In his influential book *Expanded Cinema* (1970), Gene Youngblood explored the pioneering forms of cinematic creation with computers and considered the effects that these machines would have on creativity itself. While, until then, cinema had been created with all sorts of technological devices, these were no more than tools under the control of the artist. But computers, states Youngblood, are able to go beyond such passive participation: “As he has done in other disciplines without a higher ordering principle, man so far has used the computer as a modified version of older, more traditional media. [...] But the chisel, brush, and canvas are passive media whereas the computer is an active participant in the creative process.”1 Images and sounds are introduced in the computer or created with software and therefore converted into data, which can be endlessly processed, copied, reconfigured, mixed and displayed according to fixed parameters or algorithms. The computer thus becomes an active participant, as it can independently determine the resulting product (based on a set of rules) or execute all the possible variations of a given process, beyond the level of control that would be exercised by a creator using a simple tool, such as a brush. Youngblood further elaborates this idea by quoting computer graphic artist Robert Mallary, who, in 1969, wrote an article titled “Computer Sculpture: Six Levels of Cybernetics” for *Artforum*. In this text, Mallary describes the computer as “a tool which can be used not only for executing a work of art, but conceiving one as well,”2 and proposes six stages in which the computer actively participates in the creative process: at stage one, the computer is merely a calculator that can produce versions or “proposals” for the artist’s consideration; at stage two, the computer is indispensable to the production of the artwork; at stage three, the computer is able to choose among different courses of action, based on a set of options defined by the program; at stage four, the computer can make decisions beyond the initial set of parameters and generate unexpected outcomes. At this stage, according to Mallary, the role of the artist becomes debatable, and there is even the possibility of a “posthumous production of art.” The author further states that stages five and six may never be attained, as they imply that the machine has reached a form of self-sustaining existence and a level of intelligence and consciousness that allows for the development of a creative process without any assistance from a human being. While Mallary conceives these ideas by focusing on sculpture, Youngblood applies the six levels of cybernetics to computer cinema, which he expects will generate “a new aesthetic discipline that bears little resemblance to previous notions of art and the creative process.”3

More than forty years after the publication of Youngblood’s essay, the use of computers has revolutionized many aspects of cinema, allowing for more sophisticated visual effects but also transforming its distribution channels and introducing the ability to manipulate, edit and remix the contents of a film in multiple ways. While in most cinematic productions the computer has remained a “passive” tool (used in the different stages of editing and post-production, but without any agency), several artistic projects have explored the possibilities of using the audio and visual content of a film (or even its script) as raw data that feeds a process partly or fully controlled by a computer. The outcomes of these projects speak of new forms of cinematic language, an unwilling interaction between viewer and moving picture, endlessly mutable narrations and, ultimately, a radical shift in the perception of the film as the human viewer is replaced by the computer.

In 2006, artist Carlo Zanni recorded a short movie consisting of a single scene in which a man is lying, bare chested and apparently ill, in a dim-lit bedroom. A woman enters the room and comforts him. As the couple lie in bed, she is asleep but he lies awake with a far-away look in his face, while dark dots spread all over his body. The one-minute film was displayed exclusively online for the period of one year. When visitors accessed the server hosting the movie, their IP address, country of origin, as well as the date and time of access were processed using Google Analytics. This data was used to re-edit the film, so that a new movie was produced the following day: the dark dots covering the man’s body (which remind of melanoma) were digitally added according to the number of users visiting the website and their country of origin. The viewers thus determined the amount and position of the dots, contributing to the spread of the illness on the character’s body.

Titled *The Possible Ties Between Illness and Success* (2006),” Zanni described this project as “data cinema,” since the movie was actually transformed, both in its appearance and in the intensity of the story, by the data retrieved from Internet users. The process was entirely automated, based on a set of parameters established by the artist, who was assisted by programmer Agustin Garzon Mason. During the year in which the project was online, it generated almost 360 movies. Zanni intended to explore the “intimate balance between isolation and public presence”4 in this inter-
active film, but also experimented with a new form of cinematic narration. The use of the word “cinema” in the artist’s description of the project is far from gratuitous: Zanni worked with professionals from the movie industry, including actors Ignazio Oliva and Stefania Orsola Garello and Oscar-winning composer Gabriel Yared. He added the full credits list at the end of the film as an integral part of the artwork and conceived a story that, while being simple enough to be understood without words, incorporates several layers of meaning. The silent dialogue between the actors, a laconic music score and the voice-over narration by John Haskell, who reads the last page of his novel American Purgatorio, add to the changing distribution of the dots in making every version of this project a different movie.

Zanni’s artwork, which exemplifies Mallary’s stage three of cybernetics, is based on data collected from the Internet. Artist Grégory Chatonsky also uses this resource in series of artworks that explore what he terms Flussgeist, the “spirit” of our times as interpreted through the data flow on the global network. The artist uses this apparently inexhaustible source of content to explore the possibility of generating a “fiction without narrative,” an infinite story that unfolds in front of our eyes without a specific meaning or intention: rather, it is the viewer who extracts meaning out of a succession of images, texts and sounds. The spectator takes on a somewhat active role, in this case by inventing a narrative where there is none. In L’attente/The Waiting (2007), the user accesses a website that displays a mashup of Flickr photos, Twitter posts, a pre-recorded video of people waiting at a train sta-
tion and an ambient soundtrack against a black background. The artwork consists of a program that extracts tweets and looks for images based on the words included in each post. These images are combined with the video recorded by the artist, the meditative soundtrack adding to the effect of watching a film. Chatonsky’s work includes numerous references to cinema, such as tributes to Jean-Luc Godard and David Lynch, and therefore the particular setup of the elements and the use of a black background refer to the cinematic experience. As the artist states: “the use of darkness is one of the connecting threads of my work [...] Perhaps, it is also a way to watch the Internet as if in a dark theatre, in this waiting and loss of oneself.” A more direct reference to cinema can be found in Sodome@home (2008), an online artwork that uses the script from Pier Paolo Pasolini’s last film, Salò, or the 120 Days of Sodom (1975), as source material to generate a sequence of images extracted from Flickr that substitute the images filmed by the Italian director with those taken by Internet users and presented in a different context.

An appropriationist technique is also present in the fully automated process that takes place in Nicolas Maigret’s The Pirate Cinema (2013). Using data interception software, the artist creates a video installation that displays the most viewed torrents as they are downloaded. Since torrents are downloaded in irregular fragments and not as a single file, the projection screen shows a myriad of one-second glimpses of the most popular Hollywood films, porn movies, video clips, sports matches or TV series in an endless sequence. Some images load in full, others show glitches, and (ironically) sometimes the logo of a major film studio appears in the title sequence of one of the pirated films. The sound of each clip contributes to generate a confusing collage of contents that, as in Chatonsky’s work, invite the viewer to create a new story. Still, an alternative narration is not the main subject of this artwork. Maigret states that “The Pirate Cinema proposes to watch the films again through the logic of cables,” indicating that what we should look for in the images is not so much what they are telling, but what their presence in this system tells us about their consumption. By creating a multi-faceted “film” from the flow of data, the artist actually creates a movie about Peer-to-Peer networks and the intimate relationship between users and the contents they watch and share. The frequent appearance of certain logos, faces and contents (from blockbuster movies to porn) suggests a reflection about the status of companies and individuals in the media sphere, the viral quality of some products, and the taboos that separate what is broadly and publicly shared and what belongs to a private, hidden part of our hard drives.

The fragmentation of the cinematic narrative takes a different approach in Antoine Schmitt and Delphine Doukhan’s Fractal Film (2013). Doukhan wrote and shot a wordless scene involving six characters who perform several choreographed actions that can be interpreted in multiple ways. Their glances, facial expressions and body movements suggest different relationships between them, depending on what gains prominence and what is left in the background. The framing and movement of the camera thus becomes a crucial element in establishing the meaning of the story. Doukhan shot the scene in very high definition (5K) from eight different angles. This footage is then explored by a software-based camera, designed and written by Antoine Schmitt, that zooms in and navigates the images according to several rules written by the artists. The camera chooses one rule at random and follows it, resulting in a different movie of the same scene each time.

One after another, these automatically generated scenes are played in an endless, ever-changing loop that, according to the authors, “proceeds to an exhaustion of the view on a given scene.” Fractal Film explores cinematic language through editing and a set of rules that allow the computer to create infinite versions of the same scene, while avoiding the simple display of random fragments. By following these rules, the generated video makes sense in itself and therefore suggests a particular story in a way that is closer to Zanni’s Possible Ties than to Chatonsky’s or Maigret’s explorations of the data flow.

While all these projects address the viewer with different forms of cinematic narratives, Ben Grosser’s Computers Watching Movies (2013) reverses the relationship between user and computer by turning the latter into a spectator. The artist wrote a software program that uses computer vision algorithms and artificial intelligence routines to provide a computer system with the ability to decide what it “watches” in a film sequence, analyze the visual elements and movements and choose where to place its attention. The computer’s eyes are represented by a sketching process that is displayed over a white background, synchronized with the audio of six popular film clips from the movies 2001: A Space Odyssey, American Beauty, Inception, Taxi Driver, The Matrix and Annie Hall. By watching what grabs the attention of the computer, the viewer re-creates the original scene in her mind and compares the way the machine looks at the film with her own vision: the viewer is finally not watching a film but reflecting on her own way of looking. Grosser’s artwork enters the fourth level of cybernetics and closes the circular connection between viewer, film and computer developed in the works previously mentioned.

These artworks are presented at the Media Art Futures Festival (Murcia, Spain, April 15-30, 2015) in a program that I curated for the Film Archive of Murcia. Each artwork is screened in the Film Archive’s movie theater in a continuous loop during one day. The audience is invited to freely enter and leave the projection room, staying for as long as they wish while the artworks execute their particular rou-
tines, in most cases without beginning or end. In this manner, the context of the movie theater and the usual way of experiencing a film are confronted with a series of artworks that, as Youngblood predicted, open up a new aesthetic discipline.

Pau Waelder is an art critic, curator and researcher in digital art and culture. Among his latest projects are the conferences En_lloc (Now_Here), Digital Culture (Fundacio Pilar i Joan Miro a Mallorca). As reviewer and editor, he has collaborated with several art magazines. He is New Media Editor at art.es magazine.

Pau Waelder

3 Youngblood. op. cit. 192.
5 Ibid.
10 Ibid.