanian, Crawley & Mikulis, 2009).

Personally, this author’s creative approach to any art project is always driven and based upon two guiding forces: concept and technique. This artwork was conceptually inspired by the author’s previous work, also transformative in nature. It consisted in reinterpreting anatomical images of
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