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# MODELING VIDEO ART. BERGSONIAN APPROACH

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I have written the Master Thesis myself, independently. All of the other authors' texts, main viewpoints and all data from other resources have been referred to.

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# 1. Introduction

## 1.1. Problem Overview

Memory and video are two different phenomena. On one hand, it seems they have almost nothing in common: the former initially belongs to the domain of living beings, and the latter is originally the technological offspring. On the other hand, if forcefully combined together, memory and video could result in all sorts of artificial composites – from video memory as a computer memory that stores buffered video, memory of video as a form of human memory remediated by video to social and personal memories in the broader contexts of storage, exchange and copying.

Yet this is not the connection I am eager to find with this research. In my work, I seek to draw the metaphorical analogy between a very particular concept of memory and a very specific form of video. Rather than attempting to find a firm and steady correlation, I intend to go into the depth of the structural and functional components of these two notions and propose the possible model of memory that could be applied to video as an art form, and otherwise. Narrowing down the notions of memory and video, I draw the particular analogy between the concept of memory coined by Henri Bergson on one hand, and early video art as an independent art form that flourished in the 1960s and faded in the late 1980s with the proliferation of digital technologies, on the other.

Both phenomena – memory in Bergson and video art – pose a number of challenges to scholars and researches. Not only do these two notions seem peculiar in the relevant contexts of memory studies and art, but they also disrupt the conventions of the frameworks they are put in. Thus, Bergson's explanation of memory radically differs from other concepts of memory existing in cognitive science and semiotics. It offers an unusual perspective for thinking of memory independently through its unique modality of being and conceives the process of recollection in reverse order – by moving from the past into the present. In addition

to this, Bergson highlights that memory is not stored in the brain but exists in the form of duration, and unfolds in time through the prolongation of the past into the present. In this process, the recollection starts on periphery – outside the living body – then gradually descents towards the body and ends with perception. For this reason, the concept of perception plays an important role in the theory of Bergson and lays the ground for actualisation of memory in the present moment. Furthermore, memory in Bergson surpasses the notions of representation implying that the latter does not articulate the sensible knowledge of the animated world but, in contrast, averts the comprehension of life by offering a symbolic replacement to it.

Analog video as an artistic medium, in turn, holds the ambivalent position between technology and art, and for this reason, cannot be comprehended separately from one of these two phenomena. Such an 'in-betweenness' endows video art with a kind of peculiar status: on one hand, the technological features of the video medium are directly influenced by other closely related and heavily institutionalised technologies – television and cinema. On the other, because of the relative freedom inherent in art, video art escapes technological institutionalisation and affects emotionally, like most of the artworks[1]. Moreover, due to the signaletic nature of video as an art medium, it develops its own modality of being that is characterised by the omnipresence of video signal, its plasticity, immediacy and high degree of interactivity. When all these signaletic features are multiplied by artistic expressivity, video art, I argue, avoids representation inasmuch as memory in the theory of Bergson. In fact, the non-representational character of analog video was highlighted by many video artists who stressed that the former, if embodied in the artistic medium, exists on its own thereby manifesting a dynamic energy of life.

Not only are video art and memory in the theory of Bergson ambiguous and open to doubt, but they also escape any precise definition. Thus, Bergson defines memory as an active 'intelligent' recognition as opposed to the automatic recognition of our body, or claims that memory is an interface between the virtual and the actual. After that he further stresses that memory is, in fact, consciousness, and then calls it duration and plunges into discussion of the multiplicity of durations. Moreover, Bergson develops the idea of the existence of several types of memory which intermingle with each other, and in some cases, even stand for each

1 Apart from, probably, conceptual art

other.

Taking into account all these difficulties, in this work, I use Bergson's definition of memory as a virtual potential of the past that unfolds in time through the prolongation of the past into the present (Bergson 1911). It is characterised by both intelligent recognition and affective ability to discern particular images of the past from the universe. In addition, it has the potentiality to transform itself, and uses this self-transformation in order to accomplish itself in the embodied perception on one hand, and to bring the past into the present, on the other. Bodies, in this respect, are considered as the centre of action and the 'theatre of memory'.

Video art as a young field, in addition to its close entanglement with technology, also encompasses an extensive variety of artistic practices, sub-genres, and visual experiments, significantly overlaps with other forms of artistic expression such as experimental cinema, installations, performance art, body and land art, and even embodies in itself two different media – the analog and the digital. For this reason, any attempt to find a precise definition for video art turns into a fairly complicated enterprise. In this work, I loosely define video art by excluding all other art forms that might overlap with the video medium in art. More specifically, I neither include such closely related sub-genres as experimental filmmaking, performance and installation arts, nor I incorporate videos made for the purpose of documentation and preservation of other artworks. Instead, under the term of video art I refer to the scope of the experiments done by video artists since the appearance of the medium in the 1960s in order to explore the unique innovative characteristics of video.

Furthermore, I limit myself by the time-frame of early video art which is set between the 1960-1980s. It is done in order to bound the object of my analysis on one hand, and to inquire into the germinal form of analog video in more detail, on the other. Such a delimited focus, I think, can additionally shed light on the ontology of digital video as a direct successor of analog video, and what is more important, can lay the ground for better understanding of currently evolving hybrid media which entangle both the digital and the analog.

From this perspective, Bergson's concept of memory and video art share common features which, I think, create the premise for making possible the construction of the model of memory as video art and vice versa. The initial assumption of the existence of points of connection between memory in Bergson and video art is made based on writings of such

video artists as Bill Viola, Steina and Woody Vasulka, Gene Youngblood, Ira Schneider, Stephen Beck, Nam June Paik and Angela Melitopoulos among others. In their works, the technological medium of video stood for the first time as an art medium in its own rights and was endowed with the capacity for physical action. By juxtaposing video art with film technology, these artists assigned to the former the specific quality of being able to trace light in its constant movement, expose the continuity of time, and finally, to express a kind of ontological 'liveness' inherent in video as an artistic medium.

Thus, writing about the specific features of video, Bill Viola compares the medium to Nikola Tesla's radio calling video a "transmission of intelligence"[2] (Viola 2003 [1982]: 465) and appreciates a unique vitality of the electronic medium. In turn, Nam June Paik proclaims that video is time:

> What Godard says about cinema ('truth 24 times a second') does not hold in video. Because in video, there is no space (delimited frame) there is only time (lines without thickness).To produce color in video one has to translate color in time. Colors in video are millionths of seconds. Video is essentially time (Paik 1981 quoted in Ross 2006: 83).

Steina and Woody Vasulka call the artistic medium of video a shapeable clay and see in video art the possibility to expand the habitual way of looking and go beyond "the idiosyncrasies of human vision" (Steina Vasulka in Haller 1981 [1980]: 3). In addition, unfolding the argument that video is primarily time technology, Angela Melitopoulos proposes that the former can stand for a new system meant to synthesize duration and intensities. According to Melitopoulos, video forms intervals in the same way as memory does in the theory of Bergson, and thus, eventually brings "the past into the present, letting "the dead" appear in "the living" (Melitopoulos 2003). Eventually, the expressions of these and other artists with regard to video have sketched the directions to follow in my initial assumption and additionally encouraged to excavate more possible analogies between memory and video art.

In turn, a more detailed inquiry into the hypothetical connection between video art and Bergsonian theory has brought me to a few academic attempts to combine Bergson's ideas and video. Thus, a philosophical and observant approach is provided by an Italian sociologist and philosopher Maurizio Lazzarato. In his book *Videophilosophie: Zeitwahrnehmung im*

2 However, it is worth to mention that for Viola, the same is true for digital video and digital video processing: "Digital computer and software are holistic; they think in terms of whole structures. [...] Data space is fluid and temporal, hardcopy is for real – an object is born and becomes fixed as "transmission of intelligence" in time." (Viola 2003 [1982]: 465) In turn, Viola's conclusion gives food for thought in approaching the difference between analog and digital video.

*Postfordismus*, he draws on Bergson and constructs the argument that video technologies – from analog to digital – compress and synthesize time eventually producing new forms of subjectivity (Lazzarato 2002). Lazzarato, however, is more concerned with political implications of this process, and because the latter lies beyond the scope of my research, can support my argument only fragmentary. Furthermore, he is specifically interested in the temporalities of video as a technical medium, and this fact, in turn, also narrows down the spectrum of possible application of his theory in my paper. Nevertheless, Lazzarato's assumptions about the role of video technology in the production of subjectivity and, what is more important, his appealing adaptation of Bergson, give me food for thought showing that I may be on the right track.

Another important theoretician who has indirectly influenced my research is a Norwegian media scholar Ina Blom. For Blom, she studies video art from the archival perspective and argues for video to be a driving force for new social typologies. According to her, video art produces a new way of thinking that spins around a phenomenon of real time. Not only is this technical feature of video perceived by human senses as immediate, even though on the technological level, the delay between input and output exists nonetheless, but it also links knowledge with action by means of a specific autonomy of technological agency (Blom 2013). At the same time, Blom sees the latter aspect rather as a new possibly for humanity in the age of technology than human's inadequacy of cognition as opposed to machines. In this regard, she proposes to evaluate video as a form of agency – an independent technical modality that introduces a new temporal dimension into social reflexivity. Blom's approach, however, expands far beyond video technology and video art and advances in the direction of storage, data in motion, and aims to reassert the preservation of knowledge in general.

Departing from artists' reflections about video as an artistic medium and the academic writings of these two scholars, the intuitive connection between Bergson's concept of memory and video art can be drawn on many different levels. For instance, with respect to video as an art form, memory can be conceptualised by way of the inspection of the processes that take place inside the camera and on the screen, or expanded outside and projected on the relationship of artists (also possible, viewers) and video. When dissecting the functional parts of video art and memory in the theory of Bergson, a firm connection can be established

between the structural components of these two: for instance, a camera stands for an analogy of the mind, a screen signifies the body, and various artistic approaches represent a projection of the different types of remembering. Alternatively, the link can also be drawn based on the external premises, for instance, via the assumption that both memory and the video medium are time-based phenomena. Thus, the effect of both depends on real–time perception, and therefore they can equally be analysed via the concept of time or through the close study of human perception.

Given this variety of subtle parallels between memory in Bergson's theory and video art, in order to avoid confusion and narrow down the modeling I establish the analogy on the fourfold level. First, I compare the mechanism of video camera to the functionality of the mind described by Bergson and suggest that if used in art, the former does not merely copy the operations of the mind but expands these operations thereby bringing the latter closer to intuition. Second, I see the parallels between the stages of actualisation of memory and the processes of materialisation of video and seek to establish the connection between these two functional elements. Third, I discuss duration as memory and draw the connection between a unified duration and the expressive energetic movement of light on one hand, and a particular type of duration (which Bergson calls human or psychological duration) and the temporality of video art, on the other. Finally, trying to enrich the process of modeling, I establish the metaphorical analogy between the affectiveness of bodies in Bergson and creative expressivity of video artists reflected the world with their cameras.

In doing so, in my research, I work towards three main objectives. First and foremost, I want to comprehend these two peculiar concepts – Bergsonian notion of memory and video art. In my opinion, the thorough understanding could be achieved in combination – when one phenomenon is projected on the other. Second, I seek to sketch the mechanisms of how memory and video art work. Once again, it could be done by looking at the similarities and dissimilarities between these two phenomena. By extension, I think, such an analogical connection could also help me to path the way towards the definition of video art in the broader context, and lay the ground for the understanding of what makes video an artistic medium on one side, and also can help to elucidate the mechanism of memory conceptualised by Bergson, on the other. Third, by drawing the connection between video art and memory in Bergson, I expect to touch upon the digital-analog debates and sketch the possibility of

application of the model of memory that I construct based on the theory of Bergson to digital video art.

In this attempt, however, I do not seek to re-invent the concepts of memory, nor do I claim that the traditional views on memory established in psychology, neuroscience, history and philosophy have lost their credibility. By the same token, I do not strive to write a history of early video art or construct the universal model of video as an art medium. Instead, what I want to do is to look at memory and artistic video from a different, I think, more experimental angle on one hand, and to propose a kind of model that could shed more light on these two phenomena, on the other. In doing so, I am more concerned with the questions of how memory operates in its physical connection to the world, and how artistic video works in tandem with artists than how memory and video art should be interpreted in different contexts. It is only my hope that as an outcome of this work, a few scientists and artists could see their research areas in a broader light than before, and discover new methodological tools that can derive from metaphorical modeling.

### 1.2. Further Terminological Clarification

The preceding sub-chapter poses a number of questions closely related to the ways in which a medium of video enters the domain of art, and how it can be related to technology. At this stage, not only is it important to elucidate my point of view on art in general, but also to specify how technology becomes a medium of artistic expression in particular.

For art, my long-lasting and countless attempts to understand its nature have started with the interpretation via semiotics, continued further with the tension of art and reality through Adorno and Lotman, and finally have been accomplished[3] with Deleuze and his conception of art as 'blocs of sensations' (Deleuze, Guattari 1994). In this regard, in defining art, I departure from the idea that as a very unique phenomenon, art touches on the sensory level in the first place, thus avoiding rational interpretations and reasonable descriptions via language. Because of this, in my opinion, all attempts to fully explain, analyse or even verbalise the phenomenon of art deprive the latter of its power to enrich the present and to some extent bring changes into the world. By the same token, in this work, I offer to think of

3 More specifically, I see this as 'up-to-date' accomplishment, since my endeavour to understand what is art has not yet been fully completed.

video art as an affective phenomenon, mainly because, in my opinion, a video artwork can be deciphered only at the level of individual senses, and a kind of unified interpretation, in most cases, destroys the artistic component.

This latter statement, in turn, compels me to define the notion of 'artistic component' or something that makes a certain use of technology artistic. In this regard, in my opinion, technology becomes a medium of artistic expression when it enters into a kind of reciprocal interaction with an artist and a viewer. Video image is by any means produced technologically: first, it is created either with the help of a video camera or generated by way of synthesis; second, in the act of display, it is either performed by the artist in real time by way of various technological manipulations, or played back for the viewers. For the former, I find the role of the artist essential in the process of making artistic videos. Simply put, the artwork cannot come into being without its creator, but what is more, it becomes an artwork only in virtue of a kind of synthesis between the artist and the video medium. For the audience, I suggest, in video art, the participatory role of viewers can be conceptualised as a part of the artwork itself. Such a line of thinking, in my opinion, can be explained by a performative nature of video art that in turn is closely related to the phenomenon of real time. For this reason, I think, the audience is potentially involved into the process of making art video. Not only does it witness the moment of a creative exchange between video and the artist, but it also is 'plugged' into this very moment.

Due to the delimited focus of my research, while approaching this kind of multilayered interactivity of video art in connection to memory in the theory of Bergson, I primarily concentrate on the expressivity of the artist and the relation established between the latter and the medium of video. In this discussion, however, I do not advance further with the analysis of the participatory role of viewers. For all that, I want to stress, such an approach does not mean that I disregard the viewer's component claiming it to be irrelevant for video art. Instead, I consider it as a matter of choice which I have decided to make in order to not get lost in the boundless discussion. By and large, art as an affective and sensible phenomenon and an artist as an integral part of video art, play a role of a sonar that helps to detect the direction of my research, on one hand, and better understand the features of video art in connection to memory in Bergson's theory, on the other.

Despite in my view, there cannot exist a clear demarcation between art and technology

in video art, I also acknowledge that such an integrity creates a number of problems for both scholars researching video art and artists using video in their practices. At the same time, I suggest, to certain extent, it also signifies a more broad change in art that takes place today – the coalescence of art, technology, and science. At this point, it is necessary to add that in the following, I discuss the medium of video mainly in the context of art as a special material or 'conductor' employed by an artist to create a video work. Nevertheless in order to avoid possible confusions, in the very limited occasions when I refer to video as technology without attaching any artistic value, it is identified as 'video technology' or 'the technology of video'. In addition to this, all intermediate terminology which inevitably intervenes this research is clarified accordingly in the body of this work. For now, I want to turn to the methodology and elucidate the research strategy that I apply in order to move towards the answers to the questions posed in this paper.

### 1.3. Metaphorical Modeling

As a methodological toolkit for this research I use the technique of metaphorical modeling. This form of analysis, I believe, helps not only to establish but also sustain a coherent connection between two disconnected concepts and, in turn, offers an alternative perspective for apprehension of both of them. However, before discussing my methodology in detail, I want to give a brief theoretical overview of modeling and explicate the general outcome of metaphorical modeling.

It has been suggested that models are mediators between theories and the world (Morgan, Morrison 1999). In the complex process of apprehension, theories deal with the world on its own terms seeking to tell us what the world (or something in the world) is, while models stand for a metaphorical or analogous representation of this world (or something in the world) attempting to show us what something is like. At the same time, metaphors and analogies are fundamental for every scientific research (Harré 2004).

There are various ways in which metaphorical thinking enters the domain of scientific modeling. Inasmuch as different combination of models can be metaphorical, other models can generate metaphorical terminology or, what is more common, combine these two together. In this process, model is considered to be metaphorical if it transfers knowledge from one domain to another (Bailer-Jones 2009). In many cases, such a transfer in turn creates

metaphorical language needed for the model from one discipline to be functional within the scope of another discipline. As a result of this process, the general terminology commonly associated with one scientific domain, for instance, memory in cognitive science, can be widely applicable within another domain, as in this example, memory in computer science.

Another option for metaphorical modeling is to use the structure of one object and apply it for modeling the structure of another object. However, this is not to assert that every such a model necessarily suggests similarities in structure but rather it points at the existence of an analogy between two different phenomena. These analogies can be related to some complementary attributes, functional relations, or various processes that take place in different spheres of knowledge. As Bailer-Jones aptly concludes, the most observant metaphors are those that can identify a valuable analogy between phenomena from two different domains (Ibid.).

From such a perspective, metaphorical modeling offers a vast range of benefits for my research. First, this form of analysis, I believe, helps not only to establish but also sustain the coherent connection between memory and video art without sinking into the debates on interpretation of video, video storage, screen-memory, and other closely related questions which beset video as an art medium, as well as memory. Instead, the method of metaphorical modeling strives to construct its own metaphorical representation (which, in fact, does not claim to be either faithful or exact) by establishing specific connections between these two notions. By bringing forth the concept of memory offered by Henri Bergson, I am to project the latter on the medium of video in art and explore the existing analogical aspects between memory and video art. In doing so, I attempt to analyse the phenomenon of video art from a new perspective and uncover the functional mechanism of video as a powerful artistic tool.

Second, not only does this kind of analysis clarify my research position more competently, but it also helps to excavate all the possible outcomes of modeling. Thus, metaphorical modeling comforts the linkage between video art and memory as two distinct concepts on one hand, and sheds new light on their previously unknown characteristics, on the other. More specifically, metaphorical analogy not only transposes knowledge from the domain of memory in Bergson to the domain of video art, but also modifies our initial understanding of memory and video and appeals to their reevaluation. From such a perspective, it is also possible to discover some of the unusual features of these both notions

and even conceive new hypothesises and fresh ideas under different light. In total therefore, via the application of such a methodology, I expect to understand specific characteristic of memory in the concept of Bergson and analog video as a unique artistic phenomenon, and by combining these two concepts, assume the possibility of the intermediate hybrid between video art and memory. As a long-term outcome of this research, I also want to lay the ground for the more detailed and deep study of perception and memory in arts on one hand, and temporalities of analog video, on the other.

Third, undoubtedly substantial benefit of metaphorical modeling is the flexibility of this analytic approach. Rather then ratifying certain factual similarities or dissimilarities between memory and video, metaphorical modeling, instead, is more about transferring knowledge from one domain to another. Such a transferal in turn navigates the research into a more productive pathway, and extends its possible outcome. Furthermore, the connections discovered in the process of modeling help to expand the horizons of my research and project the theory of Bergson onto different fields of study thus making it more accessible to people and, by extension, more applicable. Also, via this application, I want to inspect the perspectives for using Bergson and Deleuze for the study of video art and, by the same token, the study of video art for the purposes of memory study. Eventually, the approach of metaphorical modeling helps me to assign to Bergson's and Deleuze's works a more concrete position in my research preventing from the danger of losing my own aims in the discussion of the ideas of this authors.

Certainly, there exist disadvantages of modeling. One of the most obvious criticisms is the reduction that is inevitably present in every model. By focusing on specific aspects of one phenomenon or an object, models tell us what something is partially like and, for this reason, tend to be partial descriptions only (Bailer-Jones 2009: 2). It is reasonable to say that models do not explain the nature of a particular phenomenon, yet, I think, they aptly show the direction. The latter, as it was stated, is of practical importance to me in this research. Rather than trying to create the all-encompassing model of memory that can splendidly be applied to video art, I am eager to discover some of the new pathways for approaching these concepts inventively via the combination of creativity, intuition and scientific thinking. Such a line of analysis, I assume, could be valuable not only for open-minded scientists, but also for artists who often think in different terms by concentrating more on the seemingly disassociated parts

in order to further assemble them in the harmonious whole.

It is also reasonable to say that no model is correct. At the same time, models can provide a number of immeasurably helpful ways of understanding the world. For a model to represent a particular phenomenon, it does not need to develop a theory. Instead, it offers a way to make sense of the phenomenon and interpret it from another, less conventional, point of view. In this connection, metaphorical modeling is especially expansive: it comprises both features of modeling and metaphorical thinking. The multi-dimensionality of the world on one side, and our perceptual restrains, on the other, require a great deal of imagination from the researcher in the attempt to comprehend the complexity of the world. And metaphorical models, by transferring knowledge from one domain to another, allow us to take the features and characteristics of one small object and extend them on another, much larger object.

Undoubtedly, in this process, intuition is a very important player. The additional originality of Bergson's theory, in this regard, is that he does not deny intuition but, quite the opposite, engages it in the scientific analysis. It takes intuition to discover theories and find valuable analogies, and the idea that I develop in this paper is, above all, brought about by intuition. For Bergson, intuition, however spontaneous, comes to light as a result of touching and penetrating the reality of things rather than constructing it. At the same time, this is not to suggest that he denies the importance of the intellectual efforts. Instead, the intellect and intuition are the powerful tools in comprehending the world in its movement, spontaneity and constant transformation:

> Intuition and intellect represent two opposite directions of the work of consciousness: intuition goes in the very direction of life, intellect goes in the inverse direction, and thus finds itself naturally in accordance with the movement of matter [...] intuition is mind itself, and, in a certain sense, life itself [...] we have to place ourselves in intuition in order to go from intuition to the intellect, for from the intellect we shall never pass to intuition. (Bergson 1922: 281-3)

In this light, I argue, metaphorical modeling equally employes both the intellect and intuition and, therefore, significantly contributes to the process of understanding of life and its phenomena. This is why I find such a method both imaginative and analytically proficient, as well as conducive for the researches of such kind.

### 1.4. Overview of Chapters

After the short introduction of the research areas that overlap in my work, and the

presentation of a methodology I employ, I want to provide a brief description of the upcoming chapters. Apart from the introduction, the paper encompasses five additional parts, a final conclusion, a list of illustrations and a list of references.

The chapter that follows the introduction – a second chapter – provides relevant information needed for the apprehension of the phenomenon of video art. More specifically, in this part, I start from the short historiography of video art and further introduce a range of the problems that encircle video art as a young artistic field. After that I briefly discuss the distinctive properties of video in comparison with television and cinematography. Though the features of video art are analysed in more detail in the following chapters, in my opinion, the adequate understanding of the phenomenon of video art can prepare the reader for an inquiry into relationship between video art and memory in the theory of Bergson. In the final part of the second chapter, I provide an additional description of the artistic movement which is of particular interest to me and elicit the reasons of such an interest.

In the third chapter, I turn to Bergson in order to introduce the reader into his philosophical views. This part is entirely devoted to the theory of Bergson: it explains his way of thinking about memory and perception, elaborates on the ideas of ontological and conscious memory and ontological and conscious perception, and elucidates the interconnection between different types of memory and perception. The separate sub-chapters are dedicated to such complicated yet closely related to my research concepts as duration and the affectivity of memory. To conclude this part, I draw two models of memory that derive from the theory of Bergson – cone and kaleidoscope – and describe how memory works. I want to add that due to the complexity of Bergsonian theory this chapter may be sometimes difficult to follow as it requires a deep and immersive reading. Despite this, I tried to make it less challenging and clarify some of the most problematic aspects.

The fourth chapter makes a transition again to video, but this time, video is analysed in close connection with memory. At this stage, when the ground needed for my discussion is laid, I proceed with more detailed and specific characteristic of the video medium and compare it to the previously elicited concept of memory. By drawing a number of analogies between video art and memory, I first, concentrate on the concept of the mind in Bergsonian theory and compare it to the work of a video camera. Second, I consider the process of materialisation of video in the frame of actualisation of memory as it is explained by Bergson.

Third, I turn to the concept of duration and analyse it in connection to video temporality and modulation of video signal. Fourth, I bring the idea of non-representational features of video and memory and discuss the theories of video's reflexivity proceeding further with the problematic notion of the indexical nature of analog video. At this stage, I additionally analyse the difference between analog and digital video and try to bring forward the analog/digital debates with respect to Bergson's concept of memory.

Apart from this, in the fourth chapter, I touch upon the capacities of video art to alter human perception and reduce the habitual way of looking at video images. From the side of video art, I analyse classic video feedback, the technologies of video processing and synthesis as intriguing phenomena able to expand our perception of 'reality' and soften the bounds of habit. In addition, I make the assumption that video art, if analysed from Bergsonian perspective, can potentially lower the perceptual threshold, and inversely, can therefore create more possibilities for memory to be actualised in the present.

Finally, in the last part of the fourth chapter, I attempt to expand the modeling of memory with respect to a video camera and project it on the body of an artist. More precisely, I develop the the idea that the role of an artist is fundamental for the process of making artistic videos. In doing so, I apply Bergsonian concept of affective force of memory to real-time video art and elaborate on the implications that derive from such an analogy. In addition, I try to understand the nature of video art with respect to the assumed expressive connection between the artist and the medium of video. Apart from this, I elucidate the problematic locus of memory trying to account into the question of where recollections can be preserved.

## 2. Introduction into Early Video Art

In this chapter, I am to provide an introduction into early video art, explain its loose chronological frames, give brief historiographical overview of the sources suitable for my research and shed light on the particular features of video as an art form. In doing this, I attempt to sketch the background for the emergence of video as a new medium and lay out a range of the problems closely associated with video art. In addition, I discuss the distinctive properties of video in connection to other related technologies – television and cinematography. Finally, I briefly describe major movements in video art with an emphasis on so called 'video engineers' in order to proceed with the specific characteristic of the video medium that will be explicated in the Chapter 4. Altogether, the strategic purpose of this chapter is to lay the foundations for better understanding of the phenomenon of video art on one hand, and to smooth the transition between memory and video that will be offered in the following, on the other.

### 2.1. The Ambiguity of a Phenomenon

Within institutional art, the status of video art as an art form, as well as the position of video as an independent art medium, is challenged until today. This is not to suggest, however, that video art was outcasted or segregated from other, more acceptable (and, certainly, more profitable[4]) means of artistic expression as, for instance, painting, sculpture, and photography. On the contrary, almost every Biennale, art fair or art festival includes video works as an inseparable part of their programme. Moreover, a large number of articles, essays and books have been written on the topic of video art, especially, on its history, and an impressive chunk of video works from the 1970-1980s is preserved and occasionally exhibited in the museums all over the world. However, despite all this, the phenomenon of video art remains to be

4 Art video is one of the least profitable art works. It can be explained, on one hand, by its immateriality and immediacy when video is performed in a real-time mode, and, on the other, by its fast deterioration (in analog), difficulties of analog broadcasting (analog tape can be played on the analog video player or projected on a monitor via a video tape analog recording system), hight accessibility to mass audience (in digital) and hight rates of reproducibility (in digital).

obscure, and this fact, in turn, determines the general attitude towards video in the art world.

One of the possible reasons for such an ambiguity is the drastic technological modifications of the medium that have taken place in the late 1980-1990s when analog video was gradually supplanted by its more technically advanced and adaptable digital successor. This rapid proliferation of video 'digitization' empowered many art historians and media theoreticians with the reasonable premise to proclaim the death of analog video art and the rise of new digital media art. Indeed, from this perspective, the change from the analog to the digital not only drastically alters the nature of video, but also heavily influences its aesthetics. At the same time though, as I elaborate later, the debates between the analog and the digital remain open, and for this reason, the international quest of video artists is yet to be accomplished.

Another possible explanation of the ambiguity of video art as a genre of artists' activity can be found in high diversity of approaches, topics video artists dealt with, and strategies of the exploration of the medium. From this perspective, video art can be conceptualised as a part of a larger branch of performance art, or embedded in the broader scope of installation and, as it was already suggested, also lodged in contemporary media art. To some extent, even partial liberation of cinematography and the appearance of such artistic genres as expanded cinema, experimental cinema, avant-garde cinema, called the independent existence of video art into question, because similarly to the latter, these new modes of cinematic expression revolted against the institutionalization of cinema, sought to establish a unique visual culture and thereby eventually blurred the borders between video and cinema as art forms[5].

Finally, video as technology is highly multifunctional. Similarly to television, cinema, and even photography, depending on the broader context, video can serve in the manner of entertainment, as an instrument of marketing, a vehicle of political campaign and propaganda, or even more, it can be used for the military purpose as a surveillance device[6]. From this perspective therefore, video art is merely a narrow and a very particular practice within the

5 Steven Shaviro, an American film critic and philosopher, offers the term 'post-cinematic' in order to characterise a new media regime and corresponding to it a new mode of production that was brought up by digital technologies (Shaviro 2010). Digital video art, for this reason, is considered in post-cinematic terms like digital cinema, commercial video and digitally created experimental cinematography. At the level of the medium, I am in the agreement with Shaviro, yet I find the term 'post-cinematic' not sufficient for thinking of the interplay between video artwork and video artist.

6 The whole scope of the various applications of video goes far beyond politics, military, marketing and entertainment. The medium of video is widely used in medicine, science, technology, communications, and therefore, covers a vast diversity of functions and operations.

extensive scope of all other possible applications of video technology.

### 2.2. Historiographical Overview

Due to the heightened significance of new media, performativity, and digitisation, there exists a large number of scientific publications that can generally be characterised by their diversity of approaches and a wide scope of the objects of analysis. At the same time though, the range of international publications on video art that deal with video as an artistic medium still comprises a limited number of monographs and an extensive collection of articles written by amateurs, technicians, artists and critics. Apart from this, a large chunk of the works is either narrowly dedicated to the problematic history of video art or devoted to the analysis of particular movements into which video art was enveloped[7]. Such a predicament of video art stems from the fact that its advancement was tightly intermingled with the changes in social, political and cultural spheres that took place in the second half of the 20th century. Moreover, I have already stressed that the evolution of the video medium remains to be largely informed by the continuous technological expansion, and therefore, also touches upon the problematic relationship of humanity and technology in general, and the relationship of art and technology in particular. Due to all these aspects, the monographs on video art's history, which tend to be rather explicitly political[8], or descriptive monographs that aim to summarise the diverse movements of video artists do not provide a solid background for my research. At the same time, in my opinion, they can beneficially be employed to illuminate some of the open questions that perplex video art and video as an artistic medium. When touching upon the history of video art, in this paper, I rely on two monographs: Michael Rush *Video Art* (2007) and Catherine Elwes *Video Art, a Guided Tour* (2005). Written in a colloquial manner, these books offer the descriptive assessment of video art avoiding any kind of political statements and experimental speculations. The latter, however, can be found in the emblematic articles from the 'classics' in the theory of video art: David Antin, Lucinda Furlong, Kathy Rae Huffman, Bruce Kurtz, Paul Ryan, Christine Ross, Martha Rosler and Marita Sturken among others. When combined with the outlined monographs, these works constitute a chunk of rich

7 For instance, Fluxus, conceptual and performance art, visual music movement, feminist and queer art, kinetic and installation art, and other diverse movements partly associated with video art.

8 However, as it was eloquently summarised by Bill Viola, video "may be the only art form ever to have a history before it had a history" (Viola quoted in Sturken 1990: 102).

and thought-provoking material for my paper.

Among the monographs on video as an art medium, the most important for my research is the publication of Yvonne Spielmann *Video. The Reflexive Medium* (2010) that has marked the significant turn in the theory of video on one hand, and manifested video as independent medium in the academy, on the other. Spielmann's argument is based on the uncertainty of representation and the ambivalent materiality that video bears due to its capacity at once to present matter and to reflect immateriality of electronic signals. Concentrating primarily on signaletic features of video, Spielmann analyses a number of specific characteristics of video which I have found especially insightful and helpful in building my argument.

In addition, a small range of the observant monographs and compilations attempted to illuminate the complicated nature of video art were written and edited by video artists. Thus, Gene Youngblood in his book *Expanded Cinema* (1970) discusses a wide spectrum of problems that beset video art from the specific characteristics of different forms of video and experimental film to the idea of the emergence of a new expanded consciousness triggered by video and film. Ira Schneider and Beryl Korot have edited an emblematic compilation of essays *Video Art: An Anthology* (1976) that comprises a large chunk of essays written by the famous video artists and art critics. These two books, in turn, help to widen the horizon of this paper and explore video art from a larger perspective.

Finally, a more narrow branch in video art that is of particular interest to me – video processing and video synthesis – is practically underrated mainly due to its overlapping with programming, engineering and experimentation electronics. Today, such a connection of art, technology and science would not create any problem for a researcher, because media and electronic arts have evolved into a separate art field. At the same time, however, in the 60s and 70s, technologically manipulated video art was met with caution, and these artists were considered as the marginal experimentalists 'playing' with hardware and electronics. Hence the lack of professional art publications which in most cases narrowed to the research done by Lucinda Furlong, a video artist and critic who wrote a series of articles on image processing as a separate genre of video art. Furlong's observant articles cover professional paths of such artists as Gary Hill, Eric Siegel, Stephen Beck, Steve Rutt, Dan Sandin, Bill and Louise Etra, Steina and Woody Vasulka, Ralph Hocking, Sherry Miller, Nam June Paik, the Experimental

Television Center group, and others. In addition to Furlong's historical analysis, two big electronic archives – the Vasulka Archive[9] that encompasses 27,000 pages of documents relevant to the history of video and electronic art and the Radical Software Web Site[10] that consists of a wide range of historic issues of video magazine *Radical Software* – have helped me to discern the specific features of image processing art.

### 2.3. Diversity of Definitions for Video Art

In total, above mentioned factors have eventually complicated the growth of video art into a separate artistic brunch on one hand, and also determined the vagueness of the definition of video as a medium of art, on the other. Among the large number of existing definitions for the video art phenomenon, in my opinion, it is nevertheless possible to discern four main pivotal points around which these definitions are centred. In most cases, scholars and artists either concentrate on the specificity of the video medium, or make an accent on the perceptual features of video when it is used in art, or try to delimit the particular time-frames of video art, or at last, highlight its functionality as an art form.

Thus, focusing on medium specificity, Spielmann defines video art as a scope of the diverse movements of artists experimented with video since the early appearance of the medium, and differentiates the latter from television and film through audiovisuality, reflexivity and flexibility[11] (Spielmann 2010). In Spielmann's opinion, video is a signaletic

9 The Vasulka Archive is an extensive database for researchers in the field of video and media art that consists of a large number of articles, essays, interviews, reviews, schematics, diagrams, illustrations, posters, concert programs, photographs, and correspondence on the relevant topics. According to the description, a large percentage of this material directly relates to the art and careers of Steina and Woody Vasulka, however, it additionally encompasses the works of over 200 artists and scholars. Some of the material has been taken from periodicals that are both in and out of print. The rest has been taken from the personal collection of the Vasulkas that began over thirty years ago. In addition to the Vasulkas, Peter Crown, David Dunn, Ralph Hocking, Sherry Miller, Phil Morton, Lynda Rodolitz, Jud Yalkut, and Gene Youngblood have donated archive material. http://www.vasulka.org/about_archive.html

10 The Radical Software Web Site is a joint project of the Daniel Langlois Foundation, Davidson Gigliotti and Ira Schneider. The project's aim is to document and preserve a wide range of scholarly and artistic works on video art and its history initially compiled as a part of a printed *Radical Software* magazine. Originally, the individual physical copies of *Radical Software* can rarely be found, yet the Radical Software Web Site makes the content of the digital copies freely available and searchable on the Internet. http://www.radicalsoftware.org/e/index.html
Currently, both projects – the Vasulka Archive and the Radical Software Web Site – are the part of the Daniel Langlois Foundation (http://www.fondation-langlois.org/html/e/, Montreal, Canada).

11 However, Spielmann also points at the unavoidable connotations that the term 'video art' carries. In particular, she brings the examples of the artistic performance of video and the artist's video and suggests that despite the explicit distinction between these two forms of artistic expression, they both exist under the umbrella term 'video art' (Spielmann 2010: 74-75).

medium that consists of electrical signals, and therefore, it can easily change its form and direction. For this reason, she suggests, video signal can freely mutate into sound, and vice versa. By the same token, such a signaletic property endows video with a special flexibility and plasticity that, in Spielmann's view, constitute a set of the key characteristics of artistic videos (Ibid.).

In turn, Rush and Ross both concentrate on the temporalities of video claiming the latter to be the “art of time” (Rush 2007: 8) and the time-maker (Ross 2006: 83). From their point of view, unlike all other art media, a specific hallmark of artistic video is its obvious temporality. For Ross, video art is a time-based form of art, and for this reason, it has the ability to 'make' and alter time by means of either considering the latter as an artistic material (and thus, employ the techniques of delay, extension and repetition), or disrupt its conventionality and artificiality (Ibid.). For Rush, he likewise points out that video is used by artists to manipulate time, expose its multiple layers, and break “the barriers between past, present, and future” (Rush 2007: 10). However, in connection to time, he also stresses the significance of a concept of real time for the thorough understanding of a video art phenomenon.

Acknowledging the importance of real time in video art and also attempting to provide the chronological timeframe, Blom proposes to think of video art as an agency with a limited lifespan. According to her, the phenomenon of video art emerges around the time when TV producers became finally able to record the signaletic transmission on videotape (in the late 1950s), and it ends when analog video has been made obsolete by the digital platforms (in the late 1980-early 1990s) (Blom 2013). As it reasonably derives from Blom's definition, all video works that are produced after 'digitization' should rather be located in the domain of new media than in the realm of video art. Pushing this idea to the maximum, Ross also suggests that in the era of the digital, video art becomes “merely a digital extension of our digital lives where any image, sound, or word can be processed, played out or manipulated at will … .” (Ross 2006: 89). For this reason, she concludes, digital video art should be considered in the larger context of hybrid media in which the specificity of the medium is lost in favour of its capacity for remediation.

Finally, among the scholars who privilege the role of the video phenomenon in the broader framework of art, the viewpoints of Rosler and Sturken are especially illustrative.

Thus, Rosler develops a thesis in which video art is considered as a form of a technologically informed critique of mainstream Western culture (Rosler 1996 [1985]). From her perspective, the remarkable feature of video art is its ability to point at the proliferation of culture industry in Western society, as well as in the art institutions existing inside it. This latter approach to define video art is based on the critical potentiality which, according to Rosler, is hidden in video art. However, in this critical venture, she also recognises the naive utopian attempt of video art "to redefine the system out of existence by merging art with social life and making "audience" and "producer" interchangeable" (Ibid.: 259). Sturken, in turn, emphasises the explicit ideological context in which video art came to light. In her opinion, the history of video has been constructed by both artists and art institutions: whereas the former sought to design the powerful tool for revolts and experiments, the latter sought to defend their fundings by emphasising the innovative properties of a new medium (Sturken 1990).

At this point, therefore, it becomes clear that no unity exists in definitions of video art, and for this reason, I think, my paper can to some extent also contribute to these debates by helping to discern specific features of video art as an independent art form and elaborate on some of the open questions in this field. In order to do so, in the following passage, I sketch the brief characteristic of video as both a form of technology and an artistic medium, loosely compare it to closely related technologies of television and cinema, and finally, outline the most relevant features of video art that I intend to use for my modeling.

### 2.4. Relevant Characteristics of Video Art

Because of the uncertain position of video in art in which the former, despite being in all respects influenced by technology, simultaneously carried out the functionality of the artistic medium, video developed its own technological idiosyncrasy that differs from closely related technologies of television and cinema, and obtained the unique potentiality to influence at the level of aesthetics.

When in 1965 Sony Corporation introduced first Portapaks – the portable recording and playback systems – it gave an access to video technology for people outside the television industry and the military circles[12]. Broadcast television was already fully institutionalised and

12 The first portable equipment was developed in the early 1960s by the US army for surveillance purposes in Vietnam (Elwes 2005: 3)

successfully employed for the commercial and political purposes by the private corporations protected by government[13]. Mainstream cinema, likewise, served for the interests of the culture industry and sustained the social environment for the fertile propagation of 'useful' information in society. However, video in the context of art was never fully institutionalized in the same way as television and cinema were, even though the former has clearly adopted technological features of both other media. Such an appropriation of technology invested with artistic flexibility and freedom, in turn, determined the discursive character of video as an art medium, and also outlined its unique communicative hallmark in the eyes of many artists.

In the essay "Video: The Distinctive Features of the Medium", Antin (1986) analyses the consequences of the technological affinity of video and television and stresses that televisual industry has directly defined the formal and technical properties of early video technology. Like television, video technology, he elaborates, is based on the transmission of signals, when input images are converted to electrical impulses, which could in turn be received as output images at another location. In this signaletic structure of video technology Antin recognises the blueprint for the top-bottom information exchange in society in which communication is deeply grounded into asymmetrical relation between 'sending' and 'receiving'[14]. Such an inequality of the information exchange, according to Antin, derives not only from the hierarchical relations in society but also is reflected economically, because the transmission of the signal is obviously more expensive than its reception (Ibid.).

At the same time, in contrast to television and mainstream cinema, in video art, the audience plays a very specific role. On one hand, such a specificity is determined by the nature of art in which an artwork becomes complete only when an artist receives the feedback from his audience and vice versa. Since people who first started to experiment artistically with the medium of video were mainly educated as artists or thought of themselves in this way, they by extension projected these artist-audience relationships on their works. On the other, it was briefly mentioned, video artists sought to expand the possibilities of communicating the medium far beyond the standard chains of transmission. And video technology, with its

13 Such a scheme was developed in the USA. However, when in 1967 and 1969 the Congress established the Corporation for Public Broadcasting (CPB) and the Public Broadcasting Service (PBS) for the purpose of giving the chance to get the federal fundings for a new fundamental institution in the USA, it opened the access to television for artists (Kathy Rae Huffman 1990). At the same time, in Europe, according to Rush, television had been highly centralized, usually under the auspices of government sponsorship (Rush 2007).

14 Although Antin discusses mostly the American society, this structure is applicable to the European world as well.

immediate interactivity, perfectly suited for these purposes (Rush 2007). For this reason, Rush's ambitious conclusion that video medium (in both technological and artistic applications) has the ability to synthesise all the forms in which human communication presents itself does not sound eccentric even today. Elaborating on this statement, Rush additionally points at the participatory role of audiences in video art that stood as an essential "component of the experiment" (Ibid.: 36). By doing so, he highlights the interactive features of video art that to some extent places viewers at the centre of the stage.

The questions of interactivity of video as an art form is at heart of Spielmann's writings who, unlike Rush, stresses the specific "shared" creativity that arises between artists and the camera in the process of making artistic videos (Spielmann 2004: 22). Spielmann's latter statement is of particular importance here since it endows me with the premise to think of video art in terms of its openness to the outside world – its liveness and affectiveness that are discussed in detail in the Chapter 4. Apart from this, the interactive nature of video art is additionally emphasised by means of the simultaneity of creation and display of video works. In this context, it is important to stress once again the 'real-timeness' of video as a fundamental property of video image. From the artistic point of view, one of the immediate results of such a performativity of video is the ability to "continuously modify the sequence" that eventually "gives a great amount of variations" and allows to observe the process of image formation (Steina Vasulka in Haller 1981 [1980]: 2). Vasulka's statement additionally points at the very particular form of interaction of a video camera (or other modes used to generate video image) and an artist, implying their cooperative, almost synergetic communication.

Given to the previously mentioned technological similarity of television and video, the latter, however, when lodged into video art, did not promise the scope of traditional entertainment inherent in television, since video as an art form offers a very specific interaction, immanent to every artistic medium. Whereas television is characterised by the extreme time segmentation and the skilful ability to retain viewers' attention that has in turn derived from its precise structure and explicitly commercial interest, art videos are mostly boring, slow and uninformative[15]. From this perspective, Ross elaborates on the special

15 It is important to mention though, video can be boring if it is juxtaposed with the 'entertaining' mass-media technologies such as television and mainstream cinema. However, if put in line with other art practices such as experimental film, photography, painting, sculpture, it makes pointless to stress the boredom of video art

temporality of the video medium, its ability to alter time and expose its artificial linearity. For video artists, such a boredom eventually became a part of an aesthetic strategy in which time was extended, sampled, cut in fragments and repeated in infinite loops. In doing so, video artists, according to Ross, attempted to surpass the optical means of the video medium in favour of the "mentalization of the image"[16] (Ross 2006: 98). In this regard, the temporality of video can be conceptualised as a kind of 'upgraded consciousness' – the attempt to expand the boarders of 'visible reality' and extend the abilities of the mind.

Another important feature of video art in contrast to television and cinema is the lack of proper editing. In television, the smoothness of transition is of high importance due to its already mentioned hypnotic power to hold attention and make the viewer accustomed to the high transition rate. In cinema, especially its mainstream form, skilful editing is the key to the appealing narration and, by the same token, the path to commercial success. For video art, the situation is quite the opposite: here the stability of an image was considered as insignificant, partly due to costly editing technology, and partly due to aesthetic reasons[17]. Moreover, in the process of making artistic videos, the human factor is of particular significance. Unlike broadcast television, which seemingly exists on its own without any particular person behind its technical side but the characters on the screen, in video art, the presence of artists behind the camera is absolutely tangible and defined through the unique aesthetic approach that every artist uses in his own manner. Hence the accentuated attention to the aesthetics of video rather than to the quality of a video image. With time, such a low quality of video became a hallmark of early video art and eventually distinguished this medium from all other technically influenced media.

In stark contrast to the explicit objectives of commercial television and mainstream cinema, the main idea behind video art ever since its emergence was to challenge habitual understanding of time and space, investigate the significance of perception by pushing it to the limits and explore the identities of artist and viewers. From this perspective, video opens broad possibilities to alter perception and transform the habitual mode of thinking about the

(Antin 1986).

16 Today, as she compares, artists are more preoccupied with the destruction of representation, debunking of historical narratives or disclosure of cultural myths, and for this reason, the temporality of video, so essential for early video art, was eventually eclipsed by explicitly political questions.

17 However, it is only true in relation to early video art. After digitization, heavy editing became ubiquitous and a majority of artists have started to experiment with non-linear computer editing.

world that surrounds us. By reflecting the world in its dynamic motion, video does not merely record the movement, but also acts upon the world and interacts with its movement. This property of video, in turn, is directly informed by its signaletic nature that, in my opinion, is the key towards understanding video art in its complexity. Since the question of signaletic properties of video is elucidated in detail in the following chapters, with regard to such a special connection of video with the physical world, I would like to add the last remark on representation. More specifically, as I attempt to show, video as an intriguing artistic phenomenon, in most cases, escapes representation. By this I mean that artistic videos can fully be appreciated if the representational concern is reduces to minimum. By no means, there exist many artworks that deliberately deal with the notion of representation and try to expose its alleged artificiality. At the same time, I want to suggest that this kind of artworks, in my opinion, provides less ground for the understanding of the nature of video as a unique artistic phenomenon. In the following, I come back to the question of representation in video art and elucidate my point of view based on the particular examples.

As I attempted to show, video art grew from a fascination with media, interest in technology, and belief to tame both media and technology for the sake of further expansion of creative imagination. During video art's evolution, artist working with video situated themselves in opposition to the electronic broadcasting of institutional television on one hand, and tried to differentiate video art from commercial cinema, on the other. Thus, despite both broadcast television and video art are initially based on the transmission of signals, and cinema and video can easily be approximated as almost similar modes of expression, the latter, however, developed a number of characteristics that can be attributed specifically to video art. Thus, it acknowledged a participatory role of viewers, and by default, incorporated the feedback from audience as an important part of interactivity inherent in the video medium. Such a participatory role of audience was additionally informed by the immediacy of real-time video and its openness to the world. Furthermore, video artists developed a special form of temporality based on the aesthetics of boredom, which can to some extent be assigned to the majority of the artworks in much broader context of art. Apart from this, video art (its early form in particular) pursued a mode of visual expression that was initially based on low quality of video images and raw editing. Finally, video, due to its transformability, immediacy and instantaneity, acquired the ability to interact with the continuos movement of the world

and act upon it.

Within the broader scope of characteristics of video art, such features of video as its signaletic modality, a special kind of temporality, capacity to react upon the world and interact with artists and viewers on its own manner, along with the ability to challenge perception are of particular interest to me. First, they help to inquire into the very specific attributes of video art in more detail, and to differentiate the latter from other closely related art forms such as art cinema, performance, installations and digital media art. Second, they help to establish a more coherent connection between video art and the concept of memory in Bergson and draw the analogical relations on the different levels. Finally, these particular features provide the ground for better understanding of early analog video art with respect to digital media art, and thus, to some extent, can point at the differences between analog and digital modes of artistic expression in video art.

### 2.5. Image Technicians: Choice of Artists

In the attempts to define the unique characteristics of the new artistic medium, video art encapsulated a broad variety of creative possibilities for artists. In turn, this aspect finds its evidence in the lucidity of artistic approaches towards the exploration of the medium.

Spielmann defines three[18] major movements towards which artists were leaning while incorporating video in their art practices (Spielmann 2010). The first movement approached video as a tool for installing a new form of alternative television – radically democratic media think tank[19]. Such collectives as “Radical Software group”, “Raindance”, the “Experimental Television Center” can be the illustrative representatives of this group. In their practice, video was employed as a form of societal aid and an activist's tool. Gene Youngblood, one of the first video theoreticians and prominent video artists, writes that for the artists sought to create the project of social change, video manifested the “hope to present a new attitude from a new generation of TV management” (Youngblood 1970: 282).

18 It is worth to mention that there exist many different classifications of video. In the history of video art, one of the commonly accepted classifications discerns four categories of video artists: video-documentary, image processing, performance, and installation (Furlong 1983a.) For this paper, however, Spielmann's classification is employed, since it groups performance and installation together and makes a particular accent on the experimental videos.

19 This is the big aim of the video artists who belonged to the first group as it is being described on the web-site of the joint project of the Radical Software group and the Raindance Corporation (radicalsoftware.org).

The second group is closely related to such significant for art history phenomena as Happening, Fluxus, Performance, and Installation arts. These artists lodged video in the breadth of their conceptual artistic projects in order to “expand and transgress the “white cube” and perform perceptual experiments”. In their close affiliation with art, Richard Serra, Keith Sonnier, Lynda Benglis, Nancy Holt, Vito Acconci, Bruce Nauman, and William Wegman represent this group at best (Spielmann 2004).

Finally, the last chunk of video artists, 'image technicians' or 'video technicians', as Spielmann defines them, is of particular interest to me. By experimenting with the medium in various ways, from merely technical to the explicitly artistic, artists from this group strived to bridge aesthetics and technology, and in doing so, sought to invent a new modality of interaction between human and machine. In this connection, 'video technicians' reflect the problematic aspects of video art as both technology and an art form, and also help to better understand the art medium of video at work. Nam June Paik, Gary Hill, Dan Sandin, Steina and Woody Vasulka, Eric Siegel, Peter Campus, and Stephen Beck are the main representatives of this direction[20]. They approached video dialogically and innovatively, at once in its technical autonomy and its unified connection with video artists. Unlike the 'alternative television' movement and performative artists, 'image technicians' were looking for audiovisual aesthetics that deviates from the “preceding camera-obscura prospective” (Spielmann 2010: 101). By merging abstraction with new signaletic technologies they strived to define the electronic pictoriality that diverges from the representative features of images and is based on the expressivity of video signals. Therefore, in my opinion, the experiments of these artists articulate the phenomenon of video art in better light, since they embody all modes of working with video from recording and preforming in real-time to processing and synthesising video from scratch, as well as constitute the unique aesthetics of an electronic medium. Thus, in the conversation with Spielmann, Woody Vasulka states that “the electronic image is processed”, and Steina in turn comments that feedback is “the first true image not

20 At the same time, the division of video artists as it is explicated above is rather an artificial construction derived from the broader “institutional” narrative of video art on one hand, and determined by the urge to classify the artists, on the other. In practice however, it is almost impossible to draw a sharp line between all these movements, and for this reason, one artist could hold a place in all these three groups. After all, as Steina Vasulka comments in the interview with Lucinda Furlong: “We all knew we were interested in different things, like video synthesis and electronic video, which was definitely different from community access-type video, but we didn't see ourselves in opposite camps. We were all struggling together and we were all using the same tools” (Furlong 1983a.: 36).

related to pinhole" (Ibid.: 112). In the earlier interview with Haller, Steina also stresses that analog video is "almost never repeatable" and compares it to a musical improvisation (Haller 1981 [1980]: 2). Nam June Paik declares that video is time (Ross 2006), and Stephen Beck claims that video is a non-representational medium able to subvert the conventionality of photography, cinema and television (Beck 1976: 184).

Moreover, due to the relatively apparent detachment from institutional art and television, the works of the 'image-technicians' provide more complete illustration for the model of video art that I am about to construct on the basis of Bergson's concept of memory. Given that the process of making video is in the focus of my work, on the following pages I concentrate on the questions of how video works, what place in this process is reserved for the artist, and what possible outcome it can bring into art. From such a perspective, the artists from the last group bring attention to the specific features of video such as its signaletic nature, interactivity, reflexivity and instantaneity of real-time videos. In addition, video processing and video synthesis employed by these artists introduce the form of transition from entirely analog video to entirely digital and help to grasp this process in its vibrant complexity. In relation to memory, these video practices, I offer, reflect the mechanism of memory at work – when it undertakes a long path starting from the discernment of the past images from matter via contraction, and ends in the embodied perception of the past in the present.

At the same time, it is important to mention that video works of the 'image-technicians' in many aspects differ from the works created by other two groups, especially, by performative artists who leaned towards more political, critical, and therefore, more 'interpretative' modes of video expression. In this regard, I understand that the approximate model of video art that I want to propose in connection to memory in the theory of Bergson will eventually be limited to one particular movement. However, in my opinion, by incorporating technological properties of video and combining them with the artistic practice, the artist from latter movement managed to approach the question of video art in a more profound manner. In other words, the 'image-technicians' not only recognised and appreciated specific properties of video as a new medium based on signal but also extensively explored these properties in their works on one hand, and indirectly promoted specific features of video with respect to art, on the other. Furthermore, because video art is a very complex

phenomenon that encompasses a big variety of movements, which in turn have their own problems and specificities, I feel the necessity to narrow down my research for the sake of better clarity and more accurate focus. However, bearing in mind the 'transformative' potential of metaphorical modeling, I hope that my findings and conclusions with respect to the 'image technicians' can to some extent be applied to the analysis of other categories of video art. But before considering video art and the works of the artists of my preference more thoroughly, I would like to proceed with the explanation of memory in the theory of Bergson and to sketch a model which I employ in the further discussion.

## 3. Sketching the Model of Memory

The following chapter describes the model of memory proposed by Henri Bergson in the late 19 – first half of the 20th century and discusses the mechanism of memory in detail. Different sections that I provide in the chapter are meant to introduce the reader into such important composites of Bergson's concept of memory as pure and conscious memory, sensori-motor habit-memory, pure and conscious perception, as well as to explain their functions at great length in the context of Bergson's elaborated theory. Particular attention is payed to the concepts of duration and the body that altogether determine the functionality of memory in Bergson. In doing so, I follow Bergson's original texts and bolster my own interpretation with Deleuze's attentive reading of Bergson. In addition, to precede possible confusions, the most ambiguous speculations are supported by Bergson's quotes given in the related paragraphs.

At this point, it is more important not to construct the precise model of memory, but to understand how memory works in Bergson's philosophy, since exactly this knowledge makes it possible to project the model of memory that derives from the theory of Bergson on video art and otherwise.

### 3.1. Structural Parts of Bergson's Theory of Memory

Henri Bergson's definition of memory is grounded on his original theory of the mind that was initially meant not only to solve the mind-body problem and bring science and philosophy to a new agreement but also attempted to go beyond the human condition[21] (Ansell Pearson

21 At the time of Bergson's intellectual activity, most of philosophers, mathematicians and physicists sought to establish an innovative connection between the mind (as consciousness), matter, space and time, as well as to find new relations between them. With regard to the mind and matter, for more than two centuries the Kantian model dominated in philosophy in which both the mind and matter were taken as given and the noumenal realm was assumed to exist beyond the phenomenal. With regard to space and time, Euclidian 3-dimensional space and linear time were the predominant philosophical and mathematical concepts. However, already in the late 19-early 20th century some mathematicians and physicists understood the limits of above mentioned ideas and tried to find new solutions (Bernhard Riemann, Karl Friedrich Gauss, Henri Poincare and later, Albert Einstein who embraced the ideas of the former three scientists). In this context, Bergson by attacking Kant on one side and challenging mathematical concepts of space and time, on the other, argued for the empirical intuition as the possibility of absolute knowledge and a new kind of time that leaves the room for freedom, claiming that “space and time never overlap” (Deleuze 1991: 85).

2007). In order to shed light on Bergson's concepts of memory, a brief clearance of 'Bergsonism' is vital, since memory is conceived as an indispensable part of Bergson's elaborate philosophy.

Unlike cognitive theories of memory[22] which generally closely relate memory with perception on one hand, and assert that memory can be preserved in the brain and then later accessed via the process of recollection, on the other, Bergson argues that memory, by no means, can be conceptualised as a perception in a weakened state. For the most part, Bergson indeed confirms that memory and perception mutually influence each other. At the same time though, he highlights that these two notions are not alike, and conceives memory independently via its unique modality of being. Furthermore, for Bergson, the whole process of recollection does not start with perception, but in contrast, finalises itself in perception.

As a materialist philosopher, Bergson strongly believes in the physical existence of matter – a substance the world is made of. The material world, he tells us, is an "aggregate of 'images'":

> Matter, in our view, is an aggregate of 'images.' And by 'image' we mean a certain existence which is more than that which the idealist calls a representation, but less than that which the realist calls a thing – an existence placed halfway between the 'thing' and the 'representation.'" (Bergson 1911: 14).

These images at once coexist together without any form, centre or direction, acting and reacting upon each other. In contrast to future semiology in which the connection between reality and the interpretation of reality is to a large extent symbolic and mainly based on language, Bergson believes in the existence of a material connection between reality and our comprehension of reality. The world, for Bergson, is the field of physical forces and non-organic intensities ungraspable in practice but apprehended via a metaphor of pure perception. Noteworthy, perception in Bergson starts on periphery – outside of the subject – and gradually fades towards the centre – into the body (Lazzarato 2007). Hence his distinction between two types of perception: ontological (pure) and conscious.

22 Today, among the contemporary disciplines that are mostly associated with studies of human memory, the leading are neuroscience, cognitive psychology, and some fields in-between, such as cognitive neuroscience and neuropsychology. Drawing on biology and cybernetics, these disciplines describe memory as information that is retained in different locations of our brain, and can later be accessed by means of the processes associated with recollection. According to these studies, memory starts with sensual perceptions, which then are decoded in the cortex and stored in different parts of the brain. In the act of recollection, scattered in the brain chunks of information are reassembled once again into a coherent whole in order to re-create the past experience. Therefore, the stages of memory formation are described as a complex action consisted of three operations: encoding, storage and retrieval (Gazzaniga 2009).

Pure perception, according to Bergson, is the perception without recollection of the previous perceptual experience, and for this reason, it is capable of giving us hints into the immediate nature of matter. It is freed from any representational associations, actualised in the instantaneous present, and "exists in theory rather than in fact" (Bergson 1911: 26). In contrast, conscious perception is the perception mediated by our mind, inflated by image-memories and limited by the actual needs. Due to this limitation, conscious perception cannot encompass the whole of matter and only perceives 'by isolation' – that which interests the mind. As Deleuze aptly put commenting on Bergson's idea of conscious perception, it is "not the object plus something, but the object minus something, minus everything that does not interest us" (Deleuze 1991: 25). In the process of conscious perception, the perceived object blends with a pure perception, while our conscious perception in turn blends with the object and discerns those properties of the object that are of particular interest to our mind. In other words, when perceiving the stimuli of the environment, we move from sensing the environment as it is – in whole its mystery and ungraspable material purity – towards the specific features of the environment that are of interest to us.

At this point, it is important to stress that perception (both pure or ontological and conscious or also psychological) is a very important concept in the theory of Bergson. More specifically, it is the inseparable element of memory, because perception is precisely something that actualises memory in the body. Since Bergson describes the process of recollection in reverse, in order to fully appreciate the logic of such a process, I move backwards, starting with perception and progressing with memory. This aspect is elucidated in the following chapters, when I start to compare memory and video (especially, when I draw the analogy between the materialisation of video and actualisation of memory in the Chapter 4.3). In fact, if I am to bluntly separate memory from perception, it can be assumed that memory in Bergson's theory comes to existence prior conscious perception and ends in it. However, I am making this separation only for the sake of better clarity, otherwise it cannot be done by any means. Pure perception, in turn, exists independently as a potentiality, it is a perception without memory, or something that we can neither access, nor apprehend.

Likewise, memory, according to Bergson, is split to two: one, pure memory, that is unattainable and exists independently as an image in its original and immediate state, and the

other – conscious memory[23] – by which we can access the environment via the synchronised activity of the mind and the body. This type of memory is of particular interest to me in this work, since, in my opinion, it can be transposed onto video art in the form of a kind of mediation between the intensities of the world on one hand, and the camera and artists on the other. As Bergson himself stressed, pure memory is useless for our mind because it does not derive from a mind's operation but endures on its own. At the same time though, as I am to explain in the following, pure memory together with pure perception, according to Bergson, plays an important role in the process of recollection of the past, and therefore, these two cannot be excluded from the model of memory which I try to create based on the theory of Bergson.

Conscious memory in turn also embodies two sub-memories which could loosely be situated in the body and the mind:

> There are, we have said, two memories which are profoundly distinct: the one, fixed in the organism, is nothing else but the complete set of intelligently constructed mechanisms which ensure the appropriate reply to the various possible demands. This memory enables us to adapt ourselves to the present situation; through it the actions to which we are subject prolong themselves into reactions that are sometimes accomplished, sometimes merely nascent, but always more or less appropriate. Habit rather than memory, it acts our past experience but does not call up its image. The other is the true memory. Coextensive with consciousness, it retains and ranges alongside of each other all our states in the order in which they occur, leaving to each fact its place and, consequently, marking its date, truly moving in the past and not, like the first, in an ever renewed present" (Bergson 1911: 195).

As it derives from the quote, memory that is stored in our body is a habit-memory – "sensori-motor systems organised by habit" (Ibid.: 193). This kind of memory constitutes a set of automatic bodily remembrances of previous conscious perceptions and, strictly speaking, determines our survival by laying the ground for our conscience being and maintaining our spatial, motor, optical, and other activities. Whereas Bergson calls it "habit rather than memory", Deleuze refers to this type of memory as memory-recollection (Deleuze 1991). Another aspect of conscious memory is the type of memory that coexists with consciousness and retains the past in a set of intelligent remembrances. Deleuze calls this type memory-contraction and claims that despite the latter is more profound, both aspects – memory-

23 In different works and even different paragraphs of the same text, Bergson also calls this type of memory either a recollection, or true memory, or even a psychological memory. On one hand, it can be the result of the various translations, on the other, all these three also could stand for the synonymical expressions of the form of memory, which he opposes to pure memory. In both cases, it creates additional difficulties for the comprehension of Bergson's already complex theory of memory. In order to carry the sharp distinction between pure memory and memory that is opposed to it, I will keep referring to the latter as conscious memory.

recollection and memory-contraction – equally constitute the notion of memory in Bergson. In the Chapter 4.3, I explain the four-stage process of actualisation of pure memory in conscience memory: translation, rotation, dynamic memory and mechanical memory. The latter is precisely something that I understand as a habit-memory: it is tied to sensori-motor mechanisms in the body and has already partly blended with perception. Given that memory in Bergson begins as memory of the past and accomplishes itself in perception of the present, a habit-memory, I think, is a transitional stage between memory and perception. In *Matter and Memory*, Bergson explains the co-existence of two memories with better clearance:

> … bodily memory, made up of the sum of the sensori-motor systems organized by habit, is then a quasi-instantaneous memory to which the true memory of the past serves as base. Since they are not two separate things, since the first (the bodily memory) is only, as we have said, the pointed end, ever moving, inserted by the second (the true memory of the past) in the shifting plane of experience, it is natural that the two functions should lend each other a mutual support. So, on the one hand, the memory of the past offers to the sensori-motor mechanisms all the recollections capable of guiding them in their task and of giving to the motor reaction the direction suggested by the lessons of experience. It is in just this that the associations of contiguity and likeness consist. But, on the other hand, the sensori-motor apparatus furnish to ineffective, that is unconscious, memories, the means of taking on a body, of materializing themselves, in short of becoming present. For, that a recollection should reappear in consciousness, it is necessary that it should descend from the heights of pure memory down to the precise point where action is taking place. (1911: 132)

Now, in order to understand the mechanism of memory at work, I need to connect all these perceptions and memories together. For Bergson, the simultaneous operations of pure memory, conscience memory and conscience perception are identified by our mind as a single movement. However, as he suggests, in this process, "consciousness only follows the movement of memory at work" (Ibid.: 171). In fact, what takes place is the actualisation of pure memory in conscious memory that in turn is experienced as perception of the past actualised in the present. Perception, therefore, is "never simply a contact of the mind with a present object", it is the actualisation of the past images "coordinated with a present perception" that comes as a result of the reciprocal influence of conscious memory and conscious perception (Ibid.: 97). Hence the mechanism of forgetting which, following Bergson, is explained through the incompatibility of a simultaneous coexistence of past images and present perception. Because of this, images of the past previously retained by our consciousness cannot be rendered by perception, and by the same token, cannot be actualised in our body. It can be concluded that the more past is conserved by our conscious memory

(consciousness), the more active recognition can take place, and the more freedom for future actualisation unfolds before us.

As I have stated in the beginning, Bergson sought the difference between conscious memory and conscious perception as a matter of kind, not degree. Insisting that “to picture is not to remember”, he thought of perception as neither a recollection, nor a contemplation, and memory as neither embodied sensations, nor a weakened perception (Ibid.: 173). “There is no perception which is not full of memories”, Bergson writes when he contemplates the reciprocal influence of perception and memory, yet he insists that these two have distinct nature: whereas memory is active and continuous duration able to extract the images of the past from the universe, perception is the actual embodiment of the images in the present (Ibid.: 33).

Another crucial point to keep in mind is that for Bergson, neither subject, nor object, nor the perception of the object can create images, because a subject and an object are already images – they consist of matter. In the act of perception, we only withdraw from matter, arresting its movement and discerning the contraction of duration: it “is neither cause, nor effect, nor, in any sense, the duplicate: it simply continues perception, perception being our virtual action and the cerebral state our commanded action” (Bergson, 1993: 262). As it follows, memory is not preserved in our brain and can, by no means, be retained by our mind in the similar fashion as it is done, for instance by computers today. The latter statement emphasises the interactive (or indexical in Deleuze) side of memory and, by extension, the affective capacities of video as an art medium when this conception of memory is projected on video art.

### 3.2. Memory as Duration

To make the illustration of Bergson's mechanism of memory 'at work' complete, the next, and probably the most important functional element should be considered in detail. More specifically, the concept of duration, which is to be compared to the expressivity of light and signal, and the specific temporality of video, is of particular interest to me here.

Memory of the past, it was suggested, is not stored somewhere in the brain, it unfolds in time through the prolongation of the past into the present. These two latter concepts though distinct in nature, can nevertheless be reconciled by the actions of memory. Moreover,

following Bergson, there exist different layers of the past, as well as different images of the past (from which memories are constructed) are placed on this layers. Memory should be first, placed into action in order to discern the images of the past from the homogenous past, (in other words, differentiate itself from matter and become duration) and then, second, must be actualised in the present perception which makes these images 'alive' and complete. This is why, as Bergson claimed, memory is the interface between virtual and actual, a carrier of the past into the present in time (Bergson 1911).

In turn, time, as Bergson conceptualises it, is not a set of discrete movements, but a non-chronological continuous duration that cannot be broken, and for this reason, it "excludes all idea of juxtaposition, reciprocal externality and extension"[24] (Bergson 1912: 13). More precisely, duration is the temporality of consciousness and the very materialisation of our conscious memory. Duration as we experience it, or psychological duration, is only one case among others, among an infinity of other durations (Deleuze 1991). What is important to understand, however, is that in Bergson, though indivisible, duration nevertheless reacts and produces difference. To explain this in better context, Deleuze's elaborate interpretation of duration is further employed.

In "Bergson's Conception of Difference", Deleuze proposes that "duration is what differs from itself" (2004 [1956]: 37). By this he means that it possesses the capacity to split itself into two inseparable moments, one of which falls back towards the past, while the other is projected towards the future. Space, according to Deleuze's reading of Bergson, consists of matter and duration, and while matter exists entirely in "relaxation" – a state in which moments of time exist outside each other in an un-synthesized manner (Ansell Pearson 2007), duration differentiates itself from matter throughout the mechanisms of "contraction" and "relaxation" (Deleuze 2004 [1956]: 39). Thus, movement can be explained by infusion of duration into matter in which duration differentiates from matter and from itself. In other words, following Deleuze's interpretation of Bergson, whereas matter only repeats itself, duration also contracts itself, and through this very mechanism, transforms matter[25] (Ibid.).

In the process of such a contraction, duration changes its nature and actualises virtual possibilities of matter that in turn finds the embodiment in memory. Although the mechanism

24 Hence the notorious debates between Bergson and Einstein.

25 This will be one of the main premises for Deleuze's *Difference and Repetition*, in which he develops the concepts of difference in itself and repetition for itself as the key notions of creation.

of duration is additionally employed in the Chapter 4.4, for now I feel the necessity to highlight the methodological role of duration as a pivotal link between memory and video. Since duration in Bergson is inseparable of memory, it creates a premise to think of the former as light that makes video images (matter) visible to us. However, in order to fully understand the mechanism of duration, I should additionally trace its connection to conscious memory.

Duration for Bergson is the condition for the possibility of freedom and choice (Ansell Pearson 2007). In this process, the particular importance is assigned to memory that conserves past experience in order to make it 'happen' again in the future. Since memory is thought in terms of continuous duration, it directly determines the scope of our freedom through the unfolding the past in the present. Deleuze describes duration as a condition of experience in which "the recollection or what has happened in space would already imply a mind that endures" (Deleuze 1991: 37).

Noteworthy, for both Bergson and Deleuze, duration has to be granted an absolute existence (it is not relative to our own inner sense of time), which requires thinking time on a different plane to space (Ansell Pearson 2007). "Everything happens as if the universe were a tremendous Memory", writes Deleuze when he interprets the nature of Bergsonian duration (Deleuze 1991: 77). In a more elaborate analysis of Bergson's concept of duration as difference[26], Deleuze conceives memory as "the coexistence of degrees of difference" (Deleuze 2004 [1956]: 39). More specifically, for Deleuze, memory is a necessary condition for virtual possibilities to be actualised in the present. "The role of memory", he explains, "is to give the virtuality of duration itself an objective consistency which makes it a concrete universal, and enable it to actualize itself" (Ibid.: 44). In other words, memory is always virtual, its very progress lies in the process of its materialization, in the fusion of the virtual and the actual together. For this reason, memory always coexists with present that recalls it, and this kind of contemporaneousness of the past and the present, the virtual and the actual, memory and perception is something that makes the latter a peculiar concept in Bergson's theory.

For Deleuze, memory is the consciousness of difference, it is the ability to bring the

26 In the process of this analysis, Deleuze draws a clear distinction between three stages of difference, namely, between duration, memory, and élan vital. According to his distinction, duration is "difference from itself", memory is "the coexistence of degrees of difference" and élan vital is "the differentiation of difference" (2004 [1956]: 39).

differentiation into action. In turn, pure (ontological) memory is something that does not act, yet by this, it establishes the enormous storage of all the possibilities for the moments of virtual-actual or conscience memory. As Bergson put it: “what I call 'my present' has one foot in my past and another in my future” (Bergson 1911: 177). There are several moments in this quote that need explanation. First, that to which he refers as the 'present' is an undivided whole of movements and sensations that are linked together, and in this unity, they have the ability to prolong the present moment in action. Bergson calls this present 'sensori-motor'. Second, it implies the importance of the body that simultaneously experiences sensations and executes movements. In this sense, body is a locale in which both sensations and movements are given together. This is why, for Bergson, the present moment arrives as “a thing absolutely determined”, and contrasting with the past (Ibid.: 178). To see this mechanism in detail, I need to elaborate on the currently ambiguous function of the body. The key idea is to think of the body as a centre of action for conscious memory, the link that unites memory, perception, matter and duration together.

### 3.3. Memory as Affective Force

The body in Bergson is something that assembles together all the multiple elements of his complex theory. In this regard, it is important to understand that Bergson is the thinker of open systems (Ansell Pearson 2007). This means that for him, movement and change are the inherent characteristics of life. The latter, with immanent to it processes of differentiation and actualisation, is at kernel of Bergson's theoretical endeavour, and duration is the driving force that makes this actualisation happen. Deleuze writes that in *Creative Evolution*, Bergson compares life to memory: both are always in constant movement, in the process of transformation and difference. In this regard, despite bodies as living beings tend to naturally form closed systems, it is impossible to achieve on account of the whole of life that cannot be accomplished by definition (Deleuze 1991).

As it was briefly mentioned in the beginning of this chapter, perception in Bergson's theory of memory starts from the outside, on periphery, and gradually fades towards the centre of the body. The whole perception of the universe, or perception of “the system of images”, as Bergson defines the universe, can be altered by a slight change in the “privileged image” – the body (Bergson 1911: 118). Perception therefore, is seen as the virtual action of

matter. Since the body is the centre of this action, according to Bergson, it cannot “give birth to representation” of the universe (Ibid.: 88). Moreover, the body itself is the part of the representation determined by conscience perception, which translates the molecular movements of matter expressed in duration, and by this creates the 'representation' of the matter. What the body does, instead, is connects those things which act upon it and the things upon which it acts. Precisely this specific functionality defines the sensori-motor phenomenon of the body. By acting and reacting, the body constitutes the actual state of becoming – duration which is always in the process of expansion.

In turn, Deleuze suggests that it is precisely memory that “makes the body something other than instantaneous and gives it a duration in time” (Deleuze 1991: 26). Noteworthy, however, in Bergson's theory, the body that acts and reacts is not necessarily the 'living body' as we are accustomed to think of it. In contrast, bodies, for Bergson, are the special 'privileged' images, which can reflect images of matter and select a part of them thereby creating the gap in the continuum of matter. Projecting Deleuze's assumption that memory makes bodies from images, the former, therefore, are the images which have memory. Man's body is distinguished from other reacting bodies only via the higher complexity of actions and reactions, whereas its functional part remains the same for all other reactive bodies. This main function consists of receiving movements, singling them out and transforming them into action (Lazarrato 2007). Such a process, however multidimensional, is realised instantaneously, and for this reason, cannot be 'registered' by consciousness. In fact, Bergson highlights that the experience of life goes far beyond the capacities of the intellect to comprehend this life. What is more important, however, that conscious memory is precisely something that animates the instantaneous chain of receiving, choosing and transforming movements into action by the body. Now it becomes clear why, as Bergson put it, unlike conscious memory, pure memory previously discussed on the pages above interests no part of the body. The actual sensations, determined by the complex interplay of conscience memory and conscience perception, “occupy definite portions of the surface” of the body; pure memory, in contrast, exists only virtually, anticipating the moment of its materialisation. The complete quote is following:

> My actual sensations occupy definite portions of the surface of my body; pure memory, on the other hand, interests no part of my body. No doubt, it will beget sensations as it materializes, but at that very

> moment it will cease to be a memory and pass into the state of a present thing, something actually lived. I shall then only restore to it its character of memory by carrying myself back to the process by which I called it up, as it was virtual, from the depths of my past. It is just because I made it active that it has become actual, that is to say, a sensation capable of provoking movements (Bergson 1911: 128).

Now, when all the elements of Bergson's theory of memory are described in more detail, it makes sense to draw the model of memory, which, as I have stated in the beginning, is be the pivotal point for the analysis of the mechanism of video art as an obscure phenomenon. Bergson himself illustrated his theory by means of an inverted rotating cone placed on the moving plane.

On the image below, SAB is the totality of all the recollections accumulated in memory. AB is situated in the past and remains immobile, and the apex S indicates the present and constantly moves forwards touching the plane P with the actual representation of the universe (Bergson 1911: 196-197). On one hand, the apex of the cone represents the most contracted point of duration – the present, and on the other, it also indicates the point of immersion in relaxed matter (Deleuze 1991). In other words, S is the body that acts and reacts upon matter, it is the point at which a sensori-motor memory of the body (habit) and a true memory of the past converge together in conscious memory and simultaneously materialise in the present perception.

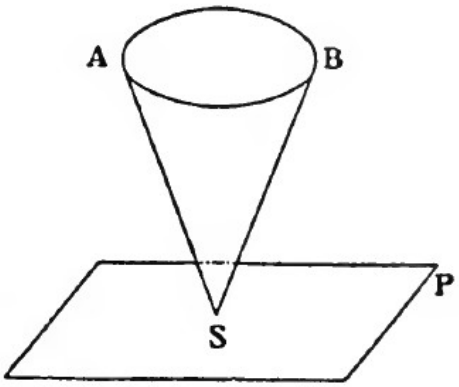


*Fig.1: Bergson's Memory Cone (Bergson 1911: 196-197)*

In my opinion, though simplified, yet probably the easiest way to imagine the model of memory based on Bergsonian illustration would be to approach it via the metaphor of a kaleidoscope. In kaleidoscope, everything coexists with itself, like in Bergsonian cone that stands for memory. Both cone and kaleidoscope are inherently based on movement: the cone

rotates and moves on the plane, the kaleidoscope is mechanically spun in order to enable the coloured objects to move and the static particles of mirrors to reflect the motion of light. Inasmuch as in the cone memory moves from the virtual past to the present, in kaleidoscope the image is assembled from the virtual possibilities of all the built-in combinations. The latter is the limitations that could stand for the restrains of our bodies, the mind and perception. The present therefore is the most contracted past, or projecting the mechanism of a kaleidoscope onto memory, it is the condensed point of the possible combinations for image to happen. At the same time though, whereas every kaleidoscope operates on the principle of multiple reflexions, memory operates on the principle of multiple reactions. However, if keeping this in mind, the metaphor of a kaleidoscope could serve as a smooth transition from Bergsonian explanation of memory represented by the cone to video art that, unlike a pre-programmed kaleidoscope, carries the reactive potential.

For the most part, the ideas of Bergsonian theory of memory can be summarised in the following statements. The universe consists of images that act and react upon each other. Some of these images have the privilege to become bodies because they can synthesise the continuum of relaxed matter and bring it to another state via duration. Movement is explained by the insertion of duration into matter, in which the former differentiates from the latter and from itself. Duration in turn is memory in the sense that it is characterised by the active or intelligent recognition and has an ability to condense and discern past images from matter. Memory is neither preserved in the brain, not it is represented by lowered perception. In the process of recollection, we do not move from perception to recollection, or from the present to the past, but from recollection to perception, or from the past into the present. By this, first, memory is placed into action needed to discern the images from the past, and second, it is transformed into perception in order to make these images alive. In this process, bodies are the centre of the memory's action and the link that unites memory, perception, matter and duration together.

As it can easily be deduced, there exists an extensive number of arguments which aim to criticise the theory of memory proposed by Bergson, as well as to dismantle the whole of Bergsonian tradition[27]. In general, the critical evaluation bridges from the vagueness of the

27 However, apart from the general criticism, there are other reasons that contributed to the decline of Bergson's ideas. In particular, the influence of German philosophy on French thought after the Second World War shifted the accents towards phenomenology of Husserl and Heidegger. In addition, Bergson's distrust in

whole explanation on one side, to the more specific accusations in intuitionism, psychologism, pantheism, and spiritualism, on the other. Among the famous critics of Bergson there are philosophers of temporalities such as Martin Heidegger and Gaston Bachelard who criticized Bergson for conceiving duration as unity; philosophers of language such as Ludwig Wittgenstein criticising Bergson for vitalism and disregard of language; analytical philosophers and mathematicians such as Édouard Le Roy, Bertrand Russell and George Edward Moore who claimed that continuity is a purely mathematical subject and not the domaine of philosophy (Ansell Pearson, Mullarkey 2002).

Deleuze himself highlighted the difficulty of Bergson's ideas and points of incoherence in his theory. Thus, according to Deleuze, Bergson attacks dualism, degrees, intensities, the negative and opposition, and at the same time recycles "for his own purposes the same notions he just finished criticizing" (Deleuze 2004 [1956]: 49). To what extent these criticisms are fair, and to what extent they have been called into question by more recent intellectual developments, are aspects that cannot be treated here. Since the aim of this paper is not to critically evaluate the theory of Bergson but to use it in a more affirmative way, I will not dive into these debates. What is of importance is to acknowledge the existence of a specific connection between memory and video and recognise a certain degree of similarity in their functions. As I proposed, memory in Bergson can be analysed in its close proximity with video art: the former is actualised in the present perception similarly to video signal that assembles itself in the artistic image. Moreover, the immediate indeterminacy of video as a medium and its ability to materialise the past in the present on the screen and in the body, seem analogical to the same mechanisms of Bergsonian idea of memory.

language as opposed to intuition, did not coincide with the linguistic turn of the 20th century. Finally, Bergson's fiasco in the debates with Einstein completed the task of downturning Bergson's theory.

## 4. Modeling Video Art as Memory

In this chapter, I project the model of memory described above on video art. In particular, the connection is drawn between the operations of mind and the video camera, the four-stage process of memory actualisation and the signaletic properties of video, duration of memory and the temporality of video, the vitality of duration and the continuous movement of light. In this process, I analyse the specific characteristic of the video medium such as its signaletic features, interactivity and connectivity, temporality and real-time immediacy in more detail in order to elucidate their analogy with the model of memory that I build based on Bergson's ideas. In addition, in the context of the indexicality of video art and its 'liveness', I touch upon the problematic debates between the digital and the analog. As I assume, these debates can bring me closer to the understanding of a specific role of analog video in the evolution of video art, and also point at the notion of hybridisation that evolves in the field of art, media and technology in general. In conjunction with memory and video, I also discuss the notion of habit and briefly analyse video synthesis and video processing with regard to their ability to expand our perception of 'reality'. Finally, assuming that the role of an artist is fundamental for the process of making artistic videos, in the final part of this chapter, I make an attempt to extend the modeling of video onto the body of an artist.

In the process of drawing the analogical relations, all above mentioned features and characteristics of video art and memory are connected together and supported by the related examples from the artworks of the 'image-technicians'.

### 4.1. The Mind and the Camera

For Bergson, the mind is a commutator that translates between movements[28] in the first place. More specifically, in Bergson's theory, the mind stands for an instrument of the analysis of both received and executed movements because it simultaneously transmits and divides them.

28 And by 'movement' Bergson means duration or all changes in matter: from the very faint and imperceptible to the changes that can be registered by means of our senses.

Deleuze writes that for the intellect everything is movement – an "instantaneous section" (Deleuze 1991: 54), and for this reason, the coexistent operations of pure memory, conscious memory and conscience perception are identified by our mind as a single operation. Bergson calls this feature the adaptation to the present situation, and by the same token, implies that without the coordination of "the adaptive consciousness the practical character of life would be distorted" (Ansell Pearson *et al* 2002: 18).

Noteworthy, the mind for Bergson cannot exist independently of the rest of the universe, because our ability to perceive the world directly derives from the physical bond with the material world. If such a connection is broken, our reactive body ceases to be 'the body' and becomes the inert matter. At the same time though, adaptation, the general aim of life, permits us to receive and execute only a limited number of movements. This is why, according to Bergson, the role of the mind is of high significance, because it allows only those past images become actualised which can be acknowledged as relevant to the needs of the present (Bergson 1911). However, despite admitting the importance of the mind, Bergson also attacks its limitations claiming that it actually hinders the knowledge of life.

In order to describe the operation of the mind in more detail Bergson uses the metaphor of the film camera. Similarly to the intellect, which divides movements and immobilizes time, by placing images side by side along the film stripe, cinematic apparatus substitutes the inner durations of things with "a series of snapshots" of passing reality (Bergson 1922: 322). By recomposing them together, cinematography reconstructs the movement from immobility. The artificially 'animated' movement, for Bergson, exists not in the world, but in the apparatus that creates a succession of the indivisible movements in film[29]. In can therefore be inferred that the film camera starts from the capturing a 'real' movement of the world, then mechanically breaks it down into a series of single frames, and finally, reconstructs the movement in the cinematic apparatus (Totaro 2001). In fact, Bergson projected the same artificiality on the human mode of acquiring the knowledge about the world by means of intellectual apprehension and, precisely for this reason, sought to justify

29 Commenting on Bergson's critique of the mechanism of cinema, Deleuze substitutes the idea of cinematic movement as constructed via the succession of still photographs with the broader concept of movement-image. The main statement of Deleuze can be summarised as follows: objects that we see on the cinematic screen are not merely figures represented in motion. Instead, the very continuity of movement constructs the objects and figures, and by this, creates a new thinking of the world. For this reason, he continues, in the context of philosophy, cinema is able to produce a new mode of knowledge, and therefore, can expand the link between man and the world by creating a new temporality of being in the world (Deleuze 1997b.).

intuition as a necessary method of cognition of the world.

Film camera therefore acts akin to the human mind and captures the world via the process of intellectual recognition. In other words, the camera isolates the fragments of reality and erases all subtle differences of the universal movement between frames. To some extent, this can equally be applied to the mechanism of video camera. At the same time however, I argue, because of the signaletic features of video, the latter is able to register movement if not in its incomprehensible totality, then in its pure instantaneity. By any means, video is capable of interpreting the mechanism of the movement as it is conceived by Bergson, yet it also expands the nature of the movement, and in doing so, makes the latter eventually more accessible to us.

First and the most obvious difference is that unlike film which operates at only 24 frames per second rate, video in general creates 25/30[30] interlaced frames that are scanned each second. More specifically, this means that video consists of two sets of half images scanned 25/30 times per second, and by extension, bears the quality of 50/60 half frames (Bensinger 1981). Therefore, it can capture the detailes of movement which the intellect (and following Bergson, film camera) mostly disregards.

Second, the omnipresence of video image and the absence of any locale whatsoever (for instance, in contrast to the cinematic stripe or a negative in photography) makes it impossible to construct a set of separated frames and then assemble them in the single movement on the screen. Instead of a mechanical reconstruction therefore, video acts upon the world and interacts with matter moulding it in the visible forms.

Finally, real-time mode of broadcasting video and/or altering it through processing or even more, creating it from the scratch via synthesis, all together demonstrate the pervasive possibilities of video in art as opposed to the operation of the intellect in Bergson. For this reason, I suggest, the camera-mind analogy is not sufficient for video (both as a technological and artistic medium). Instead, I propose to think of a video camera, the direct extension of the video medium and the translator of light into video signals, by way of intuition. More specifically, I think, a video camera equally embodies the precise operations of the mind (or the intellect) and the vague responsiveness of intuition. In doing so, it blends them together revealing a new possibility to experience the animated world in its intensity, materiality and

30 30 frames per second define NTSC standard which is used primarily in the USA, Canada and Japan, and 25 frames per second define PAL and SECAM standards which is used in other countries.

genuine inconsistency[31].

All these three significant features of video find its embodiment in the works of the 'image technicians'. Thus, Nam June Paik's “9/23/69: Experiment with David Atwood” (1969, USA), a series of video experiments with the electromagnetic manipulation of existing television material in real time, demonstrates the process of transformation of a habitual image back into the abstract electromagnetic energy, and in doing so, exposes the elasticity and active potentiality of a video medium (ill. 1). In this explicitly electronic work, Paik creatively dissects 'live' televisual images, prerecorded footages and real-time video produced directly in the studio in order to create a free-form collage composed from the expressionistic video stream. In the process of exhibiting the work, the image outputted on the screen falls apart thereby suggesting the continuity of movement and revealing its undetermined spontaneity. By manipulating with video flow, Paik destabilises habitual shapes and human figures in such a way that they can be 'recognised' only by means of purposeful efforts of the mind. The latter, in the imprinted attempts to translate the movements on the screen and reconstruct the 'reality', selects familiar pieces and tries to reassemble them into a habitual image. In my opinion, the footages taken from television, in particular underline this adaptational resemblance performed by the mind, because television, due to its social directness, can offer and sustain one of the most unified and standardised images of the world. In this regard, Paik's work can indirectly demonstrate how the operations of the mind which are primarily based on habits can beneficially be enhanced by the 'intuitive' spontaneity of video as an artistic medium and, by extension, can also induce the chance to experience the immediate inconsistency of the world.

Likewise, Steina Vasulka's “Distant Activities” (1972, USA), a video work created in real time from a processed video feedback, surpasses the capacity of the mind to withdraw from matter meaningful movements, and evokes a sort of delusional state in which reality cannot be assembled in habitual image (ill. 2). By processing video signal generated by a feedback setup, Steina creates an electronic video abstraction that consists of a deformed, almost animated mass of video flow able to change its form, colour and even structure. Not

31 Certainly, film scholars could imply the same in reference to cinema and suggest that the latter combines both the mind and intuition inasmuch as video does so. However, I argue, on mechanical level, traditional cinema is more closer to the simulation of the movement than video. As I attempt to explain, because of the signaletic features, video is more flexible, malleable, and transformable than cinema.

only does Steina's video work expose the malleability and plasticity of video as an art medium, but it also implies the existence of another form of life – life that is hidden in the frequency of light, in the modulation of signal. As a result, this work alters habitual movement in the same fashion as Paik's "9/23/69: Experiment with David Atwood", and akin to deliriums and altered states, reveals an 'extra information' from matter.

Remarkable that Deleuze and Bergson make an emphasis on delirium – a state of mind which disrupts the stability of conscious perception. In most general understanding, delirium is closely related to such conditions as fever, isolation, alcohol poisoning, vertigo, or being under the influence of drugs. Video in this regard creates the similar state in which the experience of reality and illusion overlap in conscious memory. In the process of delirium, according to Deleuze, our ego is diminished, yet our consciousness is still able to operate, and therefore, something that we actually see, might be the fragments of pure memory with its power to cross "the universe in an instant" (Deleuze *et al* 1994: 201).

On the one hand, video is indeed can be called intelligent in the sense that it can discern particles of light from the universe and translate them into a visible video stream. From such a perspective, it certainly reflects the intellectual work which, following Bergson, is based on the process of taking "one and the same idea" and leading it through "different planes of consciousness, in a direction which goes from the abstract to the concrete, from the scheme to the image" (Bergson 1975: 214). On the other hand, I argue, video surpasses the possibilities of the mind bound to the tendency to draw the precise and rational connections. If we assume the intellectual work to be a filter that discerns 'useful' information and disregards all 'insignificant' nuances, then video is seen as capable to register these subtle differences, and in doing so, it triggers the broader diapason of pure memory with its probable actualisation in conscious memory which, in Bergsonian understanding, embodies a virtual potential of the past.

According to Deleuze, our senses are limited by a special screen that acts as a multileveled filter and protects us from being exposed to a pure perception and devoured by the chaos of images. This filter can be imagined as a kind of mediator, through which the sum of all possibilities goes by being sifted via differential relations. In the process of such a filtering the world obtains clearness and becomes graspable for conscious perception. Due to the refinement, Deleuze explains, perception gradually moves from virtual chaos "into

clarity" (Deleuze 1993: 90). Analog video, therefore, because of its abilities to capture electromagnetic waves, gives us the very possibility to get closer to something that lies beyond, and if not to lower perceptual threshold, then at least let us to acknowledge this threshold and appreciate the 'imaginary' of the world. In a way similarly to pure perception in Bergson's theory, it can be said that video has a certain potentiality to access the 'aggregate' of simultaneously present 'images' of matter (Lazzarato 2007). At the same time though, because of the filters present in the camera, video actualises those virtual possibilities of pure memory which can be collected in accordance with the sensual threshold of video. In addition to this, we filter the video image in the same way as we filter reality. However, since the sense of reality is pre-given to the medium of video which, as it was suggested, is capable to grasp matter without its prior reconstruction into a set of discrete movements, in my opinion, video can surpass the intellectual activity and disrupt the stability of conscious perception.

### 4.2. Non-Representational Medium

It was stated in the introduction into the history of video art that analog video as both art and technology is essentially a signaletic medium. This means that it consists of electronic signals which can purposefully or accidentally be assembled into an image.

One of the most obvious consequences of a signaletic medium is its plasticity and manoeuvrability. Like an every electronic signal, analog video is transformative and multidimensional, it can traverse its signals simultaneously into different directions. For most of the video artist, this feature of the video medium was the main magnet that drew their attention and induced new experiments. Thus, reflecting on the artistic potentiality of analog video, Youngblood describes it as an elastic medium. (Youngblood 1970). For him, video is expanded cinema, "like life it's a process of becoming", constantly in movement, transformation and change (Ibid.: 41). Woody Vasulka recalls that there is "a certain behavior of the electronic image that is unique . . . . It's liquid, it's shapeable, it's clay, it's an art material, it exists independently" (Vasulka quoted in Video Art Review 1981). Stephen Beck interprets the malleability of video through the inherent capacity of the medium to go "beyond a strictly photographic/realistic, representational aspect ..." (Beck 1976: 184). For Beck, therefore, video is a non-representational medium that can go beyond the conventionality of photography, cinema and television.

Indeed, video does not consist of a set of coherent images but simulates an image through the manipulation of the electronic wave. In its plasticity it escapes all sorts of fixations on the screen and in the camera: neither in the scanning process inside the camera, nor on the surface of the screen can a 'coherent image' be found (Spielmann 2010). In addition, Spielmann adds, video can also exist without the fixation of electronic imagery on magnetic tape. The real-time visual effects that are generated by means of video processing can directly be displayed on the screen. In this context, the screen becomes a locus of a video creation – the point where electronic signals are being assembled into the image and presented before the eyes of viewers.

Likewise, by assuming that everything that we perceive consists of images, Bergson shows that our knowledge of things takes place only within the things it represents. I have mentioned earlier that Bergson thinks of matter as a set of images – an existence placed halfway between the "thing" and the "representation" (Bergson 1911: 14). For this reason, it can be said that representation is always in the image virtually. In other words, in the theory of Bergson, representation is conceived as a combination of the evolutionary survival inherent in our bodies (sensori-motor) and the operations of our mind based on a kind of conscious filtering of reality. However, unlike other theories of representation which assume the independent existence of the physical world and the mind, Bergson claims that both the mind and the world unfold in the same realm of duration, via continuous action of memory. Moreover, the body and the mind, as two reactive images, are already the representations of matter and in turn the products of an active 'intelligent' recognition of consciousness. Eventually, all the different images matter is 'made of' do not stand for a kind of a signifying element that is meant to represent the world, but constitute something akin to a genetic element of the physical world (Lazzarato 2007).

In this context, it is also remarkable that for Bergson, the form of art best suited for representation (he calls the representation in art 'imitation') is painting (Bergson 2007). Similarly, as it was shown, he despises cinema as a spatial simulation of reality and projects the cinematic mechanism on the work of the intellect. But in video art, neither imitation, nor simulation takes place. Instead, the medium of video due to its malleability is much closer to duration than to the spatial simulation. Embodying the temporality of time, video as an artistic medium is non-representational like Bergsonian duration: "as soon as we try to measure it, we

unwittingly replace it by space" (Bergson 1910: 106).

Such a deception of representation is analysed by Dan Sandin in the video work "Triangle in Front of Square in Front of Circle in Front of Triangle" (1973, USA). By programming an analog image processor in such a way that it visually executes logic equations with simple geometrical forms (triangle, square and circle), Sandin demonstrates the artificiality of our concepts of space and exposes the inability of human language to describe what actually can happen on the video screen (ill. 3). In doing so, he illustrates how the spatial relations given by video diverge from the logic of perspective on one hand, and transgresses perception of space experienced in 'reality', on the other. More specifically, in this work, Sandin forms a spatial line of three simple geometrical figures – triangle, square and circle – and then, by processing the generated video, manually changes their location by dragging the figures left and right on the plain surface. At first glance, everything is working according to a spatial logic and in synch with the laws of perspective: a triangle is located in front of a square and a square is placed in front of a circle. By extension, based on spatial representation we can conclude that the triangle must be also located in front of the circle since the latter is placed on the very background. However, when Sandin drags the circle from its initial position to the left in the direction of the triangle, the circle turns to be in front of the triangle and thus on the foreground. Eventually, such a displacement goes against all spatial relations we employ to make sense of the world. In this process, because of its plasticity, video as an artistic medium resists the representational restrains and escapes any firm depiction of 'reality'. Instead, it invites into its own electronic 'reality' made of constant transformation, de-assemblage and re-assemblage.

At the level of technology, non-representational plasticity endows video with a potential to mutate into sound signals and otherwise, thereby making the former genuinely an audiovisual medium (Spielmann 2010). Audiovisuality of every particular medium can be understood in many different ways. With analog video, however, it directly presupposes a physical feature of the latter to generate sound from the electromagnetic wave and create a visual output from the acoustic wave. While describing the nature of electronic systems, Bill Viola suggests that in such systems, "the same electronic signal can be an image if fed into a video monitor, an energy diagram if fed into an oscilloscope, and a sequence of sounds if fed into an audio system" (Viola 2003 [1982]: 468).

In this regard, there exists an extensive number of video works in which artists have attempted to investigate this kind of reciprocal change of sound and video easily achieved with analog signal. For instance, the emblematic experiments in this direction are done by Stephen Beck with his series of live performances “Illuminated Music” (1972-1973, USA). In one of such performances from the series created together with a musician Warner Jepson, Beck synthesised sound waves into video signal and otherwise (ill. 4). Electronic sound produced by Jepson was fed into the Direct Video Synthesizer which Beck designed himself and altered into a video image. As a result, the latter was composed in real time without the use of any camera image. Interestingly, Beck called this sort of audiovisual composition a form of “visual jazz” because, though the visual themes and variations varied in each interpretation, the basic visual structure of the work remained the same from performance to performance[32]. In this sense, the flexibility of sound and video signals does not necessarily mean the lack of control. Instead, it signifies the very fragility of representation in video art, its plastic instability, relative independency and evident mutability.

Very much alike experiments meant to study the inherent in video audiovisuality were done by Steina Vasulka who by being initially educated as a professional violinist was able to appreciate a special visual 'musicality' of the analog signal. Her work “Violin Power” (1978, USA) is composed from the direct alteration of video and audio signals in real-time performance (ill. 5). By processing the live sound of violin through the Scan Processor and additionally altering it with a keyer and the Frequency Shifter, Steina used the emanated sound output for the modification of the real-time video. This video, in turn, was generated by two cameras which recorded Steina performing a musical piece, and at the same time, by means of the Scan Processor which altered the output image before it was displayed on a screen. Such a sophisticated setup has eventually generated the effect in which the bow of violin meddled with the video signal and twisted the output image. To some extent, in this work, the violin becomes the tool able to generate the image and alter it via the incoming sound. Similarly to Beck who referred to his “Illuminated Music” performances as a kind of “visual jazz”, Steina labeled “Violin Power” “a demo tape on how to play video on the violin” (Spielmann 2004: 26). In this vein, these two works of Stephen Beck and Steina Vasulka stand as an eloquent demonstration of the relationship of music (both electronic and live) and

32 The description of other works in this series can be found on Beck's web-site http://www.stevebeck.tv/ill.htm

electronic image manifesting the unique transformative, mutually changeable and non-representation nature of the signaletic medium of video.

Finally, the omnipresence of the electronic signals complements the non-representational characteristics of video. On top of that, the image comes as the versatile outcome of the electrical assemblage, which in many cases is difficult to manage with high precision. To some extent, this unpredictability of video eventually determined the methods of working with the medium in arts. In contrast to the exactness, accuracy and attention to the image's quality of the artists working with photography and film, video artists were more open to the volatility and instability of video[33]. Rather than trying to control video, they established a dialogical connection in order to investigate into the signaletic nature of the new artistic medium. It is especially remarkable in the all above mentioned experiments in which the video image is only accidental and does not represent the final goal of the manipulations with video.

As I attempted to show, the theory of Bergson allows us to look at the notion of representation from a different angle, assuming that the 'real' and the 'visible' emanate from the continuous actions of memory, in other words, they are the products of duration. Likewise, video due to continuous transformations that take place inside the camera, escapes representation and shapes video images by means of the constant alteration of the electronic wave. Because of this, it can be said that both video and memory share certain non-representational features and merely assemble and reassemble matter at every next moment of time. In fact, the ramifications of Bergsonian approach towards representation are much broader, and therefore, in the following, I will be going back to this idea in the contexts of continuous modulation of electronic signal, Deleuze's concept of diagram, problematic questions of reflexiveness and indexicality of video.

### 4.3. Materialisation of Video as Actualisation of Memory

The foregoing idea that video art avoids representation in the same fashion as memory in

33 In both conventional film and analog photography, the exactness and directly connected to it craftsmanship play a very important role. On one hand, it is determined by the technical characteristics of these media which, in order to produce the final image, must undertake a set of procedures such as development of the initial material, printing, and editing. On the other, some of the aesthetic features of both film and photography are connected to the hight quality of the images (sharpness of the image, correct exposure, carefully thought out composition).

Bergson encourages me to inquire into the process of materialisation of video with respect to the mechanism of actualisation of memory as it is described by Bergson. In order to do so, I need to look inside a video camera and to analyse what happens to the analog signal after it is captured by the camera.

Video signal, a basic element of every video, is generated when the light particles are scanned by a sensitive surface inside the camera, or by any other alternative hardware able to convert electromagnetic energy of light into electrical energy of video signal. After acquisition, video signals can further be modified, transmitted, saved in the form of an image on the tape or projected on the screen of a monitor. In general terms, the mechanism of video materialisation can schematically be represented as follows:

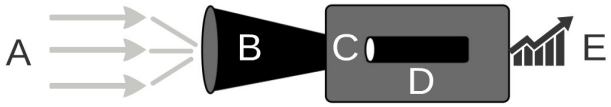


*Fig. 2: The Process of Materialisation of Video*

The electromagnetic energy of light that is captured by the camera (A) goes through the lens (B) towards the surface of the vidicon (C). Inside of the vidicon, the patterns of light and dark are scanned by the electron beam (D) and converted into electrical information or voltage that can be output in a number of ways (E).

Due to the specificity of video conversion, in analog video, the encoded signal is continuous with respect to time and the values of represented information. It is translated into electric pulses of varying amplitude and denoted by physical measurements. In digital video, in contrast, the signal is discontinuous in time, generated as a result of digital modulation and represents encoded information by means of binary format (zero or one) in which each bit stands for two distinct amplitudes (Parker 2010). Whereas it can be assumed that analog video records waveforms as they are in their original state, digital video samples them into a limited set of numbers. It derives from this kind of difference that in spite of translation, the analog still entails the physical measurements of light, while the digital is stripped off any physical connection with light particles. Such a conclusion in turn constitutes the basis for the complex discussion on the indexicality of video, which is additionally scrutinised in this paper.

When considered in reverse, the mechanism of video described above, I argue, is

analogical to the mechanism of memory explicated in the Chapter 3. By reverse order I mean the inverse line 'present-past'. Traditionally, we accustomed to think of video camera as capturing the present in order to carry it into the future thus creating from the present a 'recorded' moment of the past. However, I offer to look at the camera in synch with Bergson's idea of the past moving into the present, and therefore propose to approach light that travels into the camera metaphorically as 'the universe out there', or following Bergson, the past, or even better, pure memory.

When captured by the camera, photons travel onto the sensitive surface inside the camera (vidicon in analog and matrix in digital) where electromagnetic energy is further translated into electronic signals. As it follows, the process of 'materialization' of video image is based on first, the continuous motion of light particles, second, their translation into the signal, and third, is sustained by the constant movement and modulation of the signal. In the camera, the signal is endlessly scanned into scan lines from which video image is eventually made. Since the signal of video comes as a wide range of the electromagnetic spectrum – from visible light and infrared to gamma rays and beyond, – our eyes, which have a certain bandwidth, allow us to see only visible spectrum of light. Such a limited bandwidth, after all, prevents us from being overwhelmed with the pure perception of the universe on one hand, and determines our survival by actualizing the exact amount of the past experience needed to sustain the present. At this point, it is important to highlight one more time that, according to Bergson, in the process of recollection, we do not move from the present to the past, or from perception to recollection, but quite the opposite. We progress from the past into the present, starting from recollection and proceeding to perception (Deleuze, 1991).

Deleuze explains the process of the actualisation of memory through the mechanism by which pure memory takes on its psychological existence thus materialising itself in conscience memory. In doing so, he discerns four aspects of actualisation: translation, rotation, dynamic movement and mechanical movement (Ibid.). Translation, according to Deleuze's reading of Bergson, expresses the ontological difference between the virtual levels and regions of the past (here translation works as an intensity of contraction that indicates the difference between two layers of the past), and also embodies a movement that is necessary for the actualisation of the past experience taken from a particular level in the past.

Rotation is the process that secures translation thereby determining the transition of

the past into the present. It is carried out by memory in order to unite translation to the present. In translation, according to Deleuze, the whole level of the past is actualised in the same way as a particular memory (he calls it "undivided representation"):

> But how do we become conscious of it, how do we distinguish it in the region that is actualized with it? We begin from this undivided representation (that Bergson will call "dynamic scheme"), where all the recollections in the process of actualization are in a relationship of reciprocal penetration; and we develop it in distinct images that are external to one another, that correspond to a particular recollection" (Deleuze 1991: 66).

It is the task of rotation, therefore, to materialise a particular memory in the image and discern it from the general past within which the image is recalled. In other words, recollection prepares the ground for memory to be perceived again and thus be again recalled in the present moment. These two processes – translation and rotation – take place simultaneously, in order to form "the properly psychic moments" (Ibid.: 70). In contrast, two remaining processes – dynamic and mechanical movements – depend on the attitudes of the bodies and sensori-motor features. More specifically, dynamic movement is the attitude of the body that determines and sustains the stability of translation and rotation. Mechanical movement is an automatic recognition that takes place on the level of perception, and thus, it represents the very final stage of the actualisation. Similarly to translation and rotation, dynamic and mechanical movements are executed synchronously in order to evoke attentive recognition. These four stages, Deleuze concludes, eventually embody "the adaptation of the past to the present, the utilization of the past in terms of the present – something that Bergson calls "attention to life" (Ibid.).

As I suggest, this elaborate four-stage process of actualisation of pure memory into conscience memory can be projected on the mechanism of materialisation of video images. In general terms, similarly to memory that should be actualised in the present perception, video must also be embodied in the image. Previously, I have stressed that for Bergson, the process of recollection functions in reverse order – moving from the past into the present, from pure memory into present perception. In this regard, translation in Deleuze expresses the particles of light which travel from the distant layers of the past into the nearest past – the present[34]– and, by doing so, transfer memory (in its materiality, as it is understood by Bergson) towards the present moment in order to find the points of connection with it. Rotation, in turn, can be

34 Keeping in mind that in Bergson, the present moment is already in the past, I can specify it as a 'present-past' or one of the closest layers of the past.

abstracted to the complementary to translation moment when light, after being captured by the camera, is further actualised on the surface of vidicon by being decoded into the video signal. In this process, a sensitive surface of the camera also acts akin to both dynamic and mechanical movements: on one hand, it reacts on the light flickers thereby ensuring the harmony of the two preceding moments, and on the other, it also mechanically scans translated signals into scan lines of video. In general, the above mentioned analogy can be schematised as follows:

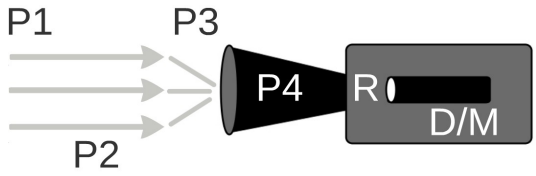


*Fig. 3: Actualisation of Memory as Materialisation of Video*

In the scheme, P1, P2, P3 and P4 are the layers of the past in which P4 is the nearest. R and D/M stand for rotation, dynamic and mechanical movements.

Noteworthy, for Deleuze, all these four stages are essential in oder to bring the memory of the past in the present. In case of missing rotation, for instance, one particular memory cannot be discerned from the whole chunk of the past it belongs to. In case rotation occurs and distinct images of the past are formed without prior translation, they would be detached from the whole of memory. By the same token, video cannot come into being if it by-passes one of the stages of its formation: if light neglects vidicon or signals sidestep scanner, the result will output only noise which in some cases could probably be even ungraspable by human senses. In my opinion, such an analogy simplifies the understanding of both the processes of materialisation of video and actualisation of memory. However, I want to add that the description offered above is incomplete. More precisely, in both cases, it lacks a very final yet probably the most important so-called 'fifth' element. In case of memory actualisation, the missing element is a kind of a new presence that 'animates' memory making it finally embodied in perception. In case of video materialisation, the lacking element is an artist who endows video with a sort of special 'liveness' making it indeed an affective and vibrant work of art. These two elements are analysed in more detail in following chapters,

when I finally come closer to the role of an artist in the process of making video art.

### 4.4. Duration as Temporality and Modulation of Video

Taking into account the above mentioned signaletic features of video and bearing in mind the analogical connections in both mechanisms of memory and video, it is now possible to descent to the details. First, and, in my opinion, the most obvious would be to project Bergsonian duration of memory onto the temporality of video that was an essential and explicit component of early video art.

According to Deleuze, Bergson assumes the existence of a multiplicity of durations at the same time suggesting that all these durations unfold in the unified duration – "a single livable and lived time" (Deleuze 1991: 84). The artistic medium of video, by the same token, introduces this total duration expressed in the continuous movement of light on one pole, and also creates its own individual duration via the specific temporality inherent in this medium. This latter duration of video can be the one that particularly correlates with a psychological duration to which Bergson refers when he talks about human duration. Human duration, or "the duration of the spectator", is both "a flux of Time" and "the representation of Time" in which "all fluxes are engulfed" (Ibid.: 82). Hence the presence of a unified Time and the multiplicity of actual fluxes or temporalities[35]. Deleuze highlights that for a man coming to existence already in the human condition of a high degree of relaxation it is very difficult to understand the meaning of "creation" – the essential notion for every artistic formation (Ansell Pearson 2007). Trying to comprehend the movement of time, early video artists approached the latter as a special material – the object of their artistic investigations and the field for their ambitious experiments. In these experiments, time was extended, contracted, rewinded, delayed and encapsulated into a variety of repeated and reorganised loops. Since feedback or 'closed circuit' will be inspected in the Chapter 4.6, in this paragraph, I want to analyse the mechanism of looping in more detail.

Looping is one of the most popular techniques of working with video used equally by artists on the early stage of video development and later, with the proliferation of digital video. However, whereas in contemporary practice loop has become a key exhibition device,

35 In order to clarify Bergson at this point, Deleuze turns to the theory of Relativity and explains that Einstein's relativity expresses the symbolic factor of time and not time as something lived or experienced. (Deleuze's detailed explanation can be found in *Bergsonism* 1991, pp. 82-85)

in the early experiments the looping technique was incorporated as a “genuine part of the temporality of the work” (Ross 2006: 98). Video loop is the potentially endless repetition of a one sequence which can either be performed in real-time, or pre-recorded on the tape and then repeated in circle motion. In Bergson's ontology, the notion of repetition is the cornerstone of evolution of life. It is aligned to matter and opposed to contraction which defines duration: “repetition is the mode of a present that appears only when the other present has disappeared — the present itself, or exteriority, vibration, relaxation” (Deleuze 1991: 45). In contrast, duration, because of its capacity to create difference, disrupts the condition for repetition to happen. At the same time, both repetition and difference are the essential components of life and, by the same token, the necessary parts of memory. Thus, a habit-memory with inherent in it automatism, is entirely based on repetition. The sensori-motor mechanism conserves the discontinuous past in the body by means of automatic recognition. Since memory consists of both elements of repetition and contraction, it has the ability to multiply itself and maintain itself. As Deleuze explains, the “identical elements of material repetition blend together in a contraction”, and the contraction “presents both something new, i.e. difference, and degrees which are the degrees of this difference itself”. In this sense, he concludes, “difference is still a repetition” (Ibid.: 47).

On one hand, video is a mode of technology that is based on the repetitive movement of signals which travel back and forth through the surface of vidicon. On the other, in the process of such a movement, signal changes itself, and akin to Bergson's duration, alters its own nature. Loop therefore is the materialized amplification of this action – the metaphor of difference that, according to Deleuze, is still a repetition. Furthermore, similar to memory that coexists in the present with that which it recalls, looped video, likewise, embodies the certain past that is invoked in the present moment. In this very embodiment, video simulates our psychological duration: it actualises virtual possibilities of light to create images and thus evokes memory which becomes complete when we perceive the video image. Because of the immateriality of signals, it can be suggested that video as both technology and an art medium is more capable of contracting than our consciousness. At the same time, due to the repetitive motion, it also shares a high degree of relaxation, and because of this, it can materialise images of matter.

Whereas video loop is the projection of human duration, the energy of light is the

analogy of a unified duration in which all other durations coexist and are represented together. It was already outlined that modulation[36] of light is at the kernel of transmission of video signals. In the context of video art, light is a flow of energy which on one hand, brings video into being (because video is made of light), and on the other, makes it happen on the screen (because light is needed to reflect the output energy). In turn, duration, as it was explicated in the previous chapter, is memory, or following Deleuze's precision, "the coexistence of degrees of difference" (Deleuze 2004 [1956]: 39). And it is exactly the conscience memory of the past that actualises the latter in the present via continuous duration.

For this reason, if seen from the perspective of duration, electromagnetic energy of light becomes indeed the carrier of information preserved in matter in which the moments of time exist outside each other in an un-synthesized manner. The whole universe is shaped from "modifications, disturbances, changes of tension and of energy, and nothing else" (Deleuze 1991: 76). At the level of video transmission, this process is described via the modulation of electromagnetic radiation, both visible and invisible. Contemplating on the potentialities of video for creation, Bill Viola suggests that just like in Indian and some Asian religions the origin of the world is grounded in sound, video is a filed of "living dynamic energy", a vibration of moving electrons. In fact, he concludes, video is just of one of many potential effects of frequency modulation (Viola 1998 [1986]: 158).

As a thinker of flows and intensities, Deleuze conceptualises modulation in various ways. In this work, I departure from his definition of signaletic material, since it is directly connected to my analysis on one hand, and contributes to the discussion on the indexicality of analog video, on the other. As it was stated, video is inherently a signaletic medium, and this in turn determines its transformative nature. For Deleuze, signaletic material "includes all kinds of modulation features, sensory (visual and sound), kinetic, intensive, affective, rhythmic, tonal, and even verbal (oral and written)" (Deleuze 1997b.: 29). However, as he continues in the same passage, this is "neither a language system nor a language". For him, signaletic material can be articulated through the modulation of flows, when a "plastic mass" expresses a whole which changes itself through the process of differentiation. The question of language is of high importance to Deleuze, since he thinks of signaletic as "a-signifying and

36 In electrical engineering, modulation is defined as the process of taking information bits and mapping them to symbols (Parker 2010: 81). In this work, however, I rely on the definition of Deleuze in which modulation is conceived by means of various modifications, disturbances and changes of tension and energy (1991).

a-syntaxic material" that is not formed linguistically. In fact, diverging from Bergson, he proposes to think of cinema by means of flows, intensities and modulations of such a signaletic material[37]. Although the medium analysed in this paper is video (and previously it has been suggested that cinema and video are two distinct media), the signaletic features of cinema advocated by Deleuze in relation to cinema can, I argue, be also projected on video in both technological and artistic senses.

First, video in its plasticity is not formed linguistically but created from the 'light of the day' – from the modulations of electromagnetic energy captured and processed by a camera or other similar device. Second, video can be shaped and re-shaped with respect to its form and content, yet it is not a pure abstraction to the extend that it nevertheless bears the physicality of analog signal. Finally, in video, modulations highlights its 'unutterability'. This implies that video is by any means beyond representation through language: it can neither be sufficiently described, nor accurately expressed via language. And here once again we encounter the non-representational capacities of video as an artistic medium. Since modulation is a process of transformation at every single moment, it is deprived of the representational stability. More specifically, for Deleuze it is the "operation of the Real" because it "never stops reconstituting the identity of image and object" (Ibid.: 28). "The video image is a standing wave pattern of electrical energy, a vibrating system composed of specific frequencies …", writes Bill Viola, and concludes that the "vibrational acoustic character of video as a virtual image is the essence of its "liveness" (Viola 1998 [1986]: 158).

This idea that video images were nothing more than electromagnetic energy of light unfolding in time was central for Woody Vasulka. His video work "The Matter" (1974, USA)

37 Hence his disagreement with Christian Metz and Umberto Eco who, in his opinion, strived to assimilate the cinematographic image to an utterance: "The root of the difficulty is the assimilation of the cinematographic image to an utterance. From that point on, this narrative utterance necessarily operates through resemblance or analogy, and, in as much as it proceeds through signs, these are 'analogical signs'. Semiology thus needs to have a double transformation: on the one hand the reduction of the image to an analogical sign belonging to an utterance; on the other hand, the codification of these signs in order to discover the (non-analogical) linguistic structure underlying these utterances. Everything will take place between the utterance by analogy, and the 'digital' or digitalized structure of the utterance." (1997b.: 27). The problem of such an assimilation, according to Deleuze, is that once it is made, the movement – or differentiation – is by definition taken away from the image. As a result, relying on linguistics in the attempt to decipher cinema, we are at once deprived from the potentiality of cinematic medium to manifest the modulation of the movement and endow the cinematic image with a "false appearance" (Ibid.). What is more, without movement, following Bergson, everything becomes matter, and the distinction between image and object is vanished. For Deleuze, semiotics is "the system of images and signs independent of language in general" (Ibid.: 29). The greatest oblivion for him is to analyse cinema though the narrative. This is exactly the point reiterated by Deleuze in his attempt to read cinema as a signaletic material.

is created from different waveforms (sine, triangle, and square waves) produced by the waveform generator and modulated by the Rutt/Etra processes. Because of such a complex alteration, the waveforms that emerge on the screen create the illusion of three-dimensionality thereby demonstrating the variability of time and energy in video (ill. 6). As a result, one can witness how a plain surface of grey matter highlighted by the blue background is constantly changing its form and shape thereby creating a kind of visual modulation on the screen. Even though various waveforms are being shaped into something that can from time to time remind us a certain geometric figure or a building block, it still hinders representation from evolving into something at least slightly coherent. Once we have established the relations of resemblance with something that looks familiar as, for instance, a rectangular prism, grey matter has reshaped itself and has shrunk into something different, as for example, a zigzag or a serpentine shape. Eventually, as it derives from such an alteration, representation slips through our fingers implying the 'unutterability' of modulated signal, its tendency to expand outside the boundaries of both representation and the screen. Woody recalls:

> At that time, I was totally obsessed with this idea that there was no single frame anymore. I come from the movies, where the frame was extremely rigid, and I understood that electronic material has no limitation within its existence. It only has limitation when it reaches the screen because the screen itself is a rigid time structure (Vasulka quoted in Gill 1976: 47).

Continuous modulation of electronic signal therefore is the key feature of analog video and the link that unites video and memory together. At the same time, Spielmann recognises the apparent connection between the continuous in analog and the discrete values in digital signals, however for her, this connection exists in the form of the affinity and inheritance, when the digital inherits the technology of analog video (Spielmann 2010). Developing this argument, Spielmann writes that analog video shares at once features of the analog and the digital, and these common properties, in her opinion, derive from the signaletic character of video. Indeed, similarly to immateriality, non-fixity, and modifiability inherent in the digital, analog video, likewise, shares the same characteristics: fluidity and non-fixity of electronic signals, their omnipresence in the camera and in the monitor, immediacy and performativity. At the same time though, analog video possesses individual and distinct from the digital features such as flicker artefacts, low resolution, fuzziness of recording and propagation of the signal. “Both the signal transmission and the information compiled in the image connote the fundamental instability of the audiovisual medium”, explains Spielmann (Ibid.: 47). In turn,

this kind of instability of the video medium endows analog video with a special 'liveness' – the property that, in my opinion, defines the analog on the first place, makes it indeed a unique art medium, and also differentiates it from its direct successor – the digital. The latter point in this discussion finally brings me closer to the question of indexical connection of video with the physical world on one hand, and opens the debates on the digital/analog, on the other.

### 4.5. Reflexivity and Indexicality of Video Art

The digital-analog debates encompass a large variety of topics, questions and approaches which, because of the limited scope of my research, cannot be thoroughly analysed in this paper. The reason, however, why I nevertheless want to touch upon some aspects of the digital-analog discussion lies in the question to what extent the model of memory that I build based on the theory of Bergson can be applicable to digital video/media art and can also be discussed in the frame of hybrid media. In this context, I think, the difference between analog and digital video is important, since it helps to enquire into the 'liveness' of video as a magnet for early video artists and 'image-technicians', in particular. In addition, these debates also compliment the process of modeling of memory in Bergsonian theory as a kind of memory that bears a physical bond with the world. Finally, all together it brings me closer to the role of an artist in video art, and thus, helps to boost the model of video as an art medium.

The difference between analog and digital video can be explained from a number of various angles. In my opinion, in discussing Bergson's theory, one of the most rewarding approaches is to follow the elaborate division between the digital and the analog explicated by Deleuze. To some extent, the distinction that he draws logically derives from the previous discussion on modulation. Thus, developing the idea of modulation of signaletic material, Deleuze brings up to the foreground the question of digital-analog and explains both terms metaphorically through two modes of mediation: direct material and indirect immaterial. For him, it is not suffice to draw the line between the analog and the digital at the level of resemblance assigned to the former and “code, convention, and combinations of conventional units” attributed to the latter (Deleuze 2003: 114). Likewise, it is not enough to think of the analog by means of a certain immediate presence and the digital as something that should be learned. Instead, he conceives analogical and digital modes of expression by virtue of their

ability to generate sensations.

More specifically, Deleuze stresses that analogical is “a language of relations, which consists of expressive movements, paralinguistic signs, breaths and screams [...]” (Ibid.: 113). To better illustrate this dense though ambiguous argument, he brings up the example of analogical language in animals and writes that rather than to be found in the 'songs' which animals 'sing', analogical language is one of animals' “cries, variable colors, and lines (attitudes, postures)” (Ibid.: 114). Digital language, in contrast, is the language of codes and symbols, yet it can nevertheless cover a certain degree of analogy: either “analogy by isomorphism, or analogy by produced resemblance” (Ibid.: 115). What is more, Deleuze also highlights that even the analog can be stripped off to two different forms. One such a form is based on figurative resemblance (as for instance, in case of the photograph which captures relations of light), and the other is a kind of resemblance “through nonresembling means” (as for instance, in case of the painting). This latter form of the analog is a sensible resemblance, in which “instead of being produced symbolically, through the detour of the code”, the analogy is “produced “sensually,” through sensation” (Ibid.: 115-116).

In order to expand this discussion, Deleuze evokes the notion of the diagram which, for him, is the “agent” of the analog, and stresses that the former acts as a modulator and not as a code (Ibid.: 120). In fact, according to Deleuze, it is precisely modulation (and not resemblance) that makes it possible to inquire into the nature of the analog as a diagram. Modulation therefore is an indispensable property of the analog, a sensible movement of flows, and a heterogeneous field of intensities. By the same token, following the line of Deleuze, analog video, which is made of continuous modulation of electronic signal, can be conceptualised as a kind of diagram in which “manual order will have been used to break all the figurative coordinates” and to liberate “lines for the armature and colors for modulation” (Ibid.). In other words, Deleuze sidetracks a more traditional point of view on the distinction between the analog and the digital that derives primarily from indexical connection or figurative resemblance. It is important to stress, in addition, that Deleuze follows Peirce in his assumption that indexical relations, relations of resemblance and symbolical connection cannot be separated from each other and exist in affinity. This is why, I think, the notion of diagram, which requires that we acknowledge modulation as a constructive force, helps to understand the nature of analog in arts to a greater degree. In this regard, I propose that

Deleuze's analogical diagram as “the operative set of asignifying and nonrepresentative lines and zones” (Ibid.: 101), if applied to video art, is precisely something akin to the 'liveness' of video – the vibrating energy of analog video as an artistic medium. But there is more to this. If going back to the comparison of the mechanism of actualisation of memory in the theory of Bergson and the process of materialisation of video (Chapter 4.3) in which the latter is encoded into video signal, the important questions remain unsolved. Namely, to what extent it is possible to think of analog video as an entirely analogical diagram, and to what extent the language of relations, or analogical language makes video an art medium?

Unfolding Deleuze's concept of diagram in this direction and additionally evoking Spielmann's conclusion about the ambivalent status of analog video as something that shares at once the features of the digital and the analog, I want to propose that the nature of analog video, because of its simultaneous alliance with technology and art, can better be understood by means of a paradoxical status of two particular diagrams[38] in Deleuze – abstract art and abstract expressionism. On one hand, the diagram in abstract art is based on a paradoxical code – something that rather than being opposed to analogy, “takes analogy as its object”. As Deleuze further clarifies, “it is the digital expression of the analogical as such” (Ibid.: 117). The paradoxical status of this type of diagram with respect to video implies that being initially analogical, video, like abstract painting in Deleuze's example, passes through a code rather than a diagram, and by this, following Deleuze, it obtains a special capacity “that borders on the impossible” (Ibid.). On the other hand, it can be also said that video shares features of the second type of diagram – the diagram of abstract expressionism. In this connection, the former also borders on impossible akin to the abstract expressionists, by having an ability to expand the diagram, “take it for the analogical flux itself”, and direct it toward itself, thereby surpassing any code whatsoever (Ibid.).

With respect to video art, such a self-directness or reflexivity of video has been the

38 In discussing the notion of diagram, Deleuze distinguishes three types of it. First, he speaks of the diagram in abstract painting and characterises it by optical space, digital code, line with a contour, a special kind of tension and an inner infinite vision. Second, he refers to the diagram in abstract expressionism and describes it via manual line without contour, totality of the painting, chaos deployed to the maximum and decomposition of matter. Finally, he discerns the third type of a diagram – neither optical, nor manual – it is characterised by “the precision of sensation, the clarity of the Figures and the rigor of the contour” (Deleuze 2003: 109). For my argument, however, I use the concept of diagram in more general sense as an asignifying and nonrepresentative element. For me, it is more important to understand the paradoxical nature of video art by combining all these diagrammatic features together than to inquire in the concept of diagram with high precision.

predominant topic in the critical analysis of video since its first appearance in the form of an art medium. Similarly to the digital-analog debates, the issue of reflexivity could be discussed from a number of different perspectives, and for this reason, in order to draw the connection with the model of memory based on the theory of Bergson, I focus on two key concepts. More specifically, the most influential historical accounts on video's reflexivity can be found in the writings of Rosalind Kraus and Yvonne Spielmann.

Krauss's essay "Video: The Aesthetics of Narcissism" (1976) analyses works of those artists who used a video camera as an alleged mirror[39]. When interacting with the camera's feedback in real-time as with the mirrored self, these artists, according to Krauss, exposed the symptomatic characteristics of video, namely, a state of a narcissistic re-projection in which the body or psyche becomes self-encapsulated or literally surrounded by itself. In this perpetuated continuity of the renewed images of the artists themselves, video brings the sense of a collapsed present. For Krauss, therefore, such a form of a narcissistic enclosure is inherent in the video-medium, and for this reason, she recognises the reflexive mode of video in the process of "consciousness doubling back upon itself" (Krauss 1976: 55). In other words, by highlighting the reflexive features of video, artists aimed at the separation of forms of art from its contexts but instead, they exposed and critically accounted a vague narcissistic suppression as a form of "bracketing-out the world and its conditions" (Ibid.: 64).

Unlike Krauss who does not speak of a physicality of the medium but highlights its psychological side that starts from the evident resemblance and ends in apparent uncertainty, Spielmann does quite the opposite. For her, the artistic destabilization of form and context lies outside the question of video's reflexivity. Instead, she brings to the foreground the technological characteristics of the art medium and emphasises the self-directness of the signal transmission in video art. Thus, the example of Steina Vasulka's "Orbital Obsessions" (1977, USA) that Spielmann provides in her book sheds more light on the reflexivity of the signaletic medium. In the artwork, Vasulka positioned two cameras in such a way that they face each other creating a closed-circuit of video transmission akin to a surrounding studio (ill. 7). By altering the image sources through processing, keying, and sequencing, Steina multiplies the feedback and interferes the spatial complexity of the initial feedback structure.

39 Krauss centres her argument around the works of Vito Acconci (Centers, 1971; Air Time, 1973), Richard Serra and Nancy Holt (Boomerang, 1974), Bruce Nauman (Revolving Upside Down, 1968), Lynda Benglis (Now, 1973), Joan Jonas (Vertical Roll, 1972) and Peter Campus (mem and dor, 1974).

As a result of this process, the reflexiveness is achieved via the immediate feedback of the electronically generated images on one hand, and via the interaction of the artist with the medium, on the other. Spielmann explains that a video image, electronically generated in such a way, eventually radiates its immediate presence right where the artist (or the viewer) is located (Spielmann 2010). By this, she makes an accent on the signaletic features of the medium and its instantaneous responsiveness. In other words, Spielmann explicitly highlights the reactive capacities of electronic signals and emphasises the continuous expressive movement of the flow of the electrons.

Both above mentioned approaches towards reflexivity of video could be stretched out onto the mechanism of memory in Bergson in its own manner. Krauss locates video in the domain of psychic which not only doubts its own existence but also questions the existence of the 'real', and in doing so, she directly opposes Bergson's views on representation as something that unfolds together with consciousness via continuous action of memory. Moreover, her views on video art doubt the continuity of duration in Bergson and suggest the conservation of the present in psychic. In this regard, the type of reflexivity she speaks of can be comprehended by means of contra-duration. In contrast to Krauss, Spielmann attempted to decompose the technical mechanism of the video medium. From this perspective, I suggest, Spielmann's idea of reflexivity could be aligned to the functional expressivity of memory in Bergson. More precisely, in Bergson's theory, the capacity of images to act and react on the external processes in the universe, as well as to be responsive to the internal processes inside these images, could possibly be projected on the mechanism of video's reflexivity described by Spielmann.

Even to the larger extent, however, the expressivity of the images Bergsonian universe consists of is closely connected to the above mentioned problematic notion of the indexical relations in video. In suggesting that video is a reflexive medium, Spielmann also touches upon the representational capacities of video images. However, for her, the representation of video primarily lies in the physical reference. As she elaborates, whereas in analog video the physical relations between the images and the content they refer to are preserved, in digital video these relations are irreversibly severed. At the same time, she also points at the very ambiguity of the indexical connection in video images. According to Spielmann, because of the general immateriality and malleability of video, the sharp difference between analog and

digital inherent in film and photography is blurred. In turn, this intermediate position between analogue recording and digital simulation is precisely something that makes video a reflexive medium (Blom 2013).

In this regard, Blom offers a third definition of video's reflexivity that can be located in-between Krauss and Spielmann and, at the same time, can also expand the discussion on video's indexicality explicated in this paper. More specifically, Blom especially emphasises the capacity of video to act and produce difference. Making references to the writings of Lazzarato in which he analyses video from the technological perspective and claims that the medium of video reproduces the contraction–dilation of time (Lazzarato 2007), Blom draws a conclusion that video art produces a new way of thinking that spins around a phenomenon of real time (Blom 2013). To some degree, this latter approach is reminiscent of Deleuze's understanding of the difference between the analogical and the digital modes of expression by means of their ability to generate sensations. Yet, I think, both Lazzarato and Blom help to inquire about a phenomenon of real time video from a slightly different angle.

In Lazzarato's opinion, when applied to real-time technology such as, for instance, television and video art, Bergsonian theory opposes alternative theoretical views in philosophy, according to which the temporality of the latter spatializes time, and thus, artificially constructs a fourth dimension of space (Lazzarato 2007). In particular, the argument, closely related to this, is pursued by Paul Virilio who stresses that the appearance of cinema in the end of the 19$^{th}$ century has already implied a different mode of perception and initiated a general transformation in “shared temporal rhythms of life” (James 2008: 191). For Virilio, therefore, video, similarly to cinema and television, modifies “the light of day” and brings a kind of uncertainty without any relation to real time whatsoever (Virilio 1991: 14). In video, time becomes not only artificially instantaneous and averts delays and intervals, but it also turns into something that imposes new modes of thought and cognition (Lazzarato 2007). In my opinion, it is possible to conclude that for Virilio, the indexical connection of analog video with the world is lost in its unstable “images whose sole duration is that of retinal persistence” (Virilio 1991: 26). By and large, the loss of spatial and material reference advocated by Virilio opposes Bergsonian viewpoint, according to which “the reality of things” is not “constructed or reconstructed, but touched, penetrated, lived” (Bergson 1911: 75). For Bergson, time unfolds only in duration, so to speak, in the real time of movement, because it

acts and produces difference. For this reason, Bergson thinks of time as a carrier of creative forces, a bearer of choice, and an indivisible change of live.

As I attempted to show, both notions of the analog and the digital entail a range of contradictive questions that remain baffling for scholars inquiring about the difference between these two modes of expression in art and technology. If projected on video art, the analog could be distinguished from the digital by means of indexical connections that are preserved in analog video and severed in digital. However, since I have left aside a number of theories that deal with the analog-digital debates from various angles, I would like to stress that the latter distinction is only one of the possible, yet the most common among the researches in this field[40]. Moreover, as I have described, the line of thinking based on indexicality does not fully extricate the digital-analog question in video because of the ambiguous 'in-betweenness' of the latter. For this reason, as I have proposed, Deleuze's idea to distinguish between the analog and the digital based on their capacity to produce sensations seems to be more appealing, since it takes into account a notion of modulation as a constructive force, and in doing so, helps to establish the analogy between the creative potential of analog video in arts and Bergsonian idea of duration as living force. On the other hand though, I have also demonstrated that such a point of view is only one of many, and there might exist alternative ideas regarding the 'creative' potential of video art. Nonetheless, I remain in agreement with Bergson and Deleuze and therefore, while continuing my endeavour into the process of experimental modeling, would like to turn to the probable potentialities of video to surpass habitual perception and extend the range of memory actualisation.

### 4.6. Altering Perception: Synthesis and Processing

In the frame of last aspects of video in connection to Bergson's idea of memory, which, I think, can contribute the research topic and expand the argument that I have been developing so far, I want to touch upon the notion of habit. More specifically, I intend to briefly discuss

40 Alternatively, there exist opinions which question the disappearance of indexical relations in the digital. Thus, following philosopher Manuel De Landa and physicist David Bohm in their assumptions that the distinction between organic life and nonorganic matter is arbitrary and 'inert' matter, similarly to animated, can exhibit self-organising behaviour and obtain experience, Laura U. Marks develops the argument that digital media “are constituted by material processes no less than photography, film, and analog video are” (Marks 1999: 67)

video synthesis and video processing with regard to their ability to expand our perception of 'reality' and soften the bounds of habit. My further hypothesis is that video art can expose the habitual nature of our perception and point in the direction of how to loose these restrains and surpass the boundaries of the repeated day-to-day mode of living. In addition, I consider this sub-chapter to be the attempt to find a more applied outcome of my paper, and a step closer to the assumption that video art, if analysed from Bergsonian perspective, can potentially lower the perceptual threshold, and inversely, can therefore create more possibilities for memory to be actualised in the present.

According to Bergson, habit exists in the body. He explains it by means of evolutionary adaptation which is needed to condition the survival of life. At the same time, he also criticises habit for its automatism and discontinuity. First, rather than reflecting the nature as it is, habit creates a kind of habitual representation of the world (Ansell Pearson *et al* 2002). Second, it results in the habitual confusion of time with space (Ansell Pearson 2007). Finally, habitual perception neglects duration and describes the complex process of actualisation of memory as a single utilized movement (Bergson 1911).

Analog video as a medium of video art, it was suggested, is made of modulation of signal. By the same token, these signals are made of analog waveforms which, in turn, exist in the universe as light energy. For this reason, I propose, the medium of analog video does not create the representation of the world. Instead, the representation is created simultaneously with the operation of our mind which tries to translate between movements and decipher what is 'sees' on the video screen. A video camera in this regard can detect a kind of phenomena which human mind cannot recognize and discern those waveforms from the universe which we cannot perceive. Further, it was also stressed that video is a temporal medium, it does not exist in space but 'happens' in time akin to duration. Finally, I argue, video as an artistic device does not neglect duration but, in contrast, appreciates it trying to surpass habitual perception.

Developing Bergson's concept of habit, Deleuze writes that the mode of being built on habit hiders the possibility “to go beyond the human condition” and prevents the experience of “durations which are inferior or superior to our own” (Deleuze 1991: 28). For instance, a limited bandwidth of our eyes not only prevents us from being overwhelmed with the exhaustively vibrant spectrum of light, but also filters matter allowing us to see only 'visible'

images. In turn, our mind habitually reconstructs the movement by means of isolating the fragments of reality, erasing all subtle differences between them and creating a kind of 'simplified' movement. Video art in this regard tries to push the boundaries of reality and suggests that something might exist beyond. At this point, I think, it is relevant to evoke the idea that video art is closer to intuition which, for Bergson, is “a fully developed method” that “already presupposes duration”, as well as the possibility of knowledge of life as an open and dynamic system (Deleuze 1991: 13). It can be suggested therefore that, like intuition, video slightly opens the access to pure memory and pure perception, and if it is combined with the mind which is “a storehouse of motor habits but not of memories” in the first place, it can also extend the human present (Bergson 1975: 35). “The human condition is the maximum of duration concentrated in the present, but there is no co-exclusivity to being – that is, there is not only the present” (Deleuze 2007 [1960]: 79). With this in mind, I want to turn to the medium of video and inspect its capacities to expand the present. In my opinion, the most evident perceptual alteration that video art brings is achieved via the technique of feedback, video processing and video synthesis.

Video feedback is the trademark of early video art. Together with the real-time mode of transmission, it constitutes the main distinctive features of video as an artistic medium. More specifically, video feedback is generated when a video camera and a monitor connected to the camera are directed at each other thereby creating a so called 'closed circuit'. Such an arrangement produces a technical effect in which the inputted and outputted information interact with each other. In general terms, video feedback is an equivalent of audio feedback to the extent that both are based on the same mechanism of the amplification of the signal. In the process of the information exchange, some parts of the output signal are sent back to the input and otherwise, and this, in turn, constantly amplifies the signal. For video feedback to be created, it does not require such techniques of manipulation with an image as video processing or synthesis, yet they can be creatively combined in order to produce more complicated alterations. Additionally, it is also possible to alter feedback signal by rotating the camera, zooming, manipulating with focus, brightness, or contrast of the image.

The most immediate effect of video feedback is irrational and unbalanced behaviour of video signal expressed in its apparent self-reflexivity and instantaneous echoing. The close analysis with respect to Bergson's idea of simultaneous co-existence of the past and the

present, however, helps to look at the former as an analogy of a single moment of life in which virtual memory that exists in the past merges with actual perception that exists in the present. More precisely, video feedback stands first, for the process of leaping “into the being in itself of the past” (Deleuze 1991: 56), second, for discernment of a proper memory-image from the past, and third, signifies the embodiment of the latter in the present perception.

While the aesthetic effect of video feedback can be described by means of a kind of surrealistic art, the creativity of unconsciousness, the effect of feedback with respect to conventional day-to-day experience results in the disintegration of 'reality' and the possibility to experience everything that lies beyond. In video art, the technology of feedback was widely used by almost every video artist, due to its applicability for nearly every sub-genre of video art (apart from, probably, more politicised documentary video art which tends to stick closer to 'reality'). In this context, Woody and Steina Vasulka were one of the most passionate 'researchers' of feedback and together or individually composed an extensive number of video works based on the effect of 'closed circuit'. I have already referred to Steina Vasulka's “Distant Activities” – an electronic video abstraction created from a processed video feedback (ill. 2) and “Orbital Obsessions” – a closed-circuit of video transmission (ill. 7). Since I have briefly discussed these two videos with respect to non-representational features and reflexivity of video, I want to go back and look at them from the perspective of a feedback technology. Both videos invite into a bizarre sensual adventure akin to immersion into a cosmic surroundings. At the same time, in “Distant Activities”, from video signal Steina shapes a formless radiating body which has nothing in common with something that we might know or experience in everyday practice. Rather than evoking the habitual representation and then changing it, this artwork composes completely new experience that goes beyond human. Video feedback sculpted into a kind of disproportional self-transforming organism also generates a disturbing low sound that contributes to uncanny and almost otherworldly effect of the video work. “Orbital Obsessions”, in contrast, is created from the environment that is more familiar to the eye – Steina's studio and geometrical elements assembled in a segment of machine. However, the effect of further segmentation, rotation and overlapping of images induces the dissolution of 'reality', and in doing so, severs habitual perception of the image. Additional distortion is created by the mirrored camera that multiplies the video image and endlessly replicates it. Like in “Distant Activities”, the feedback in “Orbital Obsessions” also

produces the audible effect that in turn emphasises the distortion of 'reality' and disassociation of the familiar image into the delusional repeated video sequences.

As it is seen from Steina's videos, the effect of video feedback can significantly be multiplied by video processing (also image processing). The latter is the part of a signal processing related to the manipulations applied to video signals in which one video is used as an input and another comes as an output[41]. In video art, video processing emerged as an experimental movement among those artists who were not afraid to expand their creativity with the help of technology, and later evolved into a separate genre of video – the art of image processing. On one hand, video processing in art encompasses a broad variety of alterations of optically recorded video: colourising, keying, switching, fading, sequencing, delaying, looping and other similar manipulations. On the other, it also includes more sophisticated analog computer processing (mostly without videotape recorder), cameraless synthesis, and video modifications by means of raw electronics. Today, most of these operations can be done with the help of a digital computer and a specially installed software, or achieved through the hybrid instruments mediated by the digital computer. Because of the digital interference, the output of such a computer-involved processing will result in the digital video. Within the framework of early video art, in contrast, video processing was possible only by means of the analog hardware or analog computers which dealt with the alteration of continuous waveform without breaking it into discrete time signals.

Video synthesizer, a “tip of the iceberg” of electronic technology and video arts (Beck 1976: 184), is the most advance level of the manipulation with video. Strictly speaking, synthesis is not a processing as such, because, in its purest form, a video input is absent, and a waveform is produced by the hardware. However, in the 70s, many artists used mixed techniques to create the sophisticated video imaging, and for this reason, the process of synthesising of video encompasses both video processing and synthesis. These two processes

41 In commercial application, video processing refers to a broad variety of methods – from the recovery of video, its correction, restoration, enhancement, to video compression and final storage. In the narrow interpretation, even a simple operation of the filtering of video signals is already assumed to be a video processing. The broader definition however, expands the understanding of the processing chain beyond the boarders of the medium. Under this framework, the output is seen as a final decision to be made based on the results of the processed video (for instance, in medicine, hard sciences, computational science, etc). For this reason, video processing has a diversity of applications and significantly overlaps with such traditionally separated fields of studies as communication, computer vision, machine learning, optimisation, etc. In this chapter, video processing is analysed in its direct connection with the development of video art and considered as an important step in the artistic exploration of video as a medium.

allow video to be output either in real-time when the artist interact with video producing direct effects, or through the programmable distance mode when the presence of the artist does not affect the output of video. In my opinion, these two techniques of manipulation of video – video processing and video synthesis – disrupt the stability of our perception and, by the same token, expand the possibilities for memory to be actualised.

Habitual actions give stable perception, and inversely, they also imply a certain fixed limit for the actualisation of memory in the present. According to Bergson, there exists a mutual support between a habit-memory which is tied to sensori-motor mechanisms in the body and a true memory of the past which lays the ground for perception to happen in the present. In fact, as I have explicated above, these two types of memory are substantially inseparable because one conditions the existence of another and otherwise: a memory of the past gives "the direction suggested by the lessons of experience" to a habit-memory, and a habit-memory makes the recollections reappear in the present moment by actualising them in the present perception (Bergson 1911: 132). Likewise, since the act of recollection moves from the past into the present – from the virtual (memory) into the actual (perception), both memory and perception directly determine the existence of each other. On one hand, memory starts from pure memory which further progresses into conscious memory and finally obtains the embodiment into the present perception. On the other, I propose, a perception of the present moment mediated sensually via the body determines the scope of all future recollections that can possibly take place. For this reason, I suggest, the process of lowering or expanding the threshold of perception in the present can influence memory which in the process of next recollection will again proceed from the past and be embodied in the present.

A video "Einstein" (1968, USA) made by Eric Siegel, one of the first developers of early image-processors and synthesisers, eloquently demonstrates the perceptual confusion and also provokes a new layer of memory to be preserved in the past (ill. 8). In this artwork, Siegel used colouriser in order to alter a photograph of Albert Einstein and fuse it to the piece of music of Rimsky-Korsakov. Not only does the effect of the video amend our habitual representation of these two geniuses vividly colourising Einstein's portrait in real time and merging it with the tunes of Rimsky-Korsakov but also evokes the state of delirium which fascinated both Deleuze and Bergson. Furthermore, "Einstein" shows how our senses (sight and hearing) literally blend with each other on one hand, and demonstrates the mutual

relationship of video image and music, on the other. From this perspective, the video of Siegel tries to surpass habit in two ways. First, it influents the habitual way of thinking and destabilises the process of repetitive recognition of external signals we receive from the surroundings. By any means, now, with the proliferation of digital technologies, this kind of experience became a mundane practice, because it can be easily achieved with the help of every portable computer or even mobile phone. At the same time, in the 1960 –1970s, this sort of 'visual hallucination' was rather unusual in many aspects. Since this kind of video manipulations were mostly done in real time, it came as a radical novelty that can be performed only on special occasions (as for instance, art performance). From this angle, early video art can be considered as an agent of perceptual disruption which, after cinema and television, created the firm ground for digital technologies to intervene smoothly in our daily lives. My latter argument, however, opens new political debates on video which I do not intend to develop in this work. At this point, it is suffice to stress that I share an affirmative view on technological development (including, of course, video as technology) as something that can expand our existence, and do not support more utilitarian and kind of fatalistic views according to which technology either exists as a problem-solving tool or as a mode of tyranny gradually enslaving humanity.

Second, Siegel's work also widens the spectrum of recollections that can happen in the next moment of the present. After watching the video which provokes a kind of perceptual confusion, we obtain a new experience in which this sort of perceptual dissociation of reality becomes possible: the experience was visual and audible, and therefore, it can be stored in the past and repeated in the next moment of the present. As a result, it is possible to assume that the amount of the past stored in conscious memory determines the amount of the active recognition in the act of present perception. By the same token, these two elements bring more possibilities for memory to be actualised.

As I attempted to point, video art therefore can loose the restrains of habit, and to some extent, even outstep the threshold of perception thereby laying the ground for the appreciation of duration, memory and intuition. In its large diversity of the forms of video processing and synthesis, it can also open the gates leading to the path that extends the human condition and gives the access to durations superior to our own. Finally, video art as an imaginative, provoking and intelligent art form can bring us closer to the wisdom of life. After

all, as Bergson put it, to philosophise “is to invert the habitual direction of the work of thought”, (Bergson 1912: 69–70).

### 4.7. Body and Real-Time Video

As I have stated in the introduction, in my opinion, video becomes an artwork only by means of a kind of creative synthesis between the artist and the video medium. For this reason, I consider the role of the former to be fundamental for the process of making artistic videos, and therefore, want to extend the modeling that I have done above with respect to a video camera onto the body of an artist. In this regard, in my opinion, the tandem of a camera and an artist endows video with an additional expressivity that moves beyond the current moment towards the arrival of a special novelty – a new present manifested both in our body and in our memory. Furthermore, in doing so, I presume that Bergsonian concept of memory that was initially meant to understand human memory can equally be expanded onto creative synergy that arises from the cooperation of the artist and the medium of video. Such an artistic expressivity comes as a result of a kind of 'inseparability' of video art and the artist, and eventually helps to inquire into the question of what video art is. In addition, I also attempt to compare the medium of video with its openness to the outside world to the affective force of memory with its ability to act on the junction of virtual and actual. Moreover, since the question of where recollections are preserved remains open until now, through such a comparison, I expect to inquire into this intriguing locus of memory.

Advancing into the idea of “shared” creativity between the video medium and an artist, I suggest that such a creativity arises on several layers. First, as it was already noted by Spielmann, it emanates between the artist and the camera in the process of making artistic videos (Spielmann 2004: 22). Second, as I was trying to show in the context of the materialisation of video, a kind of creative exchange also appears between the medium of video and the camera in which the energy of light is encoded into video signals. Finally, and this is the most important point for the discussion in this paragraph, a creative transaction emerges between the artist and the medium of video. In this context, it is also remarkable that video can be generated in real time; furthermore, I would say, this way of creating and performing video is one of the most significant features of video as an art medium.

Touching upon the real-time mode of video, I have outlined that I agree with the views

of Bergson and Deleuze on real time as an active and energetic force of life. By the same token, I have already demonstrated above that in art, video is always in movement, it consists of translation, encoding, modulation, and in the process of its materialisation, video is not fixated anywhere but spread in the body of the camera and scattered between the camera and the monitor. Furthermore, I suggest, video, in addition, emanates its distinct and a very particular presence in the form of a real-time interaction with the artist. This form of interaction is akin to the exchange of energy that takes place in the process of unfolding of memory. Since it was also shown that, like video, memory is always in constant movement and in the process of self-transformation and difference, it is possible to assume that both video and memory share a certain degree of affective force that can be closely related based on its creative capacity for action.

For many artists, video has its source in the live image. Thus, in the interview with Raymond Bellour, Bill Viola comments that with video, everything is connected, and describes the medium of video as “a living, dynamic system, an energy field” (Raymond 1985: 100). “When I first saw video feedback, I knew I had seen the cave fire. It had nothing to do with anything, just a perpetuation of some kind of energy”, reflects Woody Vasulka in the report done by Johanna Gill for The Rockefeller Foundation (Gill 1976: 46). In fact, the whole process of making art videos differs from other modes of artistic creation: one is working with the image, and not creating the image, because, as Viola puts, it is the camera who creates the image, and “it's synchronized with your experience at the moment you're there” (Raymond 1985: 100). Indeed, this approach towards making video art implies that video was considered by the early video artists as an 'intelligent' entity endowed with the immediate capacity to epitomize its electromagnetic energy via its physical presence in real time.

In like manner, manifested in duration, memory, according to Bergson, is force. More specifically, it comprises energy of movement, and has the power to change matter via contraction and relaxation. In turn, 'privileged images' or bodies in Bergson's terminology that act and react upon each other and upon themselves also exhibit power by being able to receive and transmit movements, and thus, produce sensations – the feature of all living beings (Lazzarato 2007). It was already mentioned that bodies occupy a central place in Bergsonian theory of memory, since without embodiment, the latter only doubles perception. More

exactly, by embodiment Bergson also implies the paradoxical co-existence of memory with the present:

> [...] we may speak of the body as an ever advancing boundary between the future and the past, as a pointed end, which our past is continually driving forward into our future. Whereas my body, taken at a single moment, is but a conductor interposed between the objects which influence it and those on which it acts, it is, on the other hand, when replaced in the flux of time, always situated at the very point where my past expires in a deed (Bergson 1911: 88).

In other words, following Bergson, I want to suggest that in the frame of his theory, the exchange of energy happens on different levels. First and the most important, energy is released in the process of unfolding of memory (in duration), because memory is energy, more precisely, the energy of difference. Second, the exchange of energy takes place between the 'bodies', when they receive movements produced by duration and translate them into action. Finally, a great amount of energy is needed to bring the change into the current 'present', namely, to actualise the past and substitute the old present by the new. This is why, as I stressed before, the process of memory actualisation requires the 'fifth element' – "a kind of displacement by which the past is embodied only in terms of a present that is different from that which it has been" (Deleuze 1991: 71). And this completeness, Deleuze summarises, is achieved in the arrival of a new present, the novelty of which we can feel both in our body and in our consciousness.

In the same way, the mechanism of video materialisation described above does not include a very important element that makes video an art form – the artist. One may suggest, however, that video has its own consciousness, technologically determined psyche. No doubt, it can be extended in the fully developed argument[42], yet in video art, especially in its early form, I argue, the intrusion of the artist is of critical importance. Without its maker, video would remain merely a technological offspring and the medium of mass communication akin to television. Yet, because of the artist who endows the medium with the 'fifth element' – a kind of a new presence described by Deleuze – video becomes animated with life, and thus blossoms into video art. Now, if we include the artist into the scheme proposed above (see the Fig. 3), it will look as follows:

42 For instance, the theories of artificial intelligence seek to find the locus of consciousness in machines and define the mechanisms by which the latter can be synthesised; some of the sub-movements within transhumanism suggest the point of technological singularity and propose the fusion of man into machine.

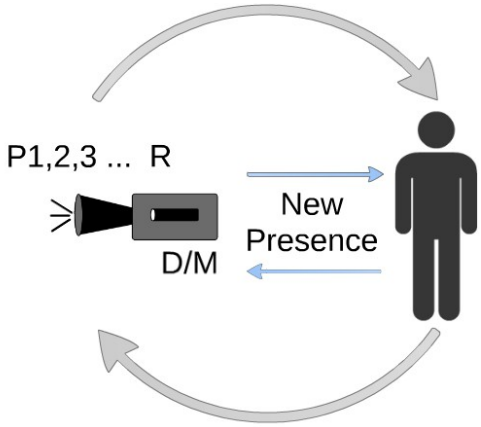


*Fig. 4: The New Presence: Synergy of Video and Artist*

In this context, the intrusion of the artist or, better put, his unutterable contribution and the dynamism of shared creativity which results from such a contribution constitute the ingenious force of creation of the work of art, explaining its mysterious power and perplexing sensual appeal. I should also comment that this idea, to some extent, deflects from the quoted above views on video medium as an independent modality of being. Although, of course, there is obviously much to agree with Viola, both Vasulka, Paik and others that video exists on its own and manifests a dynamic energy of life, I am taking slightly different, though not necessarily incompatible path. In my opinion, in video indeed everything is connected, however, this connection extends farther than the chain of recording (or synthesis), alteration and playback, and involves the artist and the viewer, to say the least[43]. Moreover, I would say that video is precisely something that could be thought by means of Bergsonian open systems – the vibrating, constantly changing energy of life able to transform itself in every instance. In this regard, the presence of the artist and the viewer, and the mutual exchange of creative energy that takes place between them and the medium of video constitutes new becoming that unfolds in the process of real-time performance:

> Situated between the matter which influences it and that on which it has influence, my body is a centre of action, the place where the impressions received choose intelligently the path they will follow to transform themselves into movements accomplished. Thus it indeed represents the actual state of my

43 On the second thought, in perception of video art, similarly to all forms of art, everything makes difference: place, time, environment, even mood of the artists and viewers can alter the sensual rapport with the artwork. At the same time, because I am more interested in the process of creation of video works, I leave the right to withhold the analysis of these elements together with the viewer for the future study.

> becoming, that part of my duration which is in process of growth (Bergson 1911: 178).

In this sense, the last artwork I want to refer to in order to provide a better illustration for my ideas is the video work “Three Transitions” (1973, USA) made by Peter Campus (ill. 9). The video which consists of three short pieces shows the transformation of three different images of the artist in real time. To some extent, this work can be approached as an electronic self-portrait of the artist: by monotonously destroying the image of the self, Campus successively employs such video techniques as simultaneous recording and playback with the help of several cameras and chroma-key effects. In every next piece of this video, artist's body is either torn apart, erased layer by layer or burned on the screen. At the same time, in the process of such an electronic destruction, a new image materialises from the previously ruined one. On one hand, it can be said that these videos imply a kind of electronic resurrection and a sort of non-human endurance referring to the transformative nature of video and the exchangeability of the self images which the artist attempted to construct. On the other, I would argue that these works explicitly point at the creative exchange that takes place between the artist and the medium of video. Thus, describing his approach towards video to Johanna Gill, Campus explains that he is primarily interested in the opposition of human and a camera, a human world and an electronic world, and in the transformation of energy that takes place between these two terrains:

> […] I'm very consciously working with transformations of energy . . . . You think of the video process: light is focused by the lens in the camera, which is photon energy, hits the vidicon tube and is translated into electrical energy, comes out on the monitor as electrons, the stream of electrons hits that phosphorous stuff and becomes light energy, photons again, is focused by the eye, hits the retina and becomes neuron energy. The relationship between all that interests me (Gill 1976: 53).

In order to expand my line of thinking and find the response to the question of memory storage, I would like to elaborate on relational aspect of video art as compared to the active sensual bodies in Bergsonian quote above. Thus, Bergson makes a specific distinction between the subjective and the objective. What we call objectivity for him is the “actual and not merely virtual perception of subdivisions in what is undivided” (Bergson 1910: 84). In contrast, subjectivity is the indivisible process, the operation of subdivision and the movement of consciousness. In fact, Bergson stresses that since the mind pays more attention to its own acts than to “the material on which it works”, we tend to think that we know subjective much better than objective (Ibid.: 85). Hence Bergson's concern with traditional scientific methods

which in his view rather draw our attention to the material than to the temporality of consciousness.

This concept though informative and profound needs an additional explanation which I borrow from Deleuze. For Deleuze, he interprets Bergsonian distinction between the subjective and the objective in the following way. First, he develops the idea that by the objective Bergson means “that which has no virtuality” and suggests that in the objective, “everything is actual” (Deleuze 1991: 41). By extension, the subjective, following Deleuze, is something that is always virtual and exists in the form of duration. Second, because of the actuality of the objective, Deleuze calls the latter “a numerical multiplicity” and concludes that in the objective, there are “no differences other than those in degree” (Ibid.: 43). In turn, he continues, the subjective is “a nonnumerical multiplicity”, it is no longer spatial but purely temporal: it “moves from the virtual to its actualization, it actualizes itself by creating lines of differentiation that correspond to its differences in kind” (Ibid.).

In turn, Deleuze's interpretation points in direction of video art as something that could exist only in relation. First, as I stressed, video is a temporal form of art, it unfolds in time akin to memory in the theory of Bergson. Second, video is virtual to the extent that it is always yet to come: similarly to duration as memory, video does not have the present, because the present immediately becomes the past in every next moment. This is why, I think, video art, especially in the form of real-time performance, is relational and, appropriating Bergson's terminology, purely subjective. By the same token, a third type of 'shared' creativity between the medium of video and the artist proposed earlier is based on nonnumerical multiplicity: it arises in time from the interaction of the artist and the medium, and in so doing, augments creativity actualising virtual potentialities of art.

In a like manner, in contrast to objective matter which has an existence in itself, memory in Bergson is subjective. Like video art, it can exist only in relation to matter and itself. While its relation to matter is expressed by the process of contraction in which memory actualises virtual possibilities of matter, the relation of memory to itself is expressed by its ability to differentiate itself and change its nature. Because of such a subjective character, memory akin to video, cannot be stored somewhere. More precisely, it is preserved only in itself and unfolds in duration, in relation to itself and to matter:

> Whenever we are trying to recover a recollection, [...] we become conscious of an act *sui generis* by

> which we detach ourselves from the present in order to replace ourselves, first in the past in general, then in a certain region of the past — a work of adjustment, something like the focussing of a camera. But our recollection still remains virtual; we simply prepare ourselves to receive it by adopting the appropriate attitude. Little by little it comes into view like a condensing cloud; from the virtual state it passes into the actual; [...] it tends to imitate perception. But it remains attached to the past by its deepest roots, and if, when once realized, it did not retain something of its original virtuality, if, being a present state, it were not also something which stands out distinct from the present, we should never know it for a memory (Bergson 1911: 171).

Deleuze comments that this passage from Bergson's *Matter and Memory* not only fully summarises his theory but also explains the nature of memory, and the locus of recollection. Thus, Deleuze writes that the past in Bergson exists not in ourselves, and by extension, not in our present, but it is "like an ontological element, a past that is eternal and for all time, the condition of the "passage" of every particular present" (Deleuze 1991: 56). More precisely, Bergsonian past for Deleuze endures in general, and in the process of recollection we literally "leap into being, into being-in-itself: into the being in itself of the past" (Ibid.: 57). Hence the explanation of memory as the ontological leap into the past that makes possible recollection in the form of a psychological existence. This is why, both Deleuze and Bergson highlight, we tend to think in terms of the present and inclined to believe that current present becomes past only when it is replaced by another 'present'. However, both refute this idea and explain that the past exists simultaneously with the present. "The past does not follow the present, but on the contrary, is presupposed by it as the pure condition without which it would not pass. In other words, each present goes back to itself as past" (Ibid.: 59). In this passage, Deleuze demonstrates that for the present to become it needs the past with which it can be synchronous. In turn, such a 'present-past' is impossible without the "past in general"– the ontological past in which memory is conserved. Following Deleuze, the present therefore is psychological and the past, in contrast, purely ontological. This is why, as it was stated previously, memory exists only in itself and in the process of materialisation, manifests itself in the present moment through embodied perception.

## Conclusion

In this paper, I attempted to construct an approximate model of memory based on the concept of memory conceived by Henri Bergson on one hand, and to find the analogical connections between this model and the phenomenon of video art, on the other. I have assumed that memory in the theory of Bergson and video art share a number of closely related features that can be approached by establishing a metaphorical connection between memory and video art.

In the process of modeling, I have touched upon the problematic aspects of video art such as its inseparability from technology and diversity of definitions, and have also outlined a number of specific characteristics that define the video medium in art. In addition, I have elucidated the problems that surround memory in the theory of Bergson, namely the absence of memory's storage and its unfolding in time, the reverse direction of its movement, its inseparability from perception, and finally, simultaneous existence of two incompatible notions – the past and the present. However, rather than aiming to resolve these problematic aspects, I wanted to engender arguments, initiate new debates on video as a medium of art, as well as to clarify the mechanism of memory in the theory of Bergson. In this connection, and with regard to the goals that I have outlined in the beginning of this paper, I have come to the following valuable for me conclusions.

First, via the methodological approach based on metaphorical modeling, I was able not only to come closer to the understanding of the concept of memory in the theory of Bergson and the notion of video art, but also to model these two phenomena with respect to each other. Thus, via the metaphorical connections that I have attempted to establish on the different levels, I have discerned common characteristics of video and memory such as transformative plasticity, continuous movement, active 'intelligent' recognition, special 'liveness' reflected in the vibrating energy of both memory and video, and finally, sensual affective force. Likewise, by juxtaposing these two phenomena, I have concluded that real-time video and memory in Bergson's theory cannot be preserved somewhere else but only in itself in the form of duration or temporality. In this regard, it can be said that there is more in virtuality of memory than in

the present embodiment, and by the same token, more in the potentiality of video than in the actual image.

Second, in my attempt to combine video art and memory in the theory of Bergson, I was able to sketch the mechanisms of how memory and video art work. The method of metaphorical modeling, in turn, helped me to project these two mechanisms on each other and thus, to look at them in more detail. As a result of such a projection, I have come to my own definition of video art as a phenomenon in which the medium of video enters in the reciprocal exchange with the artist, eventually culminating in the synthesis of creativity and novelty. This conclusion, however lucid, has derived from my discovery that memory, when embodied in duration and having a capacity for action, can stand for such an analogy of the synthesis between the artist and the medium of video. In my assumption, this synthesis is something that makes video an artistic medium. Moreover, I have also found that video as an art form is able to loose the restrains of habits and to mediate the 'reality' that lies beyond our perceptual threshold and the spectrum of our conscious memory. In this context, I have apprehended video art as an affirmative phenomenon able to expand the horizons of our human existence.

Finally, in the process of drawing the analogy between video art and memory in Bergson, I had an opportunity to check if memory in his theory can equally be compared to the analog and digital forms of video art. In this regard, although, in my opinion, the model of memory that I have attempted to construct significantly helps to understand the nature of early analog video art, it poses a number of questions with respect to digital video art and so-called hybrid video art that encompasses both analog and digital media. Thus, the operation by which the mind discerns movements reminds me of the processes of discretisation that take place in the digital. Similarly to the mind, digital signal is subjected to approximation and selection (sampling and quantisation) which, by the same token, take place when the mind, according to Bergson, translates between movements. Likewise, habit can also be understood as a kind of automatic recognition in the digital, however, this aspect has remained obscure.

In addition, I could not come to the firm conclusion whether digital signal is indivisible like analog signal and memory in Bergson, and whether it exists as a difference in degree or in kind. By the same token, I was not able to agree upon if digital art can bear indexical connection with 'reality' and to what extent we can refer to 'reality' with respect to digital art. Along with the latter aspect, the question of whether digital video art unfolds only

in space or it also progresses in time remained likewise open. On one hand, a matrix of digital image is strongly associated with spatiality, on the other though, digital video manifests its presence in time when it is performed by artists. By extension, space-time discussion triggers such issues as contraction, relaxation, synthesis, subjectivity, non-numerical multiplicity and transformability of digital video. For this reason, the following question arises: to what extent, then, the latter can be conceptualised as memory or as matter in Bergson.

By and large, however, all these open questions imply that the similar research which I have attempted to make in connection to analog video art can be done with respect to digital video art, and the model of memory that I have built can be projected on the latter with proper adjustments. In this context, my sketch can be used in order to find the differences between memory in Bergsonian theory and digital video art. Overall, the above mentioned findings can be summarised in the following comparative table:

*Table: Memory, Matter, Video Art*

| Memory/ Duration | Matter | Video Art/ Analog | Video Art/ Digital |
|---|---|---|---|
| continuous | discontinuous | continuous | discontinuous |
| unfolds in time | unfolds in space | unfolds in time | unfolds in space/in time |
| indivisible | divisible | indivisible | divisible/indivisible |
| virtual | actual | potential/actual | potential/actual |
| simple | complex | simple | complex |
| exists in contraction | exists in relaxation | exists in contraction | exists in contraction/relaxation |
| affective | inert | affective | affective |
| heterogeneous | homogeneous | heterogeneous | homogeneous |
| subjective | objective | subjective | objective/subjective |
| nonnumerical multiplicity | numerical multiplicity | nonnumerical multiplicity | numerical/nonnumerical multiplicity |
| difference in kind | difference in degree | difference in kind | difference in kind/degree |
| synthesis | un-synthesized form | synthesis | synthesis/ un-synthesized form |
| intelligent recognition | automatic recognition | intelligent recognition | intelligent/automatic recognition |
| transformative | static | transformative | transformative/static |
| difference | repetition | difference/repetition | difference/repetition |

In the table, I have summarised the features of memory, matter and video art (both digital and analog) which I have managed to discern in the process of writing this paper. As a result of my analysis, I came to the conclusion that whereas memory and analog video are notions with continuous, simple and heterogeneous modes of expression, matter and digital video operate on the discontinuous, complex and homogeneous modes. With respect to digital, 'complex' means that within one coded sequence of just two numbers there may exist a large variety of combinations. In addition, as it is reflected in the table, digital video also differs from matter and shares similar features with memory and analog video. In particular, based on my conclusion, all three notions are affective (or interactive), and matter, in contrast, is inert. However, with respect to Bergson's theory, this aspect nonetheless requires more thorough analysis if it is to be applied to study digital video art. Finally, I have also discovered that memory and both forms of video carry some differences, which, I think, could initiate a few interesting discussions of this kind. Thus, whereas memory in Bergson is a virtual substance that operates via difference, I came to the conclusion that both analog and digital forms of video combine in themselves virtual and actual presence, as well as reciprocity of difference and repetition.

Lastly, I would like to add that many of the concepts that could have possibly contributed my analysis were excluded because of the time-volume limit. Thus, I did not elaborate on such related to memory components of Bergsonian theory as creativity and free will and almost bypassed the notion of time. Moreover, I think, the concepts of intuition and duration deserve a way more attention that I payed in this paper. Likewise, I left aside Deleuze's ideas of material and spiritual synthesis which, to some extent, could have also expanded the analysis of memory as analog video art and otherwise. Furthermore, the aspect of real-time technology could have been elucidated with higher precision. In addition, as I stated in the paper, I deliberately excluded the viewer from the analysis and concentrated on the role of the artist in the process of creation of video works. At the same time, I consider all these exclusions as a sign of new academical challenges that wait for me around the corner.

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http://www.vdb.org/titles/einstine
9. Peter Campus "Three Transitions", 1973, USA
http://eai.org/title.htm?id=3127

**Videokunsti modelleerimine. Bergsonist lähtuv käsitlus**

**Eestikeelne kokkuvõte**

Käesolevas töös kasutan metafoorset modelleerimist meetodina, mis võimaldab kasutada mälu mudelit videokunsti uurimisel. Täpsemalt loon seose Henri Bergsoni mälukäsitluse ja varase, 1960ndatest 1980ndate lõpuni piiritletava analoogvideot kasutava videokunsti vahel. Mõlemas kontseptsioonid – nii mälu Bergsonil kui videokunst – on jätnud rohkelt vastamata küsimusi, esitades seetõttu uurijatele mitmeid väljakutseid. Samas pakuvad nendevahelised seosed peaaegu läbiuurimata pinnase tulevasteks eksperimentideks.

Bergsoni järgi eksisteerib mälu ajas lahtirulluva kestvusena, mineviku pikendusena olevikku. Analoogvideo, omakorda, omab ambivalentset positsiooni kunsti ja tehnoloogia vahel. Sellel on mitmeid erilisi tunnuseid, mis kordistuvad video kunstilise kasutuse käigus. Oma uurimuses lähtun oletusest, et Bergsoni mälukontsptsioon ja analoogvideokunst jagavad mitmeid ühiseid tunnuseid, mis pakuvad lähtekoha, modelleerimaks mälu videokunstina ja vastupidi – videokunsti mäluna.

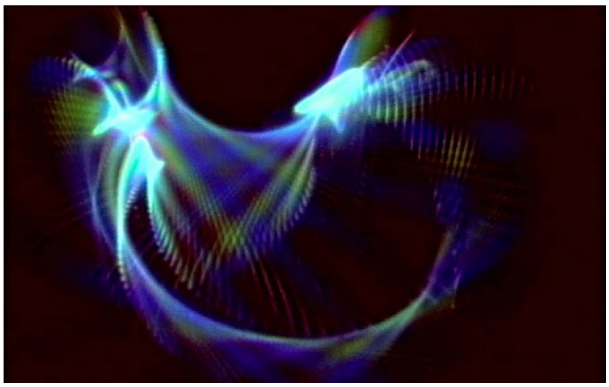
Käesolevas töös ei püüa ma seega üksnes mõista kahte omapärast nähtust – mälu nagu see on Bergsoni poolt kontseptualiseeritud ja videokunsti – ning osutada nende toimimise mehhanismidele, vaid leida selle kaudu ka vastust küsimusele, mis teeb videost kunstilise meediumi. Lisaks püüan ka siseneda laiemasse digitaalse ja analoogmeedia konteksti, uurimaks visandlikult, kas selline, Bergsonist lähtuv mälukäsitlus on rakendatav ka digitaalsele videole.

Seega ei ole mu ambitsiooniks luua uut mälu-kontseptsiooni või väita, et traditsioonilised mälukäsitlused oleksid ebaadekvaatsed. Samuti ei soovi ma konstrueerida video kui kunstimeediumi universaalset mudelit. Ennekõike soovin vaadelda mälu ja videokunsti teistsugusest, minu arvates eksperimentaalsemast perspektiivst ning pakkuda

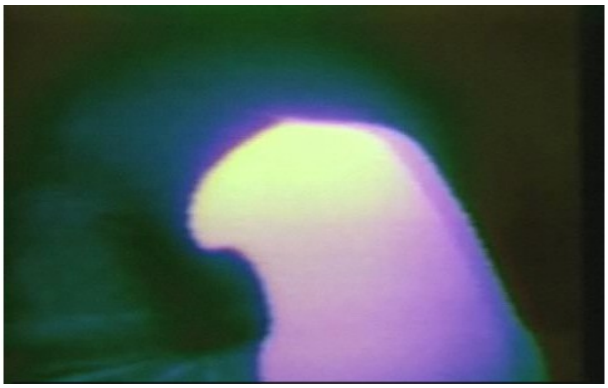
ligilähedase mudeli, mis võimaldaks leida nendele uusi mõtestamise viise. Minu peamine eesmärk olekski see, et käesoleva uurimuse tulemused võimaldaksid kunstnikel ja uurijatel näha oma uurimisala uuel, laiahaardelisemal viisil ja nad leiaksid minu katses modelleerida kahte väga erinevat nähtust uue metodoloogilise tööriista

**Appendices**

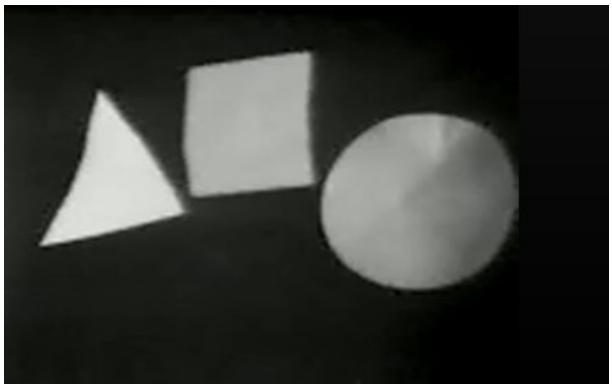
**ill. 1**: Nam June Paik “9/23/69: Experiment with David Atwood”, 1969, USA, 80 min., colour



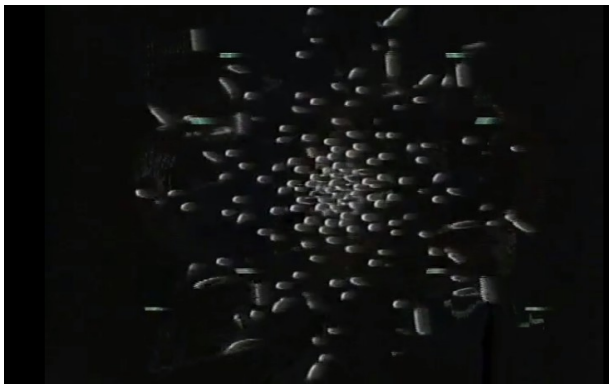
**ill. 2:** Steina Vasulka “Distant Activities”, 1972, USA, 6 min., colour



**ill. 3:** Dan Sandin “Triangle in Front of Square in Front of Circle in Front of Triangle”, 1973, USA, 3 min., b&w

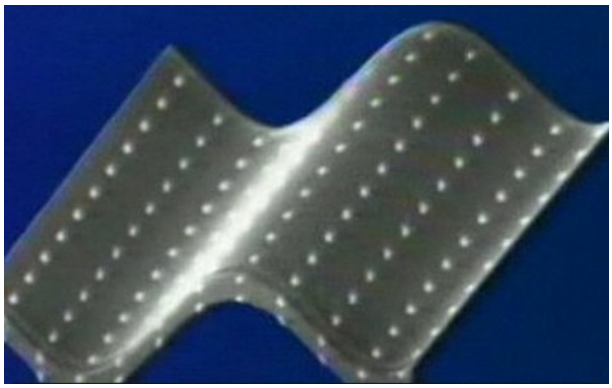


**Ill. 4**: Stephen Beck and Warner Jepson “Illuminated Music”, 1972-1973, USA, 28 min., colour



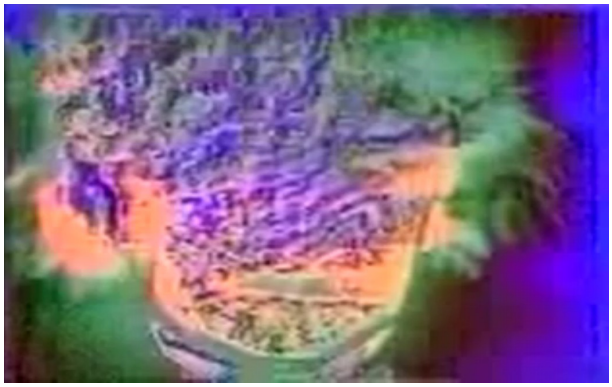
**ill. 5**: Steina Vasulka “Violin Power”, 1978, USA, 10 min. 04 sec., b&w

**ill. 6**: Woody Vasulka “The Matter”, 1974, USA, 4 min., colour



**ill. 7**: Steina Vasulka “Orbital Obsessions”, 1977, USA, 28 min., b&w

**ill. 8**: Eric Siegel “Einstein”, 1968, USA, 5 min. 22 sec., colour



**ill. 9**: Peter Campus “Three Transitions”, 1973, USA, 4 min. 53 sec., colour

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