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Rethinking Artificial Intelligence(s) with Vilém Flusser

The following article will reflect on the topics of AI in relation to work, education, culture, and humanity. The topics of AI and creativity, AI and culture, and AI and work, in a sense, identify a problematic, current state of affairs, while the topics of AI and education and AI and humanity can be read as recommendations for the future handling of AI. Among other things, in this article, I will quote from, among others, Flusser's essays "Hochschulen/Universities," "Ästhetische Erziehung/Aesthetic Education," and "Vom Rückschlag des Werkzeugs auf das Bewusstsein/On the Backlash of the Tool on Consciousness."¹

1. AI and Creativity

On August 31, 1955, John McCarthy, Marvin Minsky, Nathaniel Rochester, and Claude Shannon submitted a proposal for a research project on artificial intelligence. Under point seven, "Randomness and Creativity," they stated: "A fairly attractive and yet clearly incomplete conjecture is that the difference between creative thinking and unimaginative competent thinking lies in the injection of some randomness. The randomness must be guided by intuition to be efficient. In other words, the educated guess or the hunch includes controlled randomness in otherwise orderly thinking" (McCarthy et al. 1955).

This early connection between creativity and randomness in the context of artificial intelligence may seem surprising—the phrase "clearly incomplete conjecture" is also noteworthy. However, this connection is not at all unusual. Leonardo da Vinci, in his posthumously published *Trattato della Pittura*, already pointed to the advantages of using randomly observed phenomena, such as cloud formations or walls, for the creation of artworks (da Vinci 1990). In 1795, this process of serendipitous image creation was described in detail by the English painter Alexander Cozens in his book *A New Method of Assisting the Invention in Drawing Original Compositions in Landscape* (Cozens 1785). To depict nature as faithfully as possible, Cozens did not start with lines, but rather with areas of color that seamlessly blend into other areas. He often used a dab of paint as the starting point for his compositions, a technique later known as "blotch painting." August Strindberg, in

¹ In 2024, my article "Artistic Intelligence versus Artificial Intelligence" on the relationship between creativity and artificial intelligence has been published in the Art Nodes issue no. 34, *On Materiality and Variantology: invitation to dialogue*—already referencing Vilém Flusser. (Marburger 2024). This article is used as a starting point for the following thoughts. Most Flusser quotes are translated from the German Essays.

turn, published the essay “New Art Forms: Chance in Artistic Creation” in 1894, in which he emphasized the importance of chance for the artistic creative process: “What is it? Painters call it ‘palette scraper,’ which means: after he has finished his work, the painter scrapes together the remnants of the paint, and when he feels like it, he makes an experiment...and while the hand guides the palette knife by chance...the whole thing comes about as this delightful jumble of the unconscious and the conscious.” (Strindberg 2009: 31). Chance also became a trademark for the Dadaists. For example, Hans Richter wrote: “For us, chance appeared as a magical process by which one could overcome the barrier of causality, of conscious expression of will, by which the inner ear and eye were sharpened until new series of thoughts and experiences emerged. For us, chance was the ‘unconscious’ that Freud had already discovered in 1900.” (Holeczek 1992: 18).

The first art-theoretical and systematic explanation was formulated by Willi Baumeister in 1944 in his book *The Unknown in Art*. “Despite all experiments and research, despite conscious searching, all truly great values have been found by chance, incidentally, indirectly, in any case in an uncontrollable way.” (Baumeister 1947: 161) Baumeister sees the task of artists as penetrating the unknown and wresting “new values” from it through their works. An artist who creates in an original way cannot plan his or her approach but is dependent on chance and surprise: “Since they are the first to venture into the unknown with each work, they cannot predict what they will encounter. They can neither foresee the final form of an individual work nor survey their entire life's work, even if they are certain of their own vision” (Baumeister 1947: 156). And further: “Even if the artist, driven by an unfathomable primal will, expresses, chisels, or paints with a keen awareness of their actions, they allow themselves to be surprised by what emerges under their hands” (Baumeister 1947: 156). In this context, Baumeister speaks of a “creative angle” that marks the gap between the artistic intention, here the desired goal, and the artistic realization, that is, the finished work.

The main argument of Baumeister and Cozens, Strindberg and Richter, the artists mentioned earlier, for the connection between randomness and creativity is the necessity of being surprised by one's own work. Without surprise, one would already be familiar with the work, and therefore it would not be innovative—that is, not truly creative. In communication theory terms, one could say that novel information can only emerge when noises occur, i.e., disturbances. Communication processes that proceed without disturbance are, by contrast, redundant.

Vilém Flusser, on the other hand, does not explicitly speak of chance in connection with creative action, but rather of “noises,” which he considers crucial for the emergence of novel information. “Actual creativity,” he writes, for example, in the essay “Leben und Kunst,” “is the insertion of foreign elements, the insertion of noises, into already existing contexts” (Flusser 1988: 20). True to his background in communication studies, Flusser undoubtedly adopts the term

"noise" from established communication models—such as the well-known model by Claude Shannon and Warren Weaver. However, what he means by it is equally clear that it refers to something indeterminate and surprising, something that arises randomly and unplanned, disrupting the transmission of information. In his Bochum lectures, he speaks of creativity as a kind of "glue" (Flusser 1991a) that joins together things that don't actually belong together. Creative action, therefore, brings together something that would not otherwise have arisen: a creative connection is an improbable one.

To enable such improbable connections to be established, Flusser repeatedly advocates for external rather than internal dialogues, and ideally for dialogues between participants who contribute as diverse a range of skills and knowledge as possible to the communicative and creative processes (Marburger 2009: 107-119). Referring to his utopian vision of a telematic society, he speaks of "intersubjective networking" and, in a potentially infinite expansion of this dialogue, of "intersubjective creativity" (Flusser 1990a), which could then lead to an explosion of creativity (Flusser 1991a). So-called artificial intelligences, such as Large Language Models, are based, so to speak, on internal dialogues, in that they systematically relate stored information to one another based on quantitative criteria. The same applies to noises or chance occurrences—these, too, are fundamentally excluded from programmed processes and can only be simulated.

An early pioneer of computer-based art, Frieder Nake, created a work at the Stuttgart Computing Center between 1963 and 1965 in which he explored the connection between artistic randomness and programmed computational processes—the work "Random Polygons" already incorporates chance in its title. As Nake admits in a later interview, however, this is not a case of true chance: "What plays a major role in digital (or algorithmic) art to this day under the heading of 'chance,' and what prominently influenced the design in the very first examples from 1965 and before, we must more accurately call 'calculated chance.' But this term is a contradiction in terms. For how can anything random arise if calculations are involved? Nothing truly random arises (and in that sense, a purist would have to say: 'Then it has no place under 'pure chance' either!')" (Rist 2013: 52).

From an external and retrospective perspective, programmed processes can appear random and unexpected. But that does not mean that they are so on an ontological level. Artificial intelligence can simulate chance and creativity, but it cannot be creative in its own right – calculated processes simply preclude surprises, regardless of the size of the underlying dataset or the complexity of the calculations. In 1980, John S. Searle introduced the distinction between strong and weak artificial intelligence (Searle 1980: 417-457). Analogously, one could speak of weak and strong creativity. Creativity simulated by strong artificial intelligence could therefore only lead to weak creativity – and consequently, only to art of no art historical significance. But what does this mean

for the artistic use of artificial intelligence as a tool? At first glance, using artificial intelligence as a tool for creative processes seems unproblematic. However, this depends on the extent to which it is used. Following Flusser's critique of the use of machines, it could be said that the more prescribed procedures are followed, the more difficult and uncreative the use becomes. As Flusser has already described in detail using the example of the camera, designers would thus become "functionaries" of the artificial intelligence used as a tool. Following Flusser's example, it could also be demanded that, in dealing with this intelligence, designers penetrate the programs, turn them inside out, and use them contrary to their programmed intent. The extent to which this succeeds, or fails, both now and in the future will become increasingly apparent.

2. Anthropological Impact of AI

Flusser also identifies another problem regarding the use of artificial intelligence—namely, the question of its fundamental influence on us. Flusser aptly called it the "tool's backlash against our consciousness," and regardless of what we understand by consciousness, this image is indeed helpful. In the essay of the same name, Flusser states that tools have three functions: to produce something, to change the environment, and to change the person using them—that is, an economic, an ecological, and an anthropological function. "If one could foresee the backlash of these machines against our consciousness," Flusser argues, "then one would have anticipated all subsequent developments in history" (Flusser, *Rückschlag*: 3).

Regarding the ecological impact of artificial intelligence, two areas stand out: On the one hand, the numerous data centers and server farms require vast amounts of electricity. On the other hand, raw materials are needed for the production of the hardware, the extraction, transport, and processing of which all too often burden the environment directly and indirectly. The economic impacts are no less problematic, but more complex. Even with the initial proliferation of Large Language Models like ChatGPT, it was discussed and emphasized that a number of traditional jobs would be replaced or eliminated—a development that is already becoming apparent. Less discussed is the equally likely development that large corporations will benefit more from the rise of artificial intelligence than smaller companies or even individuals. Structurally, it can be predicted that the increasing use of artificial intelligence will promote a redistribution of economic resources from many to few, as the spread of the internet has already demonstrated, at least in the USA and Western Europe. Beyond this, however, something fundamental is also changing for working people themselves: their self-conception. While in the Industrial Revolution of the 19th century, machine labor competed with human labor, the increasing use of artificial intelligence is impacting intellectual labor. "The danger of being controlled by the apparatus, of the apparatus categorically and

definitively pre-formulating or programming our experiences, thoughts, and values, lies precisely in the fact that we are slowly losing our conceptually linear, clear, and distinct way of thinking.” (Flusser 1981: 2) – so Flusser states in reference to technical images. Moreover, it is no longer just our conceptual thinking that is under attack, but our entire capacity for thought.

With reference to the industrial revolutions of the 19th century, Karl Marx speaks of the alienation of workers from their labor. Machines, and later assembly lines and robots, gradually have replaced physical labor, rendering it superfluous – workers serve the machine-driven workflows and are alienated from the product of their labor. AI, in turn, replaces certain intellectual activities and forces them to operate only within specific, predetermined channels. The more users, for example, have texts written for them by ChatGPT, the more they lose their own intellectual capacity. The more information is represented by AI, the more our own research skills are lost. Step by step, faith in our own thinking abilities diminishes, while machine-based "thinking" processes are favored—initially perhaps out of convenience, then increasingly out of a kind of dependency. The danger, then, is not only that artificial intelligence will take away jobs or render them obsolete, but that workers themselves will change: People will cede their intellectual labor to AI systems, causing their own mental productivity to decline and, as a result, their economic value to diminish in the mid-term. Referring more generally to machines, Flusser writes: "A new image of humanity is required. Namely, an image in which humans do not appear as beings conditioned by processes and able to computationally free themselves from these conditions, but rather as beings who can delegate the calculation of processes to machines." (Flusser, *Rückschlag*: 4) He later summarizes: “This is the challenge we face with the backlash of tools against our consciousness. Not the economic and ecological, but the anthropological function of tools is what threatens us from the standpoint of pessimists, and opens up a higher form of existence from the standpoint of optimists“ (Flusser, *Rückschlag*: 5).

3. Techno-Images and Techno-Texts

With this formulation, Flusser indirectly refers to his media-chronological model, which he first presented in a letter to Alex Bloch in 1977 (Flusser 2000: 104). In this model, he outlines human history based on the dominant media of image, writing, and techno-images, and observes a concomitant increasing alienation from our environment—from concrete, experienceable external reality and from other people. At the same time, media-mediated experience becomes ever more abstract, until the level of zero dimension is reached with the dominance of technically produced images. From this, however, potentially novel realities can be generated, or as Flusser writes: “We will then understand our existence as a challenge to concretize possibilities. It will no longer be

about changing the world to free ourselves from its conditions, but about computing ever new realities from the possibilities hovering around us and within us.” (Flusser, Rückschlag: 4).

But how does the increasing spread of artificial intelligence fit into this picture? Are they already mutating into the new dominant medium?² With regard to technically produced images, nothing changes initially; ontologically, AI-generated images remain on the same level as previously digitally generated images. AI-supported VR and AR applications, in turn, move in the direction of the alternative realities predicted by Flusser—even if they can still be distinguished from a reality experienced as more solid. However, it seems more difficult to categorize what is happening at the level of machine language—it is not without reason that Large Language Models refer to language and not to images. According to Flusser, techno-images were invented because texts had become too abstract and therefore unimaginable.

In Large Language Models, linguistic information is broken down into tokens and stored and combined in the form of mathematically computable vectors. Because machine learning operates almost autonomously, an alphanumeric reality emerges to which only programmers still have any kind of access. Even though—and precisely because—code and machine language do not constitute texts in the traditional sense, one could, drawing on Flusser’s terminology, discuss whether we should not speak of *techno-texts* in relation to large language models, which, instead of techno-images, increasingly determine our medial existence in the world. In relation to the increasing alienation described by Flusser in his media-chronological model, this would mark the attainment of a new stage of escalation.

4. AI and Mass Culture

A more tangible problem, which can be identified with Flusser concerning the growing use of artificial intelligence, is that with the increasing flood of information, every person becomes an authority, since everyone has access to countless pieces of information – not to every information but to a lot of information. This leads, on the one hand, to a superficiality of culture, and on the other hand, mass culture promotes the emergence of a consumer society.³ Half a century ago, Flusser already described apparatus-based automatisms that are only now truly reaching their full potential with AI applications: “Now, it is undoubtedly true,” Flusser writes in his essay

² It would be worthwhile to discuss elsewhere to what extent and in what sense AI can be understood as a medium at all. Depending on the definition, AI encompasses at least various media applications, such as, quite simply, electricity or code. Since Marshall McLuhan has already defined media as containers for various older media, this aspect alone should suffice to characterize AI as a medium.

³ As been argued in Flusser, *Hochschulen*: 1-2.

“Hochschulen,” “that all decisive changes in mass culture have so far somehow (directly or indirectly) originated in high culture... But mass culture has its own inertia, which enables it to continue down a path once embarked upon, even without further external intervention. It is becoming increasingly autonomous, and it is conceivable that high culture will become superfluous for it in the near future. ... For example, it is perfectly conceivable that new films will be constantly produced and projected (for example, programmed by computers, specifically in the context of consumption), without any intervention from scientists or artists being necessary. The apparatus of mass culture, although produced and thus far directed by high culture, would have become automatic.” (Flusser, *Hochschulen*: 3) Similar to what Günther Anders described in his book *Die Antiquiertheit des Menschen/The Obsolescences of the Human* (Anders 1980) with regard to television, users of computer applications contribute to their own massification: “For programmers, all our behavior—especially when it is directed against the programs—is nothing but data to be incorporated into future programs. To better illustrate the gentle terror of such totalitarianism, it should be added that the programmers do not necessarily have to be humans but can also be computers. The programs can automatically learn from our behavior to program us ever more effectively” (Flusser 1993: 260).

5. Aesthetical Education

Large Language Models have reached precisely this point: Partly, computer programs collect information almost autonomously information voluntarily provided by their users. From Flusser's perspective at the time, however, there is still hope – schools and universities should impart the skills to respond to the situation. In his essay “Ästhetische Erziehung/Aesthetic Education,” he states that our culture is “falling apart due to a lack of communication between its subcultures” (Flusser 1991b: 121). The reason for this is, in turn, the information overload. As the amount of information passed down from generation to generation continues to increase, it “cannot be contained within individual memories” (Flusser 1991b: 123). The “tripartite division of ideals into science, politics, and art has been imposed on us by the amount of available information” (Flusser 1991b: 123). As Flusser goes on to explain, however, it is not at all necessary to know all the information in order to operate a system—and his remarks are so relevant to our topic that they are quoted here at length: “But to manage a system, it is not necessary to know all its elements, and an entire discipline, namely cybernetics, deals with managing complex systems that cannot be understood in their entirety. To be competent with complex systems, it is sufficient to know their function (their input and output). We are not all necessarily incompetent with our culture simply because the sum of its information overwhelms our memory capacity. Each of us can manage it if we only know how to

feed it and what the result is. The question, however, is what is meant by input and output in the case of culture. This question is extraordinarily difficult but is made easier by the currently available technology of information storage. All cultural information has always been stored in artificial memories. For example, the stone knife can be seen as an artificial memory for storing the information 'cutting'. Throughout history, we have developed a series of increasingly functional artificial memories, such as libraries and museums, but only recently have we succeeded in creating universal, dynamic artificial memories. Our culture may have branched into three subcultures, and each of these into numerous specializations, but all this information is (or at least virtually) stored in computer memories. Therefore, anyone can be considered competent within our culture if they have learned to manipulate these memories. And not just to feed these memories with new information and retrieve what is already stored there, but above all, to link the information stored there. That is the task of all future education." (Flusser 1991b: 124).

This future education is intended to "methodically and experientially undermine the separation of ideals," and this "undermining" becomes evident "in the practice of artificial intelligence" (Flusser 1991b: 125). It is "no longer about an individual in their specialized field (based on their specialized competence) producing new information that could be considered a scientific, political, or artistic creation. Rather, it is about a dialogically linked group creatively extracting previously unseen information from the data stored in the artificial intelligence" (Flusser 1991b: 126). As Flusser explains in the same passage, the goal is to "train systems analysts," and schools should be institutions committed to "passing on available methods and developing new ones—methods, in fact, that allow new information to be created from stored information" (Flusser 1991b: 125). As with his vision of a telematic society, Flusser assumes a dialogical and "intersubjective creation" and considers artists, in particular, to be competent in the critical and creative use of program-based devices (Flusser 1991b: 126).

6. Dialogic Creation and Artistic Intelligence

Specifically, with regard to the use of artificial intelligence, methods must be developed and taught that enable creative influence on the input and output of Large Language Models. In the spirit of dialogical creation, rotating groups should be formed, each with members possessing diverse competencies, and the focus should be on linking information in new and unexpected ways. Fundamentally, a distinction must be made between being and simulation. When it comes to evaluating information, human collective intelligence should always take precedence over any assumed machine intelligence. Flusser's repeated call for penetration into the black box remains desirable when dealing with Large Language Models but is no longer crucial. More important is the shift to offline

mode when it comes to existential questions. Mutual recognition must be lived exclusively on a human level: lacking consciousness, a machine cannot address a human being as "you." If we accept this programmed, machine-based "you," we attribute too much to computing machines—and thereby diminish our own capacity as independently thinking and self-aware beings.⁴ The "you" should remain reserved for humans, and machines should be viewed not as entities, but as technical constructs. Interpersonal dialogue is not only more creative but also has ethical significance.

As described in the chapters on AI and work, as well as on the anthropological impact of AI, the transformation of our consciousness and our self-understanding, as described by Flusser, can indeed be seen as the core of the problem in dealing with AI. However, Flusser evaluated media primarily in terms of their usefulness for the interpersonal exchange of information—more specifically, for the preservation of existing information and the generation of new information. Instead of merely pointing to the societal risks associated with the proliferation of AI applications, Flusser would likewise have emphasized aspects that support the dialogical creation of novel information. Since the creative potential of AI applications does not lie within the applications themselves, as outlined in Chapter 1, only their use as tools can lead to creative results. If these tools are used collaboratively, aleatorically, and artistically, this can certainly lead to surprising and novel information and expand our aesthetic scope of possibilities.⁵ In short, and this is what this essay advocates: artistic intelligence should take control of artificial intelligence. With regard to our future existence in the world, there would then be little to fear, or as Flusser put it in 1984 in the essay “Kunst und Computer/Art and Computer”: “Apparatus totalitarianism would give way to a program democracy, and programmed life to a dialogically programmed life.” (Flusser 1993: 260). The coming years and decades will reveal which direction things will take.

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⁴ See also: Joseph Weizenbaum (1976), *Computer Power and Human Reason*, San Francisco: W.H. Freeman and Company

⁵ See also: Martin Buber (1954), *Das dialogische Prinzip*, Bern; and Marcel René Marburger (2011), *Flusser und die Kunst*, Cologne: Edition_. Flusser himself refers on several occasions to Martin Buber’s philosophy of dialogue, including in an essay on Edmund Husserl: Vilém Flusser, “On Edmund Husserl” (1987), in: *Review of the Society for the History of Czechoslovak Jews*, New York, Vol. 1, pp. 91–100, here p. 93.

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