WHO IS THIS CLOUD ?

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ABSTRACT

WHO IS THIS CLOUD? is a generative artwork in progress. It is a piece of art dedicated to the memory of a loved one and the idea of existence and transformation. The computer "Beings" will be animated according to their inner program, to weather sensors as well with the viewer behavior 'sensors.

Categories and Subject Descriptors

J.5 [ARTS AND HUMANITIES]

General Terms

Algorithms, Experimentation

Keywords

Generative Art, Artificial Life Art, Cellular Automata, Turing Pattern, transhumanism.

1. INTRODUCTION

Who is this cloud? is a behavioral interactive digital installation. It is in a direct relationship with the visitor and with the prevailing weather. Who is this cloud? is an artwork dedicated to the memory of a loved one. It is a space for meditation, a shrine for peace and reflection. The deeper the visitor is drawn into contemplation, the more the work unfolds to its full dimension.

Who is this cloud? is a generative artwork: the computer-generated images and shapes deriving from a set of algorithms and scenarios have been programmed but are set in motion with a degree of autonomy, eventually making the viewer feel the presence of an artificial life form. This has been made possible thanks to research carried out by Alain Lioret about autonomous virtual "existences" called "Beings" which will be reprogrammed specifically for this artwork. This installation is connected by sensors to what is happening in the room as well as outside the building: it reacts in tune to atmospheric factors (temperature, light readings, wind measurements, barometers…) as well as a function of its own algorithms. Within the exhibition space itself, too much turbulence among the viewers inhibits the installation. Thus, to enter into contact and perceive the meaning of this installation, one must remain still, enter into contemplation, if not into meditation with it.

Who is this cloud? looks like an irregularly shaped bubble on a tall table that one can walk around and touch. Under its transparent surface, a more or less abstract landscape develops and evolves before our eyes, interacting with one or several viewers, their presence and the relationships between them, but also with the seasons, the weather and the flow of time.

2. COLLABORATION

Who is this cloud? draws deeply from research and experience by Lola B.Deswarte and Alain Lioret in keeping with their current creations.

While Lola B.Deswarte works on designing the metaphorical body through the disappearance of one element within another, thus revealing transformational time (fig.1), Alain Lioret develops computerized systems that give birth to virtual creatures with a certain degree of intelligence, "behavioral" representations called "Beings" (fig.2). These "beings" evolve in an autonomous or haphazard manner depending on the algorithmic codifications used to convey the function they embody.

Figure 1: photo of a sculpture by (Lola B.Deswarte).

Figure 2: still of a "Being" by (Alain Lioret).

The purpose of their collaboration on such a project is to share the experience of an interactive generative space which can produce, through daydream and imagination, the feeling of our own ability to evolve at every moment and on a very limited scale, by transposing into the artistic domain what David Bohm called the morphic field [1], or the potential for morphogenesis. In the long run, the question of death as disappearance and transformation is the framework of this generative artwork.

3 THE SOURCE OF "WHO IS THIS CLOUD ?"

This question appeared to Lola B.Deswarte while seeing the heat above the chimney of the crematorium after the death of her young cousin, Colombe. This question led her on a chain of thoughts about existence and the many levels of the ties that bind living people to the dead.

At this point death could be renamed "disappearance," "evolution of being" or even just "transformation." This is where she became one with that cloud she saw after Colombe's funeral ceremony.

This image recurs in different traditional ways of mourning, which the artist wanted to name and study, to interact with the processes of transformation and the continuous evolutions of life itself.

In other words, Who is This Cloud? is a work of morpho-psychological portraiture in relation to the artist's perception and memories of Colombe, the combinations of elements to be assembled together as in a cartouche in Egyptian hieroglyphs [2], touching on questions of transhumanism.

A similar work could be imagined connecting to another person, resulting in a completely different esthetic, form or dynamic.

Here, we are seeking to make visible through technology the consciousness of oneself and one's own ability to evolve and die, eventually becoming the observer and the instrument of our own interior transformations (free and subjective)...

4 STATEMENT

This project belongs to a millennium-old anthropological tradition of research about how to preserve the memory of the deceased. The aim is to refresh the connection between living beings and their existence through the observation of a space dedicated to the dead.

In the heritage of thirteenth century Christian tradition, recumbent statues were a representation of a person lying down with some references to the history and attributes of that person (fig. 3 & 4) [3].

Figure 3: recumbent detail of the basilica of St Denis.

Figure 4: recumbent detail of the basilica of St Denis.

Just like inukshuks [4] or ovoos [5] (fig. 5 & 6) and all pieces of art related to the spirits of the dead and man's place on Earth, Who is this cloud? is a sculpture settled in a place, related to the elements of that place. It can be touched and interacted with.

Figure 5: ovoo, Mongolia.

Figure 6: inukshuk, Nunavut.

Who is this cloud? is to be a place where a relationship between the dead and the living can form through daydream. The purpose of designing this stele is to explore the limits between being and nothingness, between appearance and disappearance, thanks to the "new" digital medium. The conception of "objects" that seem alive by means of computer processors raises an interesting reflection about existence as perception of things and their "simulacrums" in the Epicurean sense [6].

What is this space under the bubble?

It is a virtual space, a hyperspace, a synthetic pond in which we can see the reflection of our own image transformed into elements.

Imagine Narcissus charmed by his reflection changed into abstract dancing forms, a representation of his body on a molecular scale: would his love for himself have been as devastating?

"Man never bathes twice in the same body," said Alain Prochiantz, a neurobiologist [7][8]. Indeed, the relationship of Living Beings to their own body or to objects around them changes each and every moment.

Therefore we find it particularly interesting to address the issue of transformation and death via a medium that will allow the production of an unforeseeable and random spectacle displaying a virtual life enclosed within a (meteorological) temporality in endless motion. This will make it possible to observe a space more closely related to tangible reality, hopefully reawakening in the visitor the desire to observe fragile natural phenomena, just as we are sometimes fascinated by the streaming flow of a river, the incessant coming and going of ants on the grass, the weaving of a spider's web, the apparition of fishes in the troubled waters of a pond …

5   SCENOGRAPHY

The Who is this cloud? installation is shaped like a tall table whose surface can be caressed because it is easily touchable. It is an object one can walk around (fig. 7).
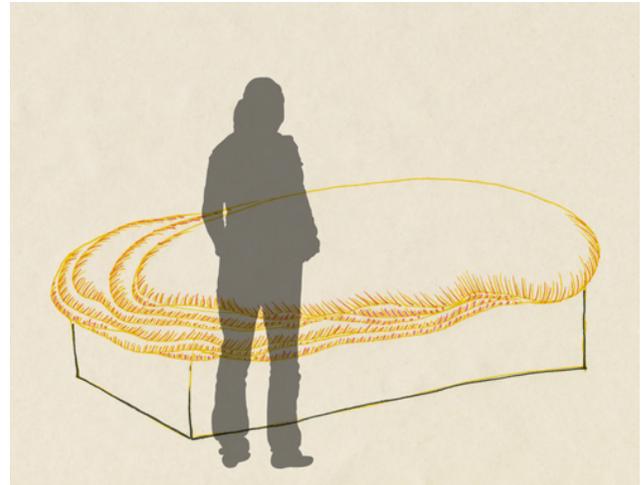

Figure7: sketch for the scenography of Who is This Cloud? (Lola B.Deswarte)

Who is This Cloud? is conceived in its plastic form both as furniture and as virtual garden. Ideally, like a plant or a lamppost, "Who is this Cloud?" must be implemented in a proper place, i.e. for its best development and its full usefulness: a dedicated space.

This work cannot really be moved around from gallery to gallery like a painting, rather it is an "immersive" and sensitive installation: it cannot be in a place of passage, but in a place where one must act to approach it. Like a stele, it is a place of visitation: a chapel, a garden, a folly, an enclave in the world (in the image of Niki de Saint Phalle's Tarot garden, Jean Tinguely's Cyclops [9], or the Désert de Retz, an English garden...).

The installation must always be compatible with the possibility of calm and contemplation offered to the viewer. Of course, the nature of these conditions will reduce the work's "sociability," therefore we can imagine that moments of pubic presentation, when a "crowd" will be invited, could become an inevitably brutal event. Still, we could also imagine "traumatic" situations in which the processes overreact and inverse, bringing the program into a state of potential chaos or of "accident"...

These events will be the installation's waking period: an opening, a move, a software update… We could even imagine on this level that such an event creates a "memory" in the program, a behavioral echo…

This table is covered by a soft, transparent sculpture, like a drapery on which will be screened a virtual space below it (fig. 8).

The first trials led up to a large silicone model usually used for prosthetic limbs. The image of a virtual 3D landscape evolving in real time will be rear-screened inside the table using a LCD panel.
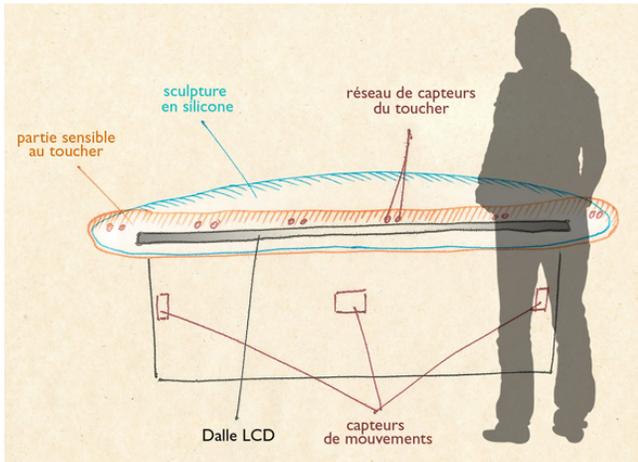

Figure 8: schema of the installation (Lola B.Deswarte)

This landscape is composed of a framework at its bottom, like a seed bead embroidery (fig. 9), closing the virtual space like a jar or a Petri dish. Above it a group of "beings" (as Alain Lioret has developed over many years) evolving together. This composition will appear to be the echo of an autonomous life, somewhere else, but connected to our real world. The events within and evolutions between the "beings" will be renewed as potentials of four kinds, acting singly as well as for the species.
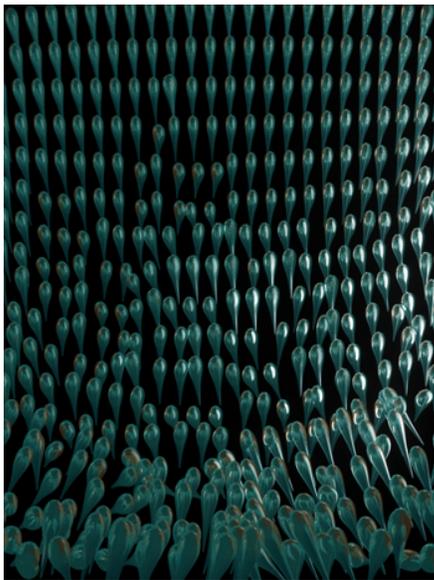

Figure 9: 3D sketch for a framework of virtual seed beads embroidery (Lola B.Deswarte)

6 CONNECTIONS TO THE OUTERWORLD

Each element is connected to weather sensors (outside the space) as well as to sensors of visitor behavior (fig. 10). The bottom framework will also evolve according to the sensors of weather and visitors: there will be changes of waves and color and opacity. The size of the beads will be variable and will change our perception of them. Sometimes the amount of "beings" above it will make it almost invisible, but it will never turn off, and will be the only elements that always stay on even when the process of the "beings" is totally inhibited because of too much agitation around the installation.
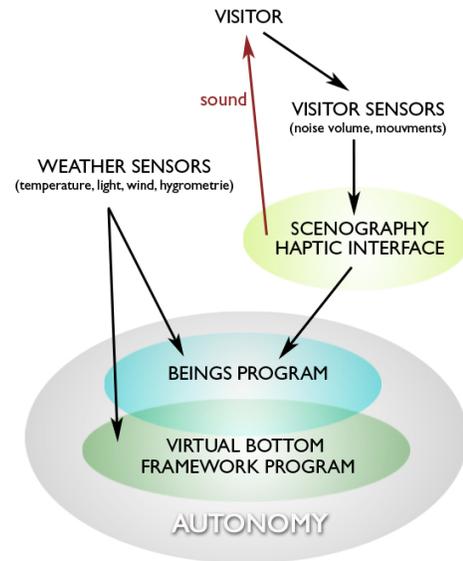

Figure 10: schema of the interactions (Lola B.Deswarte)

7 INTERACTIONS WITH THE VISITOR : WHISPER AND CARESS

Inspired by micro-organisms growing in ponds or inside bodies, the "beings" can go everywhere in the space of the "Cloud". As we saw, the process of the installation is inhibited by visitors who are too noisy or restless.

On the other hand, a more tender and calm visitor will stimulate the evolution of the landscape.

Of course the stage of testing different ways of evaluating the spectator's attention will be decisive, but we expect to concentrate on detecting sound level (microphones will "hear" if the visitor is whispering - which will attract the beings – or speaking loudly – which will repulse them) and the dynamic of visitors' movements, through the use of motion detectors throughout the structure of the installation.

We are not now considering using cameras or systems of image recognition.

Another sense it is important to include in the relationship to Who is This Cloud? is touch: "caress" sensors (probably low voltage connectors) will also be placed in the top layer of the silicon "bubble" (fig. 11). A long slow stroke could trigger the piece to emit a sound, as well as reactions from the beings. Soft repetitive

sounds will help assist the viewer in contemplation, as well as to attract the attention of others. For inspiration for the sound design we are looking particularly to the work of Gyorgy Ligeti and to certain pieces by Steve Reich.

The audience gauge is not limited for now and the installation should take into account interactions with several people at once (see the rules below).

Figure 11: tries with silicone model (Lola B.Deswarte)

8   VIRTUAL REALITY

In Who is this cloud? one can observe some lifelike beings will be evolving with no effort on the viewer's behalf. Furthermore, a too invasive behavior on the part of the viewer will inhibit the process of the landscape the digital beings are forming.

We are starting from the intuition that reality is much more virtual that any possible computer program. The nature of reality is the permanent re-actualization of potentials. Reality erases itself in each moment to move into the result of complex equations that we call the ever present.

Thanks to the digital medium of simulation of life as a stream of potentials with its interactions, its responses to stimuli, its predispositions and improvisations, the "Who is this cloud?" project aims to replace death within life.

Here, the real scenography and the synthetic biotope are two virtualities which reflect each other and weave together the threads of imagination, poetry and perhaps, therapeutic mourning.

In his paper "What matters in digital Art ?" [10] P. Berger asks the question : Can we […] create autonomous beings of sufficient sophistication to keep the spectator attentive for a long time, and even for a whole lifetime ? That implies some kind of peer-to-peer relationship. Can the digital beings reach if not outgrow human beings ?

In our project sophistication is not the point and not even an aim. This research focuses on bringing the viewer to self-consciousness as a material subject to motion, to evolution, in short, to life itself… going with both the real object, the touchable sculpture, and the symbolic object, the moving image on the screen.

Probably, our goal is not to create synthetic beings as efficient as humans, or even more so, but to create "computer beings" which emulate the same symbolic tests and physical constraints as

humans. From this relationship we expect some sympathetic and aesthetic responses to emerge from the viewer.

This is why we choose weather to be our indicator to animate the piece as a large ensemble of all-encompassing natural constraints which impact every living being at different level. In addition this one of the very few perpetual movement machines available.

The peer-to-peer relationship P. Berger is talking about becomes in our project an experience for the viewer to echo with the landscape as an aesthetic event, and hence to push the avatar concept toward the frontier of representation which would only show the "function" of things as they go from causes to effects and not only as formal shapes (see the project "In the Cloud" presented in 2011 in Laval Virtual) [11].

Hence, the purpose of this artwork is to explore the ever-changing border between reality and virtual reality, insofar as life and death are connected. Here one could say with the poet Tom Waits "everything you can think of is true"[12]. Moreover, in his philosophical work Wittgenstein explains "Die Welt ist alles, was der Fall ist" (The world is all that is the case.) [13].

9   HOW DO THE "BEINGS" WORK?

According to his research on L-systems and cellular machines [14], Alain Lioret will shape the major part of the "life-like" elements in the installation and together the two artists will program their interactions, both with each other and with the sensors (fig. 12).

We defined four main categories of motion: horizontal, vertical, single and dynamic. Each element in the stele will appear to live depending on its form or its "condition" as a quantum potential (one could be blue colored, another slow moving, a third could be light-reflective, a fourth could appear for only a fraction of a second if it is raining, etc…). Therefore different reactions will appear. These features will be encoded in the machine and will generate new pictures in real time. In addition, each feature of their aspect (color, growth, lifetime, relations, transformations…) will react to environmental elements, whether near or far from the sensors and so will become a variable, just as the weather or human activity. Moreover, their aesthetic appearance will remind us of migrations or colonization phenomena, just as in nature (fig. 13 & 14).
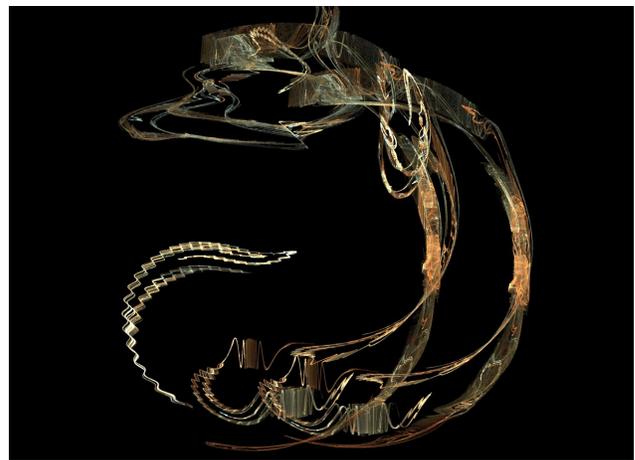
Figure 12: still image of a Being (Alain Lioret).

1- Horizontal: Inspired by the morphology and ability of regenerate itself of the skin cells, they will tend to make zones, islands, continents. They go to a preferred "depth," horizontally parallel to the bottom of the virtual space.

2- Vertical: Plants inspired also by lymphatic or blood systems, their potential leads them to the "surface" and makes a net.

3- Single: Inspired by the idea of organic systems (especially the reproductive system), this one is not affiliated with a species but floats around by itself. In certain conditions, it will "lay eggs" in the way certain coral or fish do, making a sort of "cloud" dissolving itself after some time.

4- Movement: This species' center of potential is moving, shaking, turning, clustering,…

Figure 13: 3D sketch of "Who is this Cloud ?" (Lola B.Deswarte)
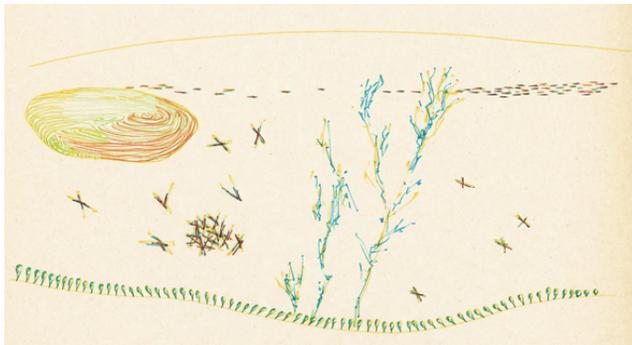
Figure 14: Schema of th beings in "Who is this Cloud ?"(Lola B.Deswarte)

10 CONCLUSION

Beyond the technical issues from which will certainly emerge the creative resolutions, this project contains for us some additional interesting aspects to develop in the actual context of digital arts.

Often oriented in more or less realistic human representation, many digital artistic projects turn into some kind on morbid experience for the spectator described by Masahiro Mori as the "Uncanny Valley" [15]. This is why we have chosen "Who is this cloud?" to directly focus on the question of existence and the relationship of the living to death itself.

Another aspect of the interactive works we would find interesting to develop resides in the notion of "gameplay" through an avatar. Most of the time the traditional way consists of projecting oneself into a virtual personality to make it work. What we are looking for here is to operate a reverse movement to re-attach the viewer to the perception of his proper presence in the world through an abstract pattern working as a deforming and symbolic mirror. Moreover the piece doesn't need the viewer to exist.

"Artistic creation, human and evolving, is also an artifice, a technique and knowledge, appears when human beings encounter the machine", according to Michel Bret in his preface to Alain Lioret's book "Emergence de nouvelles esthétiques du mouvement" [16]. He describes the process of artists working in their studio. To these three components we would add the intense "desire" that we feel to bring this project to life !

11 ANNEXE : EXAMPLE OF RULES FOR THE BEINGS RELATING TO THE SENSORS

A- Horizontal Beings behavior related to the weather sensors :

• constant bias :

-> spread on a parallel to the surface level

-> cover 10% of the total surface of the screen

-> At most it can only cover 51% of the surface of the screen

-> they die

-> life time : 2 hours ?

• viewer's perturbation coefficient :

- no viewer : random rolling of 0°

- more than 10 second of calm : random rolling of 1° to 10°

- more than 30 second of calm : random rolling of 11° to 25°

- more than 1 minute of calm : random rolling of 26° to 45°

• If a "single" being approach : repulsion

• wind coefficient :

- wind 0 : horizontals beings are contiguous

- wind 1 : the gap between them is 100% of each one size

- wind 2 : the gap between them is 200% of each one size

- wind 3 : the gap between them is 500% of each one size

• temperature coefficient :

from -15°C to -10°C : one birth every 2 minutes

from -9°C to 0°C : one birth every minute

from 1°C to 9°C : one birth every 30 seconds

from 10°C to 19°C : one birth every 20 seconds

from 20°C to 29°C : one birth every 10 seconds

-> reaching 51% of the surface of the screen, the births turn into disappearance :

from -15°C to -10°C : one disappearance every 2 minutes

from -9°C to 0°C : one disappearance every minute

from 1°C to 9°C : one disappearance every 30 seconds

from 10°C to 19°C : one disappearance every 20 seconds

from 20°C to 29°C : one disappearance every 10 seconds

-> when they reach 10% of the surface of the screen, the multiplication process reverses.

• light coefficient :

- if light is 0 then opacity is 25%

- if light is 1 then opacity is 50%

- if light is 2 then opacity is 75%

- if light is 3 then opacity is 100%

B - Spectator's disturbance

• constant bias :

If no one is in the place then weather stimuli are fully removing the « Beings »

• If someone approach to the table, his movement will be a low signal for inhibition then a latency will create a backup move of the being and will partially shadow the bottom of the virtual space.

• If someone stay still for duration x then the colonization of the space will go back for homogenization.

• If someone touch promptly the haptic part of the silicone sculpture then a flow of light will happen in the bottom part and the beings will be more agitated around the zone that has been hit.

• If someone places his hand on the haptic part of the installation then :

- the beings move away

- after 20 seconds : the horizontals beings slow down

- after 40 seconds : the verticals beings recolonize the space

- after 1 minute : the horizontals beings become translucent and let see the « movement » beings going underneath

- after 5 minutes : the « single » being approaches

• If 3 persons are in a calm behavior then the beings will evolve in clusters in their nearby visibility zones

• If 4 persons are in a calm behavior then the beings will evolve in clusters in the nearby visibility zones of three of them, the fourth person will remain an inhibiting signal

12 ACKNOWLEDGMENTS

13 REFERENCES

[1] F. David Peat, Infinite Potential: The Life and Times of David Bohm, Reading, Addison-Wesley, 1997.

[2] http://en.wikipedia.org/wiki/Cartouche

[3] Basilica of Saint Denis, French royal necropolis - centre des musées nationaux.

[4] http://en.wikipedia.org/wiki/Inukshuk

[5] http://en.wikipedia.org/wiki/Ovoo

[6] Epicurus, "Letter to Herodotus," Mille et une nuit ed.

[7] A. Prochiantz, "La plasticité cérébrale," interviewed by G. Lyon-Caen, France Culture, (http://www.franceculture.fr/emission-avec-ou-sans-rendez-vous-la-plasticite-cerebrale-2011-01-11.html).

[8] A. Prochiantz, "Géométrie du vivant," Collège de France/Fayard.

[9] http://www.lecyclop.com

[10] What Matters in Digital Art ? The (Digital) Soul!, P. Berger - VRIC 2011

[11] "In the Clouds", Nathalie Delprat, Claire Leroux, Sarah Fdili Aloui – VRIC 2011

[12] Tom Waits, "Everything You Can Think," Alice, Anti-record, USA.

[13] L. Wittgenstein, « Tractatus logico-philosophicus »

[14] A. Lioret, "Emergence Of L-Cellular Morphogenesis", in Generative Art Conference. Milan. Italie 2004.

[15] http://en.wikipedia.org/wiki/Uncanny_valley

[16] A. Lioret, "Emergence de nouvelles esthétiques du mouvement" – l'harmattan 2004