



# ECHO

AN AI THAT MIMICS THE ARTIFICIAL

Echo, Alexandre Cabanel, 1874



Yue Minjun - Untilted 1994

# ECHO

## HOW DOES IT WORKS

ECHO is a smart mirror: you sit in a booth and see your reflection. Talk to the other you and your reflection will answer by repeating sentences and words you said before. The device's AI ensures that the tone is harmonious within the conversation, with an often-enigmatic meaning.

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

This prosodic analysis mediates ECHO's relationship with the visitor. As music is governed by both the laws of mathematics and those of emotion, the link between the machine's predictive system and the human is fluid and natural.

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.

According to Bergson, what is required to transform all the seriousness and the 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."

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

## ARTISTIC PROPOSAL

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.

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.

*Many people from 5 to 75 years old speaking different languages and with different personality types have gone through the experience. Here are the game rules, placed at the entrance, in order to explain how ECHO works to someone who come for the first time.*

## GAME RULES

Would you be interested in exploring another type of dialogue 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.

# ECHO

## ECHO TALKS TO THAT OTHER IN YOU

The first step of the experience is that you sit in front of your reflection and accept to interact with it as if it was another individual. The fact that it's a digital mirror and not a real one, makes it look as if it was a parallel world and the experience may appear mind-expanding.

Sometimes, you end up not knowing which one is the most confusing or who's the one monitoring the conversation.

The frontier between virtual and real worlds becomes blurry and the reflection can whether react in a synchronous way with the visitor, or on the contrary, break the symmetry when the attitudes are different (displacement of hair, posture, facial expression).

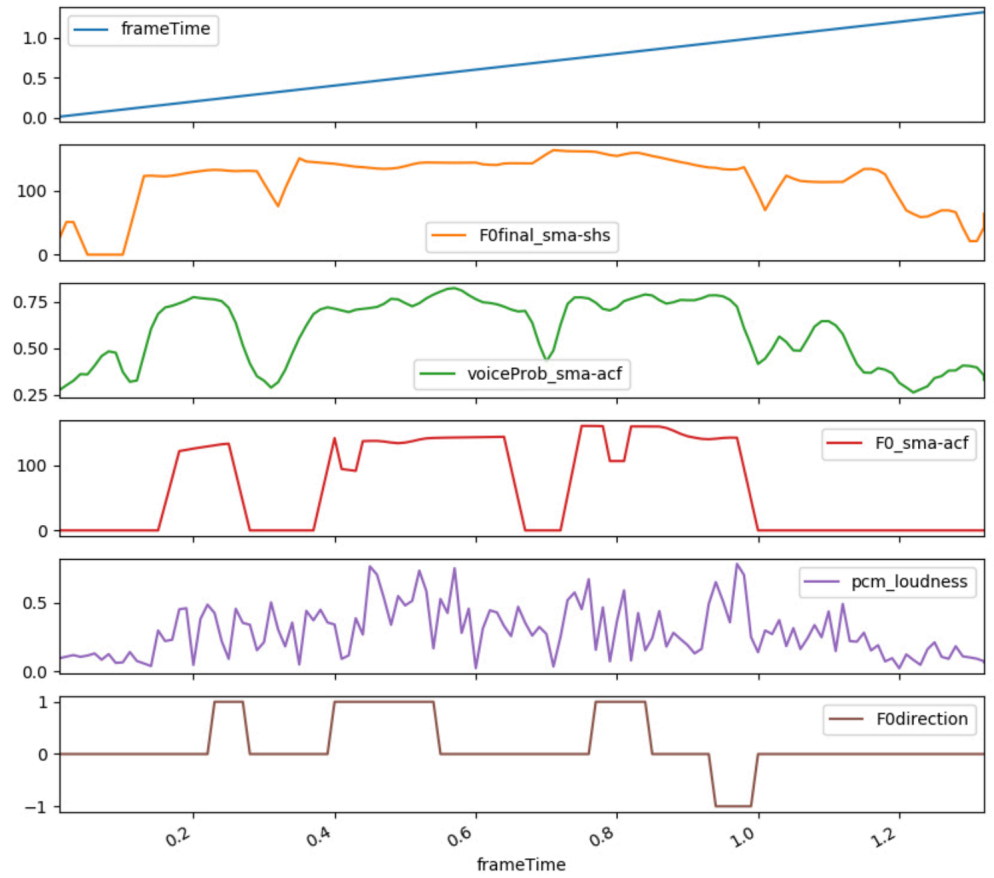
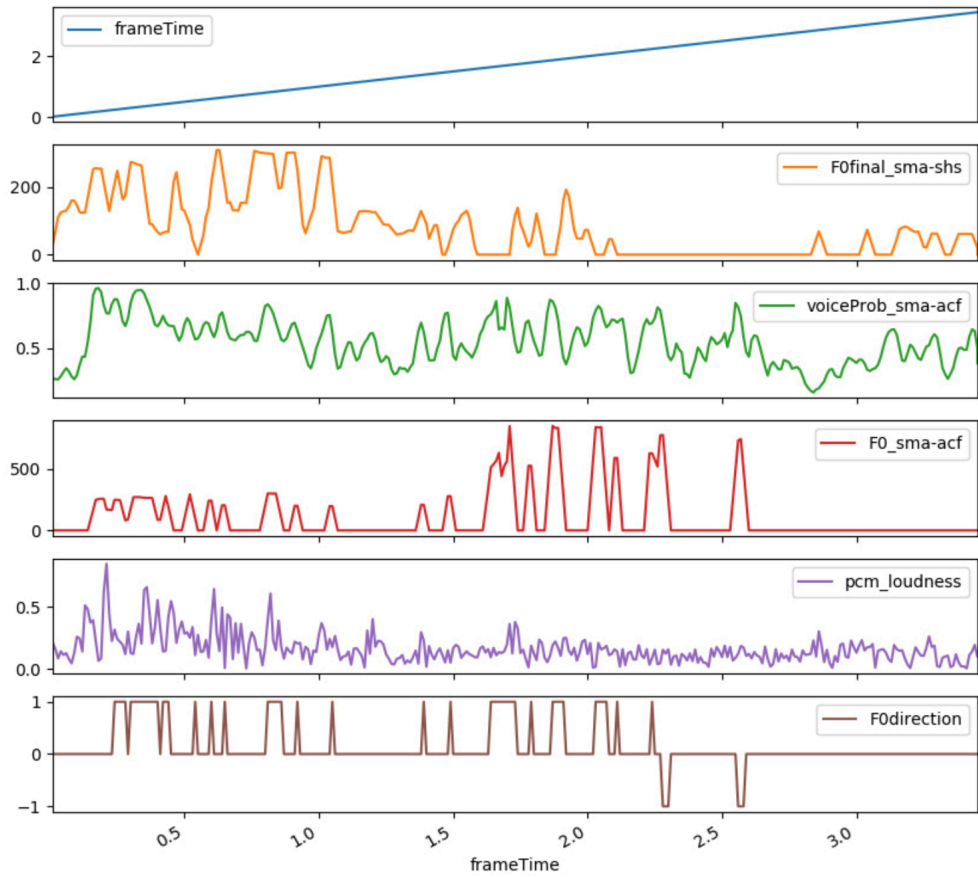
During this experience, the visitor intermingles with himself on another level. As the AI has no feelings, the symbiotic relationship benefits both: the machine which becomes efficient in fulfilling its function, and the individual who get to see how others may perceive him.

The co-living is obligatory in this encounter because of the dependence between the reflection and the user for the experience to be successful.

Can we consider the robots as a natural species? Not exactly, but through the dialogue, the visitor may enter into symbiosis with himself thanks to the AI, depicting his person.



ECHO (behind a curtain) at Paris' IRCAM 2022



Prosody Analysis

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)

## SYMBIOTIC INDIVIDUALS & IMAGINATIONS

Some current researches in neuroscience focus on the role of "mirror neurons". These neurons have the particularity of being activated in the same way when we make a move, and watch someone making the exact same move. Their activation lets us understand the behaviors of the people around us, and this phenomenon helps ECHO make the visitor even more conscious of his own behavior.

Symbiosis in human interrelation is present from the beginning of personality development. I noticed that the experience was often split into 3 phases which can relate in psychology to Lacan's concept of Mirror Stage and Freud's theory of the primary narcissism. In ECHO, the first thing happening is usually a confusion where the visitor thinks he is in front of a common mirror. Then come the second phase, the separation, where the visitor says "you" to his reflection. And it leads finally to the symbiotic

and third phase, where the conversation and the complicity get under way.

ECHO connects the human with his virtual double (non-human), creating a relation where "I" is another. The visitor can therefore discover himself from the outside, with distance and critical spirit, through the AI's prosodical perception.

This experience also aims to be a new form of interaction with oneself that stimulates our imagination to discover ourselves from another dimension. Will the surprising bond emerging in this immersive experience change the way we look at ourselves?

## THOUGHTS [414]

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

BLAISE PASCAL



## TECHNICAL SPECIFICATIONS

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 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 :

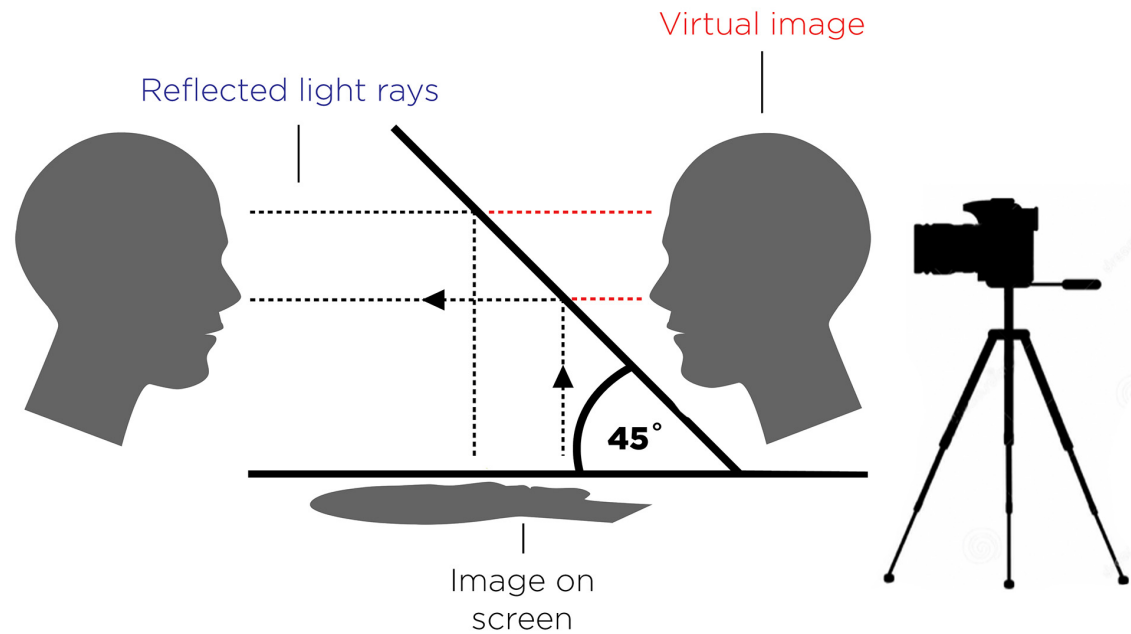
- A M1 Mac Mini
- An USB microphone (cardioïde, ElgatoWave 3) on a magic arm
- A 27 inch screen
- A 5D3 DSLR (or a or a camera of equal quality) on a fixed stand
- An USB capture card (Elgato CamLink)
- A 40x50 cm glass
- Small amplified speakers (Bose Companion 2 serie 3)
- LED lights 95 CRI with a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

COPYRIGHT: GUILLAUME FAURE

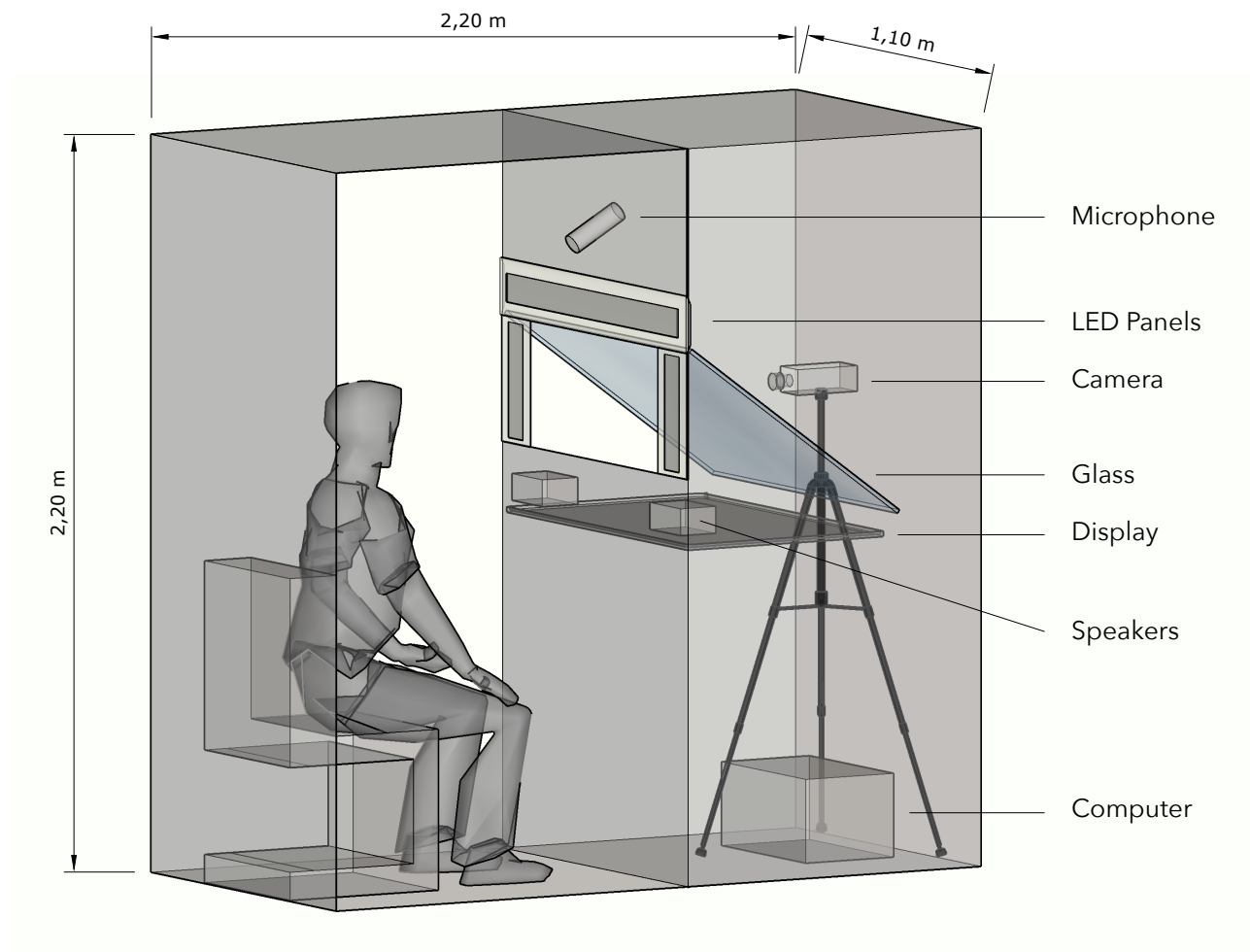
RESEARCH AND DEVELOPMENT: JOAN SANDOVAL & CYRIL LAURIER



# OPERATION



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.)



Fly through perspective

## 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.