

Video, Flows and Real Time

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The book from which the following was excerpted is the product of my encounter with Angela Melitopoulos's work. Her method of filming, editing and contemplating the relationship between the image and the world inspired me to write an 'ontology' of video. Particularly in the following chapter, I limited myself to sketching out the views of various video artists on the nature of the video image and video technology. In Angela Melitopoulos's videotape *Passing Drama* (1999) you can 'see' this ontology instead of laboriously reading about it here.

I. The shot (or: 'habit')

1

If cinema has already revealed that the world is a flow of images and this world of images is in a state of constant transformation, then video technology causes a further deterritorialisation of these flows. Video technology not only shows us the movement, the never-ending variation of images, but also the 'time-matter' from which the images are made (the electromagnetic waves). Video technology is a mechanical arrangement that establishes a relationship between a-significant flows (waves) and significant flows (the images). It is the first technical means of producing images that reflects the 'general decoding of the flows'.¹

Photography is already a technology that crystallises time because the image is bound to the shutter speed and, therefore, to the ability to capture time. It registers a development by fixating it. Film makes the still image run, thus causing the 'illusion' of movement (according to Henri Bergson's definition).² Yet video technology captures movement itself: not something moving in space, but the 'pure oscillations' of light.

Angela Melitopoulos summarises the specificity of this movement:

For video, light is movement. The movement lies, above all, in the structure of the video image. It is often stronger in the structure of the image than in the object that is depicted and moving through the space. Video is directly bound to light because video transforms and codes light through a technology. Movement is produced with the electronic structure of the image, its lines, grid, its granulation. Movement, frequencies, atoms and energy exist in the objects. Video technology makes these energetic objects and thereby also another reality visible.³

In terms of the technical creation of images, the genetic element of cinema is still the photogram. With montage, a further genetic element is introduced: a temporal element. Video, however, 'is time' – as stated by [Nam June Paik](#).

From this point of view, cinematic technology still lies in the transitional period before the epoch of the general deterritorialisation of flows. Cinematic technology couples the photographic image (the chemical impression of light on a carrier) to a

process (the succession of images). The production of images by the machine is also not the result of an arbitrary (electronic) flow. It does not yet employ the endless variety of a-significant figures. It does not yet submerge itself in the matter of the images.

The video image is not an immovable still set in motion by a mechanical arrangement. Instead, it is a constantly reshaping profile painted by an electronic paintbrush. The video image takes its movement from the oscillations of the matter; it is this oscillation itself. Video technology is a modulation of the flows – their image is nothing more than a relationship between flows. The video image is a result of contraction or dilation of the time-matter.⁴

In the video, the arrangement of the shots is not what creates movement, but the movement of the light ... I not only work on the arrangement of the shots, but also on the movement of light and the molecular granulation of the video image. If the cinematographic patterns are too dominant it does not work. When I began working with video, I noticed that the movement of the images is not bound to the displacement of something in space ... that first became clear to me while I was working with video ... by slowing the video image down (dilating time) the movement did not lessen. Instead, it sped up through the movement of the granulation. In film, deceleration is due to a slower succession of shots – that has nothing to do with video.⁵

For the viewer, new speeds, which reflect just as many vectors of non-human subjectivisation, are made visible through the contraction or dilation of movement. The molecular ‘becoming’, the molecular alignments in Melitopoulos’s video ‘*Passing Drama*’ refer to minorities (migrants) and are the main origin of the hate Western societies hold for them. The video image [here](#) becomes the echo of the movement of the great deterritorialised (Deleuze/Guattari) here, of the migrant proletariat.

The image presents itself to memory (the montage) not as an icon but as a chain of points and lines. The video image is a result of lines and intertwining. Different from a piece of woven material, the video image unceasingly weaves and intertwines with constantly new motifs. In Angela Melitopoulos’s *Passing Drama*, the images of looms not only serve as sociological descriptions but also simultaneously create a paradigm for the construction of images. Should one think of Plato here and his use of weaving as a metaphor for politics? Flows cannot be represented. They can only be compiled or arranged. One can dissolve flows in order to make others from them (hybridisation).

The difficulty of ‘politically’ representing minorities and the difficulty of using video as a means of ‘aesthetic’ representation have the same origin: the deterritorialisation of flows.

If real politics are to be searched for in ontology, as the classical period teaches us, then the politics of the video are also to be looked for in ontology. Weaving, dissolving and re-weaving flows – instead of representing them as the migrants as in *Passing Drama* – is radical constructivism in politics as well as in the video image.

Video artists already claimed the 'Bergsonian' characteristics of video technology and its specific difference to cinema in the 1960s. The film camera is too close to the illusion of perception as the impression of images on the medium, while the video camera must only be hooked up to see that there are images.

'One must not have a video recorder in order to make a video. One operates the video camera and the circuits are immediately put into action, something hums, something functions [...] everything is connected, a dynamic, living system, a field of energy.'⁶ We find ourselves in the dimension of pure oscillations, the flowing of time-matter. The decision to record something means turning on the video recorder and not the camera. 'The camera always works: there is always an image. There is always something that already works before it starts – like in the universe.'⁷ When making a video production, one intervenes, connects to the continual process of universal change that already existed before one ever intended to use it. One ensconces oneself in the flow. This duration could be called 'real time', a duration that is unknown to film. Television made this feature of the video technology of the endless proliferation of images 'visible'. With television, the world is always already an image. One must no longer represent, no longer create an image. 'We do not create images, we process them', say video artists.

3

In order to summarise the specific difference between the technical dispositives of film and video, we need analytical support.

Gilles Deleuze made a brilliant connection between the film image and Bergson's philosophy (I am indebted to his work for the consistency of my thoughts). Deleuze makes a very exact and original comparison between the term 'pure perception' and the fact that film depicts the world as a world of images for us.

With Bergson, we have defined pure perception as image-matter, but one must remember that this is about the image in principle, unseen by the human eye. It would be more exact to speak of flows of light or even of unlimited oscillations, pure stimulants, in order to make this term perceptible for our consciousness (with an image). The image as we normally understand it is already a construction, the fixing of pure perception. The image is already a selection and contraction of pure oscillations that follows the need for action. 'But in truth this independent image is an artificial and belated product of our mind.'⁸

To use one of Bergson's lovely expressions, the image of our perception – like the video image – is created from 'visual dust'. Video technology allows us access to something that belongs to the dimension of pure perception beyond the image, to the flows of light, to the flows of the flux-matter. Video assails and processes something of pure perception, which Bergson writes about. Pure perception exists only as abstraction for us because a filter that makes something visible is necessary for it to appear.

A large sieve must intervene here like an elastic and shapeless membrane, like an electromagnetic field in order to have something emerge from this chaos ... from the physical point of view, chaos would be a universal attack of dizziness, the entirety of all possible perceptions as infinitesimal or endlessly small as they may

be; the sieve extracts the differences that integrate themselves into regulated perception.⁹

According to Deleuze, there are countless filters or sieves placed on top of each other, with our senses as the top-most layer and leading down to the 'last filters beyond which would be pure perception (chaos)'. The electromagnetic sieve working in video is much closer to pure perception as the filter which is our senses.

According to Bergson, memory functions like Nam June Paik's synthesiser – namely as a capacity to reconstruct a continuity between what is dilated and what is not, quality and quantity. A new matter is thereby constituted, a new force of metamorphosis and creation.

4

For Bergson, our concrete perception is the contraction of endless oscillations into an element of time, a synthesis of the flows of pure 'matter-perception' ... What is an image? It is the process in which millions of oscillations or pure vibrations are condensed or synthesised onto a receptive surface. The image is therefore a contraction of flows.

The qualitative heterogeneity of our subsequent perceptions of the universe comes from each of these perceptions dilating itself to a specific density of duration. In this process, memory condenses an enormous variety of oscillations that all appear at the same time although they actually follow each other.¹⁰

In one moment we condense an extremely long 'history' that takes place in the outside world. If we take the example of 'red light', which has the longest wavelength and its oscillations therefore have the lowest frequency, we find that in a single moment 400 million oscillations follow each other. What we perceive as red light is a distribution, a contraction of this duration according to the contraction-dilation ability of our own duration; these abilities are not physiologically defined, but defined through the force of action.

If we could dilate this duration, experience it in a slower rhythm, would we not then perhaps see – while this rhythm is gradually slowing down – how the colors become thinner and thinner, lengthening into subsequent impressions, each of which is doubtlessly still colored, yet increasingly tend to mingle with the pure oscillations?¹¹

Bergson calculates that one would need 250 centuries in order to see the principal duration of a moment of the colour red. Memory then causes a contraction of 'pure duration' (which can save an endless number of phenomena) in a human duration which is solidified and distributed by it. This distribution takes place through space. Actually, Bergson claims that we cannot comprehend our perception as a relationship of temporalities because we habitually relate all of our movements to space. Our perception always covers a homogenous space via the uncertain variety (the infinite duration) of matter. Instead, one must observe movements in time. That is exactly what video does.

From this point of view, video is closer to reality than natural perception – the disappearance of which is often lamented.

5

This explains Paik's assertion that 'video is time'. The dispositive of video technology 'imitates' the relationship between different temporalities that Bergson writes about. How does video produce colour? By modulating the flow of the flux-matter through technology in a specific way that influences the flow coming into being.

The video machine acts like the brain by translating movements, which are not perceivable in our categories of space and time, into movements that can be perceived. The pure perception of video technology, its energy-matter, exists in the electromagnetic waves, the pure oscillations from which images are 'produced'. The colour is an electromagnetic wave with specific 'oscillations' that are contracted by the video machine in a duration we can perceive. But, here, it is technology that operates like the mind (subjectivity) because it is the machine which translates the duration of pure perception into a human duration.

Let us listen to Paik.

Since televisual space does not exist, all spatial information must be translated into undilated lines and points; then the signal can be wirelessly transferred to only one channel. All colors must be set to the same line. For this purpose, a kind of social contract has been created. A wave, called the 'color carrier wave', is equal to a second divided by 3.5 million. These very short waves are again subdivided into numerous phases: 7 colors represent, for instance, the colors of the rainbow. The first seventh of this wave is called 'blue', the next seventh 'yellow', the next 'orange' etc. A circuit opens and closes very fast (21 million times a second), whereby it lets the colors through according to their sequential order. In television, like in nature, color is created through a very fast temporal sequence. Making a film means letting nature be colored by chemical substances through the lens. But in television, there is no direct relationship between reality and images. Only code systems exist. Therefore, we enter the temporal dimension.¹²

The video image is a modulation-contraction in the flow of the flow of light. Memory does not determine this relationship in the machine, but rather the technological dispositive. Video perception is closer to the dispositive Bergson described than to the physiology of the eye. It is a technology that 'contracts' movement-matter and wave-matter into a human duration. By technologically processing duration and time, colour is returned to our perception. Natural perception exists in a transformation of the a-significant flows, which are made perceptible by the intervention of the brain and the memory. Video technology 'imitates' this relationship between flows and conscience.

In the relationship Bill Viola erects between our perception and the video camera, we also find remnants of Bergson's ontology.

The television image is a constant transit of waves of electric energy, a system of oscillation. Of specific frequencies as they are pictured in an object that oscillates. The image we see on the surface of the cathode tube is the trace of a point of light in movement, which is part of a flow of electrons that hit the back of the screen and light up the phosphorous on the surface in video technology, there is no constant (still) image. The weave of all television images, whether still or moving, is the radioactive bundle of electrons that are continually thrown out, an incessant flow of electric impulses arriving from the camera or the video recorder. The separation into lines or frames is only a division in time: the opening or closing of windows in time that demarcates the periods of activity on the inside of the progressing flow of electrons. This way, the image is a living and dynamic field of energy, an oscillation that only appears stable insofar as it goes beyond our ability to perceive such small units of time.¹³

II. Montage – ‘processing’ (or memory)

A video recording can be compared to the sensory-motor function of the body described by Bergson. The technical dispositive of a video recording actually transforms only one movement into another, even if the possibilities of the contraction-dilation are much more numerous than those of our body. The video camera only works within the realm of the present. The techniques of processing images (montage) allow us, however, to imitate the ‘free’ work of memory.¹⁴ Similar to how the (‘raw’) perception of ‘synthesising’ activity of ‘intellectual work’ is processed, processing the ‘recording’ makes an ‘endless’ production of images possible through electronic image processing.

Technology then multiplies only the ability of intellectual work, although video is only the first step in endowing the machine with a memory that begins to resonate with the ‘actual’ object and can then reproduce the circuit between the ‘actual’ image and its memory. The technologies for processing images are technologies for the synthesis of flows. The length of time determined by the video camera can be processed and therefore installs a degree of ‘freedom’.

For Paik, only image processing can instill ‘true memory’ in video technology. He believed that the video camera is nothing more than a dispositive of input and output time that is tuned in to the flow (waves) of light, meaning a dispositive with absolutely no degree of freedom: it reproduced contractions and dilations as a matter of habit. If one limits oneself to letting the dispositive of the video camera function, then one finds oneself in the ‘present’ – namely, in the simple contraction-dilation and the perception-matter. But in order to contract or dilate the time of memory, one must employ the techniques of image processing.

Yet it is real life (life ‘live’, so to speak) that makes the relationship of input and output time much more complicated. This is how, for instance, one’s whole life can be relived in the fragment of a second in the form of flashbacks during extreme moments or in our dreams [...] or – like Proust – we can repeat a short period of our childhood over the course of our entire life practically in the isolation of a room with a cork wallpaper. That

means certain fragments of the input time can be purposely dilated or contracted in the output time [...] exactly this quantitative and also qualitative metamorphosis is the function of our brain. The process of editing is nothing more than the simulation of this function of the brain.¹⁵

With Bergson, one could say that electronic image processing simulates memory and intellectual work more than ‘the material syntheses’. The compression and dilatation Paik speaks of work with the duration crystallised by the video camera. Once again, the difference between this process and the film cut is remarkable.¹⁶

Based on the hypothesis that the video recorder already provides a – perhaps ‘coarsening’ – simulation of intellectual work, Viola defines the transition from video technology to digital technology as a further development of the relationship between perception and memory. ‘After the first video camera (together with its recorder) gave us an eye combined with a primitive form of non-selective memory, we have now entered the next stage of development: the age of perception and the intelligent – though artificial – structures of thought.’¹⁷

Angela Melitopoulos experiments with the subjective bifurcations made possible through the work of placing images in a new order (montage): an ecology of the mind, an opportunity for resistance that resists the media’s takeover of attention and memory.

In the course of my work with video I have constructed something that could possibly be called a second niveau of memory that is bound to the machine. Aside from that, I also better understand my own memory through the work with video. I can reconstruct a chain of memory around an event that had been experienced but forgotten. I start to film and establish a relation to my experience then I scan the chains of images forwards or backwards at various speeds; simultaneously, various genres of images develop within the process. At the same time, other associations are called up and I can use them to construct a parallel path. Possible memories are sometimes more exact than ‘real’ memories. Through its vision, my memory is taken care of differently, by recoding the work referred to, I can create my own memory or at least something lying in my memory.¹⁸

The object of contemporary economy is linked to the question of how memory can be constructed; how one’s attention can be steered towards the ability to be able to characterise one’s wishes, beliefs and sensations or to perceive their effects by dissolving flows and reassembling new ones. The public is the true customer of this economy. How to resist and create new worlds with a camera that is integrated in the flows (of cyberspace)?

Translated by Stephan Gregory, Angela Melitopoulos, Erik Stein, Stephan Geene and Rosanne Altstatt

¹ The electric flow, which can be considered the realisation of a random flow as such, can serve as an example of a technical means of expression that corresponds to the general deterritorialisation of the flows in capitalism. Marshall McLuhan puts it another way: ‘Electric light is pure information, a medium without a message.’ As a consequence, all

images produced by electronic and digital technologies are transformations and combinations (composites) of intensities, forces, fields, taking place in the flow – the electromagnetic flow in the case of video, the optical flow in the case of the telematic, the algorithmic flow in the case of the computer. The transition from the first to the last can be defined as an increasingly forced deterritorialisation. Fibre-optic cables replace copper. Lasers and silicon cables make the control and canalisation of light possible and now replace the electric shock as the vector of information bound to the net. The flow of information overcomes, again, matter, and light is just a mathematic (non-discursive) language. But in all cases, the relationship between a-significant and significant flows is the most interesting as a newly introduced paradigm – the images and sounds are produced by machines with matter consisting of new materials that are being endlessly and variably modulated, and from which the flows are made. Actually, ‘these figures do not derive from a signifier nor are they even signs as minimal elements of the signifier; they are non-signs, or rather non-signifying signs, point-signs having several dimensions, flows-breaks or schizzes that form images through their coming together in a whole, but that do not maintain any identity when they pass from one whole to another. Hence the figures, that is, the schizzes or breaks-flows are in no way “figurative”; they become figurative only in a particular constellation that dissolves in order to be replaced by another one.’ Gilles Deleuze and Félix Guattari, *Anti-Oedipus*, Paris: Les Éditions de Minuit, 1972 (here, mpls. 1977), p. 241 ‘Semiotics, languages, codifications that no longer pass through human subjectivity but open themselves to other processes of subjectification and other developments.’ *Ibid.*, p.242.

² It must be emphasised that Bergson, who limited himself to the critique of the illusion of movement, was not able to comprehend the crystallisation of time as an activity of cinema. As Andrei Tarkovski noted, ‘for the first time in the history of the arts and culture, man has found the means to fix time and simultaneously reproduce it, to repeat it and return to it as often as possible. Man has a matrix of real time. Once it was seen and fixed, time could be conserved from now on in metal boxes, theoretically, forever.’ Andrei Tarkovski, *Le temps scellé*, Paris: Cahiers du Cinéma, 1989, p.59. But the ‘matrix of real time’ first found its appropriate technological order in video.

³ Interview with Angela Melitopoulos by Maurizio Lazzarato, ‘Vidéo, temps et mémoire’, *Chimères*, no.27, Winter 1996,

⁴ In the film cut, the movement of the images is not determined by the projector as Bergson assumed when he compared human perception to the ‘illusion of movement’ created by cinematography. According to Bergson, the cinematographer records momentary poses (the photograms) and reconstructs the movement by adding mechanical movement to the images. Bergson neglected to see that the film cut distributes a past and a future, the actual appearance of time.

⁵ ‘Vidéo, temps et mémoire’, *op. cit.*, p.96.

⁶ Bill Viola, ‘L’espace à pleine dent’, *Cahiers du Cinéma* (special issue ‘Où va la Vidéo’), no.14, 1986, p.65.

⁷ *Ibid.*

⁸ Henri Bergson, *Oeuvres*, Paris: PUF, 1991, p.304.

⁹ G. Deleuze, *Le Pli*, Paris: Les Éditions de Minuit, 1988, p.104.

¹⁰ *Ibid.*, p.73.

¹¹ *Ibid.*, pp.227–28.

¹² Nam June Paik, *Du Cheval à Christo et autres Écrits*, Paris: Lebeer Hossman, 1993, p.110.

¹³ Bill Viola, [Name of article?](#), Valentina Valentini (ed.), *Vedere con la Mente et con il Cuore*, Rome: Gangemi Editore, 1993, p.73.

¹⁴ The work of the body and the brain is an automatic work, in which memory has no freedom. It is completely absorbed in the fulfilment of the goal-oriented action, the memory contracts and dilates time, but it is a repetitive 'habit'. Memory cannot 'freely' produce images, and it is only 'intellectual work' from the moment it is separated from the necessity of goal-oriented action. It can then introduce uncertainty, the unforeseen in the process of perception. The magnetoscope and the perfected techniques of image processing create a greater freedom in the contraction-dilation of the flows in the same manner.

¹⁵ N. J. Paik, *Du Cheval à Christo et autres Écrits*, *op. cit.*, pp.124–25.

¹⁶ 'One should not say cut, but process, video processing (as said in English) in order to define the work of the electronic structure and images. Montage/cut are part of the cinematic language. It means bringing the shot and the sound together. Processing, on the other hand, means putting the image together. The image therefore begins to change somewhere, to become something else and something else again. You don't even have to see the image at the beginning, it is not predefined.' 'Vidéo, temps et mémoire', *op. cit.*,

[p.?](#)

¹⁷ Bill Viola, *La Vidéo*, Paris: Communications, p.72.

¹⁸ 'Vidéo, temps et mémoire', *op. cit.* [p.?](#)

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