ECHO

AN AI THAT MIMICS THE ARTIFICIAL

Echo, Alexandre Cabanel, 1874

GAME RULES

Would you be interested in exploring another type of dialogue with yourself? Echo will introduce you with your double, allowing you to a new kind of relationship with yourself.

If the light is green, you may enter. Sit on the cube and push the central button. Your face appears. First, talk to yourself for a minute. Keep your questions/answers open and short. For example: Yes - Do you love me? - You are lying! - I love parrots - I'm scared - Are you crazy or what? - Noooo - etc.

After a minute, your reflection will start talking. Respond to it as he or she was someone else, and dive into the conversation!

The room is soundproof, and no data is kept. Feel free and enjoy!

ECHO IS A MIRROR THAT REPEATS YOUR SENTENCES IN A SHIFTED WAY.
INTROSPECTION, QUESTIONING OR SELF-DERISION, THIS EXPERIENCE IS ALL ABOUT YOU.

Yue Minjun - Untilted 1994

ECHO
ECHO TALKS TO THAT OTHER IN YOU

ECHO is a small black booth. Inside, the visitor's face seems to be reflected in a glass, but it is a video stream. The camera is behind this glass so that we can look into each other's eyes and maintain the illusion of a mirror as close as possible. The machine records the image and sound continuously, and then uses the collected words to respond to the participant and discuss with him.

When ECHO speaks, the video stream is replaced by the video sample which corresponds to the recorded sound, giving the impression that our reflection is talking to us. This artificial intelligence repeats the words in a shifted way according to the criteria of harmony of the tone of the voice. Its speech is therefore fluid in terms of musicality, but the meaning of the words is "random". The continuity of ideas in the discussion and the natural need to find meaning allow the participants to follow a conversation, but at the cost of contortions, sometimes made of embarrassment or laughter.

This prototype of artificial intelligence allows us to spend a moment with ourselves. At first it confronts us with our face, our voice, then quickly the interaction arouses curiosity, and a conversation is created. Then comes a moment of self-suggestibility, where visitors can influence themselves by listening to their past voice.

THE CONVERSATION INVITES TO PLAY AND TO QUESTION YOURSELF, BY TAKING A STEP BACK IMPLIED BY THIS "MISE EN ABIME".

A RELATIONSHIP WITH THE OTHER YOU

In this machine, the reflection and the echo which confirm our tangible reality, are also shifted in time. The experience can alter our state of consciousness, by changing this temporal dimension of natural physical processes. It invites us into the fantastic and the dream, beyond the concrete.

Jacques Lacan's concept of *the mirror stage* explains that in early childhood, our external image reflected in the mirror happens to witness and trigger our self-consciousness. Indeed, if the connection with the reflection helps to become aware of one's autonomous ego, then modifying this reflection in a realistic and unexpected way can disturb this awareness as well.

The reflection's presence can be disturbing since it questions the notions of personal identity. The fact that an AI controls this reflection is even more troubling as we can feel invited to see sides of our personality that we consciously disguises.

This installation will therefore oscillate between game and self-therapy, where the user will always reap the fruit of what he has given. ECHO let the user realizes his ephemeral self-portrait, where he can contemplate and self-analyze himself and choose the relationship he wishes and can maintain with himself at the time of the experience.

OPERATION

Virtual Image

Reflected light rays

45°

Image on screen
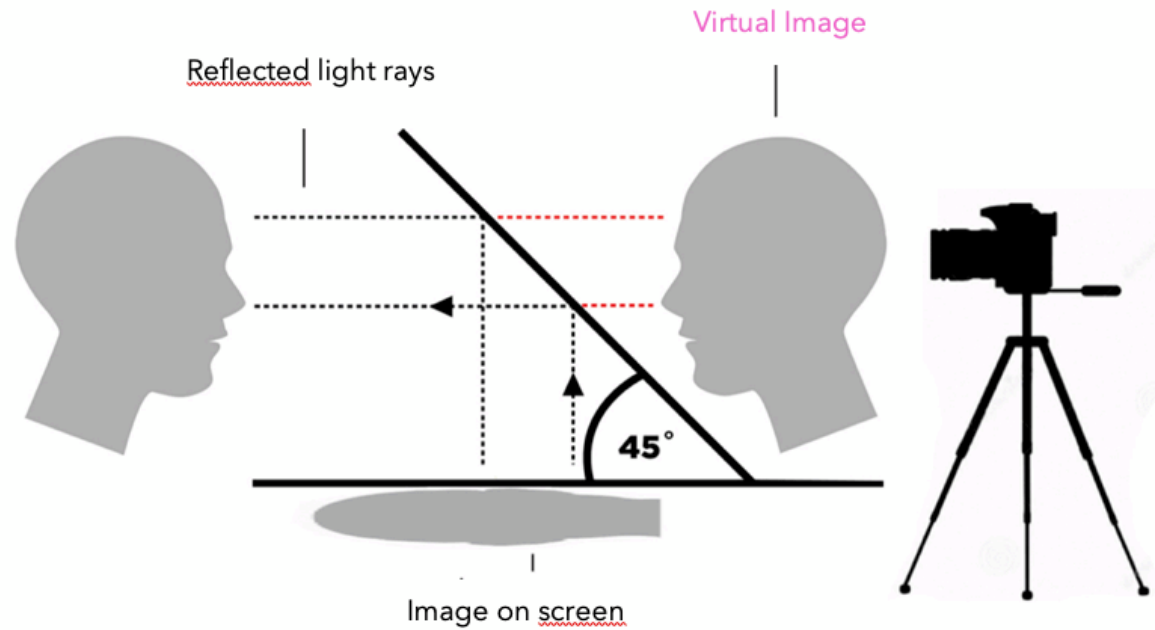
Pepper's ghost effect

The visitor enters alone, sits down, and sees his face in front of him. It appears as if there was a mirror, but it is an optical effect: an angled glass plate reflects an image positioned horizontally, which is hidden from the visitor's view (Pepper's ghost technique.)

The predictive system will record voice samples as well as the video and analyze their prosody. At the next detected silence, it will play a highly probable phrase in terms of musicality in the logical continuity of the conversation.

CORRESPONDANCES

« Music is a secret and unconscious mathematical problem of the soul. »

GOTTFRIED LEIBNIZ

PROSODY AS THE MUSIC OF DIALOGUE

The first thing we perceive about a language is its music, which means its prosodic organization. Each language has indeed a specific accentual, rhythmical, and melodic organization. In broad terms, prosody is the inflection, the tone, the intonation, the accent, the modulation that we give to our oral expression, to make our emotions and intentions more intelligible to our audience. The rhythm of speech (especially the silences) also plays an essential role. The prosodic aspects are called the "musical elements" of language. ECHO pays attention to the prosodic "attitudes" that it deduces from the analysis of the ongoing conversation. It is particularly effective at this task, as it is not influenced by the meaning of the words. Because of

this uniquely musical and asemantic approach, the machine can adapt to any language.

The link between the machine's predictive system and the human is natural, thanks to the fact that prosodic analysis mediates this relationship. Music is governed by the laws of mathematics and emotion.

The system records the words of the discussion, detects predictable situations in terms of prosody, and then repeats them at the appropriate moment. This disruption can create surprise, embarrassment, and laughter.
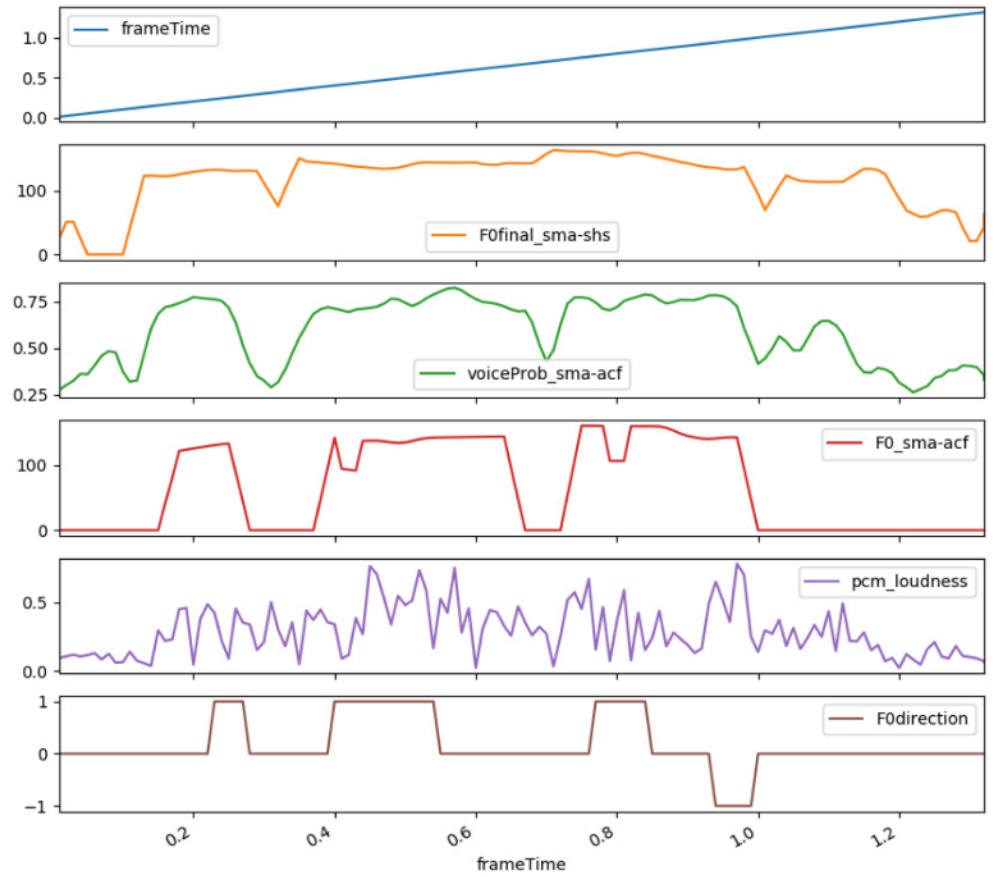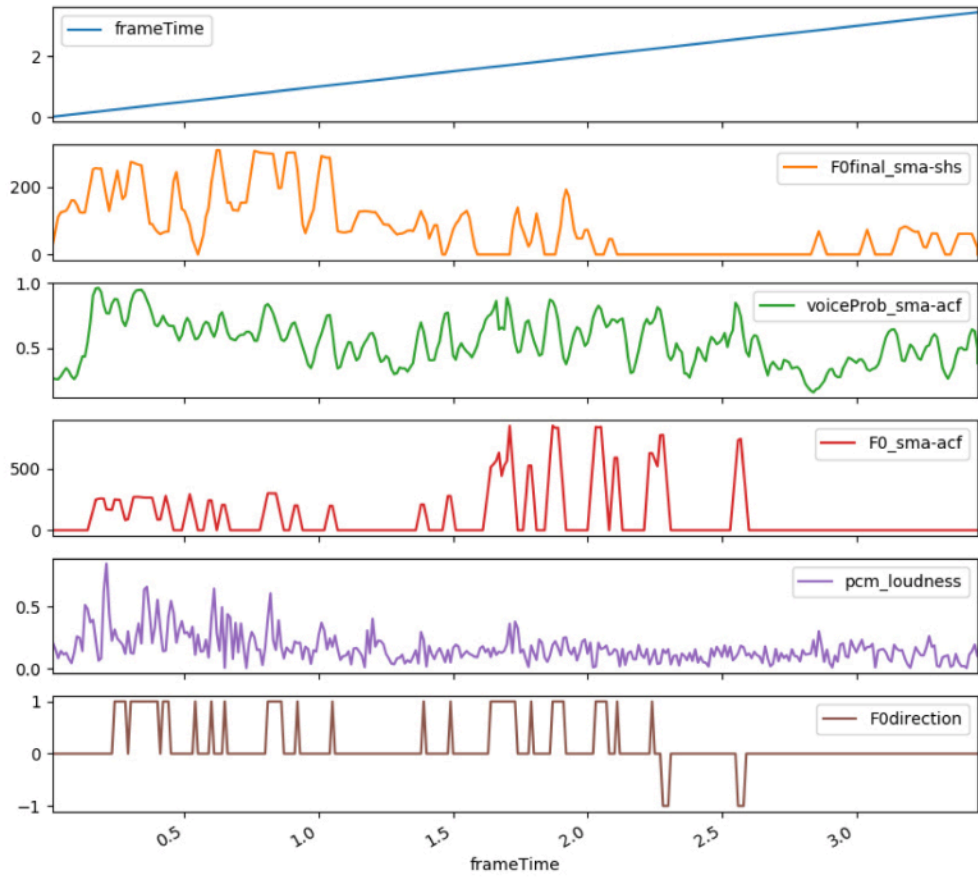
On the left, the data of a laugh, on the right, of a calm voice ice (the curves displays: pitch/voice probability/loudness/pitch direction)

THOUGHTS [414]

"Men are so necessarily mad, that not to be mad would amount to another form of madness."

BLAISE PASCAL

COINCIDENCE AND BEHAVIOR

Humans seek to create meaning naturally. The brain does not tolerate the unknown and what is not understandable. It quickly builds bridges between isolated parameters to get a reassuring coherence. ECHO's unpredictable reactions initially disturb the visitor who will gradually end up finding a sense in it. The interpretation of the semantic accidents generated by the machine will differ from one person to another, depending on the context and one's perception. Moreover, the fact of hearing our own voice put us in the listener's shoes. With this new perspective, the visitor can reflect on its own behavior and notice its subjective point of view, as an individual or within the group.

ECHO whispers into the visitors' ears, and makes suggestions, but does not give any answer. It lets the visitors make their own interpretations and allows them to read between their own lines.

According to Bergson, what is required to transform all the seriousness and gravity of our life into a comedy is "merely to fancy that our seeming, freedom conceals the strings of a dancing-Jack, and that we are, as the poet says :
... humble marionettes
The wires of which are pulled by Fate."

ECHO plays with the visitor as a marionette, with his own strings (his words), allowing him to laugh at and with himself, to be astonished by incongruous circumstances and to observe himself from a distance.

EXPECTED ACCIDENTS

Interactions between ECHO and his visitors can produce the following manifestations :

Répétition - When ECHO reuses the same phrase several times, its meaning can be transformed depending on the context.

Inversion - Inversions take place when the repeated words are in opposition with the preceding sentence.

Interference - This comical effect is comparable to a coincidence of meaning that borders on the absurd. For example, when someone's voice harmoniously fits in the middle of another's sentence, perhaps creating something surreal.

Dissonance - A dissonance refers to the discordance of a set of sounds producing a sense of instability and tension, requiring a resolution. In the case of incomplete phrase endings, awkward silences, ECHO may respond with a phrase such as an answer to a question, or a laugh, or a disturbing tonal gap.

Obligatory melodic movement - In interrogative phrase endings (with the rise to the high end of the phrase), ECHO can respond with resolving phrases (with a downward direction to the low end). This attractive note requires resolution because it is loaded with strong melodic tension.

Tension - The use of tremolo (trembling of a note, as in laughter) gives a sense of instability and suspense. It creates or reflects tension because human perceptions are oriented toward recognizing change - and tremolo is continuous instability, continuous change.

SCENOGRAPHY

Free from distraction, this space is open to surprises, generating emotion, or unexpected thoughts and leading the mind off tracks from its logical continuity.

A small black cabin of 1.2m wide, 2.2m long and 2.2m high, is divided in two: the technical space on one side and the space for the visitor to sit on the other side. The visitor is facing a reflection of his face surrounded by light.

From the outside, ECHO is a parallelepiped with a door on one side. The inside is all black. Camera, screen, microphone, and speakers are hidden in the room. The machine will be ideally installed in a quiet place. The walls will be made of acoustically insulated plywood panels.

To operate the installation requires a standard electrical line.

The system is composed of :

- A M1 Mac Mini
- An USB microphone (cardioïde, ElgatoWave 3) on a magic arm
- A 27 inch screen
- A 5D3 DSLR (or a or a camera of equal quality) on a fixed stand
- An USB capture card (Elgato CamLink)
- A 40x50 cm thin glass
- Small amplified speakers (Bose Companion 2)
- LED lights 95 CRI with a flicker-free dimmer
- A custom designed furniture
- A soundproof booth

2,20 m

1,10 m

2,20 m

Microphone

LED Panels

Camera

Glass

Display

Speakers

Computer
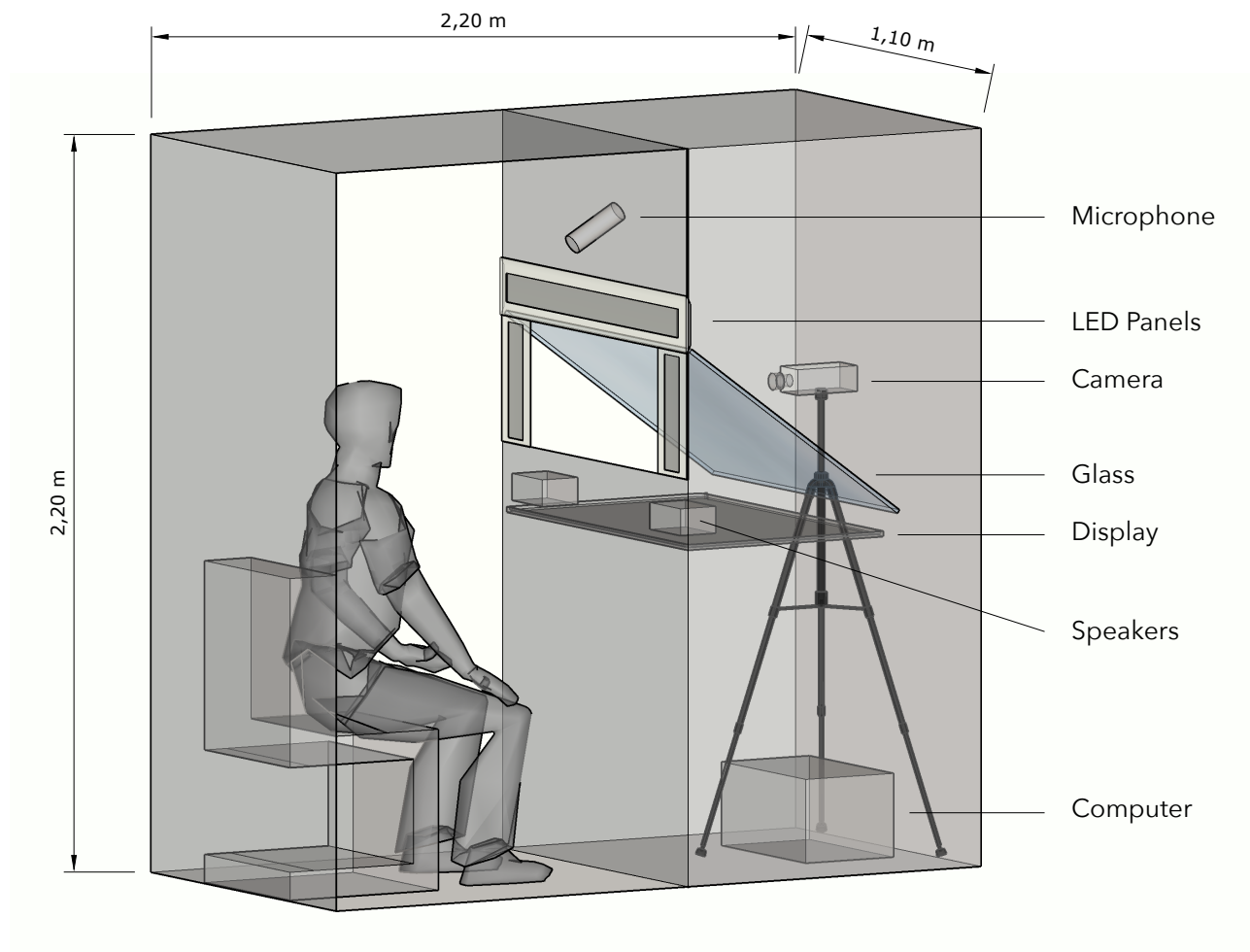
Fly through perspective

PRODUCTION

ECHO is a project invented and produced by Guillaume Faure, developed in collaboration with Cyril Laurier and Joan Sandoval in Barcelona, Spain. It comes from the transformation of ALEA, his previous machine, which is based on the same artificial intelligence but does not use video and is made for small groups. The development of the project was carried out according to the following steps:

 - Research of existing technologies and draft of the software architecture
 - Optimizing the structure and developing the software in Python
 - Creating a video interface
 - Designing and manufacturing the prototype of the scenography

In 2022, ECHO was presented at :

IRCAM forum in Paris
RectoVRso festival during the Laval Virtual exhibition
NYU with IRCAM forum in New York
EXPERIMENTA the biennial Art and Science in Grenoble
INTANGIBLE festival in Lerida

It is possible to see a demonstration of ECHO with the scenography in Barcelona in Gracia district. It is also possible to plan a demonstration of the software in Paris.

A demonstration video with English subtitles can be seen on this link : www.vimeo.com

COPYRIGHT: GUILLAUME FAURE
RESEARCH AND DEVELOPMENT: JOAN SANDOVAL & CYRIL LAURIER

CONCLUSION

ECHO is a predictive system employed by the surprise.
It expresses itself thanks to its prosodic analysis and prediction, but the meaning of words remains random, which generates coincidences and absurdities.

The visitor remains the only master to think and build his own experience. Far from what we usually expect from an artificial intelligence, ECHO is dedicated to the cognitive awakening of its users.

This space of discontinuity of meaning invites to play, to question and to connect to one's inner child who imitates to communicate with the other.

Everyone can project a little bit of himself in the randomness that the machine generates. This mirror reflects his posture, his language automatisms, the expression of his unspoken words.

BIOGRAPHIES
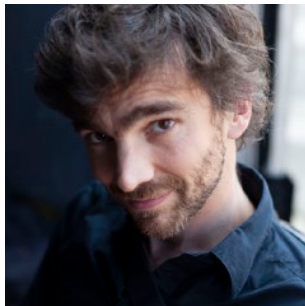
Guillaume Faure, 45-year-old, has been directing and photographing for video, cinema and art for over 20 years www.guillaumefaure.eu. He has worked with Marc Caro, David Lynch, Lou Yé, the special effects studio Buf or the artist Agnes Guillaume (exhibited at the Petit Palais in Paris, at the Musée des Beaux-. arts in Brussels).
He also participated in the development of two companies, an internet start-up, and a film laboratory with Buf and Mac-Guff.
He currently directs and films commercials, music videos and art videos www.easy.barcelona, and build smart devices.

Since 2010, he has been inventing interactive systems connected to emotions.
His previous project, SOMA, brings together his expertise in narrative imagery as well as his observations on individuals: a one-person cinema connected to the body that questions the free will of the spectator-actor through a "massage" of his subconscious (see explanations below).

His last creation, ALEA and ECHO, are two devices that generate unexpected breaks in discussions to promote openness in the perception of others and of oneself.

BIOGRAPHIES

Cyril Laurier studied sound design and spatialization at IRCAM (in Paris) and then wrote a Phd thesis on artificial intelligence at the Music Technology Group in Barcelona. His research has focused on the emotional analysis of music and has been published in newspapers, books and used in conferences.

He now applies his knowledge of artificial intelligence to artistic works, questioning human's relationship to technology and nature. He composes, recordings samples, synthesisers and develops his own digital instruments. He is co-founder of the Hand Coded collective, a creative platform for technical development of artistic works.
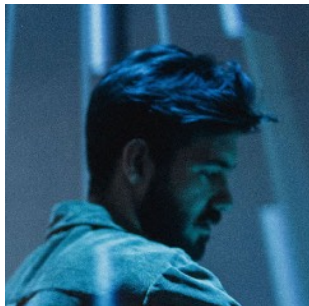
Joan Sandoval is a creative developer and digital artist. He has worked on live coding projects, interactive installations, augmented reality, virtual reality and audiovisual performances.

Joan holds a degree in Audiovisual Systems Engineering from Pompeu Fabra University in Barcelona and a master's degree in Music and Media Technology from Trinity College Dublin. From Barcelona, he has been collaborating with different studios, imagining, creating and delivering unique projects to artists, festivals and brands. In addition, he is part of the musical duo Ínfim who performs live shows mixing audiovisual performance with public interaction.

PREVIOUS PROJECT : SOMA

Developed from 2010 to 2015, SOMA takes the form of a single viewer interactive movie theater controlled by the viewer's emotions. Physiological sensors monitor sweat and heartbeats and an infrared camera detects facial expressions. Those signals allow to modify the editing of the audio-visual content in real time, which then arouses other emotions which in turn interact. The experience lasts about 5 minutes.

The project presentation file is available on www.guillaumefaure.eu

This installation was exhibited in its first form, Mange-rêve, in the fall of 2010, at Galerie 59Rivoli, curated by Guillaume Wiener and Gaspard Delanoë. Then in a new version at the FAD (Foment de les Arts i del Disseny) in Barcelona in the fall of 2013, as part of the international ACM Multimedia meetings (Commissioner Marc Cavazza).
Finally, under the direction of Charles Carcopino, two booths of the third version of the device were co-produced (see logos) and exhibited in 2015 in France:

- at the VIA festival in Maubeuge
- at the EXIT festival in Créteil
- at the RENAISSANCE festival at the Gare Saint Sauveur in Lille

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SCENOGRAPHY: ANDRES GLEIXNER - MUSIC: AALDERICK DE VRIES & THOMAS SPITZ

PRESS

MAKERY

Interactive and sensory cinema cabin for solo spectators, "Soma" by Guillaume Faure, at the Exit festival from March 25 to April 5, explores the unconscious relationship of the body to the image. An immersive cinematographic experience on the edge of psychotherapy.

[Unlike other immersive cinema pieces, Soma is not a playful or even ostentatious device like a 360° film for Oculus Rift. Its general concept is clearly more focused on a sensory awakening principle, with almost therapeutic aims in perspective. [The whole concept is based on the body and trying to re-establish contact with it, through the audiovisual system. It is a way of reminding us of the power and strength of this 'machine' to make choices that are not those of reason."

Lire l'article

Télérama

The digital artist Guillaume Faure is nourished by a double experience as a photographer (notably for the film Yves Saint-Laurent by Jalil Lespert) and a cinematographer, which taught him the requirement of light and the sense of the frame. After a video and sound installation Mange-rêve (2010), he develops a strange device: Soma.

I sit down in the small cinema room designed for the occasion. And put three fingers of my right hand on sensors that will detect my heart rate, my body temperature, and my sweat. It is indeed my emotions that will condition the narration and the editing of the projected film. The sounds make the chair vibrate and envelop me. Guillaume Faure willingly speaks of a massage of the subconscious.

Lire l'article

Les Echos

Charles Carcopino, his curator, signs one of his most beautiful successes with this learned, poetic, artistic and playful exploration of new cinematographic practices. Making one's own montage of a film with Thierry Fournier Dépli; orchestrating images according to one's emotions with Guillaume Faure Soma; getting lost in the light beam of Etienne Rey Space Odyssey; ...

Lire l'article

LA VOIX DU NORD

Soma, by Guillaume Faure. Two interactive cinema booths. A small booth, a wooden armchair. And, on one of the armrests, three points to put your fingers on. The white screen suddenly becomes black. Little by little, images take shape. The impression of being in front of a kaleidoscope, which comes to life according to the emotions of the spectator. "A machine centered on the body and the perception. A photo booth of the unconscious

Lire l'article

poptronics

More disturbing, "SOMA" by Guillaume Faure, also places the viewer at the center of the installation but deprives him of the choice of interaction. Installed alone in a small capsule, his fingers placed on sensors, he sees scenes, colors and sounds selected by the computer according to his emotional responses. The proposed montages influence in turn the mind of the guinea pig, subject and object merge.

Lire l'article

la Croix

The experiments of "sensitive cinema", as Soma, of Guillaume Faure, which makes scroll images in supposed relationship with the emotional state of the visitor, transform it into guinea pig of fair. Perhaps a way to reconnect with the modest origins of cinema.

Lire l'article

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