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Analogue summer, digital winter and the increasing confusion of the seasons

The authors of the following essays had not originally planned to produce a book, but another, much more lively project, as fleeting as the years and the seasons themselves. We were organizing an international summer school coinciding with the 100th birthday of the media philosopher Vilém Flusser, in the week of 12 May 2020, at his last residence in Robion (southern France). The aim was to bring together interested students, artists and media philosophers, to honour Flusser's life's work, to bring more attention to individual expertise and scholarly exegeses, and to invite people to reflect on the present and future of media technology in his spirit without falling into orthodoxies.

We had obtained a generous grant from the German Academic Exchange Service, for which we would like to take this opportunity to thank them once again. We were curious about Flusser's former home with its small garden and summer house, as well as about the amphitheatre situated on the opposite mountain massif, where we wanted to hold our summer school in the open air. And we were curious about the town, Robion, in Luberon, where the Flusser's had finally settled in 1981 after almost 10 years of peregrinations following their return to Europe. The fact that this place was not on any map of culturally important places, although Flusser wrote his most important writings there, was an additional inspiration.

At the beginning of 2020, a global pandemic became more and more likely with each passing week. With a heavy and sinking heart, we soon determined we would have to move the planned summer school from May to September. When even those dates no longer seemed feasible, as travel as well as face-to-face meetings became increasingly unlikely, we moved the planned school not only to the winter, but also completely online. After the many postponements and changed plans during the year, our summer school ineluctably became a winterschool. The move to digital was also unavoidable, for our small project, for the societies in the pandemic and probably also for the global history of technology. But the fact that this shift into the digital realm struck us with the same fateful violence and lack of alternatives as the turning of the seasons, made us wonder. Because one change is (still) natural, planetary and astronomical, and the other is made by people who should be able to decide what they do.

People sometimes wish for the impossible, for example, for a season that is not here at the moment. Such a wish must remain unfulfilled, but it will certainly come true one day, because that is the nature of the seasons. Digital culture is something that many have wished for, some have even bet heavily on it, others have worked hard for it and the planet has also had to make a contribution. But the digital epoch suddenly materialised in a way that was compulsory for everyone, seemed to defy the law of nature. The history of media and technology is probably linear,[1] and certainly not cyclical. Those who wish for a familiar era will be disappointed not only now but also in the future. The age of steam engines will not return. But if the desired technical epoch never existed, if it is pure 'Zukunftsmusik', as heard in the writings of Jules Verne, in the last chapters of Flusser's 'Into the Universe of Technical Images' or in the SF of Donna Haraway,[2] then there is a certain chance that it will happen one day. There is another difference between seasons and technical epochs. We associate familiar living conditions with seasons and expect that their repeated occurrence will also reaffirm our experiences. With desired technical epochs, however, we cannot know how our living conditions will change and what experiences we will ultimately have.

So we had wished for an in-person summer school in the south of France and got a digital winter school in separate virtual rooms, on computers and servers, as if Flusser had wanted to tell us: 'Now think about it.' That's what we did and went to the digital winter school with a group of international participants as well as invited guests from the Flusser community. We sat together on Friday evenings of every other week from November to December 2020, isolated in front of the screens of our private and at the same time public computers.

1   Only probably because, on closer inspection, there are parallelisms, stagnations, breaks and leaps, and a line can ultimately also take on the ups and downs of a sawtooth pattern, as in the developmental logic of the history of technology conceived by Gilbert Simondon. Cf., 'The Mode of Existence of Technical Objects' (1958).

2   The ambiguity of the acronym SF, which Donna Haraway describes in the introduction to 'Staying with the Trouble. Making Kin in the Chthulucene' (2016), gives a nice indication of the (literary) shapability of the future.

Although spatially separated from each other, we were connected in two ways. On the one hand, technically, a miraculous means of communication[3] was rolled out at massive scale pushing the limits of existing infrastructure to connect us auditorily and visually around the globe. By the end of the pandemic videoconferencing had become a matter of course even for those who very grudgingly at the outset had to use it. On the other hand, we were intellectually connected through Flusser's prophetic insights into the cultural significance of the media-technical structures which were being introduced during the 80s and 90s and which undergird the online experience of the present. Flusser increasingly expressed the hope that networked computation would bring about new forms of dialogical intersubjectivity, provocatively remarking 'the synthetic computer-image is perfectly Jewish.' [4]

One can now ask oneself which bond was stronger. The intellectual or the technical? One can also ponder whether one of the two ties should be called primary and the other secondary? Or whether they can be ordered causally, so that one causes the other like a cause causes an effect. It is not so easy to decide which component takes which position. That is why one can also argue that a distinction between them is artificial, because ultimately every intellectual activity includes technical structures, be it in the sentence-like order of thoughts or in their medial communication.

For German media philosophy of the 20th century, which often referenced Flusser and owes much to him, a sentence by Friedrich Nietzsche has become emblematic in this sense: 'Our writing utensils (Schreibzeug) collaborate on our thoughts.' (Kittler 1986: 293) The visually-impaired philosopher wrote it in 1882 on a Maling Hansen typewriter he had acquired to make his writing more legible. (Nietzsche 2003: 18) Flusser also wrote with a typewriter and summed up the dependence of writing on writing utensils with an wide-ranging historical survey ranging from chiselled hieroglyphics to the then nascent writing of artificial intelligences. He trusted the latter with future writing: 'The ordering of ideas is a mechanical process, attributable in any case to the order of writing, and can be left to artificial intelligences.' (Flusser 2011: 92)

One of the books he wrote in Robion thus came to have the title 'Die Schrift. Hat Schreiben Zukunft?' (Does Writing Have a Future?). This book was not only ahead of its time in its reflections, but also in its form. Working with his longtime supporter and publisher Andreas Müller-Pohle, Flusser was able to produce the book in 1987 in both analogue and the most appropriate form, as an interactive program on floppy disk.[5] This work is therefore not merely a record but also a performance of literate thinking, speculating on how the future of writing will transform the future of thinking.

'One can leave writing, this ordering of signs, to machines. I do not mean the sort of machines we already know, for they still require a human being who, by pressing keys arranged on a keyboard, orders textual signs into lines according to rules. I mean grammar machines, artificial intelligences that take care of this order on their own. Such machines fundametally perform not only a grammatical but also a thinking function, and as we consider the future of writing and of thinking as such, this might well give us pause for thought.' (Flusser 2011: 6)

We don't know in which natural season this book will finally be published, the articles have been written and rewritten several times since we decided to condense our seminars into a publication. But to return to the theme of seasons and epochs, there have been two long winters in the technological history of AI. AI winters refer to those two periods in the 20th century when the massive

3 'Miraculous means of communication'? That sounds a bit old-fashioned, but it will probably be called that again in the near future. Because let's not forget: the newest technical medium is always the one that will be old next.

4 'through the computer-image, I can talk to the other person: he sends me his image, I work on it and send it back to him—so this is the Jewish image. This is not an idol. This is not paganism. It is a way to love my neighbour, and by loving my neighbour, to love God. So I am not a good Talmudist, but I would say that from a Talmudic point of view, the synthetic computer-image is perfectly Jewish.' (Flusser 2010: 13min30s)

5 In the context of our digital winter school, we have arranged for an emulation of the digital book to be accessed on the Flusser Club site: https://wiki.flusser.club/doku.php?id=die schrift.

public subsidisation of that technology was halted because it had not produced any significant results. The first AI winter began at the latest in 1973 when the Lighthill Report written by the British mathematician Michael James Lighthill, criticised the unfulfilled promises of AI research, leading to the reduction of government subsidies in the UK. This first winter lasted for about 10 years. From 1982, international AI research resumed via large government funding programmes. In Japan with the Fifth Generation Computer Systems Project (FGCS) and in Europe with the ESPRIT research project. The US Department of Defence's SDI programme also boosted AI research by subsidising expert systems and LISP, which were expected to make significant advances at the time.

Flusser wrote his most important books between the first and second of the two AI winters, in an epoch of technological history that, metaphorically speaking, should be called the second AI summer. At that time, AI systems were still considered incredibly primitive, but they were already hinting at their future capabilities:

> 'We can already see both the speed and the variability of writing in the new orthographic writing machines, word processors, however primitive they still are for now. And artificial intelligences will surely become more intelligent in the future.' (Flusser 2011: 8)

Against the background of the history of technology that has been realised in the meantime, the question Flusser posed in the title of his floppy book, whether writing has a future, thus seems to have to be answered with an emphatic no. And perhaps this answer was even implied by the author for reasons of content and dramaturgy. However, this conclusion would be wrong. When we look back from our third AI-summer to the book of the past, the question in the title takes on a completely different meaning, which must be answered with a resounding yes. Flusser's writing has a future because it could still take the liberty of thinking of technology as future.

Is the future in Flusser's writing not also an effect of the writing tool he used?[6] Although Flusser was very open to new technologies,[7] essential qualities of his writing tool (Schreibzeug) lie in rather classical cultural techniques: offline, sitting at the desk of a small garden house in the French Provence of the 80s. He benefited from the lifelong support of his wife Edith and regular conversations and correspondence by post with friends, especially artists and scientists. In the end, are we attracted to Flusser's media philosophy less for its original thoughts than for these (cultural-technical) conditions of its creation? Who wouldn't want to use such writing to reflect on possible future technologies and the likelihood of various cultural consequences that might one day be ensue from them? We are no longer allowed this distancing through the life-world from digital technology. Perhaps we can nevertheless learn from Flusser to think of the digital epoch, like all other epochs in the history of technology, as a future again. As a future whose shaping is to be considered and decided by people and not one which occurs as if it were a season.

Flusser (fore)saw the rise of the universe of technical images not just in terms of the omnipresence of screens flooding private and public spaces with (moving) images, but also and above all the rise of techno-imagination as a new way of thinking and perception. If writing allows logical, causal, processual, linear thinking and thus becomes the foundation of science as well as historiography, technical images introduce revolutionary changes within these discourses – and everyday reality or realities. In between the universe of text and technical images, still writing books (on his typewriter), Flusser advocates critical thinking connected to this medium or cultural technique and at the same time explores the intertwining of the alphabetic and the numerical code[8] as well as the 'dialectics' of writing and image. Writing is a code which allows to order ideas

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6   On the biographical situation and the gesture of writing, see below the article by Baruch Gottlieb.

7   See as an example the hypertext project, that we could emulate in the context of the winterschool: https://wiki.flusser.club/doku.php?id=hypertext

8   Vilém Flusser, Die Auswanderung der Zahlen aus dem alphanumerischen Code, in: Dirk Matejovski, Friedrich Kittler (ed.), Literatur im Informationszeitalter, Frankfurt/Main: Campus 1996, 9–14; Vilém Flusser: A New Imagination, in: Andreas Ströhl (ed.), Writings, Univ. of Minnesota Press 2011, 110–116.

('images') lining them up in a literal sense of lines of graphic signs and a metaphor for logical conclusions, causal relations and chains of historical events. The alphanumeric code[9] however also allows to create completely new concepts, not using symbols to refer to phenomena in the real world or ideas in the minds of readers, but as a medium of modelling new, artificial or synthetic phenomena – new realities that at the same time symbolic and real, abstract and concrete.[10]

Facing the restrictions of an online-exchange in the phenomenological dimension of a face-to-face dialogue – starting with the impossibility of eye contact – the online winter school also turned our attention to Flusser's and our own encounters with technical images. Working with texts, we were always at the same time dealing with word processors, 'readers' and automated references, following Flusser's walks on the margins of 'writing consciousness' (Flusser, 2011: 7), in between writing, image and number. Three decades after his death, we found ourselves to be (part of) technical images rather than looking at them. Besides reading Flusser's thinking in text, we explored it through videos of Flusser's interviews, cooperations with filmmakers like Fred Forest or Harun Farocki and the emulation of Flusser's interactive philosophy lecture 'Hypertext' restored and published on the FlusserWiki.[11] The winter school thus engaged in questions of the crisis of writing and thus logical, scientific, historical thinking exploring the potentials of 'techno-imaginative' practices – in Flusser's call: *'We can no longer philosophize in text as we had before, we must try it with images.'*

It may well be that a book like this, which appears as a collection of various, thoughtfully ordered reflections by human authors, will soon no longer exist.

'A book is, from one point of view, an intermediate stage on the way from the forest into the land of artificial intelligences. […] But the book is also a piece of artificial intelligence, for it is an artificial support for memory consisting of bits (letters) of computed information. The book may be seen as what one must go through to get to artificial intelligences (even if this passage took a few millennia)' (Flusser, 2011: 96f.)

Our artificial memory aid, which is to appear analogue, digital and in commentable WIKI articles, has taken two years longer than expected. While we are finishing it, we are already preparing for the second summer school in Robion.[12] A third AI winter is currently not in sight. Or perhaps we haven't noticed, because the seasons have clearly become confused. Nevertheless, it remains the case that seasons cannot be wished for or anticipated, but that the future of technological history can be thought through, or at least played with, and against, just like the present.

Flussera Robionica

Potsdam, Berlin and Prague in the spring of 2023.

9   Close to Flusser's concept Sybille Krämer contrasts the 'operative' use of graphic signs with their 'phonographic' use, in which writing only denotes language. The 'operative' use is also linked to the 'iconic' dimension of writing, see Sybille Krämer: 'Writing, Notational Iconicity, Calculus: On Writing as a Cultural Technique', in: Modern Languages Notes – German Issue, Vol. 118, No. 3, John Hopkins University Press 2003, 518–537.

10 Vilém Flusser, Into the Universe of Technical Images, Univ. of Minnesota Press 2011, 37, close to Friedrich Kittler's vision of computing.

11 https://wiki.flusser.club/doku.php?id=de:tag:flusser_video_collection

12 The first Vilém Flusser Summer School in Robion took place there in May 2022. A book on this has been published: Flussera Robionica (ed.): Towards Technosophy, Potsdam, in analogue: ISBN: 978-3-947796-10-6, digital: URN: urn:nbn:de:kobv:525-29553 and Wiki form: https://wiki.flusser.club/doku.php?id=towards_technosophy:start.

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M Anusas

Gestures to a Futura

You are invited to view this series of ten photographs, reflecting on the photographic gesture itself, as well as the scenes depicted. Accompanying each photograph is a quote from Vilém Flusser's (2014) Gestures. However, these quotes are not at attempt to explain the photograph, and nor do the photographs intend to illustrate Flusser's points directly. Rather, the photographs and text are placed together in a dialogue and an interplay between different forms of philosophical gesture.

One must start here: we are dealing with a free movement, reaching from the present into the future, that is to say, with a gesture.

We have two hands. We comprehend the world from two opposing sides, which is how the world can be taken in, grasped, intended, and manipulated. We do not comprehend it from eight sides, as an octopus does. Because of the symmetry between our opposed hands, the world is 'dialectical' for us.
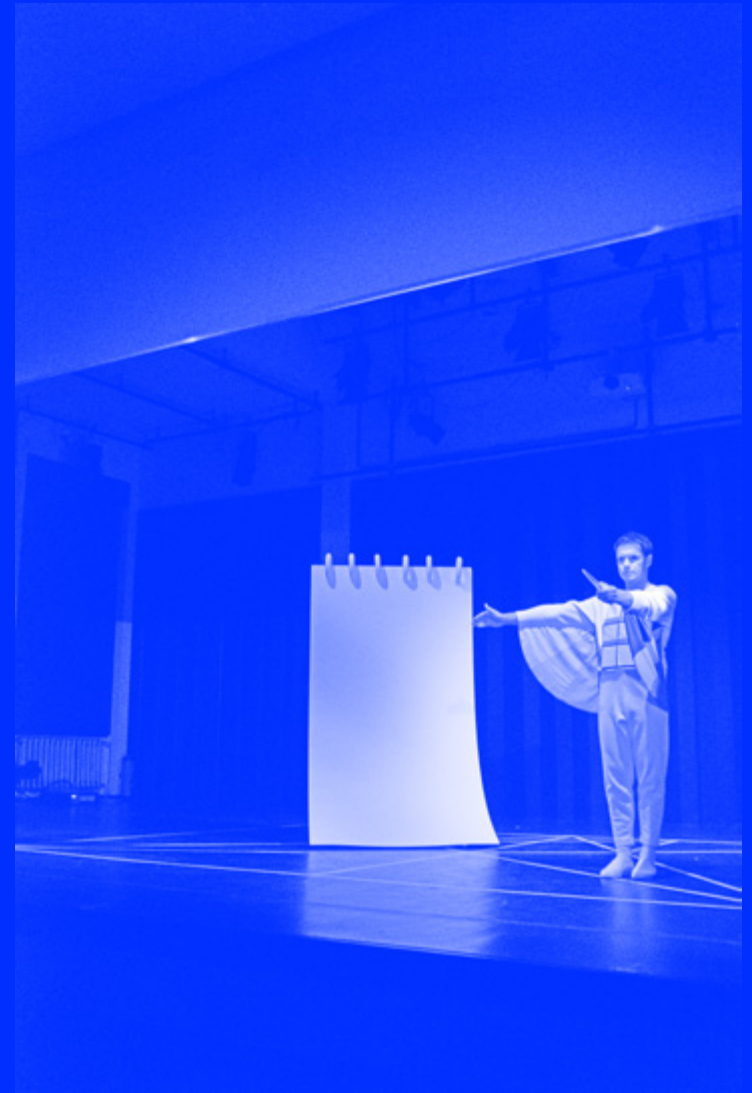
The words we use to describe this movement of our hands–*take, grasp, get, hold, handle, bring forth, produce*–have become abstract concepts, and we often forget that the meaning of these concepts was abstracted from the concrete movement of our hands.

Movements that point to something cannot be understood by listing their causes. Casual explanations that link the movement to previous movements, showing how one led to the other, do not explain where the movement points. To understand this, one must know the purpose of the movement. One must have explanations that link the movement to its future.

The gesture not only reaches from the present into the future but also brings an anticipated future back into the present and returns it to the future: the gesture is constantly monitoring and reformulating its own meaning.

The more information a gesture contains, the more difficult
it apparently is for a receiver to read it. The more information,
the less communication.

Perception is no immaculate conception. It is a powerful, active
gesture. It exerts force in the world, for it divides the world into an
area between the hands' two surfaces (that it takes in) and an area
outside of this (that it turns back). It has an effect on the future,
because it opens a channel through which certain things flow and
others are excluded.

… it means that to observe a situation is to manipulate it, or to put it another way, observation changes the observed phenomenon.

To observe a situation is, to the same extent, to be changed by it. Observation changes the observer.

… one can see how 'having meaning', 'giving meaning', 'changing the world', and 'being there for others' are four formulations expressing the same state of affairs.

And still it ends. It ends when the hands withdraw from the object, open their inner surfaces at a wide angle, and let the object glide into the context of culture. We know this gesture. It is the gesture of sacrifice, of resignation and giving: the 'gesture of presenting'. This gesture is not made by the hands when they are satisfied with the work but rather when they know that to go on with the gesture of making would no longer have meaning for the work. The hands stop working when they are no longer able to make the work better. The gesture of presentation is a gesture of resignation.

ENDNOTE

The photographs are of specific moments in a stage performance at Bauhaus Dessau on 12th September 2019. The performance – *Futura* – was part of Festival Stage TOTAL 11-15th September 2019, part of Centenary 2019 celebrating 100 years of Bauhaus.

I attended the performance as part of the audience and as an anthropologist and educator who has collaborated with Bauhaus Dessau in recent years, working with them to explore the meaning, complications and possibilities of the Bauhaus in contemporary times. I was mesmerised by the performance; its beauty, accuracy and conviction. It held a power of communication through the forceful movement of bodies, in and through costume, form, props and light.

Over the last few years I have been reading *Gestures* and, in stretching the reading over this time, I find it weaves in-and-out of the work I do as anthropologist and educator. There was thus not an explicit or predetermined connection between the performance, my photographs and my reading of Flusser's writings. However, over time, I started to feel connections between these works, these feelings coalescing for this publication.

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Katerina Krtilova

Changing Perspectives. Vilém Flusser's and Fred Forest's Video and Phenomenology

Flusser's interest in phenomenology is one of the few common threads of his heterogenous work. An important starting point of Flusser's phenomenology – with its specific media philosophical twist – is a critique of scientific thinking that resonates with Husserl's *Crisis of European Sciences and Transcendental Phenomenology*. For both Husserl and Flusser, science[1] is the foundation of Western culture – the 'ground we stand on' (Flusser 1990: 13–15) and thus cannot be dismissed: 'As soon as we no longer rely on science [...] the entire culture collapses. And this not only because science turns us from subjects of the objective world into its masters (liberates us), but even more because science disciplines our thinking, decision-making and acting (dignifies us as subjects). As soon as we no longer rely on science, the objective world and ourselves fall apart.' (Flusser 1998: 40, my translation) Husserl outlined his thoughts on the crisis of European science in 1935 in Vienna and Prague, on the backdrop of the rise of the Nazi party in Germany; Flusser, having escaped the terror in his home country (Czechoslovakia) and a large part of Europe, responds in his work from the 70s and 80s to the rise of new technologies that for him introduce both a new form of totalitarianism and new possibilities of communication and access to knowledge that strengthen democracy.

As a response to the crisis of European thinking, Husserl develops phenomenology as a scientific method – as a new foundation of science, which needs to be situated in or reconnected with the 'life-world', the world of common experience: also the knowledge of physicists is based on 'knowing themselves as living in the life-world' (Husserl 1970: 48). In contrast to Husserl, Flusser addresses the pitfalls of scientific thinking: if objectification 'led in the course of history to science, to technology, ultimately to the apparatuses' (Flusser 1990: 63) at the same time '(t)he total objectification of the Jews by the Nazis, the concrete transformation of Jews to ashes, is only the first of the possible realizations of objectivity, only the first and therefore still brutal form of the 'social technique' that

characterizes our culture.' (ibid., my translation) The possibility to master the world of objects also allows to develop instruments of the '(r)eification of human beings, that means extermination camps' (ibid., my translation) Science is thus the basis of both critical thinking and the manipulation of people and things as objects at free disposal, approaching reality as computable (*berechenbar*), Husserl's student Martin Heidegger[2] will add to the gloomy techno-scientific world picture.

The common ground of Husserl's and Flusser's critique[3] is the search for a different approach to the modern (techno-)scientific world, a new 'method of thinking' (Flusser 2003: 7) that would allow to grasp 'things themselves' in Husserl's approach and 'non-things' (Undinge) in Flusser's philosophy. 'Non-things' refer to the current situation when information is replacing things and our concrete environment is consisting of symbols, codes, systems, models (Flusser 1991: 83). Still Flusser evokes Husserl's motto 'zu den Sachen selbst zurückgehen' (to the things themselves) with a specific twist: the task is to understand the code: 'non-things' are 'literally hard to grasp. They can only be decoded.' (Flusser 1991: 81)

Husserl's approach is based on uncovering the 'life-world' basis of scientific knowledge. Turning to the 'how of the pregivenness of the world, that is, of what constitutes its universal ground being for any objectivity' (ibid.: 53) – as the subject matter of phenomenology – means to acknowledge the 'subjective-relative' (ibid.: 38) perspective, which can actually be experienced, in contrast to the objectifying scientific or techno-scientific thinking. In Flusser's definition technical images are images of concepts, i.e. scientific concepts or theories (Flusser 2000: 42). With this definition he is drawing on Husserl in a literal sense we may say, not referring only to concepts as ideas or ways of thinking that shape the modern worldview, but addressing a concrete technology that determines what we actually see. He describes the 'categories of the camera' (ibid.) as in a way 'a priori' categories of time and space, creating

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1 Bearing in mind that the German term for science, 'Wissenschaft', applies to both natural sciences and the humanities (as 'Geisteswissenschaften' – literally sciences of the mind).

2 Flusser had clearly more sympathy for Husserl than Heidegger, however he was apparently also influenced by Heidegger's critique of techno-scientific thinking, see Krtilova 2020, 91ff.

3 For a different take on the impact of Husserl see also Alpsancar 2012: 59–62.

'one time and space for extreme close-up; one for close-up, another for middle distance, another for long distance; one spatial area for a bird's-eye view, [...] another for a toddler's perspective; another for a direct gaze with eyes wide open as in olden days; [...] Or: one area of time (shutter speed) for a lightning-fast view, another for a quick glance, another for a leisurely gaze, another for a meditative inspection' (ibid.: 34) In this description the settings of the camera are on one hand perspectives and movements allowed by the (human) body or sense apparatus of the camera operator, on the other hand settings of the camera that introduce new perspectives invisible to the 'naked eye', like shots that 'freeze' fast movements (like Eadweard Muybridge's photographs of animal and human movements), or today the 'non-human' perspectives of drones or surveillance cameras.

Close to Husserl's phenomenological method Flusser suggests to pay attention to photographic *gestures*. Gestures in Flusser's sense do not just refer to the observed phenomenon, but also (the performance of) the observation itself, that is never 'outside' the phenomenon, but involved in it–observing what you see looking. The scientific programming of our thinking and perception however seems to enforce a position 'outside' or 'above' the phenomenon, observing it from a distance–in Husserl's terms disregarding the subjective-relative perspective. Flusser's gestures, which he makes and observes, are thus in line with Husserl's critique, trying to change the perspective configured by scientific (or techno-scientific) thinking.

Flusser's suggestion is however not aiming at the reconnection with the life-world and a 'pre-apparatic' perspective. In 'playing *against* the camera' (ibid.: 81) there is no 'natural attitude' (Husserl 1913: 53) which can be 'put in brackets' applying the phenomenological method (ibid.: 56)–the goal is to intervene in the program. According to Flusser's cultural history human beings have always lived in a mediated world–or vice versa, mediation is the *conditio humana*.[4] His goal is to understand the *mediality* of images, writing

and technical images, which characterize different universes–not a given reality that is mediated in different ways. Thus photographs should not be regarded as a 'true' representations of the world, but also not as traditional images like paintings. 'If one wishes to decode such images, then one has to decode the encoding that took place 'in the head' of the painter.' (Flusser 2000: 15/16) This 'decoding' seems close to the method of the phenomenologist who analyzes intentional acts. The program of the apparatus, its 'concepts' however are in fact 'on the outside of the camera' (ibid.: 34): in terms of its technical settings, the 'categories' of space and time set by the shutter, lens and timer. They are not (just) concepts inside the photographer's head. For Flusser the 'thing itself' is photography–neither the intentions of the photographer nor the perceived objects or scenes; In the context of contemporary media theory we may say photography as a cultural technique that creates new kinds of images, not just representing, but shaping and discovering what can be seen.

Moreover, apparatuses perform tasks that were before attributed to the human mind, like computation: 'Apparatuses are scientific black boxes that carry out this type of thinking better than human beings because they are better at playing (more quickly and with fewer errors) with number-like symbols' (Flusser 2000: 32) At this point–on the verge of the 'universe of computation'–Flusser leaves Husserl's phenomenology behind and comes close to Friedrich Kittler's approach, who decidedly rejects Husserl's idea of the foundation of scientific thinking in the life world:

'In computers the 'mathematical objectification', which they are like nothing else in the world, can never be reconnected with a meaning in the life-world, but at best turns into second order perception or life: scientific visualization, artificial life. Universally programmable computers are so isolated from human experience that there is rather the danger that they would also program their users.' (Kittler 1989)

4   Anticipating a later discussion in media theory, see Christiane Voss, Katerina Krtilova, Lorenz Engell: 'Einleitung', in: Medienanthropologische Szenen. Die conditio humana im Zeitalter der Medien, Paderborn 2019, S. 1–14.

The apparatus' scientific categories cannot be as if peeled away to expose the photographer's intentions: 'While the apparatus functions in function of the intention of the photographer, this intention itself functions in function of the program of the apparatus. '[…] in reality, it can shoot precisely only what can be photographed, that is: everything that is in the program.' (Flusser 2000: 35)

At the same time, he states that 'the gesture is a series of decisions that occur not despite but because of the determining forces that are at play' (Flusser 2014: 80)–the photographer always manipulates the situation, 'for his search is tightly bound up with this manipulation. Search and manipulation are two aspects of one and the same gesture' (Flusser 2014: 83). Thus the cultural-technical 'programming' becomes visible not playing against the apparatus and its (preset) program, but only through the gesture of photographing, using the settings that open up different ways of seeing.

The discrepancy between the two statements can be resolved focusing on the gesture as the key element of Flusser's argumentation: he turns the attention not to photography (or any other apparatus) as an object, but–in correspondence with Husserl–to a different way or 'method' of thinking: thinking *with* the apparatus. Flusser's idea of playing *against* the apparatus turns into a play *with* the apparatus as a result of his change of perspectives, turning away from the viewpoint of a naïve photographer, but also a naïve phenomenologist: the first one sees the green meadow as a 'real', a true representation of reality, the second one tries to understand the intentions of the photographer, not integrating the 'external' settings of the apparatus. The perspective that allows to play with the apparatus is not an 'objective' observation, because then it would just apply the categories of the camera for example, as a kind of 'a priori' categories shaping perception and thinking. But it is also not a 'subjective-relative' perspective, explored with the phenomenological method: the image as much as our perception are shaped by the settings of the camera, which can be explored using the camera, turning the attention to its settings–which are of course changing according to the actual technology and artistic and social practices. Flusser's method gives phenomenology a 'medial' twist, letting the apparatus so to speak intervene in

the 'programming' of the phenomenologist: confronting his introspection with the mediality of perception, disrupting what is 'going inside one's head' with the tools, things, techniques which are always already part of thinking and perception, in writing as much as in photography or computing.

In *Vidéo et phénomenologie* from 1974[5], a collaboration between Flusser and the artist Fred Forest[6], Flusser outlines his 'theory of gestures' in an unusual way: shot by Fred Forest, the video is a dialogue between Forest and Flusser–the latter speaking, the former filming. Flusser explains his philosophy of gestures on a terrace, dressed only in shorts and sandals; Forest films him with a video camera on a tripod, in a single shot (in two sessions–this text will refer only to the first one). When Flusser addresses Forest, he responds 'Yes! Do you want to ask me something?' Flusser: 'Yes' Forest: 'I am here behind the camera, I will manifest myself' followed by a series of crash zooms, focusing on Flusser, who comments on the scene: 'Forest is now manifesting his gestures, can you follow? Now let me go back to what I said…'

"I am here behind the camera, I will manifest myself."

Still 1 from Video et phénomenologie *(private archive Fred Forest ©)*

5   The video is available online on Flusser Wiki: https://wiki.flusser.club/doku.php?id=gestures_professor (accessed 14.7.2022)

6   An earlier interpretation of this work has been published in Krtilova 2020, 137–149.

Flusser proposes in this collaboration with Forest a 'rather non-traditional way a theory of the human gesture'. The title names the starting points of the experiment: 'the possibilities dormant in video as media for the capturing of the concrete phenomenon,' and a 'phenomenological vision of the human gesture.' Flusser's exposition however might evoke a rather traditional use of video and phenomenology, based on the video capturing gestures:

> 'I shall propose to you, in spoken discourse, a specific theory of the gesture and I shall try to illustrate my theory by gesturing. And while doing this, Forest is going to film me [he takes a mirror in his hand and holds it in the direction of the camera, which zooms in but does not show Forest in the mirror but only reveals a part of the camera tripod in a blurred image], which means he is going to do certain gestures which are at the same time a mirror of my own gestures and a critique of my own gestures.'

Still 2 from Video et phénomenologie *(private archive Fred Forest ©)*

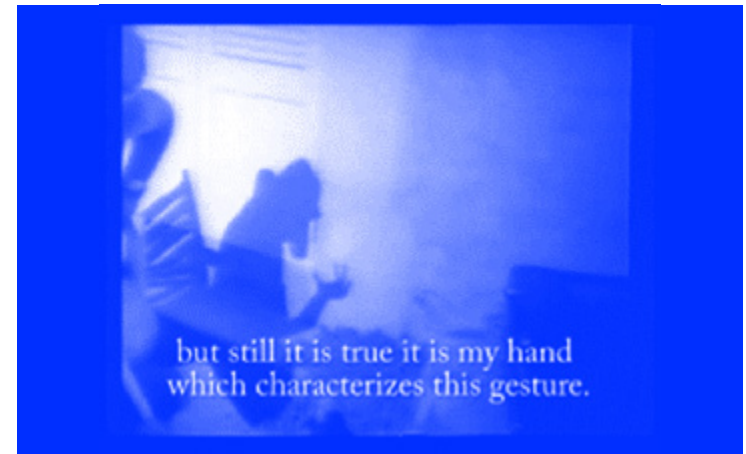*Still 3 from* Video et phénomenologie *(private archive Fred Forest ©)*

Which gestures does he refer to? Flusser initially seems to presuppose a 'common sense' understanding of a gesture–to question it in the course of his lecture. Corresponding with the theory of gestures outlined in his book *Gestures*, he defines gesture as a movement of the body that is–according to the first definition–expressing an intention (Flusser 2014: 1) to turn in the video to the problem of determination (or codification) and freedom: 'We have a definition of gesture as a motion of the body, which articulates an interiority which is conditioned by forces. So that we would suppose that the gestures is a motion of the body totally conditioned by specific forces. [...] but this is only one side of the problem [...] the gesture is an articulation of the specific character of human being.' Gestures as an expression of the intentions of the gesturing subject and the 'articulation of free will' are thereby in a dialectical way connected with their determination 'from outside'. 'My gestures are totally conditioned. I have to accept this, because if I did not accept this, I would have to deny science, and I cannot do this. I cannot live without science.' From the scientific perspective gestures are observed 'from outside'–and can in this way be recognized even without any human subjects involved, in the light of today's digital technology.

Flusser however stresses that the gesture cannot be fully grasped in this 'objective' way: seen only 'from the outside' the gesture

is hard to distinguish from any other hand or body movement. Gestures-based user interfaces are dealing with exactly the same problem, the difficulty of recognizing which movement is *meant* to signify a command, distinguishing it from random movements. Flusser's critique of the scientific perspective however aims not at the basically mathematical problem of gesture recognition in computing (from a techno-scientific perspective)–in the *Gesture of Photographing* he stresses that 'scientific observation' reduces the gesture of photographing to a laboratory operation. It must be forgotten, not because it is 'wrong', but because it does not include what we see in the gesture.' (Flusser 2014: 81) Recognizing or noticing a gesture is a question of a different kind of knowledge, based on a different kind of observation. Flusser picks up on this question in the video:

> 'This objectivating position [...] we can no longer maintain [...] because we can no longer, when confronted with gestures, assume the objective position of a filmmaker filming a hairdresser, the gestures of a hairdresser as he is working, because he knows very well that the fact that he is being filmed influences the gestures of the hairdresser. So, how can we approach the problem of gestures? Well, from the inside, making the gesture, filming it or putting the gesture on tape while we are making it. For example, Fred who is filming me now is completely conscious of the fact that he is also making a gesture in order to capture my gesture.'

Flusser on one hand refers to the mere representation of gestures –'filming (them) or putting the gesture on tape'. Filming as a *gesture*, however, problematizes the filming of gestures as objects, the 'objective' representation–it *performs* a different kind of 'observing'. Forest's gestures cross the 'objective' viewpoint which would make the medium disappear in order to focus on the presented facts, objects. He 'manifests' himself in zooms and pans, which are not corresponding with Flusser's talk, but rather twist it ironically and poetically.

Still 4 from Video et phénomenologie *(private archive Fred Forest ©)*

Still 5 from Video et phénomenologie *(private archive Fred Forest ©)*

Flusser's gestures in the common sense of a gesture certainly do not illustrate his theory of gestures as proposed by him in the beginning: they are only 'illustrative' from a semiotic-linguistic perspective, movements of hands that accompany speech.[7]

7   In his own categories, the gestures could probably be understood as 'spontaneous', with Flusser's ironic twist: 'Of course I cannot make a spontaneus gesture by speaking about it.'

Forest's close-up of Flusser's motionless foot accompanies Flusser's remarks about the possibility of gesticulating with feet–and thus points out the gap between the lecture (the theory or philosophy) and Flusser's actual gestures (that he supposedly refers to), including smoking the pipe, standing up and sitting down or walking back and forth. However the performance of the lecture –as an object and subject matter of the video–challenges Flusser's gesture of philosophizing that seems to be tied and restricted to language, rhetorics or the gesture of writing[8], precisely in exposing the detachment of the theory/words on one hand and the eye-catching bodily presence of the speaker on the other–Flusser in shorts and sandals, bare-chested, smoking a pipe–in contrast to the usual dispositive of a lecture, focusing on the 'content' as the tradition of the separation of body and mind commands.

The video is not 'illustrating' Flusser's philosophy in the sense of showing the gesture as an 'object' you can observe, neither (just) expressing the speaker's intentions , but performing gestures of (video) filming which are determined not only by the concepts (presented in the talk) and the filmed scene, but also–in an literally eye-catching way–by the settings of the camera that are apparent precisely when Forest is not 'accompanying' Flusser's gestures.

Flusser is e.g. proposing a phenomenological-anthropological description of gestures as movements of the body or the 'structure of the hand' as a disposition of the human body while the shadows of Flusser's gestures staged by the camera turns his body it into a 'canvas', corresponding with filming Flusser's shadow on the wall (the body disappears in this shot altogether). A 'shadow theater' not intended by Flusser, but noticed by the filmmaker and his camera.

Still 6 from Video et phénomenologie *(private archive Fred Forest ©)*

Forest's gestures depart from the phenomenological and anthropological framework Flusser hints at to become part of the visual philosophy of gestures Forest and Flusser are creating in the video:

'Look what you are now watching. [...] I am not by myself in gesturing, nor am I in front of a passive public which is looking at me. I am looking at Forest while he is filming me. Now what is Forest doing? He is trying to gesture his camera in a way that can accompany both my gestures and my thoughts. But this is more. He is so deeply involved in the process that while accompanying me, he is also criticizing me which you have probably remarked earlier during this tape. All his motions are in accord with mine. On the other hand, I am not totally free in gesturing. I am trying to adapt myself both to Forest and to the machinery which he is handling. Which means that Fred Forest is not watching objectively my gestures and my theory of gestures, but he is involved in the phenomenon.'

8   Which Flusser explores not only writing about the gesture of writing (in the inevitable paradox of never being able to 'observe' writing from a distance) in different versions of 'The Gesture of Writing' (Flusser 2014:19–25); see also Krtilova 2020.

44   45

Still 7 from Video et phénomenologie *(private archive Fred Forest ©)*

When Flusser holds up a mirror to show Fred Forest behind the camera (however does not hit the right angle for this) the movement which allows Forest and the spectators of the video to see a reflection in the mirror is the zoom as a movement of the camera, and the intersection of the reflection of the mirror on one hand, the camera lens on the other – not synchronized with the (human) bodies involved.

Still 8 from Video et phénomenologie *(private archive Fred Forest ©)*

Still 9 from Video et phénomenologie *(private archive Fred Forest ©)*

The mirror does not reflect the creator of the video – self-reflection as a basic phenomenological operation turns here into a (video-) cinematic gesture in which the mirror and the camera are gesturing as much as the philosopher and the filmmaker. The camera operator, the camera and the filmed 'object' are only abstractions, the gesture is 'determined as much by the observed situation as by the apparatus as by the photographer, so that any separation of the named factors must be ruled out.' (Flusser 2014: 81)

Video-filming and philosophizing appear as *gestures* when they refract rather than reflect each other: not creating one 'image', one idea of a philosophy or phenomenology of gestures, but always dealing with an 'outside' – the camera outside the discourse, the practice of filming outside the (its) theory, the interactions or intersections between camera; Forest and Flusser 'outside' their intentions, the bodies of Flusser and Forest outside the 'body' of the video and the body of philosophy – the philosophical concepts. The gesture only becomes a gesture when the subjective-relative perspective meets the 'outside' of the culturally and technically determined form.

Unsettling an objective representation of reality, the settings of the apparatus come into view, questioned by Forest's playing with rather than against the apparatus. The same holds true for Flusser:

he exposes the settings of western-scientific-linear thinking playing with them, confronting language with (technical) images, a theoretical or philosophical discourse with aesthetic practice, theory/philosophy based on universal concepts and its (situated, singular, individual) performance.

Not coincidentally, apart from holding up the mirror, Flusser's only non-illustrative, 'real' gesture Flusser is a simulation of a hand holding a pen writing, which he classifies in the video as a 'working gesture': 'One is a gesture which hurts itself against an obstacle [...] The gesture is changed by the obstacle and the obstacle is changed by the gesture.' In this sense, the best part of Flusser's and Forest's work might be the obstacles they run into.

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Ulrich Richtmeyer

The 'movement of doubt' in screenshot photography

In his essay *The Gesture of Photographing*[1] Vilém Flusser describes photography as particularly suited to philosophy in that both carry out a 'movement of doubt', which is a 'philosophical gesture par excellence'.[2] The present text aims to determine whether this also holds of a digital photographic practice as extreme as it is quotidian: screenshot photography. I will not foreground here the question that readily suggests itself, namely whether this is a legitimate form of photography at all, though it will come to the surface in the analysis of various photographic qualities.[3] Flusser would likely have dealt quite generously with this classification. For him digital culture began with the invention of photographs in 1839,[4] because the procedures of generating technical images with scientific devices inaugurated the historical epoch in which it is no longer work that is determinative, but play – no longer the production of works, but of information – which develops human communication into a network-like dissemination of technical images.

As a procedure that operates strictly numerically (evident in the focal widths and exposure and developing times) photography was from the outset based on those discontinuities by which the cyberneticists of the 20th century defined their concept of digitality.[5] Flusser saw these discontinuities between the silver halide particles in the photosensitive layer of photographic negatives. He also found these discontinuities in the *gesture of photographing itself*, which belongs to the seeking movement of the recording body in circling a

motif to be registered as well as in all decisions that have to be taken thereby: 'The quantum character of the gesture of photographing (the fact that this concerns a clara et distincta perceptio) gives it the structure of a philosophical gesture, whereas the gesture of filming dissolves this structure.' (Flusser 2014: 80)

In screenshot photography, however, the pre-photographic visual field in which the photographic objects are located is two-dimensional. Because all objects are equally distant, there is no manipulation of depth of field. Frames that overlap are given automatic shadows, as in Fig. 1, but this does not change their focus. The screenshot icon captured seven times in a row (Fig. 2), with its sequentially miniaturized image content, is able to generate an illusion of pictorial depth through the reduced frame and continuously increasing pixelization, which however is not a matter of artistic decision for the photographer.

Fig. 1, staged screenshot 'Deep Surface'

Fig. 2, seven-fold screenshot of the screenshot icon on a dark-grey screen with continually decreasing focus of the file name (screenshot)

Moreover the search for the position from which to take the photo does not occur in space. In screenshot photography, all bodily movements are reduced to those of the eyes and fingers, whereby a simultaneous movement of the recording apparatus is irrelevant. So can the three interwoven aspects by which Flusser described the *gesture of photographing* also hold of the practices of screenshot photography? 'In philosophy, as in photography, the search for a position is the obvious aspect. The manipulation of the scene to be illuminated is not always readily admitted but nevertheless characterizes the various movements of philosophy, and the self-critical aspect is the one that allows us to judge whether the manipulation has been successful.' (Flusser 2014: 78)

A search occurs in screenshot photography first as the selection of suitable motifs that are then placed on the screen or place themselves there. Such iconographic motifs are available almost without limit, since the devices can go online and thus access the 'universe of technical images'. The selection of motifs does in fact still evidence the 'deeply predatory nature of a photographic consciousness' (Haraway 1991: 169), but no longer takes on the

violent transformations that concerned Susan Sontag.[6] For screenshot photography does not steal a view of anyone that has not already been long disclosed. Thus the 'predator-like nature' of the apparatuses that Flusser grounds etymologically occurs as a photographic lurking and pouncing within the apparatuses[7] themselves. The selection of motifs cannot overcome their redundancy, since the photographic objects are of the same kind as the recording images. They are files intended for a display on the screen that are then reproduced by screenshot photography for further screen presentations.

B)

Beyond the selection of motif, the pictorial-productive decisions of screenshot photography occur above all in determining the moment in time and the two-dimensional section of the image. The *gesture of screenshot photography* can be carried out, in operative terms, in accordance with two different modes that correspond to these two interests, the first generating a total screenshot and the second a partial one. The total method is faster as it simply captures the entire screen surface. On my computer this is done by simultaneously pushing three keys. I do not need to make any iconographic decision in the pictorial surface, but with this quick procedure I can determine the moment in time that I capture in the sequence of moving images in a film or a game.[8]

The total screenshot is ignorant of the structure of the image, which is accepts blankly, as it is found, but it is quick because it only involves determining the right moment, that moment in which an ephemeral event becomes a striking frozen image. It is evident that 'the most fruitful moment and the most fruitful aspect of that moment must be chosen' (Doris Lessing 2005: 16 f.), as Lessing

6 'To photograph people is to violate them, by seeing them as they never see themselves [...] it turns people into objects that can be symbolically possessed.' Sontag 1973: 10.

7 'This being-on-the-leap of the apparatuses, their predator-like nature, can be found in the attempted etymological definition of the concept 'apparatus'.' Other translation of Flusser 1983: 20, cf. Flusser 2000: 21f.

8 On the playful fixation of the moment in Pokémon Snap see Giddings 2013.

had already noted in his pre-photographic medial theory of the image. Sontag, who was also a film-maker, referred to the higher evidentiality of the frozen image in comparison to filmic images, and Flusser also emphasized the greater philosophical relevance of the photo relative to the filmic image.[9] However the significance of this frozen image is somewhat relativized where there is the technological possibility of capturing a series of a process; for then the photographic decision about the 'fruitful' image of a 'fruitful moment' falls under post-production, which can retroactively select the most successful motif.

Because quickness is a property of the total screenshot, I wanted to test how fast it is. And since I'm an amateur in screenshot photography in Barthes's sense, not in Bourdieu or Flusser's,[10] I used the second-hand of my desktop clock and was able to create five screenshots per second at 14:14:14 (which, like quite ordinary photos, prove nothing). These of course do not document the 'exposure time' of the screenshot apparatus, but rather only my corporeal ability to trigger it.

Fig. 3: Seven screenshots of the second-hand of my desktop clock
between 14:14:13 and 14:14:15 (excerpts from total screenshots)

I was too quick for the slow second-hand, since every one of the five screenshots from 14:14:14 looks identical, which would be no different in a recording taken from a film. However, although they look identical, they are not identical, since they capture the state of my screen at different times. My computer automatically assigns file names to the screenshots, which record this variable time at which they were made. Beneath the second unit it numbers them

9   'Photographs may be more memorable than moving images', Sontag 1973: 13.

10   For Barthes, the amateur photographer can accidentally encounter the noema of photography. For Bourdieu the aesthetic decisions of the amateur are oriented by social distinctions, and for Flusser the amateur sits in a 'post-industrial opium den' and intoxicates herself on 'structural complexities of the apparatus'; Flusser 2000: 58.

chronologically and as in the field of computer science it begins with the position 0, which contains no number, and then follows up with the numbers 1 to 4.

Fig. 4: Chronological list of the automatically generated
file names of the 7 total screenshots

Flusser writes:

'The moment the photographer stops looking into the reflecting mirror (whether real or imaginary) is the moment that will define his image. If he stops too early, the image will be superficial. If he stops too late, the image will be confused and uninteresting.' (Flusser 2014: 85)

In my series as well it is the moment of intentionally interrupted reflection that defines the particular image. Because my aim was to test my gestural speed in generating total screenshots, the reflection was stopped as soon as possible. But it continues to operate now, for the 'superficial' pictures show that my operative time does not correspond to that of the screenshots. We can both act under the limit of seconds, but my limits are reached very quickly and can be quantified at 1/5 of a second. The limits of my screenshot apparatus are different in nature and cannot be identified in the same way. The apparatus can certainly record faster than I can trigger it, probably as fast as it takes to compute the image file. Below the level of seconds it uses another notation for the automated file names, which unfortunately does not further differentiate the time (in hundreds of thousands of a second) but only captures the order of the images. It would be interesting to find out whether it can have two or three digits. I am not able to test this with my own gestures, but can only refer to this with questions. Can my screenshot

apparatus take photographs faster than the images on the screen change? Yes, as shown by the example of the second-hand. Every one of these five recordings is faster than my triggering gesture. But there are no ultra-fast movements in my pre-photographic field that the screenshot could surprise, like Edgerton with his falling milk drops.[11]

There are of course ultra-fast states in my computer and in principle the screenshot apparatus is able to capture them, but I don't know how I could make them my own photographic decisions. The screenshot photographer does not 'pass […] through a space-time consisting of diverse areas of vision, that is, of diverse 'Weltanschauungen' and the barriers that divide them.' (Flusser 2014: 80) Screenshot decisions only pertain to times and two-dimensional areas of the screen. But they also encounter obstacles that divide fields of vision, and that I would like to encounter.

c)

The partial screenshot is in many respects slower than the total one; and it combines two moments, the selection of which could occur too early or too late. I also activate this function with three keys. Then a position symbol appears on the screen consisting of a cross on an opaque circle (Fig. 5). As it turns out, this is one of the exclusive appearances on my screen that cannot be photographed in screenshots. Thus there is a perceptual limit to the screenshot function which can only be circumvented with a photograph of the screen.

Fig. 5: Photograph of the position symbol for the partial screenshot, which is invisible for all screenshots

The position symbol can be moved using the touchpad to every pixel position on my screen, while the two coordinates of the row and column of the screen are indicated directly next to the symbol for orientation. My pre-photographic field is numerically ordered from left above to right below and has the dimensions of 1680 × 1050 pixels. Thus it is demonstrably two-dimensional. I position the movable symbol by setting my index finger of my left hand on my touchpad. This fixes one corner of the future pictorial frame, while my further actions will determine which corner of the future image it will be: top or bottom, right or left. To position this point I have to take some time, since it can then no longer be changed. This first decision of my photographic gesture is not associated with any time pressure, but it is irreversible. Starting from this point I can then, by moving the index finger of my right hand on the touchpad, draw out a quadrilateral pictorial frame diagonally in any arbitrary direction.

The position symbol then changes function and connects to the movable corner set diagonally across from the first point set. Instead of the position on the screen, the size in pixels of the selected excerpt is now indicated next to the symbol, so that I can also make a purely numerical decision for my image in addition to the visual one. As soon as I remove my left finger from the touchpad, the screenshot is 'triggered'. Until then I can continue to shape the excerpt with my fingers and eyes indefinitely, though it is always a quadrilateral within the larger rectangle of the screen. The

11   'For fifty years, Harold D. Edgerton has photographed the explosion of a drop of milk, to the millionth of a second.' Barthes 1981: 33.

selected quadrilateral can minimally be one pixel tall and wide and maximally can fill the entire screen.

Fig. 6: 17 partial screenshots of one line of text, set above one another with 1 pixel distance between each. Every screenshot is taken one pixel high and 1372 pixel wide. In taking the screenshots I left one line of pixels between each of the excerpts.

Thus with a partial screenshot I can take a very clear and distinct position that serves as a fixed starting point for the image and from there I can stretch out quite various frames. I first look for an initial position and then for my image, whereby one of the four corners is the previously determined position. In this search for a position I remain caught within the delimited surface of my screen, I cannot circle around photographic objects or change the perspective of my apparatus on the photographic field. Every one of the 1680 × 1050 pixels of my pre-photographic field is 'viewed' from the same perspective and the same distance, so there are also no distortions on the margins such as those caused by photographic objectives. But other apparative categories can be seen (Fig. 7-9):

Fig. 7: A partial screenshot
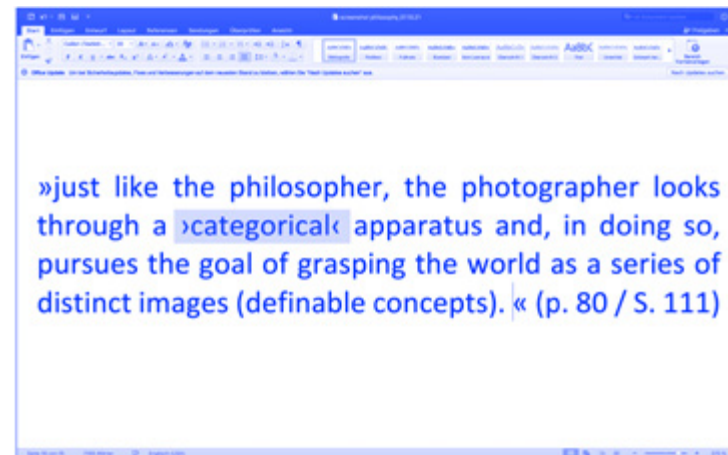
Fig. 8: A total screenshot taken during the decision process for a partial screenshot (Fig. 7) showing the automatically darkened selection field, which remains itself invisible in the selected screenshot.
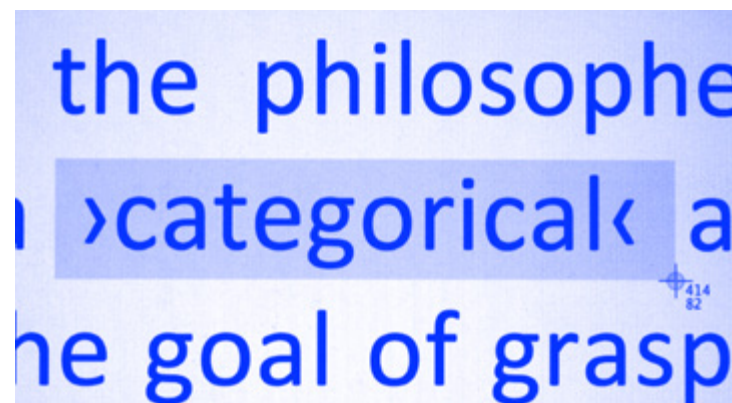
Fig. 9: Photograph of the selection field (Fig. 8) with the position symbol that is invisible to screenshots

The pictorial field selected for the partial screenshot is automatically darkened and thus marked during the process of selection. The position symbol that can be seen at the same time cannot be photographed, as mentioned. We are dealing here with three different varieties of screen presence that all emerge in the context of screenshot photography: appearances on the screen that can be

captured by the screenshot, and appearances on the screen that belong to the visual operationality of the screenshot function, are only visible in the work process and then automatically disappear. The latter can be divided into two groups, one of which (the darkened selection field) can be photographed in a total screenshot taken intermittently (I did not know before that this was possible) while the other (the position symbol) remains invisible to screenshot photography. By crossing the two screenshot modes, I was able to photograph myself at work. 'In another meaning, 'reflection' is a mirror for looking at ourselves as we make decisions.' (Flusser 2014: 84) And the external photo on the screen showed what can be seen in both modes.

D)

The differences between the operational modes of a total and a partial screenshot recall Sontag's dialectical definition of photography – as fundamentally a medium of the aesthetic or instrumental view of the world.[12] Still in 2003 Sontag repeated this thesis of the 'dual powers of photography' (Sontag 2003: 76), which always combines documentary and aesthetic functions. This dialectical structure is given a one-sided weighting in each of the two modes of screenshot photography. The total screenshot arises where documentary expectations are to be fulfilled instrumentally. The partials screenshot arises from an aesthetic process of decision-making that creates the picture through a point and a visually selected excerpt.

In traditional image processing programs we find a similar function with the 'extracting' of an image, which has the same precision as the partial screenshot but a different dynamic. In extracting I can separately move all four sides of the image and take time to get an impression of the differences. This decision can be philosophically motivated as well. After all, the analog cutting out of an internal motif from a photographic surface was the favored photo-

philosophical procedure of Ludwig Wittgenstein (cf. Richtmeyer 2021). But in the partial screenshot this is not a part of post-production but rather is a compulsory decision of the recording situation. I can take time to select a partial screenshot, but there is only one attempt for every image that is generated. Moreover the geometry of the image cannot be determined by four separate individual decisions for the position of the image boundaries, but rather by two diagonally related points. Since the first corner gets immovably fixed, this also determines the positions of two pictorial boundaries, which can then only be varied in length. Thus the point set first determines the position of two edges, which have to be anticipated in setting that point. And the entire pictorial field that emerges has to be anticipated from this point, whereas in extracting it can be adjusted from the external boundaries. Hence the screenshot photographer also 'sees possible images, and as he looks in this futurological way, he chooses his own image from those available to him'. (Flusser 2014: 84)

The gesture of photographing aims 'not directly to change the world or to communicate with others. Rather, it aims to observe something and fix the observation, to 'formalize' it' (ibid.: 76f.) as Flusser writes in allusion to the 12th Feuerbach thesis of Marx. The images that thus arise articulate interpretations of the world: 'The reason is that the gesture of photographing is a gesture of seeing and so engages in what the antique thinkers called 'theoria', producing an image that these thinkers called 'idea'.' (ibid.: 76) So far here I have been concerned with the gestures of screenshot photography in the sense of corporeal and operative decision processes. Flusser's concept of the gesture however goes beyond this understanding phenomenologically. Thus I would now like to take up the 'gesture of seeing' in screenshot photography. And here it occurs to me that I have to distinguish my own gesture of seeing from the visual capacity of my screenshot apparatus.

12 'Though these two attitudes, the aesthetic and the instrumental, seem to produce contradictory and even incompatible feelings about people and situations [...]', Sontag 1973: 138.

The most important quality of photography is light, as registered in the name John Herschel proposed for Fox Talbot's procedure: 'photography' is accordingly a drawing with light (the light of the sun, as in Joseph Nicéphore Niépce's earlier neologism heliography). The name remained even as artificial light entered the photographic situation and then electric light at the end of the 19th century, which illuminated dark photographic studios, sped up the process of capturing an image and banished the aura from the images (cf. Benjamin 2012: 55f.). What can we determine about the relation of my self-illuminating photographic apparatus (i.e. my computer and its function) to light?

If changing light conditions such as light gradients, twilight, spotlights, or darkness are already a part of the image that I see on my screen, then I can capture them. When my computer is online, I have an inexhaustible repertoire of iconographic light effects available from photo archives, animations, films and games. Thus I can reproduce the light situations generated in other pictures by other photographers in my screenshot. And of course in an image processing program in my own computer I can generate iconographies with lighting situations of my own choice and then photograph them. But can a differentiated decision about light become part of my photographic practice with the screenshot apparatus? Can I stage the lighting as iconographically with this apparatus as I could if I photograph my screen with a regular commercial camera?

After a series of screenshots I was able to ascertain that this is not possible. I can dim my screen and thus give it various lighting moods, so that the self-illuminating photographic objects appear with varying intensities. On my light-bar I have 16 different levels of brightness available, an escalating spectrum comparable to that used in the dark-rooms of analog photography to review the optimal illumination of a paper print. But no matter how I dim my screen, my screenshot always captures the same brightness.

Fig. 10, Five varying and yet equally bright screenshots. (The words were arranged in a Word file such that they frame the automatically appearing symbol for screen brightness. Then I made a total screenshot of each in order to avoid the automatic fading of the symbol and then chose the appropriate selection with a partial screenshot.

The five screenshots (Fig. 10) show that I cannot capture the dimmed light of my screen with a screenshot function. The computer always calculates the image as if the screen were optimally illuminated. And the bright and homogenous illumination of my screenshot cannot be manipulated. The writing is always equally black, the background always equally white, although the symbol shows the varying darkness and brightness that could be seen on the screen at the moment of the image capture.

Thus my screenshot apparatus ignores not only my individual perception of brightness but also that of the screen (which could be demonstrated by the reduced use of electricity). As it pertains to light, the screenshot is no screenshot at all, is not a photo of my screen! The technical image does not merit the name, as it is neither an optically generated nor a computed image of the visible screen. Or is it still?

Can the specific brightness of my screen be represented in a computed image? In fact it can, since I can take digital photos of my screen. These would be computed images that more or less correspond photographically to the human visual impression by means of artificially sequenced digital lighting moods, insofar as the different brightnesses of the screen become visible in them. The difference to the screenshot however is that these digital photos would also be generated optically.

The simplest justification of the screenshot as a photo of my screen might be to compare it to a fully automated digital camera, with

automatically regulated focus for greater comfort and convenience and for example to save people with weak eye-sight the trouble of adjusting the focus. Similarly, the constant brightness of the images could be intended as such a service-oriented automatization. Since screenshots are usually generated by devices with batteries and that often dim their screen to save energy, images automatically computed to be bright could compensate for this. The ignorance of my screenshot regarding the factual variance of screen brightness would then be the result of the automated convenience that it offers.

If photography is a drawing with (natural or electric) light, screenshot photography is certainly a computing with digital light. Digital light is dimmed by means of the frequency with which the LEDs are turned off and on. They cannot light up more or less but only make variously long interruptions between the moments in which they are on. If the interruptions are longer, in fact less light is emitted and the human eye, which is too slow to perceive the ultra-short sequencing of digital light, receives the impression of a similarly dimmed light such as we know from electric lightbulbs.

Thus the light captured in the photograph always stands in relation to the time of illumination. But how fast does the screenshot function capture an image? What is its 'exposure time'? Technically speaking it can be as short as the time it needs for the computation. Moreover I assume that my computer can fixate any of its sufficiently distinguishable states. The bright recording of my dark or dimmed screen could represent the state with the LEDs turned on. And the decision for the one or the other millisecond-state (for the bright or dark screen) would then not be taken randomly by the screenshot function. The computed image of the dimmed screen would then produce the bright image due to the properties of digital light generated by the LEDs in the fractions of a millisecond in which they're turned on.

F)

To ascertain whether my screenshot does in fact compute digital light this way, I want to find out what it captures when my screen is black. For then the light is off and there are no longer any ultra-brief states of brightness beyond the perception of the naked eye, one of which might then be captured by the screenshot. This experiment is reproduced here as a screenshot:
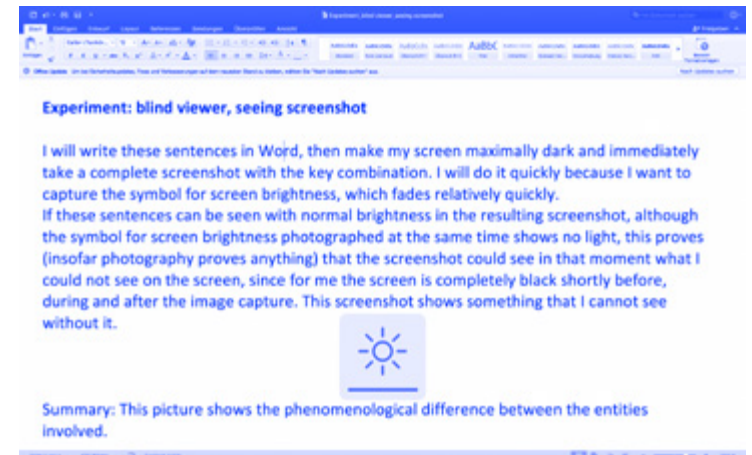
Fig. 11, Screenshot of an encounter in complete darkness

I photographed a black screen and got a bright well-lit image showing that the screen was black during capture. (This image could be faked, but the description indicates how simple it would be to confirm the authenticity by repeating the experiment.) My screenshot apparatus did not see that I could see nothing or that at that moment the screen was black. Its photographic object is a different one than mine and than that of the visible screen. For what the screenshot shows could not be seen on the screen!

But isn't this quite a self-evident statement, which holds of every screenshot and ultimately of photography as a whole? All photos show something different than what actually presents itself to the human visual capacity at the moment of capture. Benjamin's

central concept of the 'optical unconsciousness' describes this with a psychoanalytic metaphor. For him it was above all the spatial and temporal qualities such as the close-up and slow-motion (as well as actually all types of movement photography) whereby the image shows what the person essentially sees but does not grasp (consciously) so acutely as the photographic or filmic apparatus.

However the 'optic unconsciousness' is not the same for the person and the apparatus, because it makes a difference whether we measure this against the human visual capacity, which stands metaphorically for consciousness, or against the technical conditions of the recording apparatus. This difference is also expressed in Paul Virilio's sentence: 'Blindness is thus very much at the heart of the coming 'vision machine", which he conceives as the 'non-gaze' (Virilio 1994: 73). The screenshot apparatus can see where we are blind (the black screen) and is blind to something that we see (the dimmed screen). Thus the screenshot shows that 'it is another nature which speaks to the camera as compared to the eye' (Benjamin 2008: 37). It is 'another nature' that speaks to the screenshot function of my computer than that which speaks to me or to non-human creatures or to other forms of photography. This other nature most likely speaks exclusively to the screenshot, being its own; it is no optically generated image but rather a computed one. But computed on what basis? What is it based on? Certainly not on what is shown on the screen.

The photographic object of my screenshot (Fig. 11) is the encounter – which remains hidden to me visually – that takes place on the dark screen between the text document and the temporary brightness symbol of the screenshot. But the intention of my screenshot is not to generate a beautiful, unusual or sensational image of the encounter in the darkness, like a camera trap for wild animals, where I would also be unable to see what the apparatus sees. The intention is to capture, with this image of the encounter of the brightness symbol with the text document, the rules of perception of my screenshot.

Thus without meaning to I have brushed up against the old photographic theme of witness and indexicality with this screenshot. We know that all photographic images can be manipulated, and we nonetheless believe that what they document has occurred. Roland Barthes despite his better knowledge gave this belief a final, or better a first, incontestable justification, namely that despite all the dubitability of the photographic image it is at least certain that an object emitting light must have existed in front of the objective, the traces of which were then recorded on the photosensitive layer. However Barthes' assumption that 'the thing of the past, by its immediate radiations (its luminances), has really touched the surface, which in its turn my gaze will touch' (Barthes 1981: 81) is a construction that strictly speaking no longer held true even for analogue photography. For 'the certainty that the photographed body touches me with its own rays' (ibid.: 82) was already undermined with the intermittent negative. In the darkroom an electric light goes through the negative and leaves its traces on the paper print. And yet it was considered to hold of both analogue and digital photography that the 'photographic referent' is 'not the optionally real thing to which an image or a sign refers but the necessarily real thing which has been placed before the lens, without which there would be no photograph.' (ibid.: 76)

The argument can even be repeated for photography without any apparatus, e.g. photograms, which lack any objective. If we understand light to also include the frequencies of natural and artificial light that are invisible to the human eye, then this even holds of x-ray photography or the ultraviolet photography that Talbot had already reflected on. However even this last bastion of photographic indexicality is lacking in my experiment. Unlike all other types of photography, here for the screenshot we do not need to assume any object emitting light.

The screenshot photo is a computed image that in contrast to the computed images of digital photography is no longer generated optically. It does not arise from any drawing with light, even if it is usually made visible with electric light or more precisely digital light. So where is the photographic object of screenshot photography if it is not found on the visible screen? Paul Frosh answered this question as follows:

'From what does the screenshot grab? Here the comparison to photography becomes even more important. A chief characteristic of photographs is that they depict a prephotographic visual field (including when this field, a conjunction of objects in space and time, is arranged or 'staged' especially in order to be photographed). In regular photography, whether analog or digital, the pre-photographic visual field is something other than the camera or photographic device being used. In contrast, in the case of the screenshot, what is reproduced is the displayed content of the device itself. The photograph 'captures' an image of the world; the screenshot 'captures' an image of the device.' (Frosh 2018: 18)

The comparison with photography is understandable, but I find the conclusion unconvincing, since in my experiment the pre-photographic visual field is not identical with the 'displayed content of the device itself'. It might be helpful to say that the screenshot is actually a snapshot of an image that could have been displayed as a screen image at the moment of capture from the available data. But this is also untrue, since the displayed brightness of the screen would have to be a part of its image data – or at least could be. The screenshot could theoretically be a true screenshot, since all the appearances on the screen that it ignores could be integrated into its computation.

6)

The visible screen is not the photographic object of screenshot photography, as I falsely assume when I'm taken in by the name. The screen is for screenshot photography like the viewfinder on analog cameras or the display on digital ones. I look with the aid of such images, like with my screen, onto a pre-photographic visual field in which I orient myself and from which I would like to generate image files that when displayed later will come as close as possible to what I saw in my 'viewfinder' image. In contrast to other photographic procedures, here I have only this 'viewfinder' image for visual orientation and cannot view the photographic object in any other way.

I cannot view it with my own eyes independently of the apparatus or move around in this field with my body or with my apparatus in order to make photographic decisions. There is nothing more to be seen, for the fact that the pictorial appearance on my screen is based on a computation is irrelevant for the photographic operation of my screenshot apparatus, since I cannot make any decisions with that computation that would be determinative of the image. We are not generating a graphical file in an image processing program but rather deciding on a screenshot on the basis of the 'viewfinder' image. But – and this is decisive – the screenshot is not a photo of my 'viewfinder' image, even if the two are almost indistinguishable, unlike in other photographic procedures. The screenshot seems to have the exact dimensions, iconography, color, resolution and brightness as the image on the screen with which I see what I'm photographing. They do not correspond in light and darkness. 'What you see is what you get' has always been an unachievable ideal between screens and the image-generating technology.

Screenshots as digital photos are 'dubitative images' (Lunenfeld). They are image files of frozen images that can be opened on suitable display devices and can be viewed under the technical conditions of the apparatus being used, whereby the colors, formats and resolutions of the display vary depending on the device used. However they differ from the typical digital photos in that the latter, like analog photos, are generated optically. Screenshots thus, in contrast to screen photographs, are not image data made from self-illuminating photographic objects, although their visibility is indispensable to the photographic decision-making process. Flusser's essay on gestures ends by describing 'photography as a gesture of looking, of 'theoria'.' (Flusser 2014: 85) Here and in his photo-books he dispensed with any images, although he essentially rehabilitated them for philosophy: 'The gesture of photographing is a philosophical gesture, or to put it differently, because photography was invented, it is possible to philosophize not only in the medium of words but also in that of photographs.' (ibid.: 76) I was unable to argue here without screenshots and was compelled to think along the lines of a 'photo-philosophical montage' as in Latour's essay on soil-sampling, for like the researchers there I have tried to fix an invisible and moving boundary between savannah and rain-forest (cf. Latour 1997). My savannah is the

easily surveyable flat-land of my screen, which abuts the dense jungle that is the black-box of my automated screenshot apparatus. The philosophizing with photographs occurs where the dynamic relation those two domains have with one another can be seen, fixated and reflected with photographic gestures.

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Alexandra Moralesová

Gesture of film-making: Preliminary notes on contemporary material film practice
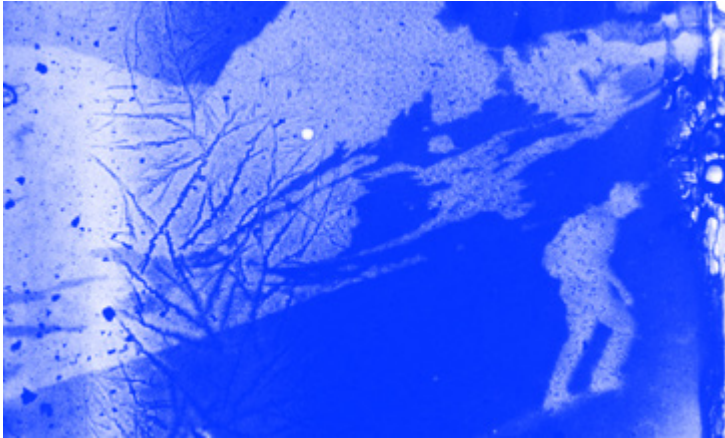
Fig. 1. Robert Schaller, In Lightning Agnes (2014, 16mm)

While cinema industry has abandoned a photo-chemical film (or the other way around), contemporary experimental filmmakers active on the scene of artist-run film labs continue to explore it. The apparatus of film, understood with Vilém Flusser at various scales and in different senses of the word, here gains a very concrete, material and tangible yet plastic and optional object character. Following Karen Barad it seems necessary to conceive of the film apparatus as a structure of intra-active bonds among different multiple human and non-human elements entering into the relation between an artist and the object of film. How they mutually influence each other can be seen through a study of a contemporary experimental gestures of making a film.

Subsequent to the original era of film-pioneers,[2] the act of physically touching film as a material object was a practice developed by avant-garde filmmakers before the First World war. From the 60s'on, material techniques such as painting, scratching or direct exposition become more radical and headed towards destruction of film material and disruption of the cinema dispositif e.g. in the work of Brigite and Wilhelm Hein or the group Schmelzdahin and

Jürgen Reble himself active from the 80s until today. It is necessary to understand that this practice involves the artist's body as an intrinsic part of the film's material conditions. In to the context of the post-digital discourse, the practice of handling or touch the film directly re-appears or persists as an increasingly relevant artistic approach to the production of technical images. With every new experimental and material film, which is the object of interest of this essay, the filmmakers reach and intervene in different levels of the film apparatus and set forth its perpetual transformation.

The filmic or cinematic apparatus should be conceived as a bio-mechanical project whose affinity with the human body implies different body movements. Some of these movements can be called *gestures*. Given how complicated and contradictory any attempt to satisfactorily produce definition of the gesture (Flusser 2014: 1-9) may be, let us consider a working hypothesis for gesture in artistic practice as a specific, not necessarily efficient, *inspired movement* of hands (or other body parts) which arises from their contact with something else (another being, material, apparatus, etc.), while emphasizing its playful potential and setting aside symbolic dimension of the movement (aim, value, or efficiency). In the case of film, this poetic or artistic gesture ceases to be an apparatistic (operational) gesture, it rather follows the senses, reacting to the materiality of film, and opens up to a playful encounter which is however not limited to the physical aspects of the medium; In a cultural and technological sense these physical and the conceptual aspects can hardly be separated.

1 Richard Tuohy and Dianna Barrie, annotation for their program 'Hand and Machine' composed of seven films (2011–2016) which explores cinema as a mechanical human–like apparatus and the relation between the hand and the machine

2 I refer mainly to early photographers and inventors such as Nicéphore Niépce, Louis Jacques Mandé Daguerre, William Henry Fox Talbot, Sir John Herschel from the side of photo-chemistry and from the side of the study of motion by Étienne-Jules Marey and Eadweard James Muybridge. In the realm of cinema it is fruitful to follow both its manufacturers the brothers Lumière and illusionist Georges Méliès, these two lines would engender two lineages: a commercial one and experimental one.

1. Photo-chemical film as post-industrial object
Imagine the cinematographic apparatus as a philosophical toy store or even better as a flee market, an open space forming a symptomatic image of our post-historical and post-capitalist time. The market is replete with miscellaneous objects: various tools, instruments, devices, apparatuses, materials and films carrying with them heterogeneous experiences, habits, memories, histories, theories, strategies, narratives, modes, etc. and figures. It is a place where play and thinking, object and subject, materials and ideas, art, science and industry intertwine in an associative but also completely chaotic mode outside of the history of film. Sellers are missing, but there is a considerable number of players (customers). They touch the items, manipulate them and make other things out of them. In this formerly marketable area, (almost) everything is freed from economical and cultural value and can be brought into improbable terrains.

The question posed here is how to capture the gesture of film-making in material film practice sometimes called experimental in the context of the current technological paradigm characterized as post-industrial, that is after the abandonment of the classical photo-chemical methods by the industry of the digital moving image. It may seem that the industrial frame is totally irrelevant for artistic practice. This might be the case in other arts–film is inherently a technological domain. The change from the analogue photo-chemical and mechanical film apparatus towards one of the digital moving images generates a shift from a physical object to a set of information, from making towards computation. These are all based on scientific texts, however, they differ in their degree of abstraction. While the photo-chemical and mechanical film is a material object (flexible film base with a number of emulsion and other layers) which requires physical handling, the digital moving image is a numerical

code developed in computation which appears to be contactless and harmless, although it needs–as any technological production–a concrete material medium, a whole material infrastructure.[3]

In terms of the relations between the human body and apparatuses, the post-industrial and even post-digital transformation is based on symbol operations and thus increases the frustrating[4] lack of tactility and performativity. According to Dieter Mersch[5] the distinction between performativity and operability marks the difference between artistic practices and operational techniques solely focused on the correct and efficient functioning. And this is also the idea which lies behind the distinction between the photographer (as an operator, a functionary) and the experimental photographer (as an artist) in Vilém Flusser's concept of the apparatus (Flusser 2000: 21) which is based on the Western techno-scientific approach towards the world as a disposable operable environment and source.

2. Abstracted one-finger movement
An enormous number of complex operations have been abstracted into the gesture of pressing a button, a terrific indulgent gesture of dealing with a black box,[6] so characteristic for developed Western culture. Günther Anders writes on this account:

> 'A key is a key. Whether the control panel serves you to start an ice-cream maker, put into operation a power plant or trigger the final catastrophe, from the point of view of the attitude, it makes no difference. [...]

3 The excessive and still increasing industry of digital technical objects requires an enormous amount of raw material, water, minerals and metals becoming more and more scarce. It is an environmental, (geo)political and (post) colonial issue. A graphic case is that of lithium which is crucial in fabrication of accumulators used both in analog and digital electric devices. See for example Cubitt 2017: 64–69

4 This frustration is often sublimated into an analog-like interface of digital tools, for example musical electronic instruments. See Andrews, Ian 'Post-Digital Aesthetics and the Return to Modernism, Media Arts and Production' (lecture), University of Technology Sydney, Faculty of Humanities and Social Sciences, 6. 11. 2002, https://www.ian-andrews.org/texts/postdig.html (21. 6. 2021).

5 Krtilová, Kateřina, 'Performativní reflexivita: rozhovor s Dietrem Merschem' (Performative reflexivity: interview with Dieter Mersch) in Krtilová, Kateřina –Svatoňová, Kateřina 2016: 301–313

6 '[...] No photographer, not even the totality of all photographers, can entirely get to the bottom of what a correctly programmed camera is up to. It is a black box.' Flusser 2000: 27.

In brief, the gesture that will determine the commence-
ment of the Apocalypse will not differ from any of the
other technological gestures — and it will be performed
[...] like all the other identical gestures, by a bored
operator innocently following instructions of a light
signal. If something symbolizes the diabolical nature of
our situation, it is precisely that innocence.'[7]

A specific performative gesture can dissolve this reifying
relationship towards the world. A mutual interaction of our bodies,
our thinking and our media cannot be ignored or reduced in any
way, because it is in our media where our thinking happens. Our
body, the body-mind complex is irreducible and maybe it is in the
arts where such a realization is being made evident. The need to
handle our apparatuses bodily, and not only digitally (finger, *lat.*
digit), manifests itself in various contemporary hands-on practices
(photochemical film, modular analog synthesizers, dj vinyl , etc.)
which stand alongside conceptual, digital, post-digital and machine
learning art practices. The hands-on approach[8] develops also in
media theory as hands-on research, re-sensitizing experiments of
the observer, etc. Experimental film practices developed in artist-
run film labs[9] are an important case of the necessity to reconnect
body with mind and to physically shape artistic practice, its
understanding and realizations.

3. Film apparatus
The apparatus of film is understood as Vilém Flusser defines it
in his theory of technical images:[10] in a technical sense, such as
a photocamera and metaphorically such as a political system, a
state and its various institutions (culture, education, industry,

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7   Anders 2007: 52—53. My translation.

8   Fickers and Van den Oever 2014: 272—278.

9   Artist-run film labs are photochemical laboratories or dark rooms for artistic
    film practice, with varying degrees of technological complexity and often
    with considerable emphasis on hand-made DIY procedures, set up and
    managed by artists (individuals or collectives). There are about 50 labs world-
    wide which function approx. from the 1980's on different bases and degrees
    of independence. See http://www.filmlabs.org/index.php/site/home/
    (20. 8. 2021).

etc.). According to Flusser, the camera is the prototype of
apparatuses 'so decisive for the present and the immediate future,'
and which 'provides an appropriate starting point for a general
analysis of apparatus – those apparatuses that, on the one hand,
assume gigantic size, threatening to disappear from our field
of vision (like the apparatus of management) and, on the other,
shrivel up, becoming microscopic in size so as to totally escape
our grasp (like the chips in electronic apparatuses).' Flusser
2000: 21. Apparatuses provoke a certain behavior in their users,
operators, functionaries or performers. Thus Flusser's 'Practice of a
Phenomenology of Gestures'[11] is an important experiment dealing
with our understanding of technology, our human nature-culture
(if we can still follow this distinction) relationships and, generally,
the Western paradigm. Flusser provides a thinking tool or a
performative concept suitable for further thinking on our perpetual
and constantly changing gestures, especially those connected with
technology.

In a narrow sense the cinema apparatus could be understood
through the objects of film, for example the film strip itself together
with its history of all repeated attempts at its fabrication. The film
base (optionally carrying the photosensitive emulsion) is often
perceived as the only irreducible[12] element of film. Actually the
cinema apparatus has absorbed multiple objects and histories
of cinema which are inseparably intertwined with the seemingly
continuous history of film technology which culminates in the
current industrial infrastructure and the subsequent modes of
spectatorship. However, I would like to point out the apparatus of

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10   Technical images are the result of the third step of abstraction in Flusser's
     model of human beings relating to reality—after classical images and linear
     texts they constitute complex, and in a way ambiguous, codifications standing
     on the border between text and image. 'As apparatuses themselves are
     the products of applied scientific texts, in the case of technical images one
     is dealing with the indirect products of scientific texts.' Flusser 2000: 14.

11   A practice preceding theory which is still waiting for its formulation. See
     Flusser 2014: 1—9.

12   The film base is hardly replaceable, it is difficult to fabricate it outside of
     the industrial process. That's why the emphasis on the history of filmstrip
     as a material object. See Martin 2018. Another option is to completely skip
     the film strip and make a radical film like Tony Conrad's Yellow movies (1973),
     seemingly a kind of an anti-thesis of cinema. Many of contemporary film-
     makers however seem rather to stick to the film strip and to conceive it as
     a fundamental precondition of materiality in their practice.

film which reveals itself in part through a different, uncertain and volatile set of gestures of the operator, or rather performer, who is experimenting with it to a certain degree independently from the industrial commercial infrastructure.

Besides photography, a cornerstone of Flusser's theory of technical images, he considers film and different types of electronic image (video, hologram, computer generated images). However the gesture of filming or filmic or cinematographic gesture, 'the gesture of cutting and pasting', as he terms it at different places in his writings,[13] was developed only from the outside, as Flusser announced in the beginning of his essay on the gesture of filming (Flusser 2014: 86). Maybe he considered the film apparatus, the film camera, to be more impenetrable than the photographic camera because of its implacable motion, its self-confident running on different speeds, which is hard to interrupt. Even if the analogue film camera operates in quanta–like the photocamera, it simulates smoothness which doesn't offer a break or a fissure as an opportunity to be split open. And that is exactly what contemporary filmmakers and performers are doing. They are–harshly or gently– splitting open the film camera or film process in order to test it and taste it because film already seems to be a mature fruit. It is on the thrilling borderline between immaturity and decay, in this sense according to the mode of its use it can be both a young and an obsolete artistic medium.

Fig. 2. Esther Urlus, Konrad & Kurfurst (16 mm, 2014), film with self-made still basic emulsion developed in caffenol.

1. Post-industrial shift of the gesture of filming
For a long time, the only part of film which was possible to find on the street was the film itself–in the form of lost or discarded footage called *found footage* (exposed and processed film strips with images made by somebody else). From the late 1980s on there are a number of technological tools and apparatuses which can be easily found and shared in physical and virtual filmmaking communities or purchased on digital markets. Artists interested in the photo-chemical process thus find discarded technological objects, and more unlikely also a certain knowledge, that were both until recently barely accessible. We should therefore talk about found technologies and techniques. They are being re-acquired, re-learned, re-interpreted, but not in a perfect mimesis, but rather, deviated from their habitual path through the act of their singular performance, they are being performed 'from the side'.[14]

The filmmaker engages in the whole process of making a film, taking care of it in the strong sense of the word. He re-imagines the apparatus of film on different levels by performing various gestures:

13 See 'The Gesture of Filming' in Flusser 2014: 86, 'Our Game' in Flusser 2013: 99–106.

82   83

extending his practice with the challenge of brewing his own emulsion[15], preparing colour dyes or (mis)using the great variety of industrially produced film stock (print film, sound negatives, etc.), over-writing traditional recipes and mixing his own film processing baths, creating his own shooting, projection and sound devices and systems based on disposable technological devices or building them from scratch using his amateur transdisciplinary knowledge.

The emblematic film apparatus[16] is no longer only the camera[17] or editing table[18] because crucial and equally creative processes occurs in the darkroom, the photo-chemical laboratory, or simply the film lab. This lab practice could be compared to the performative acts of projection, called expanded cinema,[19] in which the body is involved as an inherent part of the film body or the apparatus of film. The expansion in the case of lab however doesn't lead up to an exuberant projection, expanding the frame of pure media, but goes into the opposite direction, expanding the process of making which then exposes and performs itself. The shift of creativity from the phase of filming (exposing the film in the camera with a light coming from outside into the camera objective), writing (development of a conceptual text as a film script or a film score) or editing the film (the act of montage) to processing and further

14 A 'sideglance' is a condition for an indirect but yet the only possible theory of mediality which can grasp media's inherent ambiguity. The work of media according to Mersch 'consists of dissolving themselves in fulfillment of their function' and their mediality can be only shown through specific aesthetic practices of rupture, of 'sideglance'. (Mersch 2013: 209)

15 See a practical book on emulsion experiments by the Dutch filmmaker Esther Urlus (Urlus 2013) or collaborative project on photosensitive emulsion http://www.filmlabs.org/wiki/en/artisanal_production (3.5.2021).

16 The apparatus in its bureaucratic dimension of funding, producing and distribution is left aside although in some regions it is also part of experimental film production.

17 In different contexts, a common emblem for film counter-culture was a 16mm camera held by a hand in a threatening way. Film as a gun. See for ex. Dinçel, Hazlı, 'Shelter in Place: A Woman of Color in Analog Film, Sensate', Flint Magazine, Issue 3: Wonder https://sensatejournal.com/shelter-in-place-a-woman-of-color-in-analog-film/ (4. 6. 2021).

18 See Agamben's analysis on Guy Debord (Agamben 2008: 315) or see Pantenburg on the sense of montage at Farocki and Godard (Pantenburg 2015: 164–174).

19 The effervescence of an eclectic and often counter-cultural cinematic practice where the film is happening through the act of projection and which uses different media and knowledge can be more systematically seen from the 60s on. See (Youngblood 2020).

photo-chemical practices executed in the darkroom naturally changes the gesture of the filmmaker. Rossella Catanese and Jussi Parikka follow this thread in the introduction to their collaborative article on film-labs as sites of film counter-culture and inquire 'into what constitutes film as a material process and also, importantly, what infrastructure enables this practice.' to find out that '[…], film becomes emphasized as a hands-on practice that explores both a relation to the technological apparatus and to film and media history.' *(Catanese, Parikka 2018)*

2. From the eye to hand and maybe further
Artistic practice which combines conceptual and material knowledge reconnects our body with our mind, which means overcoming the modernist ocularcentrism and expanding the mind to all senses. It is not inaccurate to associate a considerable number of experimental films and tools used in their production with pre-cinematic optical toys. These tools, also called 'philosophical toys', required a simple hand movement to produce the illusion of movement in static images. The effect and apparatus of illusion was literally situated in one's hands, it was an open machine. As Wanda Strauven emphasizes in her *Observer's Dilemma*: 'The eye communicates with the brain – or better: the eye fools the brain, via the hand.' *(Strauven 2011: 154)* The relation between senses can be playful and ambiguous: illusion and understanding at the same time, sometimes alternating. Vision directs the body, the hand follows the eye – or inversely in the case of working in the darkroom (without light). In a similar way in experimental film practice, the object of film and its apparatus are seized and examined: seen, heard, touched, smelled and tasted. Moreover young children demonstrate that the mouth completes this triangle: the seen and seized is often tasted and chewed up/digested. Contemporary filmmakers proceed similarly, and in the phase of digestion, they reflect on the agency of both their own corporeality and the materiality of the medium. They break open the industrial apparatus of film and playfully transform it into toy-like instrument which provokes our senses and intelligence. To enter into dialogue with the materiality of film and its apparatus allows to create and apprehend the medial difference which distinguishes it from other technological images. It shows, realizes and materializes

itself in various artistic gestures. Richard Tuohy uses the notion of 'emergent phenomena' to reflect on this transformed thinking produced through his practice 'I like to think of creating situations where new phenomena will emerge from the apparatus. […] this tells us about the apparatus of cinema.'[20]

3. *'Hand and machine'*
Via experimental hands-on practices, by handling film, apprehending it bodily, we can think through the film matter and consequently through its images which are not just the scientific concepts behind them. Even if these images are produced by technological apparatuses, despite their basis in numeric operations (optics, mechanics, chemistry), they are backed by a materiality which is familiar and tangible: the filmstrip, camera, projector and chemicals can be experienced and performed bodily. The man-made, man-like physical machine of cinema somehow corresponds to the human body. Gilbert Simondon, a philosopher pleading for the reconciliation of technics and culture assumes that '(w)hat resides in the machines is human reality, human gesture fixed and crystallized into working structure' (Simondon 2017: 18) Thinking, in the case of film *thinking in technical images*, occurs in the machine and more importantly within the gesture connecting the human (body and mind) with the machine.

Making a film thus includes not only the physical-optical and chemical transformation of the film-strip in order to carry photorealistic images, but also the material fabrication of a film apparatus, its re-invention. This is handmade film in a strong sense: the film stock, exposition devices (camera), if needed, projection mechanisms and other tools for physical, graphical and chemical interventions in the filmstrip, all of which can be made in a fashion of one's own choice, which can be deliberately precarious. As Colorado filmmaker Robert Schaller states 'we can't do film without technology, we can however make the choice of which technology, materials and processes we use.'[21] Schaller's project *An Emulsion*

in the Wilderness: in lightning Agnes[22] (Fig. 1. p. 76) shows quite clearly that we can make our technology ourselves: he makes his films using film stock coated by hand with a self-prepared silver emulsion and shot with a hand-cranked 16mm pinhole camera. This emulsion requires numerous exposure tests and the hand-cranked camera requires a synchrony with the filmmaker's body in order to expose frames even in absence of a trailing mechanism and timer. His technology manifests itself as knowledge that is materialized and *situated*[23] and which makes his relationship to nature, his environment and his body evident. Film-makers working in a similar way as Schaller are situated in their landscape, culture or subculture (scene, film lab) and at home, optionally a studio. They are not unconditionally subordinated to the industry services however they cannot be abstracted from the world of technology. By opting for the above mentioned solutions, they adopt a clear position and relationship towards it.

20 Richard Tuohy in Q&A after the screening 'Alchemy and Apparatus. The Films of Richard Tuohy and Dianna Barrie', op. cit.

21 Robert Schaller in his speech The Art of Making Things to Make Art at the conference The Shifting Ecologies of Photochemical Film in the Digital Era held in June 7–11 2021 at Aberystwyth University, Wales).

22 A project of the 2014 Wilderness Film Expedition by Handmade Film Institute consists in hiking and dwelling in alpine environment and besides survival it also implies creation of a film under the naked sky. In lightening Agnes is an outcome of this expedition and a collaborative film Robert Schaller made together with expedition participants Curt Heiner and Armand Tufenkian. For further details see here: https://www.handmadefilm.org/wildernessfilmmaking/inLightningAgnes/ (7. 6. 2021)

23 Haraway's situated knowledge (Haraway 1988) here in terms of specificity of the artist's knowledge and tools depending on her/his actual situation. For ex. Schaller living in the mountains, having critical attitude towards technology and limited access to goods, electricity etc. puts a common film practice in doubt.
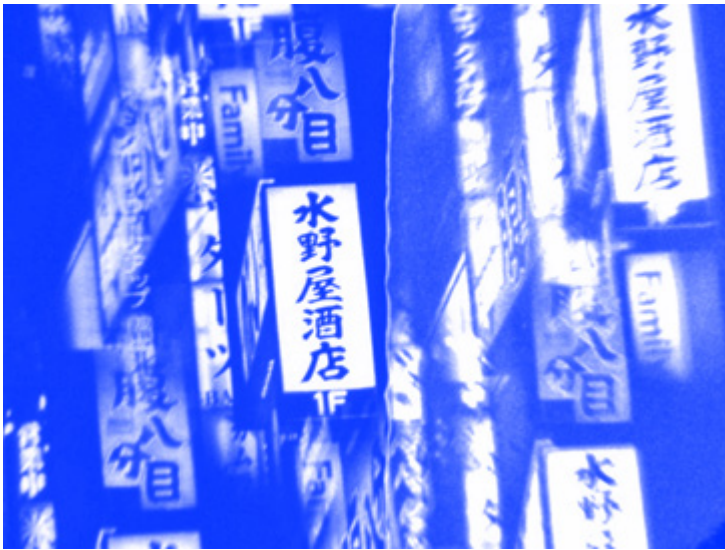
Fig. 3. Richard Tuohy, Ginza Strip (16mm, 2014), his first film using the technique 'chromaflex' developed by Tuohy and Barrie

Australian filmmakers Richard Tuohy and Dianna Barrie have focused in their art practice on the idea of mechanization, the relation between man and machine: 'the hand being one usual site of connection between body and machine'.[24] Their films and performances show a relation of intimacy which Tuohy conceives of as '[t]his kind of reflexive, unconscious familiarity and bodily knowing that allows one an opening into a dialogue with the medium'[25] which allows stepping inside the apparatus of cinema. With their practices, Tuohy and Barrie *undo* the formal apparatus of film, which had been *made obsolete*. As in their process called *Chromaflex* (Fig. 3.) they unlock and reprogram different film stocks for artistic use finding new non-standard ways of processing and chemical interventions.[26] Or as for their film performance *One hand*

they have invented strategies for exposure and duplication[27] in order to make the image also audible – that is to make the same image we see to produce sound we hear – which required multiple experiments with contact printing techniques. Their film performances also often require building projection systems or special devices. Not by chance, also here, the (artist's) hand[28] is recurrent motive in Tuohy and Barrie's films. Their artistic practice is not only sustainable in a sense of self-sufficiency in terms of skills and knowledge but also reflects on the current technological situation and thus emerges into the current world and incites other artists to undertake a similar journey into the realm of apparatuses. 'Indeed, emerging into the world – becoming a person – means internalizing some of these structures through interaction and thereby beginning the perhaps unending process of forming pathways that define us. […] We are that with which we are intimate. As film people, film and all its apparatus is inside us.'[29]

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24 Personal communication with the artist November 2021.

25 Personal communication with the artist November 2021.

26 Their process called Chromaflex is '(t)he procedure' which 'effectively allows colour negative, colour positive and black and white to exist within the same image by masking off sections of the film with Vaseline or tape so that they resist the different processing chemistry.' (Knowles 2020: 110)

27 See Notes on the making of 'One Hand', https://vimeo.com/560342907 (Accessed 19 June 2021).

28 Hand also appears in Tuohy's film Etienne's hand (16mm, 2011, 13 min) and it also gives name to Tuohy and Barrie's film program 'Hand and machine', collection of 8 of their films reflecting on the human and technology relationship.

29 Personal communication with the artist November 2021.

Gesture of making (a film)

In the *Gesture of Making* Flusser focuses on our hands, which could be a suitable point of departure for the gesture of film-*making* as well. As already mentioned before, having two hands and two feet[30] shape the condition of being human, our senses and intelligence. Flusser writes: 'If we imagine a being that is just capable of thinking as we are but that has no hands, we are imagining a way of thinking completely different from our own.' (Flusser 2014: 33) and later '[...] hands are one of the ways we [...] are in the world.' (ibid.: 34f.) The mirroring, the symmetry of our two hands, as Flusser notes, makes us feel the world as dialectical, divided. Through a gesture of making, we try to reconcile the two opposites and to achieve a whole. It transforms, imprints a form, it is a gesture of work, it informs and thus changes the world.

Within described post-industrial situation we can imagine that different objects of film previously lost or abandoned get into filmmaker's hands. Without difference he touches seemingly single particles as a filmstrip and simple tools as developing tank but also complex apparatuses as capturing and projecting devices, developing machines or as processing baths. This widely understood materiality of film presents a primordial resistance, an obstacle which conditions any artistic practice dealing with film. To transform, to inform, to work the film means above all an opportunity for our hands, the possibility to re-think it. As the film and all the mentioned particles intrude into filmmaker's hands, the gesture of filming or filmmaking – previously engaged with the camera and the act of montage – is transformed into the gesture of *making a film.*

Experimental gestures building a film practice anew with every single artwork are introducing a pause (halt) into an efficient, productive course of the operative handling of the apparatus – its accepted and closed operational routines, aesthetics and politics, purpose and functioning of machines. Such gestures stem from

mutual entanglement and friction of several materialities: one being the artist's body, the other one the film apparatus consisting of many elements which all together delineate a field of force being the reciprocal corporeal and material negativity and another one the spectators accomplishing the act of filming. The scene of artist-run film labs situates the materiality on the foreground because only because of this emphasis and constant contact they can continue to make films. Whereas the materiality of digital media[31] being as invisible and natural as electricity, running water and heating – present in all spheres of the apparatus of our society – runs in background. One of important parameters of digital media's interface – place of contact with their operator – is, contrarily to analog, media the smoothness, minimal friction, intangibility and transparency. The last one in particular represents an emblem of the paradigmatic shift between the disciplinary (industrial) society and the society of achievement (post-industrial, digital) overflowing with positivity transformed into one's inner imperative to produce more. Artistic practice such as contemporary experimental material filming often seeks to produce less and to situate itself within the post-industrial context, to deal with the given circumstances of waste[32] and stimulated overproduction and unsustainable environmental conditions, which, especially in the case of media artists, means facing our technological situation and assuming a critical position without the fear but on the contrary almost with a pleasure and need of being *other or alternative.*[33]

30 For developed reflection and further research on hands in relation of our being and thinking through film see Pantenburg, 2015: 217–234.

31 Among already numerous writings on the environmental aspects of our media I would return to Sean Cubitt's thorough and unsparing analysis from 2016. See Cubitt (2017) Finite Media Environmental Implications of Digital Technologies.

32 For a reflection on excessive waste and contemporary experimental film see Knowles (2013) Blood, Sweat, and Tears. Bodily Inscriptions in Contemporary Experimental Film.

33 There could be seen both a connection to and contrast with Hito Steyerl's notion of the 'poor image'; it shares the rejection of fetishized quality standards of industrial 35mm film adopted by digital film production. But on the other hand experimental photo-chemical films often have an aesthetic material complexity or 'richness' which is hardly translatable and would miss the characteristics of the ghost image affected by compression and problematic material character judged as poor. Maybe it would be worth to develop a theory of 'poor images' in a broader context than just digital media. For comparison see Steyerl 2009.

What the hands do, then?

They make various movements. Instead of a physical training mostly for one single finger, *digitus secundus*, challenging a whole range of keys and buttons, they touch the film, leaf through old photo-chemical books, browse on the internet in order to get into film forums, write (tap on the keyboard or write on paper), touch the film again and possibly decide to wash out the original industrial emulsion of discarded footage: they hold the wet filmstrip, feel the emulsion soften, remove a bit with their nails, then a bit more with tools such as a spatula or other less sophisticated ones, feel the naked filmstrip classed as clear film leader, prepare a new self-brew emulsion–and from this point on, they work without visual reference in the darkness, they rely on themselves–spread the gelatinous emulsion[34] (Fig. 2., p. 85) with a brush or an air-brush on a film base, halt and wait, sleep till the next day, they inspect the result and find something, if they don't like it, they start again and if they like it, they keep it and proceed to the exposure test, they expose the newly coated filmstrip to the light, develop it in with chemicals, observe, touch, etc. Or they load it directly into a film or photographic camera or just an old can as pinhole camera or make up something else. At another time, they pick leaves and flowers to make phytograms[35] or prepare solution for developing, collect ashes in order to prepare processing solutions, compost the film or bury it deep in the earth. Or they make something completely different which I can't list.

GESTURE OF HYPOTHESIS

Film is also often conceived to be realized in the act of projection. Introducing waves and particles it constitutes another material setting than the physical object of film strip itself, however the gesture of filtrating light[36] is not less physical than those described earlier. Giving it direction and placing obstacles into light's course can be thought of as a material act of *putting hypotheses forward*. No matter if the film operates primarily in the narrative or rather sensoric regime we live through an experience which constitutes a hypothesis about the visible, about the world. It is a tangible hypothesis because the encounter between a hand and projector is physical, their mutual contact is realized via their surfaces: the human and technical being[37] meet. The light modulation by the means of a lens, a filter, a mask, a hand or a chemically or physically produced film carrying graphic figural or abstract inscription (another type of mask) etc. lies at the core of film projection; it transports and performs ideas, makes them visible and therefore thinkable and existent in the sense of *ontography*.[38] What matters is how, by which means the hypothesis is *projected (put forward)*, whether using custom arguments of prefabricated film apparatus (filmstock, film camera, predetermined photochemical processes and operative modes resulting in visual effects rather then artistic performance) or a variety of arguments invented anew which are capable of dialoguing with the former film apparatus and contemporary audiences.

The film strip and projector providing the material and conceptual frame of the vision belongs to the world as well as the resulting

34 To mention just one film which became emblematic of self-made emulsion experiments it would be Esther Urlus's Konrad & Kurfurst (2014, 16 mm, 7 min).

35 Phytogram is a technique explored by several filmmakers as Philip Hoffman, Karel Doing, Franci Duran etc. using the chemical agent in plants which reacts on photosensitive emulsion coated on film or photo-paper. See for ex. Doing's website https://phytogram.blog/ (accessed on June 5 2021).

36 This conceptualization of film is expressed for example in Hollis Frampton's performance piece A Lecture presented at Hunter College in New York on October 30, 1968.

37 A technical being not in terms of nostalgia opposing consumer outdatedness of analogue media but rather in terms of a complex familiarity with the apparatus of film and of a polyvalent ontology outlined for example in Simondon 2017: 59–62.

38 Here the ontography appears in the context of the German media philosophy and its understanding of matter, materials and media as having agency, operating, performing and thinking themselves and thus inscribing themselves, alongside that which is mediated and potentially signified, in a field which Engell calls ontographic where the gap between ontic and ontological is suppressed. Engell 2015.

image and the artist who creates it and the audience which receives it. This election, decision, take, act, gesture contained in the creative process form a point of view, a perspective on the world which therefore starts to exist in it. Or in the words of Lorenz Engell:

> 'Since cinema, as a physical and technical device, as perceivable object to our senses, and as a system of material operations, is part of the physical and phenomenal reality, its own ontological status is at least in parts of the same nature as it is the case for the ontic world film opens up or generates.' Engell 2015: 141.

The concrete practice of projection, which makes this metaphor graphic, is specific but still it is only an example of the possibility of *putting a hypothesis forward* in artistic film practice. The film based on interventions in various components of the film apparatus forms different hypotheses about film. They are multiple, create images of and from the world and show their construction, their medial character: how, by which means they are constructed and proposed, and which effects they may have in the world.

It can be said that these hypotheses showing the virtual world and more importantly by laying bare its sources are indeed philosophical and in the same time constitute aesthetic, ethical and political standpoints. The aesthetic meaning propagates itself through the sensoric and emotional aspects of the images. The ethical draws attention toward the sources and conditions of the art practice which means for example its ecological and social impact contained in artistic decisions. The recognition of its impact and the act of situating the practice within a broader cultural and social context has a political dimension. And it can imply a decision not to produce or to produce within a very concrete frame of creation through critical means in order to adopt polemic attitude. This polemic doesn't necessarily need to explicitly point out the increasing environmental crisis, overproduction of technological images or the excluding privilege to produce art but by its minimal and singularized apparatus it offers an alternative to it.

We might benefit from recalling that these hypotheses are put forward bodily using artist's two hands which not only operate and organize the technical objects in a predefined and rather theoretical way but literally touch, manipulate and perform them via heterogeneous hand-made and also technological procedures ranging from the dark-room practice (photo-chemical laboratory) through the artisanal (wood, metal workshop) and engineer work (mechanics, electronics, cybernetics) towards the artistic practice crossing fields of visual and conceptual arts, music and other. Whithin the scene of artist-run film labs the hands meet the machine in different steps of production: handling professional and amateur (film) equipment, adjusting a former industrial machine according to the artist's need, or implementing the recent scientific knowledge and incorporating technological systems and products (programming arduino, raspberry pi or 3D printing). The body-mind concentrates in the hands which provide an interface with the material world, execute the majority of the actions and realize the afore mentioned standpoints. In that way the hands gesture the thinking. As Kateřina Krtilová writes in her article on Flusser's Inverse Motion of Thinking, '[t]he gesture does not separate the material medium from meaning, it rather connects a material practice with thinking – gestures of thinking emerge from and intervene in cultural practices.' Krtilová 2016.

The gesture of making a film, of stepping inside the apparatus of film, of putting a hypothesis forward has already started with the so called film pioneers and continued in all the attempts of any single filmmaker who have touched the object of film contrary to the industrial protocol of cinema, or in another words, who have entered the cinema apparatus from the side. The movement on the scene of artist-run film labs could be as well as cinema itself seen as a collective work but differently from industrial division of labor needing a mass of bodies it rather involves a community which is interconnected physically and virtually. It steps out of the unity of time and place, is not realized in a linear wave in respect to historical time, actualized in different places like artist workshops, film labs or farms[39] Karen Barad could possibly offer a hint by their assumption that a certain moment can be living inside another moment without an obvious continuity. All the films created in a such way might come together as singular gestures that could

become a part of the Metahistory of cinema compiled by Hollis Frampton and fulfill the messianic hypothesis of cinema as 'the last machine' and more importantly 'maybe the last art to address intelligence through the senses'.[40]

Baruch Gottlieb

Most-history

Flusser's intersubjective politics

39 For example Philip Hoffman runs a project called Independent Imaging Retreat at FILM FARM (Ontario region), Robert Schaller runs an expedition into Wilderness at Handmade Film Institut (Colorado region). Both explore the practice of filmmaking within environmental conditions and experiment with natural substances and minimum prefabricated materials. Their farms are not situated in cities but in countryside or mountains.

40 In his essay 'For a Metahistory of Film' Hollis Frampton who was familiar with all the stages of material film production called cinema 'the last machine'—after the arrival of radar being a black box for surveillance resisting intuitive comprehension. Frampton 1983.

At stake is the limit of words in effecting and addressing our material conditions in the world. We human beings who are alive today experience literacy's vexed legacy like never before. As foretold by Flusser (1988), the printed text, and the linear, causal thinking it instructs and propagates has become obsolete. But as McLuhan (1964:27) warns, obsolescence does not mean the end, on the contrary, 'if it works, its obsolete' the obsolescent technology is released from the culture's reliance on it and freed to play all manner of new and old roles.

On the instrumental level, in the materiality of the display, text is not distinguished from image, and so it can no longer perform its 'iconoclastic' function. Identical with image, text use is becoming more emphatic, assertive, active and gestural. Text's electronic translation also infuses it with an unprecedented urgency. As web 'pages' have become 'streams', intellectual engagement with coherent epistemics give way to the responsivity to and management of modulating flows of information. As such the scientific, analytic rigour assumed, not only with written text, but reflectively with causal arguments of all kinds, is convoluted with gestural and other non-verbal or extra-verbal modes of expression.

For a few centuries, the printed word promised to release human knowledge from the fetters of tradition, convention and belief (Flusser 1991). The triumphs of modernity are the result of this irreverent hyper-literacy. The essential quality of print which produced such profound effects was its anonymity, its industrial uniformity, its standardization. The social status signalling which resided in calligraphic scripts was blasted away by print. And a new age of general intellect augured, where every thought, regardless of origin, once expressed in type, had to be evaluated on its merits.

The reliability of industrial technology depends on linear causality inscribed in the instrumental functioning. The principles of this causality, the 'laws of science', are the historical product of an interactive process requiring unfettered scientific criticality. This unfettering was a painful process which accelerated with Gutenberg (McLuhan 1962). The Protestant revolution with their mass-media vernacular Bibles ripped away the absolute power of the church. The Gutenberg Bible threw the gospel down in uniform

lines of print to be analysed on its own merits, as Spinoza did, in the Tractatus Theologico-Politicus. The secularization of the world of knowledge has been a violent process which produced abstract rationality and the abject materiality it means to – but can never adequately – govern.

All through this process of modernization, text played an essential role, reflecting, analysing and synthesizing the transformations afoot, providing a 'sounding board' for public debate, and political positioning. The paradoxes and contradictions, both revealed and produced by text were grappled with in that technology of the original sin of literacy which, for thinkers like Flusser and McLuhan, was at the origin of the Western scientific tendency with its apparatus-nature.

Text permitted the protomodern person to be both inside and outside the transformation. Text provided as much a refuge into private contemplation as an intellectual toolbox with which to grapple with one's conditions, not to mention an ostensibly universal medium to communicate after death. The silent private sphere of the reader/writer, producing or consuming texts was extrapolated with the industrial revolution into theories of 'the unconscious'. Psychology – the word had once been allegorical for philosophy – ironically split off an only indirectly accessible 'psychic' dimension of experience from an explicit domain of rationality.

But just as 'we have never been modern' (Latour 1985) we have also never been rational. One thing is certain, we have been writers, and readers. And we still are. As text is subsumed in speed-of-light informational flows, it turns out we have not abandoned text but, indeed, are using more text than ever before. Though, for practical reasons, voice-command is slowly becoming more common, contemporary social life involves more textual communication than ever. Many things we would once say on the phone, today we text. The provisionally persistent form of text permits us to manage myriad personal and professional streams of communication simultaneously.

Likewise, scholarly writing is going through a revolution overwhelmed by the ever increasing availability of scholarship. Scholarly texts are not only composed using algorithmic text generators trained on a historical corpus of scholarly texts but conversely are cross-referenced and analysed using search engines and other tools which can coalesce knowledge from vast datasets. Hyper-text, the name of the prototype of electronic philosophy produced by Bernd Wingert with Vilém Flusser at the dawn of the Internet age, has become everyday scholarship. But the new forms of philosophy Flusser and Wingert were sketching out with the Hypertext prototype have barely emerged.

In his essay 'orders of Magnitude and Humanism' Flusser (2002: 160) warns his reader not to uncritically apply philosophical strategies developed in the world of human scale experience to knowledge derived from alien orders of magnitude through the use of various apparatus. This 'technical knowledge' requires its own humanism, it must be humanized, as the title of his unfinished final book project 'Menschwerdung' indicated. Ironically for many of today's scholars of technology, Flusser proposed no a-human or non-human theory of technical knowledge or technical aesthetics, rather he insisted that we elaborate new 'humanisms' (Flusser 2002: 163) which are able to bridge the epistemic rift which opens up between our direct experience and that gained through apparatus. This provides us with a bracing challenge, and a troubling suggestion. Since knowledge of the vast world of material flux is availed to us through human science, it cannot but be anthropomorphised, made analogous to human experience, and so the only way we know Nature, the cosmos, the vastness of material reality and the infinitesimalities of viruses and protons is to some degree through encounters with other human beings.

But such encounters cannot be merely philosophical, they are necessarily materially conditioned, if nowhere else than in the physical limits and needs of the participants. Therefore there can never be disinterested philosophy, nor can there be disinterested science. Only the confessions of intentionality can be indefinitely postponed so as to appear to be immaterial. Unuttered, they remain suspended in a network of private assumptions. The examination of the material predicates for scientific and philosophical thought

are often considered orthogonal to the content of the thought itself. But Flusser's 'new humanism' compels us to address the challenge of plumbing the crosshairs of the orthogon, the zero-dimension. Inevitably, this requires a 'biography of the technical apparatus' wherein this alien knowledge can be elucidated. Through the biography in the stories or history, poly-history of human activities recorded in and enacted through the apparatus we can criticise the apparitions and dispositions of alien reality the apparatus affords us.

Inevitably we must then acknowledge that the power unleashed by knowledge at the largest and smallest scales, does not disrupt but is still constrained to pre-existing distributions of power. Concerns about how genetic modification, fissile radiation, nanotechnology or artificial intelligence may affect the human condition, necessarily, in the short term, reconcile to general conditions about the social distribution of political agency. In other words, the powerful wield any new technology to serve their purposes, paramount of which is perpetuating their privilege. All other effects of the introduction of new technical affordances devolves from this first imperative.

Both Flusser and McLuhan warned of the disappearance of the distinction between private and public sphere (Flusser 2003, Flusser 1986: 39, McLuhan 1977), between private reflection and political encounter. Acknowledging the radical egalitarian pretences of democracy as the technical product of literacy and understanding that the power which technology avails us is made up of other people, Flusser, in a surprising passage, even reveals a feminist dimension to his critique of liberal modernity. Responding to his friend Abraham Moles' reactionary contention that human liberty and true democracy is increasingly constrained by technocracy, Flusser states:

'[For the] republic, the market-place to work at all, it has an economical bases (sic) in slavery and oppressed women. Democracy in the Greek village is founded on slavery. The Market serves to exchange goods and ideas. Goods are exchanged in order to verify their exchange value, to 'normalize' them. Ideas are exchanged in order to

'normalize' them. That is why for the Greeks 'government'
is synonymous with 'steering': 'Kybernein' and to govern
means to normalize values, (including the so-called
Supreme Good and Evil) on the market. All this is possible
because there are women and slaves who labor without
any values. This basic fact has not changed ever since
the neolithic village, and is, in my view, the reason why
government practices are costly and unrealistic. They are
costly because it costs to maintain the women and slaves
laboring, but the cost is of course less than the costs of
liberating the slaves would be, and they are unrealistic
because they substitute the reality of slavery by the
fiction of representation.'—Letter to A. Moles 21. April
1979 / FA Cor_111_MOLES2013-03-26 (16)

Flusser, like McLuhan or Spinoza back at the dawn of the Gutenberg
age, was pessimistic about the prospects for general democracy.
In post-history, the private and the public fuse together into a
totalitarian 'global village' (McLuhan 1964: 20) and the 'oppressed
women' disappear again into the category human being. Flusser
would not further develop the rich vein of feminist techno-politics
put forth a few decades later by Silvia Federici (2012: 206). From
him there would be no call for a women's strike. Trapped between
his disavowed marxism and anti-autoritarian enlightenment
liberalism, he eventually gravitated towards retrieving a kind of
secularized rabbinical practice of itinerant dialog.

WRITING IN MOST-MODERNITY

The world translated into semantic sequences of words is resonant
in the words. The words are moments of epistemic contact between
the producer, consumer and world to which the words refer. But
the purpose of translation of world to word cannot be merely
figurative, it is inter-subjective, it exists in a political relation
between producer and consumer and materially elaborates these
social bonds in the togetherness of a conversation. In the mutual
presentness of spoken exchange, a conversation, the world and the
resonant words which unite the conversants are one. The content of
the conversation is thus a gestural performance through which each
is informed or transformed through the experience. The experience
includes, but is not limited to, cognition. In the conversation,
conversationalists stand in for the world, one is subject to the world
through another human and participation in a verbal performance
and informance. The effects of this encounter inform each subject
when they pass out of any performance into other relations to the
world.

The purpose of communication is information, 'to put the form
in' as Flusser (2007: 19) put it, to effect some change in the other.
This may be understood also as a reordering of attentivities and
energies. When we meet each other and converse, we give orders.
The objective is instrumental, if for no other reason than that
which determines the conclusion of the conversation. Why should
the conversation end? The reason for the ending determines the
purpose of the conversation, although this purpose may not be
fully explicit to any of the participants. Emerging out of the world
as individual avatars of the world with the urgency of mortality,
what Spinoza (2002: 184, 268) called the finite or inadequate human
intellect, we experience in the conversation a liminal politics whose
purpose is at best mutually self-serving, instructive and ordering,
giving a purpose. As anthropos limns on physis, the culmination of
the conversation produces social order.

This social order is substantively disrupted by technology,
which transits individual finitude with infinitudes of persistent
significance. Though nothing ever really interrupts the material
flux of physis, events in the anthropic real, informed by mortality

and finitude, distinguish themselves in endings, and thereby produce their purposes and politics. The limits of texts and images are even more political. As Borges (1999: 225) famously recounted in his essay 'On Exactitude in Science', a description or depiction can go on ad absurdum. Indeed, it is difficult to determine where the absurd begins... probably at the culmination of the political purpose of the gesture of describing or depicting. This politics is of course economics in the limited materiality of the text, or image: page paper screen, or the limit of the speakers' physical capacity to persist, in a war of attrition with the material circumstances whereby their capacity to converse is reproduced. An inherent, radically social politics is simultaneously in the materiality of the image or text which is different from that in a living interlocutor. The radical abstraction of language to text of course extends individual conatus to that of the whole social form capable of interpreting the text.

This is finally the dialectic we must learn to navigate on the interminable edge of post-histoire. Our words are insufficient for our purposes, but we can't do without them. Flusser (1988) also warns us not to forget the literary, causal, scientific thinking has been programmed into networked computation and technical images. Its not really post-histoire, its better thought of as most histoire, with the history embedded and ramified into everything we use. We will never be rid of 'histoire' just as we will never be rid of 'modernity.' Post-modernity simply means the modernist, specializing tendency has slipped under the surface of experience, most-modernity. We are locked in an interminable, Spinoza (2002: 283) would say indefinite, tradeoff between the rationalizing, critical analytical purpose of texts and the communizing, coalescing, holisitifying instrumentailty of images. Flusser, as a writer, is painfully aware of this tension, as he violently hammered out his texts and letters on old manual typewriters.

However Flusser, like Spinoza before him and Haraway (1991) and Barad (2007) in our day, struggled with the sticky dialectical position of the textual tradition itself. Writing a text affirms a commitment to a human reader. Regardless of the cosmic or infinitesimal scale of the subject of contemplation, there is no getting away from a certain anthropomorphic rescaling which conforms the subject to human scale. Vampyroteuthis Infernalis, through the absurdist taxonomies and images of Louis Bec is a boisterous ballet on the pin head of this problem: how to speak of the non-human, of the inhuman, maintaining its sovereignty and its difference, yet do so in a way that communicates with other humans? Because the goal is as much to convey an idea as to provide a basis to convene and exchange about the idea. Since writing is ineluctably social, perhaps the highest vanity is to neglect the pressing contemporary material conditions of the reader in the interest of cosmic truth.

Flusser(2013) heralded the age of post-history. By this he meant that the notion of history generated by univocal linear lines of text, composed in causal arguments in an inexorable process which proceeds from the past through the present into the future, was over. Implied here is that linear texts were no longer adequate to describe or understand our situation, they never really were, but as they were the most powerful knowledge technology for several centuries, they were forced into action in circumstances for which they were, as we will see, never quite appropriate.

Though today the primacy of linear texts diminishes, we are reading and writing more than ever before. Where we used to write to pro-gram the world through philosophical, legal or literary texts, which were central to the functioning of society, today we text in lieu of speaking, and writing becomes more phatic and gestural, sprinkled with little images and emojis. And though the cultural tendency away from text and towards images may imply a return to 'epic' pre-historical consciousness, historic causality is still very much at work in the industrial technologies we depend on every day. Thus post history is just as much most-history, where historical processes are instenified within the surfaces of not post-modernity, but most-modernity. This is particularly ironic for the printed word which had its heyday from the 15th to 20th centuries as the technical anchor for intellectual endeavour.

The uniformity of type pretended a radical egalitarianism of cultural expression, a 'level playing field' where all statements could be cooly judged on their merits. For science, again, this was its emancipation, even the least known researcher from the most far flung university could garner attention if their theory was sound. But in the human sciences such standards of impartiality proved impossible to maintain, though every effort was expended to approach the asymptote. Flusser suffered deeply from this failure of reason to prevail over injustice or for justice, despite the obvious virtues it displayed in the successes of science.

The limits of reason were not only disappointing, they were dispiriting, and these eventually flung Flusser into a sort of

celebration of the end of the age of print and a quixotic embrace of various post-print technologies which were emerging (Flusser 1988), whereby the legacy of rationality and criticality could find a new purpose and redeem its devastation.

The 'Weapons of Mass-Destruction' (WMD) argument, used to goad the world into an illegal war with a small country called Iraq is a symptom and an exacerbant of the de-legitimization of causal argument we can observe popularly today. Ostensibly 'parliamentary' in character, the arguments for the invasion of Iraq followed several idioms of scientific analysis, satellite photos, chemical analysis, historical analysis, and the conclusion was definitive, the offensive was launched. At one point the talking stops and the actions begin. In this case the talking was a mere formality of ritual convention since the actions to be taken had already been determined behind the scenes. As has become evident in subsequent revelations, all rational argument in this case was merely formal without content, a gesture of deference to the conventions of international diplomacy.

The delegitimization and obsolescence of rational argument occurs here as the relevant texts disappear from the surface of experience, inscribed in the background operations of the apparatus. The UN security council chamber, where Powell's fateful speech took place, is a component of the apparatus UN, which performs a variety of functions pertaining to the global government of the world. For everyone who has ever had anything to do with the UN, it is immediately explicit that this is an apparatus, based on texts. Colin Powell instrumentalized this text-based institution in order to mobilize armies for an illegitimate invasion. Somewhere the critical, objective analytical safeguards expected of institutions based on texts were subordinated to the will of the apparatus who wanted war with Iraq.

This corruption of reason, whereby rational formulations are used idiomatically and gesturally justify the unjustifiable, is, of course, time-honoured practice, but as techno-science avails ever greater orders of magnitude of transformative power in the hands of human beings, this corruption takes on a more threatening dimension. In the case of justifying the invasion of Iraq, the content of rational

argument is purely formal, performative ritual. Television viewers are told the vial holds yellowcake from Niger, in a performance of rationality which itself becomes a deceptive sleight of hand.

The corruption of reason is even more profound as the meta-rational scientific conventions and techniques of image-making were also instrumental in drumming up the case for invasion. Flusser alludes to this consummate subordination of both rationality (textual argument) and meta-rationality(scientific evidence in technical images) to a gestural performance sanctioning war, with an anecdote he often retold whereby an airforce pilot who is also a gunman wearing a helmet which allows him to direct and fire guns from the air as he pilots a helicopter, emerges from the airship to meet a group of journalists. Forgetting he still has the gun-pointing helmet on, he narrowly avoids killing the journalists by removing his helmet at the last minute. (Flusser 1992)

This anecdote accentuates the sense of urgency Flusser wished to generate about the technical condition which was intensifying rapidly. The 'journalists' here, sorry scribes in an age of technical images are saved at the last minute by the consciousness of the pilot who was not merely part of the military apparatus but also a human being. Despite the ever-intensifying alienation of our technical conditions, human beings with human sensibilities and biographies, embedded in social relations conditioned by other human beings at human scale. In the case of the alleged 'yellowcake from Niger' Iraqi citizens were not so lucky, Powell's performance begat the very real physical invasion and devastation of Iraq.

For Flusser, the pivot of post-history occurs where, through computation, a zero-dimension of informational 'bits' are abstracted out of the forgoing 'one-dimension' of linear, causal scientific texts. These bits can then be recomposed into 'technical

images' which are, according to Flusser, uniquely appropriate to meaningfully engage with our technical condition. (Flusser 1990) There is a well-discussed paradox here, where the zero-dimensional bits are themselves the products of and are reproduced by the scientific tradition which is based on one-dimensional texts. As Flusser repeatedly stresses, technical images are not like the old iconic images, they are images of thoughts, to criticize technical images it is not sufficient to unroll them into texts, one must also criticize the thinking which produces and reproduces them on the technical level. On the other hand, if the specialist knowledge required to criticize technical texts is not available, a more cybernetic, heuristic approach is proposed whereby one treats the technical image as the product of a black box apparatus, and criticizes this apparatus by 'playing with and against' it. (Flusser 1978)

With the collapse of the legitimacy of rational argument which accompanies the entry into the Universe of Technical Images, we witness the birth of a new culture of critical images. These images are auto-iconoclast, attempting to playfully take apart the entire apparatus of power which produced them.

In every case, we discover that the point of origin of technical images, at the zero dimension point, there is ineluctably a human figure. In the early 70's shortly before he left Brazil for France, he was offered a newspaper column in the daily 'Folho do Sao Paulo' which he called Posto Zero (the view from Zero) (Flusser 1972). His assistant at the time, the artist Gabriel Borba, who's drawings also grace the first 4 columns published, recalls that Flusser was engaging with the 'observer effect' established in particle physics research whereby the influence of observation method, including apparatus and observer need to be factored in to the interpretation of the resultant data. (Borba, private conversation)

Flusser's first column in the Posto Zero series was titled 'Sythesis' and elaborates the difference between a bourgeois 'Picassoean' Carnaval and Brazilian Carnaval. European bourgeois carnival is one where the trappings of pre-modern, pagan carnality are merely assumed or performed while European individuality is preserved, whereas, Brazilian carnaval involves a total loss of persona and subordination to the festivities. Flusser closes the short essay writing that for the bourgeois, carnaval is about putting on a mask, whereas the authentic Brazilian carnaval involves removing the mask. Written from deep within the military dictatorship, this column seems to be a veiled attack on the Brazilian elites confronting their Euro-chauvinist cultural appropriation with their inevitable subordination in the 'real Carnival' to come.

Here Flusser seems to be condemning the doomed Enlightenment humanist project as manifested in one of its more miserable guises as the rationale behind the military dictatorship in Brazil in the 1970s. He invokes an apocalyptic groundswell of noumenal indigenity whereby the masks will fall and the common humanity, at best, or mere existence in the most extreme Hegelian sense, would be experienced. What the time frame for this revelation might be is left open.

Posto Zero

A

Série carnavalesca I
Sintese
VILEM FLUSSER
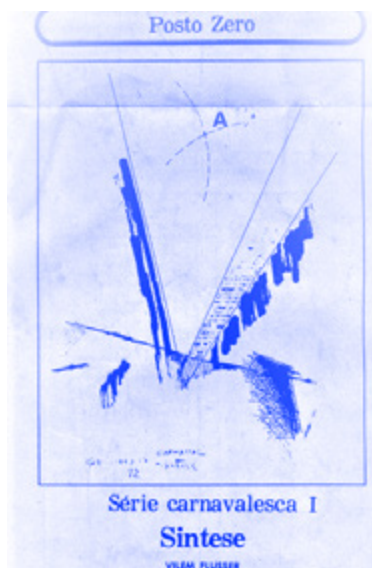
HUMANIZATION

As he returned to Europe to settle in France, Flusser began to articulate his communicological model of a messianic redemption of the modernist project in dialogue (1990). Ironically for one who wrote in 'the Gesture of Writing' that his lonely hammering at the typewriter was for no greater purpose than to allow him to think (Flusser 2014). This thinking ineluctably has a social telos. The reason he had to use so much physical power that, as Louis Bec (private conversation) once recounted to me, he would slowly push an enormous marble table across the room during the course of the day, was not merely the existential angst being worked through within him, it was also the fact that he was typing through multiple sheets of carbon copy, a detail inexplicably left out of 'the Gesture of Writing', but one which is well known to anyone who has studied at the Flusser Archive.

As the stacks of correspondence attest, Flusser's philosophical practice was intensively dialogical, combative, gestural, and playful. Flusser is both the hyper-modern hyper-alienated 'thinker' formulating and reformulating his private response to the world, but also the hyper-networked and engaged participant in the intellectual lives of others, and it is certainly the latter which nourishes and sustains the former. Like every thinker since Gutenberg and maybe since Plato, Flusser struggles with the dialectic between private and public, between individuality and anthropomorphism. The solution he gravitates to in his later years is a most-modern retrieval of pre-modern rabbinical practice of private rumination, punctuated by spontaneous and ritual encounter and exchange (Flusser 1990).

Having weathered adventures into inhuman territory, of Auschwitz and the deep sea, Flusser returns to reaffirm anthropomorphism as the only path available to us to understand our circumstances. That we have no way of understanding the world as it is, except through the avatar of other human beings. That the individuality of the modern 'person' is only gestural dis-guise provisionally coalescing on the entropic edge not only of common humanity but of cosmic material flux, eventually having its only form in 'the memory of others' (Flusser 1990).

For this reason Flusser's moral and philosophical solution to adequately address the alien dimensions of knowledge brought forth and availed to us through technology is in the face of the other human being. In the final chapter of his Post-histoire, Flusser pleads for the retrieval of a private mode… of publishing, which is another way of reclaiming the modern institution of the private individual, but now acknowledging its public predicate.(Flusser 2013) This hyper-modern or most-modern condition of accelerated technological and scientific progress produces here what McLuhan would call a 'flip' or 'retrieval of the pre-modern mode of dialogical thinking, and, ironically, a 'return' as Flusser writes to 'being Human'.

Flusser's post-historical post-politics is an interpersonal one. In the end he puts his faith in ephemeral and informative encounters in pairs or small groups (Flusser 2003). The large sweeps of global or national politics are now out of scope of what can and must be undertaken more locally, even if this 'locality' takes place on a platform provided by finance-industrial meta-corporations operating highly systematized hyper-modernist hyper-rational global production chains, and instrumentation based on causal, historical scientific principles. This is Flusser's anarchism, a playful critical commitment to what is at hand (zuhanden), a certain shuttering off of the big historical, political questions of his time which have become so much cosmic radiation.

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DAAD Deutscher Akademischer Austauschdienst
German Academic Exchange Service

Ministry of Education, Culture and
Science

Federal Ministry
of Education
and Research

Vilém Flusser (1920-1991) remains one of the most daring and original thinkers of the electronic age. Firmly grounded in classical philosophy, he examines an epochal shift, from what he calls the 'historical' age based on principles of literacy and linearity, to a 'post-historical' period where synthetic, gestural and playful forms of thinking and critique need to be developed.

This book project brings together 5 Flusserians, M Anusas, Baruch Gottlieb, Katerina Krtilova, Alexandra Moralesová and Ulrich Richtmeyer, who are actively applying Flusser's conceptual apparatus to their practices.

West