LAUREL JOHANNESSON

Paper / Artwork / Installation:

Acqua del Velluto Sospesa ~ Interactive Video Painting

Abstract:

In this paper I present the interactive video painting art work *"Acqua del Velluto Sospesa"*. I will describe the viewer interface for the interactive component as well as the conceptual approach to the project. Additionally, a comprehensive survey of works related to fluidity, interactivity, installation, video, and 3D imaging is included.

In section II of this paper I present an overview of work from the past five years. Section III covers a survey of related works focusing on fluidity, interactivity, installation, video, and 3D imaging. Section IV speaks to my methodology including the concept, code, and interactive viewer interface. I conclude with a description of the results and a summary of the future direction of the work.

The act of swimming underwater defies the sense of equilibrium the body requires: gravity, sight, hearing, balance, etc. I place the viewer as voyeur, inside my shifting ground that contains both figure and water as one amalgam. The point of view is always from outside looking in and under, operating in a kind of « lussuria ossidionale » ; as sublimations of unattainable acquisition, just out of reach by the nature of our imperfect vision into water.

I have created a water environment that responds to viewer controlled movements and encompasses the viewer in the environment that I put myself into in my images. I want the viewer to experience the feeling of being submerged in and enveloped by the water and to be able to "paint" with the liquid video imagery. Each stroke that I perform under water pushes and drags millions of molecules along. The movie painting activity relates to this as the viewer interacts and drags dynamic pixels across the screen.

The interactive aspect of this work provides a rich environment to explore connections between physical bodies and the myriad of representational systems possible in the digital realm. Physical-digital interfaces, ranging from the mouse and keyboard, to the iPhone or iPad, or further to unusual sensing systems, provide the connective tissue between our bodies and the codes represented in our machines. The viewer interface is both a practical and conceptual element in the work. Interactive systems can determine the grammar of our interaction with digital media, and ultimately open up the possibilities for meaning in the work.

Still image from video.

Screen capture from video painting.

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Keywords:
Art, Installation, Interactive Painting, Interactivity, iPhone, MSA Remote, Painting, Processing, 3D imaging, Underwater Video, Video Art, Water.

Acqua Velluta Sospesa: Interactive Video Painting Installation

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Abstract
In this paper I present the interactive video painting artwork *"Acqua Velluta Sospesa"*. I will describe the viewer interface for the interactive component as well as the conceptual approach to the project. Additionally, a comprehensive survey of works related to fluidity, interactivity, installation, video, and 3D imaging is included.

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1. Introduction
This project relates to the themes present in my ongoing artistic practice. Thematically my work is dependent on water. Water seems to have been synonymous with creation for time immemorial. My work alludes to a fundamental memory that lurks in our psyche surrounding life origins from ubiquitous water sources. My images concentrate around my own body integrations into naturalized settings that are shallow depths of water along shorelines. I seek out specific locations that reveal minimal, but absolute characteristics of the water in each country that I work in. In some instances my presence relies not so much on my being seen, as it does on my almost not being seen. As the figure assumes to take on characteristics of the surrounding qualities of light or shadow, textures of rock or submerged surfaces ; one might ask if the figure is truly present at all. Or is it merely a mirage swimming up from our imagination, like so many sailors' accounts of sighting the elusive form of their desire [1]?

In section II of this paper I present an overview of work from the past five years. Section III covers a survey of related works focusing on fluidity, interactivity, installation, video, and 3D imaging. Section IV speaks to my methodology including the concept, code, and interactive viewer interface. I conclude with a description of the results and a summary of the future direction of the work.

2. Previous Work
Previously, I have recorded still images of myself in distinct locations (Greece Iceland, France, and Italy), where water is both a national protective boundary, and simultaneously a force that is respected as unpredictable [1]. See still images (Figures 1 – 9).

Figs. 1, 2. Images from the series "Wake" photographed in Iceland. Laurel Johannesson, 2005.

Figs. 3, 4. Images from the series "Metamorphosis" photographed in Greece.

Laurel Johannesson, 2005.

Figs. 5, 6. Images from the series "Thirst" and "Metamorphosis" photographed in Greece. Laurel Johannesson 2006.

Figs. 7, 8. Images from the series "Thirst" and "Respiro" photographed in Greece. Laurel Johannesson 2006/07.

Fig. 9. Image from the series "Respiro" photographed in Italy. Laurel Johannesson, 2007.

3. Related Work

Works by others that have inspired my project include aspects of fluidity, interactivity, installation, video, and 3D imaging.

3.1 Interactivity and Fluidity

Mehmet (aka Memo) Akten is an artist, musician and engineer whose work focuses on exploring new ways of creating and performing images and sound [2]. An open-source advocate, much of his source-code and experiments are documented on his blog [3]. MSA Fluid for Processing is a library for solving real-time fluid dynamics simulations based on Navier-Stokes equations and Jos Stam's paper on Real-Time Fluid Dynamics for Games [4].

Fig. 10. Still image from MSA Fluid on a multi-touch table.

Akten's "Body Paint" is an interactive installation and performance allowing users to paint on a virtual canvas with their body, interpreting gestures and dance into evolving compositions. Custom software analyzes live feed from infra-red cameras in real-time, and converts shape and motion into colors, drips and brush-strokes. The installation is designed to work with any number of people. While the installation is suitable for a single user, when multiple users are present a new dynamic emerges between people. A user-to-user interaction is born when the audience start playing with each other through the installation, throwing virtual paint at each other, trying to splash their friends, working collaboratively to create shared artwork, or mischievously trying to vandalize others' work. [5]

Fig, 11. Participants interacting with Mehmet Akten's "Body Paint"

3.2 Video, Motion Sensing, and Interactivity

Camille Utterback's *External Measures Series* began with her attempting to create interactive paintings. The works have evolved as she continues to experiment with linking digital aesthetic systems to human movement. Utterback's installations react visually to movement in the installation space, and interact with each other to create dynamic live animations. This computer generated work that detects movement in the space via a video camera "shares a lineage with analog works like mobiles and kinetic sculptures, where artists create a framework for various possibilities to occur through the physical relationships between parts of the sculpture". [6]

Fig. 12. Viewers interacting with "Untitled 6" from Camille Utterback's External Measures Series. [8]

4. Methodology

4.1 Concept

The act of swimming underwater defies the sense of equilibrium the body requires: gravity, sight, hearing, balance, etc. I place the viewer as voyeur, inside my shifting ground that contains both figure and water as one amalgam. The point of view is always from outside looking in and under, operating in a kind of « lussuria ossidionale » ; as sublimations of unattainable acquisition, just out of reach by the nature of our imperfect vision into water. [1]
I have created a water environment that responds to viewer controlled movements and encompasses the viewer in the environment that I put myself into in my images. I want the viewer to experience the feeling of being submerged in and enveloped by the water and to be able to "paint" with the liquid video imagery.

Each stroke that I perform underwater pushes and drags millions of molecules along. The movie painting activity relates to this as the viewer interacts and drags dynamic pixels across the screen.

4.2 Underwater Video

I shot video of myself underwater at Santa Marinella along the coast of the Tyrrhenian Sea, sixty kilometers northwest of Rome, Italy. In antiquity, Santa Marinella was the site of *Aquae Caeretanae*, a Roman bathing resort [7].

Fig. 13. Excavation site of Aquae Caeretanae, Santa Marinella, Italy.

Fig. 14. Arial view of video shoot location. Tyrrhenian Sea and Castello Santa Severa, Santa Marinella, Italy.

Fig. 15. Still image from underwater video. Laurel Johannesson, 2009.

Fig. 16. Still image from underwater video. Laurel Johannesson, 2009.

Fig. 17. Still image from underwater video. Laurel Johannesson, 2009.

Fig. 18. Still image from underwater video. Laurel Johannesson, 2009.

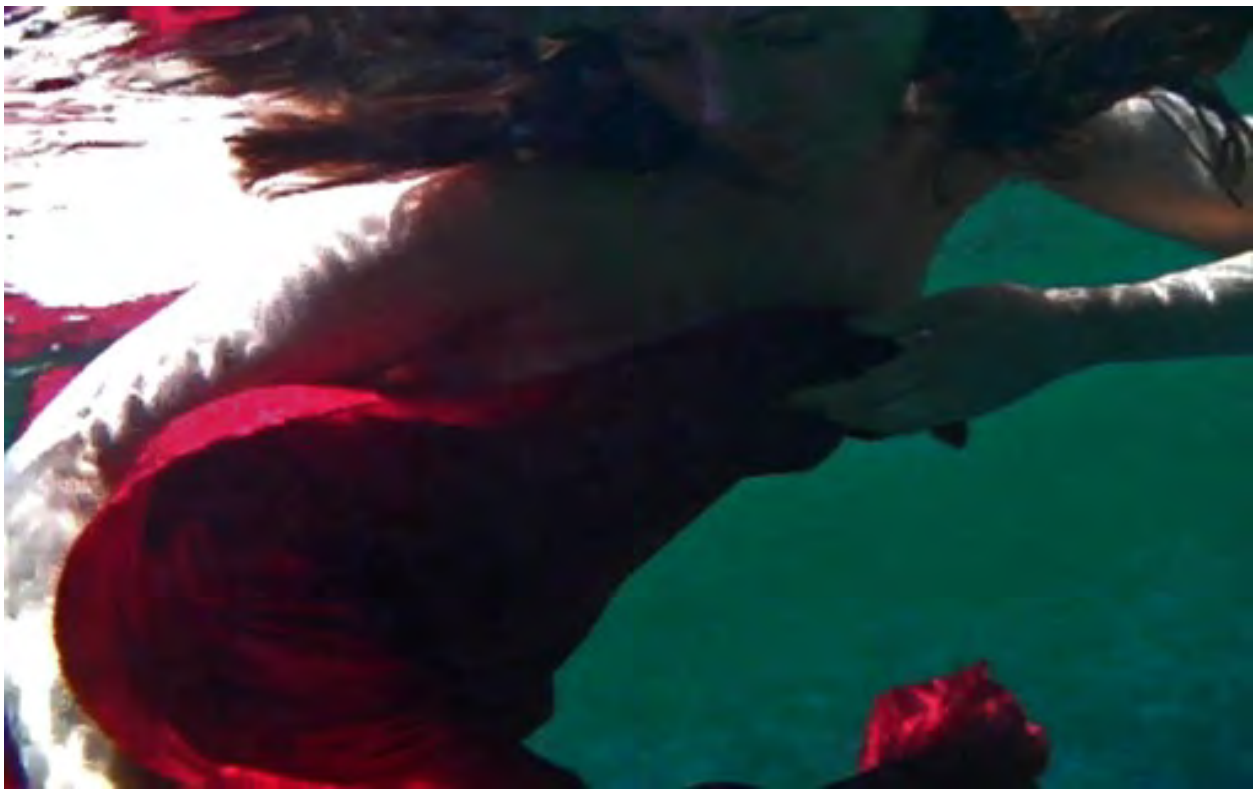


Fig. 19. Still image from underwater video. Laurel Johannesson, 2009.

Fig. 20. Still image from underwater video. Laurel Johannesson, 2009.

4.3 Processing Code

The open source programming language of Processing was used to create the project. The underwater video located in the sketch's "data" directory was inserted into a chunk

of simple Processing code. The code gives the command to load and play the movie in a loop and the drawing function allows the video picture to be used to paint using the mouse, track pad or other device such as the iPhone. By manipulating the tint or transparency as well as the image, the video leaves a trail or evolutionary history in its' wake. Tint sets the value for the displayed video. The video can be made transparent by setting the alpha. For example, a tint of (255,128) will produce an image that is fifty percent transparent. For this project the fill value was set at (255,5). The image parameter specifies the image to display and the x and y parameters define the location of the image from its' upper-left corner. The image will move when the cursor is moved. The viewer begins with a blank black "canvas" and then "paints" layer upon layer of video to build a fluid image.

4.4 Interactive Viewer Interface

Viewers receive an instruction card when entering the installation. They may choose to download the MSA remote application to their iPhone or use iPads housed in the gallery space.

Fig. 21. Viewer instruction card.

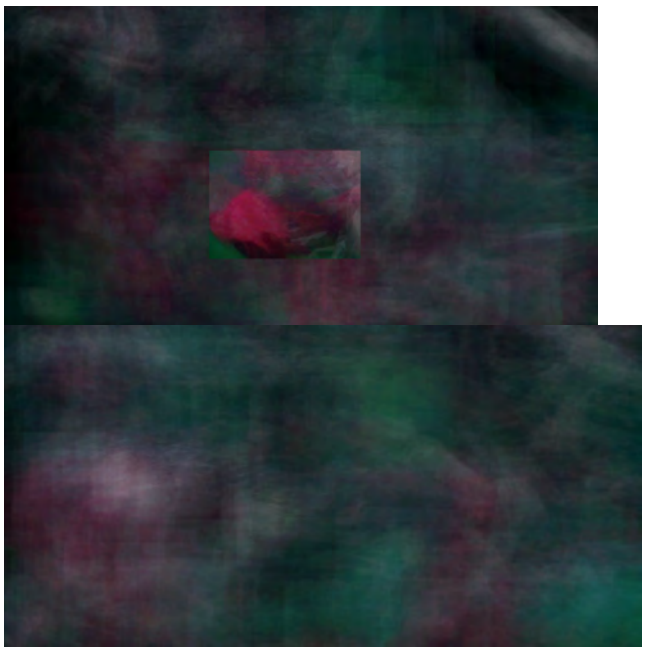
The interactive medium provides a rich environment to explore connections between physical bodies and the myriad of representational systems possible in the digital

realm. Physical-digital interfaces, ranging from the mouse and keyboard, to the iPhone or iPad, or further to unusual sensing systems, provide the connective tissue between our bodies and the codes represented in our machines. The viewer interface is both a practical and conceptual element in the work. Interactive systems can determine the grammar of our interaction with digital media, and ultimately open up the possibilities for meaning in the work.

Fig. 22. The Mega Super Awesome Visuals Company. MSA Remote for iPhone. [8]
Fig. 23. MSA Remote available at the iTunes store.

5. Results

Viewers who have experienced the interactive video painting have instantly become engaged with the activity and have rapidly gained skill and ability in creating their own composition with the supplied water video. The ever- changing footage provides a sort of brush for the painter to create with. Each participating painter has come up with a unique composition with movements, gestures, and signatures specific to them.



Figs. 24,25. Image captures from "Acqua Velluta Sospesa" Interactive Video Painting by Participants 1 and 2.

Fig. 26 Image capture from "Acqua Velluta Sospesa" Interactive Video Painting by Participant 3.

Fig. 27. Image capture from "Acqua Velluta Sospesa" Interactive Video Painting by Participant 4.

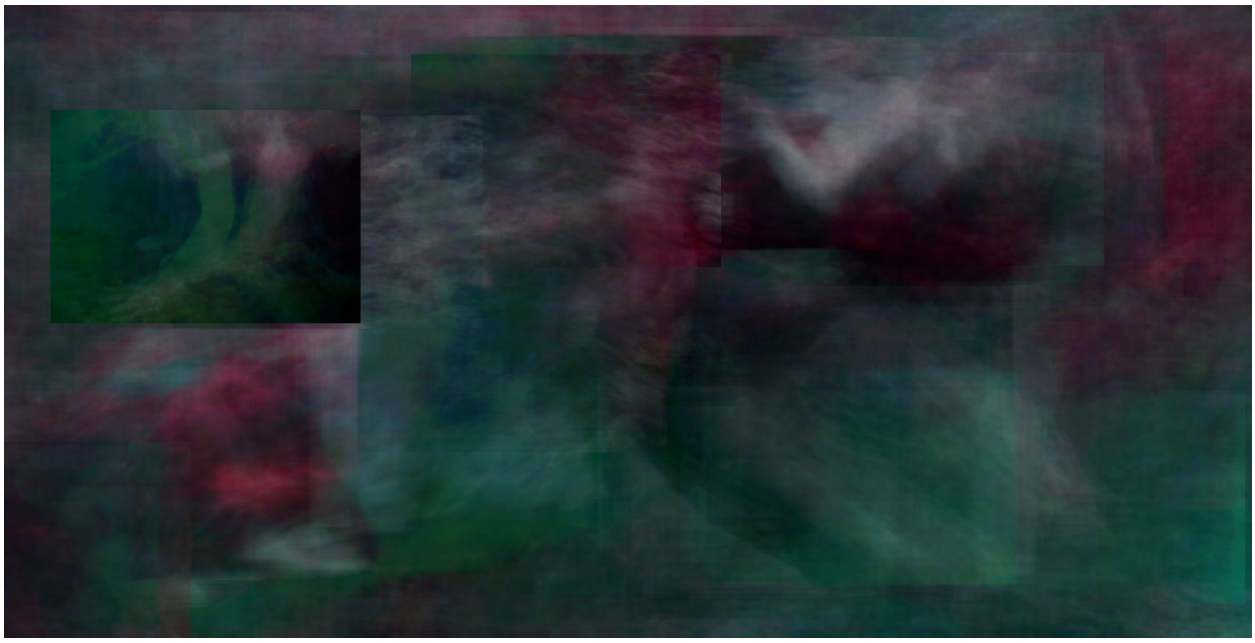


Fig. 28. Image capture from "Acqua Velluta Sospesa" Interactive Video Painting by Participant 5.

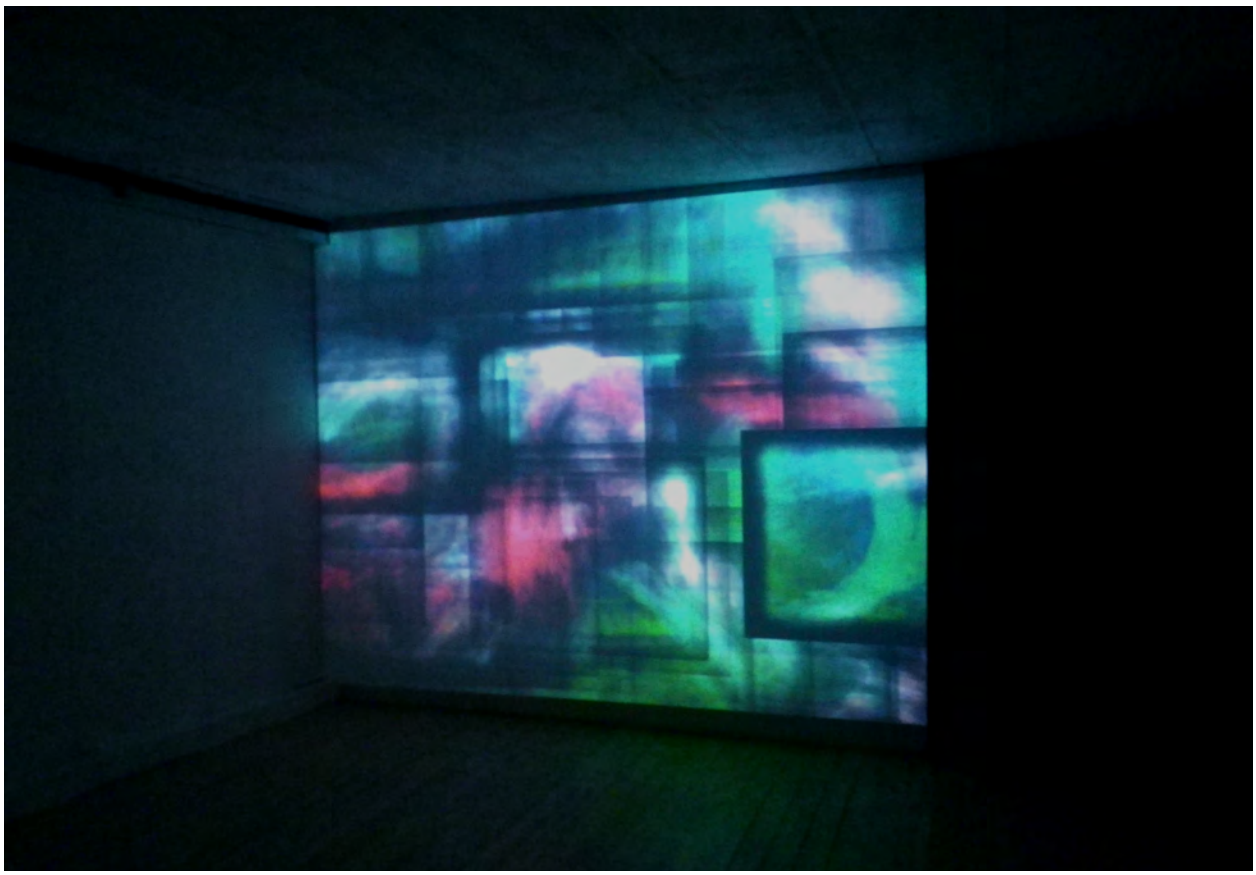


Fig. 29 "Acqua Velluta Sospesa" Installation, Spiazzi Gallery, Venice, Italy. 2010.

6. Summary and Future Work

I will develop this project further in a number of ways. I intend to investigate the possibility of adding additional video boxes with cursors assigned to them. This would enable the viewer to select from a "palette" of videos to paint with. Perhaps enabling painting with up to three fingers at a time.
I am also interested in developing physical digital systems that engage people's bodies instead of just their fingers and eyes. I hope to focus attention on the embodied self in an increasingly mediated culture. More research into 3D or stereoscopic possibilities is necessary as I would like to present the installation in a CAVE [*Cave Automatic Virtual Environment*].
Whether in a CAVE or in a traditional space, I will explore ways to respond to participant's locations in the installation space and to actual gestures and body language. By creating installations that use video tracking software to respond transparently to a user's entire body, I hope to create a visceral connection between the real and the virtual.