Interactivity extends graphic design

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Introduction

Interactivity has become ubiquitous in our everyday life. Present in multiple formats and in different forms, interactivity is defined as a dialogue between a person and the information provided by a digital device. It holds an important place in the gaming universe that is now one of the most common interactive devices. Video games help reinforce the idea of proximity between users and a computer system. They question interactivity and allow to question the origins of interactivity. Indeed, interactivity is both new but it is also part of an evolution that predicted it.

According Catherine Guéneau[1], the term tends to be misunderstood with a much earlier concept - interaction. Interaction promotes the exchange with the audience, it is a reciprocal influence of two phenomena, two people, which suggests that interactivity was present long before digital devices, but it was just interaction. Such was the case with ancient Greek theaters. Indeed, the audience could interact with the actors and project themselves emotionally in the fiction, though passively. Today interactivity allows viewers to be active, being in direct contact with a device and questions the place of users.

Interactivity is defined as a dialogue between a person and the information provided by a digital device.

1 : Catherine Guéneau, L'interactivité : une définition introuvable, essay taken from the book Communication et langages, edition Armand Colin, 2005, p.123

Since interactivity existed before video games, how can it be renewed nowadays ? In fact, interactivity in video games has not reached all its possibility. Indeed, video games are closely related to cinema. If both worlds actually meet, they will bring out new technical features and they will allow to change the place of viewers. That is possible nowadays thanks to interactivity, which allows to interact with a video, to control the video. A video is a new form of graphics. When dealing with animated images, it is motion graphics.

> ***The game is cinema. Only, we finally turn to ten different films. We have all these options and, every time we play, we play with the show.***
> Georges Lucas

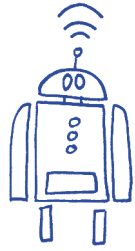
Can digital devices and interactivity expand the world of graphic design? To answer that question, it is necessary to study the definition of interactivity, its origins and its form, to define video games and the representation of interactivity in video games. In other words what interactivity brings in video games and what interactivity allows in video games. After studying the similarities between cinema and video games, I will present a hybrid device containing interactive narration, a mixture with of cinema and video games, and see how this new system opens the scope of designers.

/ RESEARCH

1 / Interactivity

1 - What is interactivity?

Interactivity is all about freedom. It offers the possibility to influence, change and take advantage of situations in a way that cannot be done otherwise. According Catherine Guéneau[2], its origins are from the early 80s, with the advent of computers. The notion of interactivity is based on the simulation of an exchange with the machine, reciprocally assumed between a man and a machine as full partners. We give the machine communicating functions that were previously reserved to living beings.



The term interactivity applies to several fields such as art, television, gambling, advertising, etc. An application is interactive when its users can act on the program run by making their own choice. Interactivity increases our relationship with the machine, it places us in the center of the device. The audience is more sensitive if there is interaction with a device. This is what the FRAC, the Regional Fund for Contemporary Art, tries to do with its interactive exhibitions.

2 : ibid. Catherine Guéneau, p.123

Thus, the word interactive is defined as a means of communication favoring an exchange with the public. This word is close to another word - interaction. Interaction can be seen as the exchange of information between two parties through a medium. Thus, interactivity is only a matter of degree. We interact with a work of art or a movie, as long as we see it and our imagination weaves emotional connections with it. Thus, we have to take into account the relationship between activity and passivity.

2 - Short history of interactivity

The opposition between « active » or « passive » seems to define the line between «non-interactive» and «interactive». In fact, the one who acts is active, whereas the one who undergoes the action is passive. But historically, we realize that the dividing line is more subtle.

According to Catherine Guéneau[3], the notion of interactivity is linked to gesture, a physical action exerted by means of a digital object like a mouse, a touch screen, a joystick or a data sensor. We are in an active interaction. Most of the time with digital images, the activity is reduced to a gesture, a movement, like in some virtual environments and art installations. We act on the device to interact with the machine. But sometimes there can be interaction in a passive way, without our realizing it. For example, in some stores, if we touch a product, an advertisement appears next to the product to encourage us to consume.

3 : ibid. Catherine Guéneau, p.126

Interaction is the root of interactivity. Indeed, interaction is an interplay of two phenomena, two people. This is what we find at the theater[4] - we watch, we liberate emotions, we interact with the show passively. But passivity is an illusion. Indeed, there is always activity unconsciously. For example, when we interpret, we are active without knowing it. It is like a computerized system in our brain.

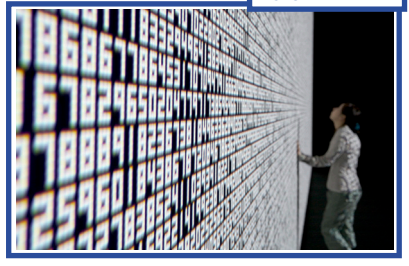
04

Theater of the city of Carcassonne, 1909.

Video games create interaction and interactivity to be closer to reality. They integrate them. While playing, we solve puzzles, we click, we check, we follow a reasoning that is automatically done in reality. When there is an obstacle, something that is not clear, reasoning does not work anymore. Interactivity thus becomes a necessary tool. We must interact and be active to continue the game. In addition, the machine's anthropomorphism facilitates interactivity. Indeed, machines have a human aspect that makes it easier for us to exchange with machines. Indeed, the graphic interface makes the exchange with viewers more accessible. Users see the machine not just as a computerized device only. Here is the difference between interaction and interactivity. Interactivity refers to digital devices[5] while interaction was present long before digital devices.

05

Ryoji Ikeda, *data.tron/data.scan*, 2015



4 : http://henri-alaux-historien.blogspot.fr/p/carcassonne-la-cite.html

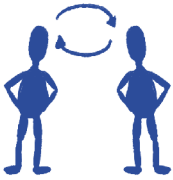
5 : www.ryojiikeda.com

3 - Different ways to interact

According to Benjamin Hoguet[6], there are three major kinds of interactivity - interactivity linked to machines, social interactivity and creative interactivity.

In a project based on interactivity with a machine, the experience is the interface. It has been coded to provide preset responses to technological interactions. The possibilities are predefined, the user has a limited number of choice. Indeed, it is not possible to get out of the universe imagined and developed by its designers. The creator/designer is all powerful. He is the master of the space created. The challenge for designers is to create an interface adapted to the story which offers the most satisfying experience to the audience.

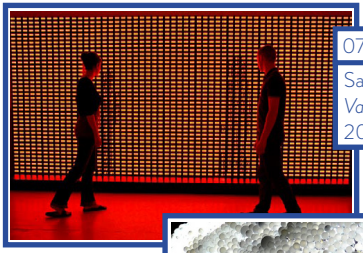
However, the different ways to manipulate these interfaces can be numerous. Among the most obvious possibilities, we can mention those offered by computers such as click, scroll, drag and drop, type commands on the keyboard. We can also add the interactivity that smartphones offer. There are touch gestures such as touch, sweep or pinch the screen with one or two fingers to increase the number of possibilities.



In a project based on social interactivity, the project is not linked only to the choice of its designer. The interface becomes a communication channel and the project expands far beyond the social space, either virtual or real. In that case, designers do not plan the limits of the narrative universe, they become matchmakers that act as incubators for social interaction. This can take the form of simple discussions and comments in artworks, on social networks, for example.

6 : Benjamin Hoguet, La narration réinventée, edition 2015, p. 46

Regarding creative interactivity, the public takes part in the design of the work, the narrative is shared with the public. The project expands with each contribution and is potentially endless. The challenge is to create an interface that is easy to use so that each participant can use it. For example the project « What Ze Teuf » every day the public was requested to submit an idea on Twitter to inspire the episode that was shot the next day.



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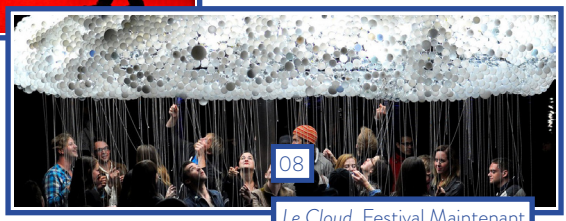
Samuel Bianchini, *Valeurs croisées*, 2008

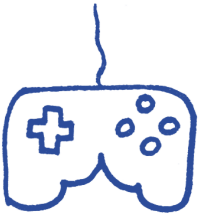


08

Le Cloud, Festival Maintenant et Opportunités Digitales, 2008

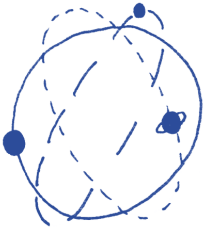
7 : dispotheque.org/fr/valeurs-croisees
8 : www.maintenant-festival.fr/artistes/

2 / Video games



1 - Definition

Thanks to video games, interactive products have invaded the market. Literally, video games are games with video, we play with video. Interactivity is what differentiates them from other media such as films. They act as a combination of texts and images on a screen. According to Mathieu Triclot[9], a video game «is a program with which one interacts via a graphic interface for fun, not to produce anything.» With video games, we interact with the world, a virtual world that has rules. It is an experience managed by a screen and a computing machine. The bond that links it to other technical devices such as reading or cinema is to propose some form of users experience. Indeed, video games allow to dive in a parallel world.



2 - Representation of another reality with interactivity

Video games create a new dimension of reality. A free space opens up and allows us to explore new possibilities, to satisfy a want, to open space for discussion. Interactivity can represent reality and trigger an exchange with an audience that is submerged in digital content. It creates new worlds, allows us to better represent space or even to invest space in an experiment presented to the public.

Time and space are represented differently with interactivity. Users can control these concepts and they can become central elements in a story.

9 : Mathieu Triclot, Philosophie des jeux vidéo, editions La Découverte, 2011, p.8

According to Benjamin Hoguet[10], «interactive experiences can create the illusion to users that they master time, that they can stop it, accelerate it.» But they also allow authors to change the perception of that time.

However, the nature of time is difficult to define. We can say that time expresses a movement, a change. A manageable movement, which can be continuous and linear but which can also slow down, speed up, be distorted or stop for a while. It gives users the opportunity to choose, to think about the implications of their choice, take a direction that will influence the course of events.

3 - The question of choice

Interactivity is a story of choice, according to Catherine Géneau[11]. Users are immersed in an environment of choice and personal decisions that will directly change the experience. Involvement is crucial to give a meaning, a direction. To promote the audience's immersion, designers must give meaning of the choices available. Indeed, interacting must entertain users, they can not be « simple » commonplace interactions. Although the technicalities regarding storage of information increase and offer a greater choice, the freedom of users is submitted to the limits of the system. The choice is always pre-determined in advance by the designer of the program yet, it belongs superficially to its users. The challenge of the designer is based on the illusion of choice, as there is no real choice for users.

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Les Sims 4

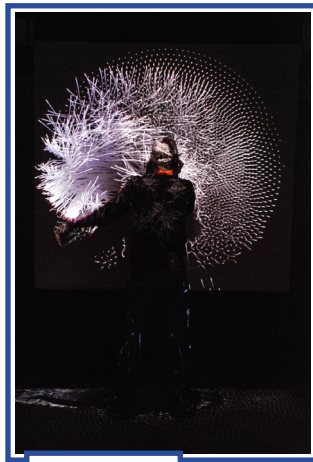
10 : ibid. Benjamin Hoguet, p.112
11 : ibid. Catherine Guéneau, p.126
12 : https://www.thesims.com/

3 / Between video and video games, a hybrid device

1 - The expansion of graphic design with interactivity

Video is a new form of graphics. Interactivity in video is a particular way to use images. Interactive images can be useful in graphic design. They are motion graphics, a new way of working with images that extends the scope of designers.

Indeed, interactivity shakes graphics. This began in the 1990s when computers became more attractive, combining still and moving images, text and sound on the screen. The notion of interface appeared to create a visual link with the computer and act as an intermediary between computer programs and users. The role of graphic designers is now important to guide users. Graphic symbols such as icons allow an immediate preview of the actions to perform.



Emmanuel Mâa, *Floating Point*

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This is a new way of creating graphics. Indeed, graphic designers can now create interactive graphics. Kinect for example revolutionized our behavior with machines. In fact, we communicate by gestures in front of a machine that recognizes us, guiding our moves to create graphic shapes.

13 : http://lepixelblanc.fr/maa-berriet/

2 - Interactive Narrative

Interactive cinema follows an interactive narrative. Video games also follow interactive storytelling. According to Benjamin Hoguet[14], interactive storytelling is the art of telling stories. These stories have technological, social or collaborative interactions to present content adapted to the new public's expectations. Interactive storytelling is a contemporary issue. It releases new perspectives. Today game developers are looking for new ways to get in touch with their audience. Thus they use interactivity to be closer to the public who lives in a connected world in perpetual motion. Interactive storytelling draws its heritage from Gamebooks. It allows the public to dive into a fictional universe. As previously stated, users can make choices that will change the story. This process comes from video games. Thanks to interactivity in storytelling, the author can tell the story in different ways.

> ***Thanks to interactivity in storytelling, the author can tell the story in different ways.***
> Marida Di Crosta

With interactive storytelling, writers must think their stories differently. The place of the graphic designer is vital because he can use innovative forms with the content of interactive narratives. Interacting with a story helps make the device credible, dive fully into the narrative and make it acceptable for users. Today, the place of users has changed, they are in the middle of the device and act as true heroes.

14 : ibid. Benjamin Hoguet, p.14

The place of viewers is challenged with the advent of new digital interactive devices.

3 - Videos where we are the heroes

The place of viewers is challenged with the advent of new digital interactive devices that sometimes integrate older technology, such as video or film. According to Catherine Guéneau[15], the first definition of the word « spectator » makes him/her a simple witness « the one that looks, contemplates an event, the course of action ». Today spectators are passive despite the fact that we continue to address them.

But thanks to new forms of interactive mediation, viewers become active. Based on the idea of passive reception, viewers have the power to act and choose. Viewers act on a project with a physical action. They become « interactors », they are active, we can now call them « spect-actors ».

The emergence of new interactive formats allows the emancipation of those « spect-actors ». We can take the example of the hybrid format of interactive cinema, in between film and video game in which the spectator is fully active. According to George Lucas « The game is cinema. Only, we finally turn to ten different films. We have all these options and, every time we play, we play with the show ».

This is now possible with interactive videos. The movie changes, we no longer watch the film from outside as passive spectators, but we participate in it. It is a kind of cinema where we are the heroes, an evolution of Gamebooks which proposed a form of multiple-choice literature.

Interactive movies[16] have constantly explored the notions of time and space. For example, there is random reading of the order of the movie sequences or the possibility to activate some songs or pictures by clicking on the interface. Various forms of interaction are possible. We are still in the active / passive opposition. On these interactive devices, users carry out active and

15 : Catherine Guéneau, article Du spectateur à l'interacteur ?, edition INA, 2006, p.1

passive interactions of different degrees. Indeed, according to the nature of the interactions offered, the « spect-actor » can physically interact with an imaginary world or simply develop a sensory experience such as the video clip « Happy » by Pharrell Williams. The video clip lasts twenty-four hours and we can interact with time, we can go back to the past, watch what happened a few hours before or watch what will happen a few hours later.

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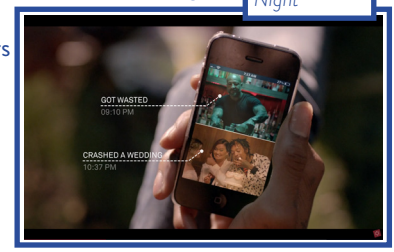
Wiz Khalifa, *Stayin Out All Night*



It can thus be said that interaction is the forerunner of interactivity. Indeed, the public could interact with a work well before the advent of digital devices. Digital devices enable interactivity to settle in our environment. Interactivity opens up new possibilities, especially to graphic designers who see the emergence of new fields of application. Interactivity has changed the place of spectators turning them into actor-spectators.

16 : https://interlude.fm/v/M3v1GV

/ PROJECT

My project focused on cultural mediation to develop the technical part of an interactive video. With OpenFrac#2 project with the Frac and the prototyping of an interactive video, I created various mediation tools for the museum's future cultural project. As part of its distribution policy and educational involvement, the Frac, the Regional Fund for Contemporary Art, offers educational tools to contemporary creation, to partner organizations and teachers. Some of these educational tools take the form of toolboxes containing several different media. The Frac for example, developed a toolboxes named The Autobiography by Sophie Calle containing various tools to discover the work of the artist, Sophie Calle. Today, the Frac has developed a toolbox centered on the work of the artist Olivier Rebufa, a photographer and artist.

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Olivier Rebufa, *Pégase, Bellérophon et Athéna*

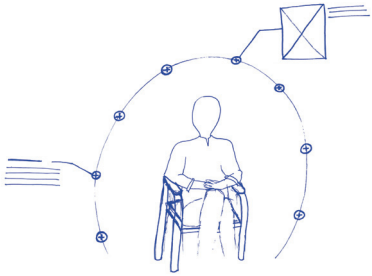
In his work, Olivier Rebufa shows photographs made with Barbie dolls and artificial decorations. He puts himself on stage with photo-montages, becoming both a character and an artist. The toolbox is called Pocket Studio. It is intended for teachers to undertake educational work with their pupils on the work of Olivier Rebufa. This box contains the monograph of Olivier Rebufa. There are also educational posters to discover and study the work of the artist, an interactive video explaining the artist's vision, an educational book and objects to reproduce a picture based on Olivier Rebufa's way

of working. There are playing cards of 7 families to discover the photographs of Olivier Rebufa, a USB key holder printed in 3D representing the artist with his camera and a USB key containing the various digital tools. I developed with the Frac the playing cards, the interactive video and 3D modeling of the artist for the USB key.

For this project, I worked with the artist Olivier Rebufa. There was also the Frac team that included Annabelle Arnaud and Stephanie Putaggio who are in charge of the project, Lola Goulias, Marielle Agboton and Rafaele Mamane who are cultural mediators. Flora Gaultier, the coordinator, manager of the educational and teaching projects at the Ateliers l'Image, is also part of the project. Sophie Valentin, a teacher of Visual Arts also worked with us on the project. All these people were in charge of the creation of the educational content. For the 3D printing and USB key holders, we worked with the Fab Lab La Charbonnerie and Imalize 3D.

The playing cards focus on the photos of Olivier Rebufa. The playing cards are composed of seven families based on seven themes that the photographer works on. The seven families are Africa, Mythology, Couples, the History of Art, Cinema / TV Show, Circus, Winner / Loser. With this game, we can discover the work of Olivier Rebufa, discuss the different themes and try to understand the artist's biography, the artist's vision.

The interactive video is based on the playing cards. With the seven families represented in the playing cards, Olivier Rebufa explains how he works. Thus, with the interactive video, Olivier Rebufa tells us what the theme Africa represents



for him, or why he decided to work on the theme of cinema. This interactive video acts like an interactive interview. In fact, in the video, when Olivier Rebufa speaks, there are different interactive options. By clicking on the options, we can have more information on what the photographer tells us like more references or pictures.

This project addresses users directly who are immersed in the device and can navigate through the various interactive points available.

Conclusion

This research gave me the opportunity to create and develop an interactive video. This kind of device opens up the world of graphic design. Now, thanks to interactivity, designers have found new ways to create.

The interactive video made in collaboration with the Frac shows that viewers can now fully participate in a project. They can navigate in the project as they please, making their own choices. It seems that spectators, who are now « spect-actors », feel much more involved when they participate. It is much easier for them to understand, to keep in mind what is broadcast on the interactive video.

Thanks !

I would like to thank Mrs Orsola for all her help during this project !