
The Neuro-Image

Alain Resnais's Digital Cinema without the Digits

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THIS ESSAY TAKES UP THE RECURRENT QUESTION of cinema's death after the digital turn, or its possible survival. As is well known, cinema's death certificate has been issued several times before the digital age as well. The arrival of television in the course of the 1950s and the introduction of the home videotape in the 1980s are just the most obvious moments in the past in which its funeral was announced. In 1961, when the small screen started to become a common object in the living room, Alain Resnais was interviewed for television in coincidence with the premiere of *LAST YEAR IN MARIENBAD* (France 1961) (this interview is now available on Youtube). The interviewer concluded with the question of whether cinema is dead, alive, or about to be (re)born.¹ »It will continue to flow, like a river«, Resnais answered, assuming in this way the development of cinema to be a continuation with the past and a movement toward the future. Gilles Deleuze, at the end of his cinema books written during the 1980s when the electronic video image was massively introduced and cybernetics started to raise questions about the future of the image, similarly demonstrates a belief in the survival of cinema, stating that »the life or afterlife of cinema depends on its internal struggle with informatics.«² In the same chapter he also argues that this struggle does not necessarily rely on computing skills or cybernetic machines, but on a will to art: »An original will to art has already been defined by us in the change affecting the intelligible content of cinema itself: the substitution of the time-image for the movement-image. So that electronic images will have to be based on *still another will to art*, or on *as yet unknown aspects of the time-image*.«³ The question of time remains very important in the transformation into a new image-type, which I propose to call the neuro-image.⁴ What is particular about creative audiovisual images is that,

¹ Alain Resnais interviewed by Francois Chalais, under: http://www.youtube.com/watch?v=gTg_knL4cks (17.04.2011).

² Gilles Deleuze: *Cinema 2. The Time Image*, London 1989, p. 270.

³ Ibid. p. 266 (my emphasis).

⁴ This idea is further elaborated in my book *The Neuro-Image: A Deleuzian Film-Philosophy for Digital Screen Culture*, Stanford, CA (forthcoming).

in contrast to ordinary perception, they can »render time relations sensible and visible«.⁵

In Deleuze's cinema books, the temporal dimensions of the movement-image and the time-image are investigated through the work of Henri Bergson. Therefore, it is useful to return to Bergson's temporal metaphysics to see if and how the temporal relations of the neuro-image might be different to those of the movement-image and the time-image as Bergson himself elaborated. Not co-incidentally, Bergson's metaphysics is developed in (intuitive) partnership with sciences of the brain, as is very clear from his essays in *Mind Energy*.⁶ Deleuze of course further extends Bergson's »meta/physics« by adding the film screen into the equation (time = brain = screen). In the *Time-Image*, Deleuze indicated that the movement-image has not at all disappeared, but »now exists only as the first dimension of an image that never stops growing in dimensions«.⁷ If the time-image is its second dimension, then I suggest it is possible to consider the neuro-image as a third dimension of the image. In order to explain and justify this, however, I will first look at Deleuze's own conceptions of the three syntheses of time he developed in *Difference and Repetition*.⁸ In the second part of this essay, I will return to the cinema of Alain Resnais to argue that his films, conceived by Deleuze as the ultimate example of brain screens of the time-image, can be considered as a neuro-image *avant la lettre*, or as digital cinema without digits. Resnais's films are fascinating in the context of the neuro-image, because they already inherently comprehend the fact that not only are the differences between image-types not clear-cut, but also that such differences are better thought in terms of »nested instancing«, partial overlap, and continuous growth. In this way, Resnais's work further demonstrates how the neuro-image can be sensed at its incipience as a will to art, and can anticipate aspects of digital culture such as a participatory aesthetics and database logics.

⁵ Ibid. p. 371.

⁶ Henry Bergson: *Mind-Energy. Lectures and Essays*, New York, NY 1920.

⁷ Ibid. p. 22.

⁸ Gilles Deleuze: *Difference and Repetition*, London 1994.

1. Deleuze's Bergsonian Cinema Project and the Three Syntheses of Time

Many important commentaries have already introduced and critically commented on the nature of Deleuze's Bergsonism in his cinema books. It is not my intention to discuss these commentaries here extensively. However, for the sake of developing an argument about the possibility of a third image-type (with yet a different dimension of time, though one not unrelated to those of the previous image-types), I will briefly summarize Deleuze's four commentaries on Bergson. One of the most problematic issues is that, in spite of Bergson's specific objections to cinema as a mechanism that resembles the tendency of human intellect toward spatializing time in immobilized sections to which movement is added, Deleuze considers Bergson's philosophy of perception (matter) and memory (time) as duration as nevertheless *essentially* cinematographic. Deleuze's contrariness in identifying a cinematic Bergson in spite of Bergson, which Deleuze explains only by stating that Bergson could not yet grasp the essence of the cinematographic apparatus, is considered by many as too easy or too historicist a solution to the problem of contradiction. Nevertheless, Deleuze's Bergsonian view of cinema itself has generally been welcomed as a new way to think filmicly without taking language or linguistics as its model. Another way of looking at Deleuze's remarkable move of reading Bergson against Bergson is to recognize this as Deleuze's first (key) shift in to his »brain is screen« argument. Consider that Deleuze does not spend any thought on the technical conditions of the projection of 24 frames per second that give the illusion of movement. Instead, he perceives the »realities of illusion« on the brain-screen.

In his first commentary on Bergson, Deleuze discusses how Bergson thinks of time not as »clock time« (which Bergson also calls »cinematographic illusionary time«), that is, not as a succession of divisible immobile sections, but instead as indivisible mobile sections, as movement-images. Deleuze argues that cinema immediately gives us movement-images: »The cinema would rediscover that very movement-image of the first chapter of *Matter and Memory*.«⁹ The second thesis of the first commentary is that Bergson (in accordance with modern scientific developments) considers time no longer a succession of special poses, privileged moments, but a succession of »any-instances-whatever« and cinema reproduces movement by relating to these »any-instances-whatever«: »Bergson forcefully demonstrates that the cinema fully belongs to this modern conception of movement.«¹⁰ The final thesis in the first commentary considers movements as mobile sections of

⁹ Deleuze: Cinema 1. The Movement-Image, London 1986, p. 3.

¹⁰ Ibid. p. 6.

duration in relation to a whole that also keeps on changing. This means that movement is always open to change, never given, nor givable: »Movement always relates to change. [...] If we think of pure atoms, their movements, which testify to a reciprocal action of all the parts of the substance, necessarily express modifications, disturbances, changes of energy in the whole. What Bergson discovers beyond translation is vibration, radiation.«¹¹ In the chapters that follow this, Deleuze maps the different ways in which framing and montage are the specific cinematographic ways in which mobile sections open to the whole to transform it.

In his second commentary on Bergson, Deleuze indicates how Bergson identifies the images with movement, with a world of universal variations, undulations, rippling: »This infinite set of all images constitutes a kind of plane of immanence. The image exists in itself, on this plane. This in-itself of the image is matter: not something hidden behind the image, but on the contrary the absolute identity of the image and movement leads us to conclude that the movement-image and matter are identical. [...] The material universe, the plane of immanence, is the *machinic assemblage of movement-images*. Here Bergson is startlingly ahead of his time: it is the universe as cinema in itself, a metacinema.«¹² The second part of this commentary on Bergson consists of distinguishing the varieties of movement-images as perception-images, action-images, affection-images. They constitute three »material aspects of subjectivity,« related to the brain as a »center of indetermination.« Deleuze concludes this part of his commentary by posing the screen immediately as a screen: »And each of us, the special image or the contingent center, is nothing but an assemblage of three images, a consolidate of perception-images, action-images and affection-images.«¹³ The remaining chapters of *The Movement-Image* discuss in detail the different image-types and the different signs they emit.

The third and fourth commentaries are developed in *The Time-Image*. Here Deleuze moves to take images as »immaterial aspects of subjectivity.« By referring to the distinction Bergson makes between habitual recognition of sensory-motor activities (necessary for moving in the world, and developed in the movement-image) and attentive recognition (that does not extend in movement but connects to a recollection-image) Deleuze develops the idea of the exchange between the actual and the virtual. Again, the correspondence of Bergson here with more contemporary research into the neural processing of images is striking: »A zone of recollections, dreams, or thoughts corresponds to a particular aspect of the thing: each time it is a plane or a circuit, so that the thing passes through an infinite num-

¹¹ Ibid. p. 8.

¹² Ibid. p. 59.

¹³ Ibid. p. 66.

ber of planes or circuits which corresponds to its own ›layers‹ or its aspects.»¹⁴ In this way, Deleuze distinguishes recollection-images, dream-images, and crystal-images. And while the recollection-image (usually flashbacks) and dream-images are considered as the memories and dreams of the movement-image, where it is still possible to distinguish between the actual and the virtual (in classical cinema there are often markers, such as a zoom into a character's head or a dissolve after a pensive face that transports us into another dimension), in the crystal image the actual and virtual are no longer distinguishable. Here we move to Deleuze's fourth commentary on Bergson: »What the crystal reveals is the hidden ground of time, that is, its differentiation into two flows, that of presents which pass and of pasts which are preserved.«¹⁵ Deleuze refers to Fellini's statement that »we are constructed in memory, we are simultaneously childhood, adolescence, old age and maturity« as a fundamentally Bergsonian conception of non-chronological time, the co-existence of all sheets of the past, and the existence of its most contracted degree.¹⁶

Deleuze explores the »most contracted degree« of time through reference to Augustine's multifold formulation of the present: there is a present of the future, a present of the present, and a present of the past. Something is about to happen, something is happening, something has happened. These are the »peaks of the present« Alain Robbe-Grillet presents in his films. As such, Robbe-Grillet's Augustinism can be traced in *LAST YEAR IN MARIENBAD* (screenplay by Robbe-Grillet) as follows: The stranger or lover / X (Giorgio Albertazzi) lives in the present of the past, the woman / A (Delphine Seyrig) lives in the present of the future, the husband or escort / M (Sasha Pitoëff) lives in the present of the present; meanwhile all implicate the other in complicated and inexplicable ways.¹⁷ Alain Resnais, on the other hand, conceives his time-images much more like undecidable circles or co-existing sheets of the past. *LAST YEAR IN MARIENBAD* also carries the temporal marks of Resnais: »If *Last Year...* could be divided, the man X might be said to be closer to Resnais, and the woman A closer to Robbe-Grillet. The man basically tries to envelop the woman with continuous sheets of which the present is the narrowest, like the advance of a wave, whilst the woman, at times wary, at times stiff, at times almost convinced, jumps from one block to another, continually crossing an abyss between two points, two simultaneous presents.«¹⁸ I will return to the films of Alain Resnais in section two. Here, I want to continue with the problem of time in relation to cinema.

¹⁴ Deleuze: *The Time-Image* (ibid. 2), p. 46.

¹⁵ Ibid. p. 98.

¹⁶ Ibid. p. 99.

¹⁷ Ibid. p. 101.

¹⁸ Ibid. p. 104.

It is quite possible to argue that *The Movement-Image* and *The Time-Image* together already successfully address the whole range of the actual and the virtual, the indivisible plane of immanence of Deleuzian philosophy. As Deleuze in one of his last texts asserts, »the plane of immanence includes both the virtual and its actualizations simultaneously, without there being any assignable limit between the two. [...] The virtual image absorbs all of the character's actuality, at the same time as the actual character is no more than a virtuality.«¹⁹ Recall that movement-images and time-images both relate to the actual and the virtual but in different ways. Moreover, they also exist in close exchange and interconnection with one another (the division between the two image types is not absolute). In this sense, there is perhaps no need for a third type of image, a »neuro-image« as I propose in this essay. Indeed, there are many instances that justify a view of the neuro-image as simply an extension or intensification of the time-image. In Alain Resnais's work in particular, which I will return to soon, the screen as a cerebral membrane is already proposed explicitly in the time-image (and also perhaps implying Deleuze's brain-screen argument for the whole of cinema).

However, a return to *Difference and Repetition* might allow us to distinguish yet other metaphysical dimensions of time, and to make a distinct case for the conception of the neuro-image as a third type of image, or in any case a third dimension of the image. *Difference and Repetition* is a book that poses the problem of the virtual and the actual specifically in terms of ... difference and repetition, addressing the complex problems of the conditions of appearances, things, life forms as they differ and are repeated. As James Williams has indicated, a consciousness of repetition is proposed by Deleuze in terms of certain variegated syntheses of time, which offer a »complex but deeply rewarding and important philosophy of time [that] will, no doubt, come to be viewed as one of the most important developments of that philosophy.«²⁰ In Chapter 2 of *Difference and Repetition*, Deleuze develops the passive synthesis of time. Here, too, Bergson is the main reference, although the starting point of his reflections is Hume's thesis that »repetition changes nothing in the object repeated, but does change something in the mind which contemplates it.«²¹ Repetition has no *in-itself*, but it does change something in the mind of the observer of repetitions: on the basis of what we perceive repeatedly in the present, we recall, anticipate or adapt our expectations in a synthesis of time. This synthesis is a passive synthesis, since »it is not carried out by the mind, but occurs

¹⁹ Gilles Deleuze: *The Virtual and the Actual*, in: Gilles Deleuze and Claire Parnet: *Dialogues*, 2nd. Ed., London 2002, pp. 149–150.

²⁰ James Williams: *Gilles Deleuze's Difference and Repetition. A Critical Introduction and Guide*, Edinburgh 2003, p. 85.

²¹ Deleuze: *Difference and Repetition* (ibid. 8), p. 70.

in the mind«. ²² The active (conscious) synthesis of understanding and memory are grounded upon this passive synthesis, which Deleuze, referring to Bergson, calls duration and which occurs on an unconscious level. Note also that although Bergson refers to the observation of our inner life in duration as consciousness, the temporal contractions that generate it are largely unconscious. Deleuze distinguishes different levels of passive syntheses that have to be seen in combinations with one another and in combination with active (conscious) syntheses:

»All of this forms a rich domain of signs which always envelop heterogeneous elements and animate behavior. Each contraction, each passive synthesis, constitutes a sign which is interpreted or deployed in active syntheses. The signs by which an animal »senses« the presence of water do not resemble the elements which the thirsty animal lacks. The manner in which sensation and perception – along with need and heredity, learning and instinct, intelligence and memory – participate in repetition is measured in each case by the combinations of forms of repetition, by the levels on which these combinations take place, by the relationships operating between these levels and by the interferences of active syntheses with passive syntheses.« ²³

The first synthesis Deleuze distinguishes is that of habit, the true foundation of time, occupied by the passing present. However, this passing present is grounded by a second synthesis of memory: »Habit is the originary synthesis of time, which constitutes the life of the passing present. Memory is the fundamental synthesis of time which constitutes the being of the past (that which causes the present to pass)«. ²⁴ As James Williams explains, the first synthesis of time occurs because habits (repetitions) form our expectancies based on what we have experienced before, »as in the passive assumption that something will occur«. ²⁵ The second synthesis Williams calls archiving, »as in the passive sense of the present passing away into the past as a stock of passing presents«. ²⁶ The second synthesis of time is equivalent to Proust's involuntary memory. In the description of these two syntheses of time, Deleuze refers explicitly to Bergson. The first and second syntheses relate, such as in the alliance of the soil (foundation) and the sky (ground), but they also have their own characteristics. ²⁷

²² Ibid. p. 71.

²³ Ibid. p. 73.

²⁴ Ibid. p. 80.

²⁵ Williams: Gilles Deleuze's Difference and Repetition (ibid. 20), p. 101.

²⁶ Ibid. p. 101.

²⁷ Deleuze gives the ground of the past the characteristics of the sky: »the foundation concerns the soil, it shows how something is established upon this soil [...] whereas the ground comes rather from the sky, it goes from the summit to the foundations ...«, ibid. p. 79.

The conception of the syntheses of time is incredibly sophisticated and complicated and I cannot do justice to the richness of Deleuze's arguments here (Williams and others have done this powerfully and convincingly). Nevertheless, I take that it is possible to argue that the first synthesis of time, habitual contraction, can be recognized in terms of movement-images linked to (as Deleuze also states) the sensory-motor aspects of the brain-screen. Similarly, I consider that the second synthesis of time can be related to the dominant form of time in the time-image, where the past becomes more important and manifests itself more directly. Importantly, each synthesis of time has its own relation to other times. The first synthesis of time as »the living present« relates to the past and the future as dimensions of the present.²⁸ In this way, the flashback (and flashforward) in cinema can be seen as the past and future of the movement-image. In the second synthesis of time, the past becomes the actual ground, as the synthesis of all time and thus the present and the future become dimensions of the past.²⁹ The time-image's dynamics – the past as the coexistence of all its layers (as Bergson proposed) – are further elaborated by Deleuze in his commentaries on Bergson, in which different time-images are distinguished based on their reliance on the past. Time-images are established here as dimensions of the »pure past,« of the second synthesis of time: the present and the future become dimensions of the past; and the virtual becomes more indistinguishable from the actual at certain crystallizing points, in comparison to movement-images, which have the present as their main dimension.

However, in *Difference and Repetition*, Deleuze also distinguishes a third synthesis of time. The third series of time is the future as such: »The third repetition, this time by excess, [is] the repetition of the future as eternal return.«³⁰ In this third synthesis, the foundation of habit and the ground of the past are »superseded by a groundlessness, a universal ungrounding which turns upon itself and causes only the yet-to-come to return.«³¹ In this third synthesis, the present and the past are dimensions of the future: »In the work of the third passive synthesis,« Williams explains, »there is the sense of the openness of the future with respect to expectancy and archiving.«³² Williams refers to this openness and its risks as the possibility of change (making the future different from the past and the present). It is

²⁸ Ibid. p. 76.

²⁹ We can see now how the present is different in the first and second synthesis of time: »In one case, the present is the most contracted state of successive elements or instants which are in themselves independent of one another. In the other case, the present designates the most contracted degree of the entire past, which is itself like a coexisting totality.« (Ibid. p. 82).

³⁰ Ibid. p. 90.

³¹ Ibid. p. 91.

³² Williams: Gilles Deleuze's *Difference and Repetition* (ibid. 20), p. 101.

the condition for the new. This third synthesis is complicated, since it does not simply repeat the past and the present, but instead cuts, assembles, and orders from them, to select the eternal return of difference: »Identities, or the same, from the past and the present, pass away forever, transformed by the return of that which makes them differ – Deleuze’s pure difference of difference in itself.«³³ The three syntheses of time together account for the importance, originality, and wider significance of Deleuze’s philosophy of time.

In elaborating the third synthesis of time, Deleuze breaks from Bergson and Nietzsche becomes the main point of reference. In *The Time-Image* too, Bergson disappears in favor of Nietzsche’s appearance, although Nietzsche is not explicitly connected to the question of time in the cinema books. Chapter 6 of *The Time-Image* for example discusses Orson Welles and the powers of the false, and Nietzsche is an important reference for understanding the manipulation of such powers. The powers of the false are discussed first as a consequence of the direct appearance of time (the pure past of the second synthesis of time), then at the end of the discussion of Welles, are connected to the creative powers of the artist and the production of the new (though not explicitly to the eternal return and the future). Deleuze’s notion of »series of time« thereafter emerges in *The Time-Image*, especially in the chapter on bodies, brains, and thoughts (Chapter 8); Antonioni and Godard’s films of bodies particularly announce this time as series. Deleuze however leaves his explanation of this chronosign of time as series for the conclusion of the book: »the before and after are no longer themselves a matter of external empirical succession, but of the intrinsic quality of that which becomes in time. Becoming can in fact be defined as that which transforms an empirical sequence into series: a burst of series«.³⁴ We can observe that after all the insistence on elaborating the Bergsonian temporal dimensions of the movement-image and the time-image, this form of time (series of time) remains rather underdeveloped on a theoretical level in the cinema books. Referring back to *Difference and Repetition* it is not difficult to connect Deleuze’s own logic and suggest that the powers of the false and the series of time that can be sensed in some time-images might belong to this third synthesis of time. Taking this logic one step further, I suggest this third synthesis of time, which already appears in *The Time-Image* (in a more or less disguised form), is the dominant sign of time under which neuro-images are formed.

The neuro-image belongs to the third synthesis of time, the time of the future (though this certainly does not exclude the other times, as the past and the present now become dimensions of the future).³⁵ A revisit of the works of Alain Resnais

³³ Ibid. p. 103.

³⁴ Deleuze: *The Time-Image* (ibid. 2), p. 275.

³⁵ Moreover, each synthesis also opens up to the other syntheses (each with their own re-

acknowledges the fact that Deleuze has already mapped out the contours of the neuro-image in his cinema books. However, it also allows us to see how Resnais's cerebral screens actually anticipate the digital logic of our contemporary screens as a will to art (and thus to indicate a resonating link between the neuro-image's brain-screen and the digital age, in a non-techno-deterministic way).

2. Neuro-Images Avant la Lettre in Resnais's Digital Screens without Digits

»Thunderbolts explode between different intensities, but they are preceded by an invisible, imperceptible dark precursor«, Deleuze says in *Difference and Repetition*.³⁶ Perhaps Resnais's films could be considered as such dark precursors of the neuro-image. Obviously, this does not mean Resnais's films were »invisible« when first released. On the contrary, many of his films, such as *NIGHT AND FOG* (France 1955) and *HIROSHIMA MON AMOUR* (France 1959), have always been recognized as important films (politically and artistically) and indeed masterpieces, especially the puzzling *LAST YEAR IN MARIENBAD* (1961). »This film is an enigma«, says the French interviewer to Resnais in the interview mentioned at the beginning of this essay, expressing broader public feeling about the film at the time. But following Deleuze's discussions of the problem of time and the ways in which cinema can make time perceptible, and considering the changes to screen culture in the digital age, it is perhaps possible to see Resnais's films anew, as the avant-garde of a new type of image we can now understand more fully.

Deleuze mentions Resnais's *JE T'AIME, JE T'AIME* (France 1968) as one of the few films that shows how we inhabit time.³⁷ For decades, this film has been literally invisible indeed, but a recent DVD edition has rendered it viewable again. *JE T'AIME, JE T'AIME* is the strange »science fiction« of Claude Ridder (Claude Riche), who has tried to commit suicide after the death of his girlfriend Catrine (Olga Georges-Picot). He survives, collapses into a catatonic depression and upon his

spective dimensions of times). In his article *Passions and Actions: Deleuze's Cinematographic Cogito*, in: *Deleuze Studies* 2/2 (2008), pp. 121–139, Richard Rushton also refers to the syntheses in time, indicating how the virtual and the actual can be read as the first and second synthesis of time in the movement-image. His focus is on spectatorship and he relates the time-image to the third synthesis of time and the dissolution of the subject. I propose in this essay a more meta-theoretical perspective by arguing that the movement-image, the time-image and the neuro-image are each based in a different synthesis of time, that each have their own relations to past, present, and future and each open up to the other syntheses.

³⁶ Deleuze: *Difference and Repetition* (ibid. 8), p. 119.

³⁷ Deleuze: *The Time-Image* (ibid. 2), p. 82.

release from a mental hospital is recruited as a guinea pig for a scientific experiment at a remote research center, Centre de Crespel, in the Belgian countryside. »Our only subject of research is time«, the scientists explain to him in the laboratory. They have built a machine, which looks like a giant brain, referred to as *la citrouille* (the pumpkin). The experiment involves the scientists sending Claude back in time exactly one year (to 5 September 1966 at 4:00 p.m.) for the duration of one minute. Prior experiments on mice have shown it possible to disappear back in time and return safely. However, a mouse cannot report on this experience, which seems crucial for understanding more of what happens when we travel back in time.

The test is therefore ready for a human, which of course involves significant risks. This is why Claude was chosen for the experiment: having wanted to die once already, he is assumed to care less about the possibility of losing his life again. The ethical implications of this suggestion and Claude's consent are not addressed in the film, but the philosophical concept of multiple deaths is relevant, as will become clear later. Before Claude enters the brain-machine, he is heavily sedated with drugs that, as explained to him, make him »completely passive though still capable of receiving memories«. As if the scientists had read *Différence and Répétition*, they seem to have created a machine for literally traveling in to the second passive synthesis of time. The inside of *la citrouille* is soft and lobe-like. Claude lays down, sinking into the soft folds of the brain-machine and waits for the memories to come to him.

The scene to which Claude returns is at the seaside during a holiday in the south of France with his girlfriend Catrine. He is snorkeling and gets out of the water. Catrine, who is sunbathing on the rocks near the water, asks him: »Was it good?« This scene is repeated several times, but always with slight differences and subtle variations, both in the order of the shots within the sequence, its variable beginnings and ends and with slightly different camera angles and shot lengths. It is as if his memory is looking through a kaleidoscope at all the possible combinations of the mosaic snippets of memory. Soon, however, this mosaic memory of his loved one (»Catrine, je t'aime, je t'aime«, Claude whispers half conscious back in *la citrouille*) starts to transport him to other fragments of memory. In a non-chronological way, pieces of his life present themselves: other moments with Catrine, scenes at work, *temps-morts* while waiting casually for a tram in Brussels, and sexual encounters with other women. More surreal oneiric scenes also return: a girl in a bathtub in the office, a nonsense letter, bosses that have gathered around his desk to watch him writing, a woman who tells him in a tram »J'ai terreur« (instead of »J'ai peur«, meaning, »I'm terrified«, instead of »I'm frightened«).

Another important scene repeated with variations is in a hotel room in Glasgow where Claude and Catrine are on a holiday. This is the moment where Catrine will die because of a leaking gas heater. Was it an accident or not? The memory is

not clear and changes slightly each time. As writer Jacques Sternberg explains in the DVD extras, Claude did not leave his girlfriend purposively behind with a leaking gas heater – the girl herself in fact chooses to die. It is eventually revealed in the film that she takes sleeping pills and smiles when performing this action, which is importantly the first time in the entire film that she smiles. The first time we see this memory of the hotel room scene, the flame of the heater burns. It is only in retrospect, at the film's end, that we understand Claude's memory is here already transformed by his feelings of guilt; at the last return of the »same« scene, we see the flame is actually extinguished, compared to earlier versions of the memory where it was not. On the DVD commentary, Sternberg explicitly mentions the fact that *JE T'AIME, JE T'AIME* corresponds to our mental life: we remember in snippets of non-chronological fragments, our memories change each time we go back to them, our memories change us. The film presents quite literally a meeting between physics (the scientists in the film) and metaphysics (the larger questions raised by the experiment of time-traveling and the functions of memory) that Bergson called for, expressed in an artistic and imaginative way.

MY AMERICAN UNCLE (France 1980) is another key Resnais film that mixes fiction with scientific findings about the brain. Here, the genre is less »science fiction,« where scientists invent strange experiments to reveal truths about the nature of time and memory but instead more »docu-fiction.« Organizing the film conceptually are pieces to camera and voiceovers by French neurobiologist Henri Laborit, author of countless neuroscientific studies and one of the first to experiment with anti-psychotics to treat schizophrenia. Laborit delivers the latest findings about the workings of the human brain from a modern evolutionary perspective (his contributions, it should be noted, mostly align closely with current cognitive neuroscientific principles). It is possible, he explains, to distinguish three brains: a »primitive, reptile« brain for survival, a second »affective and memory brain« and a third brain, the outer layer or neo cortex which allows associations, imagination, and conscious thoughts. Throughout the film he explains how these three layers, in constant exchange with one another, and ever-influenced by engagements with others and our environment, can explain human behavior. These scientific intermezzos seamlessly connect to the stories of three different characters, Jean (Roger Pierre), Janine (Nicole Garcia), and Leon (G rard Depardieu), who tell their life stories, and whose own lives meet at certain moments. The fictional stories translate the scientific discourse of the neurobiologist quite literally (sometimes too literally for a contemporary audience who tend to distance from over-emphasized comparisons between humans and laboratory rats). Nevertheless *MY AMERICAN UNCLE* also gives moving insight into what ultimately motivates the filmmaker, the philosopher and the scientist: to understand more profoundly why we do what we do and to find ways to improve not only individual destinies, but also the fate of

humanity. The last images of *MY AMERICAN UNCLE* present a traveling shot through a deserted and devastated urban landscape. The images are actually of the Bronx following violent riots, explosions of crime, and fires in the 1970s, but the landscapes contain all the horrors of any war in its ruins. The camera fixes itself upon the only colorful image: on one of the somber walls, a forest is painted. It is a mural painting by Alan Sonfist in the Bronx; a city screen *avant la lettre* as a hopeful sign of a possible future, a sign of the third synthesis of time... While the camera zooms in, the forest turns into a purer green and then nothing more than grainy pixels, mosaic snippets in our brain that must search for new connections.

Deleuze analyzed Resnais's work as cinema which plunges us »into a memory which overflows the conditions of psychology, memory for two, memory for several, memory-world, memory ages of the world«.³⁸ In *JE T'AIME, JE T'AIME* we dive into the memory of one person; *LAST YEAR IN MARIENBAD* gives us the memory of two characters. In *HIROSHIMA MON AMOUR* the memory of the lovers coincide with the memory of Hiroshima and Nevers in France; similarly, in *MURIEL, A TIME OF RETURN*, the characters relate to the memories of Bologna and Algeria, and in *LA GUERRE EST FINIE* (France 1966) the Spanish civil war mixes with a new age of young terrorists. *MY AMERICAN UNCLE* explores the ages (and biographies) of several characters and adds an evolutionary perspective; *LIFE IS A BED OF ROSES* (France 1983) also presents »three ages of the world«. Deleuze ends his discussion of the »data sheets« of Resnais's memories with a more general conclusion: »This is what happens when the image becomes time-image. The world has become memory, brain, superimposition of ages and lobes, but the brain itself has become consciousness, continuation of ages, creation or growth of ever new lobes, re-creation of matter.«³⁹ Deleuze compares Resnais's sheets of past and their pliable transformations to the Baker's transformation in mathematics to explain how these undecidable coexistences, transformations, and inevitable fragmented revelations play out.⁴⁰

For the most part then, Resnais's screens as cerebral membranes can be connected to the second synthesis of time, that is, to memory. However, there are also openings toward the third synthesis of time. The third synthesis of time, as I have outlined, opens up to the future and the creation of the new. The last images of *MY AMERICAN UNCLE* above testify to such renewal and creation in and of the future. However, the third synthesis of time is also related to death, both the shattering of the subject in its groundlessness, and the »final end of time.«⁴¹ A return to *JE T'AIME, JE T'AIME* shows that this necessary aspect of the third synthesis of

³⁸ Deleuze: *The Time-Image* (ibid. 2), p. 119.

³⁹ Ibid. p. 125.

⁴⁰ See ibid. p. 119.

⁴¹ Deleuze: *Difference and Repetition* (ibid. 8), p. 94.

time, where death is an inevitable element of the future (and possible new beginnings) is a concern of which Resnais and Sternberg were quite conscious. In the film, Claude returns to the brain-machine and travels from the past to the present regularly, but he stays increasingly longer, until he can (literally) no longer escape from time. The scientists are anxious to get him back but his body has disappeared in the present, only to commit suicide once more in the past: the scientists discover his body outside the brain-machine in the park of the research center with a gunshot wound. Underneath the layers of memory then, is always this even more fundamental problem of death, the problem of the third synthesis of time, the problem of the future. Or, as Deleuze argues: »Between the two sides of the absolute, between the two deaths – death from the Inside or past, death from the Outside or future – the internal sheets of memory and the external layers of reality will be mixed up, extended, short-circuited and form a whole moving life.«⁴² Before turning to contemporary expressions of these concerns with death and renewal in the third synthesis of time, I want to discuss briefly the ways in which the cinema of Resnais is not only a neuro-image in respect to its temporal/cerebral meta/physics, but also anticipates the concerns of digital screen culture in an artistic way through its internal struggle with information (technology).

Information is not memory. Resnais's cerebral films show that a will to art and thoughtful images will stand out and make us grasp the meta/physical depths of time, memory and death that go beyond individual psychology. On the other hand, Resnais's aesthetics also shows that these brain screens behave in ways that are now quite characteristic for digital culture (perhaps a will to art has preceded these cultural developments as much as technological inventions). It may seem like a far stretch to think of Resnais as a Web 2.0 filmmaker. However, the volatile and ever-changing characteristics (and matter) of time in Resnais – in which memories are constantly transformed each time we go back to them – is not unlike Lev Manovich's conception of software performances, in which images play out as a set of possible variations and transformations (to create 2.0's cinema).⁴³ In this sense the memories that keep on presenting themselves in new variations in *LAST YEAR IN MARIENBAD* or *JE T'AIME, JE T'AIME* or *MURIEL* could be compared to the always slightly different versions of »soft cinema,« or to navigation patterns on websites that change only subtly from a previous visit.

Software performances are closely related to a database logic, also described by Manovich.⁴⁴ Contemporary culture is driven by databases from which, time and

⁴² Deleuze: *The Time-Image* (ibid. 2), p. 209.

⁴³ See Lev Manovich: *Software Takes Command*, under: <http://lab.softwarestudies.com/2008/11/softbook.html> (17.04.2011).

⁴⁴ See ibid.: *The Language of New Media*, Cambridge, MA/London 2001, pp. 218–243.

again, new and different selections are made. In traditional structuralist terms, concepts of the database seem dominated more by paradigmatic relations of options in depth, rather than by surface narrative strings, although several narratives can be constructed out of the database selections.⁴⁵ In *LA GUERRE EST FINIE*, for instance, the main character Diego Mora (Yves Montand) imagines in a sort of »database flash forwards« when pondering what the unknown girl who has helped him to escape from the police at the Spanish border might look like (he has only heard her voice on the phone). A montage of female faces presents various possibilities. This »database flashforward« returns at other moments in the film as well. In *JE T'AIME, JE T'AIME*, Catrine and Claude are in bed when the doorbell rings; in one version they open the door, in another they don't. These possible variations are also the basis of a later film of Resnais's, *SMOKING/NO SMOKING* (France 1993), where the same story is told twice in different versions according to the choice of the heroine (played by Sabine Azéma) at the beginning of the film, to quit or to continue smoking. *MY AMERICAN UNCLE* is also database-like when at the beginning of this film several objects are shown without any clear meaning or connections between them. Later, some of the objects are suggestively linked to different stories and characters, and obtain (symbolic) meaning, only to return in a mosaic of many different objects and persons at the end of the film. Here, Resnais's screen resembles a typical webpage that offers many entrances at the same time, while each chosen object or pathway hide another version of a story.

A final characteristic of Resnais work – its seeming »digital without digits« – becomes evident when we watch the original trailer for *LAST YEAR IN MARIENBAD* on the DVD redistribution of the film. While we see a compilation of images from the film itself, a voiceover speaks to us:

»Remember?« But the woman doesn't remember. Who is right, who is lying? What really happened last year in Marienbad? These are the questions that you will have to answer. Be attentive. An object. A Gesture. An attitude. The smallest detail has its importance.

For the first time in the history of cinema, you will be the co-author of a film. Seeing the images you will create your own story, according to your sensibilities, your character, your mood, your past life. And it is up to you to decide, if it is this image, or this, that presents the truth or a lie, which image is real or imaginary, which one in the present or in the past. All the elements are given, you will have to decide.

⁴⁵ As Manovich notes, databases are not new (seventeenth-century Dutch still lifes can be seen as databases of food or flowers, arranged as a catalogue), libraries have worked with databases for ages, encyclopedias are arranged in a database logic. The point is of course that with the arrival of computers, databases become the more dominant organizational form of culture and knowledge.

Come play the real game of truth. Come taste this new sensation. Better than 3-D cinema, better than the giant screen. You will be yourself the center of this love story that you have never seen before but perhaps have lived.» (My translation)

Similarly, in a television interview about the film on Youtube, Resnais emphasizes the fact that individual spectators must select their own interpretations and that his interpretation as film director is not more important than any explanation assumed by anyone else. »I request the help of the spectator, because that is the best way to respect him«, Resnais explains.⁴⁶ Placing himself firmly within cinema traditions, Resnais here also anticipates the Web 2.0-logic of participatory culture. In digital participatory culture now, certainly not all images are high art, and various »machines of capture« (be they used for capitalist, fundamentalist or other purposes), operate according to the one same logic, yet the creative potential, collective intelligence, and democratic (though not unlimited) access to the expressions and constructions of culture has expanded exponentially. Resnais's cerebral screens anticipate the temporal meta/physics of digital culture and therefore can be considered as an early neuro-image. More than any other director, Resnais also shows that the neuro-image is not a break with the modernist concerns of the time-image, but a continuation of these »avant-garde« artistic concerns that return in a »democratized« (or hypermodern) form in media culture today.

⁴⁶ Alain Resnais, 1961, under: http://www.youtube.com/watch?v=gTg_knL4cks (17.04.2011).