

Daniel Irrgang

Reversing the vectors of meaning.

The diagrammatic language of Vilém Flusser

1. Introduction: the techno-diagrammatic image-icon

This paper is an attempt to explore the genesis of the concept of the “technical image” or “techno-image,” later “synthetic image,” in the work of Vilém Flusser—and to subsequently discuss it in context of “diagrammatology”, that is the field of research on diagrammatic signs and their epistemic and operational capacities.¹ This is not a simple undertaking. Firstly, because of the dynamic character of Flusser’s term, evolving in the course of ca. 30 years. He developed his ideas and theses in the process of writing itself—and he wrote almost without interruption: there are over 10,000 documents in the Vilém Flusser Archive at the Berlin University of the Arts, including book, article and lecture manuscripts, in addition to an extensive collection of correspondence. Flusser’s concept of the techno-image must be understood as a dynamic one, a concept that he refined continuously and that is closely correlated with his own biography. The concept emerges explicitly by 1977, at the latest, though there are identifiable traces of it dating further back, to Flusser’s early encounters with communication or information theory in the 1960s and with video art in the 1970s.

In the first part of this paper, I will gather some characteristics of the Flusserian techno-image, looking especially at early attempts by Flusser to define this new image type, since in this stage the concept had a certain openness, including some image types not necessarily generated by a technical apparatus (a condition Flusser later included into his definition as a necessary one).

In the second part, I will point out parallels between Flusser’s techno-image concept and diagrammatic signs, emphasizing the non-trivial relation between signifier and object, which is the condition for both, the “projective” capacity of the Flusserian techno-image and the epistemic element of “diagrammatic thinking”. With the term of “diagrammatic thinking” I am already referring to Charles Sanders Peirce’s notion of diagrammatics in logic and semiotics, which is considered the pioneering

¹ This paper is, although extensively reworked, based on my German book *Vom Umkehren der Bedeutungsvektoren. Prototypen des technischen Bildes bei Vilém Flusser* (Irrgang 2017). It also contains translated and revised parts of my PhD thesis, upcoming, in German, as *Erweiterte Kognition. Zum diagrammatischen Zeichen als verkörpertem Denkding* at Kulturverlag Kadmos, Berlin. Furthermore, this work has been funded by the Federal Ministry of Education and Research of Germany (BMBF) under grant no. 16DII115 (“Deutsches Internet-Institut”).

work in diagrammatology and who himself considered diagrams—a specific *operational* form of icons—as essential for his take on logics and semiotics. In my paper, I will mainly refer to Peirce’s take on diagrammatics when talking about diagrammatology. I am aware, however, that Flusser himself did not engage much with Peirce’s writings. In fact, Flusser developed his sign concept from information theory, phenomenology or analytic philosophy. There is barely any trace of Peircean thought in Flusser’s own writings, e.g. on images. One of the very few existing traces is a “confession” by Flusser in a letter in 1973 to Thyllis M. Williams (Graduate Library School at the University of Chicago) where he admitted that he does not know Peirce’s own diagrammatic sketches—a logic notation which Peirce called “existential graphs”. Williams, in her previous letter, had pointed Flusser to Peirce’s graphs because of the fact that she—as do I—saw some parallels between Peirce’s theory of sign (or, more precisely, his notion of icon or diagram) and Flusser’s image theory (as Williams had received it by reading Flusser’s 1973 essay “Line and Surfaces” in the journal *Main Currents in Modern Thought* [Flusser 1973]), which was, for an academic paper written by Flusser, relatively widely received in the US at the time).²

In the third and last part of this paper, I will introduce a specific practice in Flusser’s thinking and writing. Flusser produced huge amounts of texts during his lifetime, usually by employing a mechanical typewriter. Apparently, Flusser cultivated a writing practice that began with a blank sheet of paper in his typewriter, which he then filled in during his thinking and writing. He usually wouldn’t draft a text beforehand, e.g. by compiling handwritten notes or writing down a structure, but would rather just start with his typing the pages until the essay was finished (from interviews with Flusser but also with his collaborators we know that, afterwards, he would only do minor corrections, if any; in the case of major changes he would simply draw up a new version).³ Thus, there are no handwritten drafts that would testify Flusser’s approach to writing or his “method” of transferring his observations and thoughts into the end result of a written text.

However, upon a closer look through the vast collection of manuscripts and correspondence in the Vilém Flusser Archive, one finds a number of diagrammatic sketches by Flusser, bringing, in some cases, vital aspects of his work onto paper before they were elaborated in written sentences. Compared to the vast number of documents, the approximately 160 diagrammatic sketches hidden between manuscript sentences, in letters or on the backside of personal conference notes constitute a relatively small

² Correspondence in the Vilém Flusser Archive, Item no. Cor143, Document 45.

³ This is consistent with text versions in the archive. See Flusser’s own statements on his writing practice (cf. esp. Flusser 1996: 214) as well as statements by Vera Schwamborn who, along with Edith Flusser and Miguel Gustavo, began the work of building the Vilém Flusser Archive (in a 2015 interview conducted by Moná de Paula Antunes and the author; recording in the Vilém Flusser Archive).

part of Flusser's intellectual estate. Nevertheless, I am convinced that an analysis of these sketches can be fruitful for the study of Flusser's work. Not only because, as mentioned, they often show some central aspects of his work in a kind of pre-articulated state. But also because I do believe that there is a productive connection between Flusser's concept of the techno-image and his diagrammatic sketches itself. In fact, Flusser, in an early approach to define those new images, discusses some of his diagrammatic sketches as examples of techno-images. I will come back to this later. First, I will turn to the basic question of what Flusser actually meant when he talked about techno-images as a specific, new image type.

2. The (early) Flusserian techno-image

The elaboration of a concept in the course of its formation can lead to its constriction: criteria are abandoned, foci displaced. This happens in Flusser's writing as well. I will therefore propose in the following paragraphs that, in the early years of its development, Flusser's techno-image concept is characterized by a fertile if unwieldy openness. I will also be attending here to the techno-image as a diagrammatic sign. Yet, it's difficult—even in the later years, as Flusser's interest in the synthetic, computer-generated image increased—to speak of a *theory* of techno-images (as in a consistent theoretical model), not only because of the dynamic character of Flusser's concept formation. But because, generally speaking, an analytical uncertainty is legible in many of the discourses that endeavored, in the late 1980s and early 1990s, to formulate theories of the new computer-generated images of cyberspace and virtual reality—in Flusser's approach and also in the investigations of other scholars, artists or activists. Thus, according to the program of a symposium on the question of virtual aesthetics and the new computer images organized by Florian Rötzer and Peter Weibel at that time (in November 1990, at Städelschule, Frankfurt am Main, Germany), one had to provisionally locate the undertaking “within a labyrinth of concepts” that, “like simulation, imitation, fiction, design, virtuality, appearance, hyper-reality, etc., take the ‘agony of the real’ as their starting point.”⁴

Not even the definition of the techno-image, which Flusser provided with one of his later major media theoretical works, *Into the Universe of Technical Images* (1985), should be taken as static or final; in this

⁴ Program (leaflet) for the symposium “Strategien des Scheins. Im Irrgarten der Begriffe und Medien” at Städelschule, Frankfurt/Main, Nov. 28-30, 1990 (transl. D. I.); cf. the conference proceedings (Weibel and Rötzer 1991). (Thanks to Siegfried Zielinski for referring me to this passage.) The terminology used in the leaflet is clearly influenced by Jean Baudrillard's theory of simulation or simulacrum. At the time a leading figure in the European media theory discourse on computer generated images and their ontological and existential implications, Baudrillard was a recurring speaker at the symposium series at Städelschule.

paper, however, I will take it as a point of entry. Here Flusser designates the technical image as generated by means of a technical apparatus, which in turn is based on “scientific texts” (or scientific research). These images do not represent phenomena in the world—i.e., they are not signs representing a given object. Rather, they enable the “projection” of entirely new models and concepts—they thus “reverse the vectors of meaning”. These novel images emerge from a “new imagination”⁵ which works through the calculative abstraction of the apparatus. Both domains—the new imagination and the apparatus—assume an interdependent relationship: early generators of technical images, like the camera, as well as the most advanced, like the computer, enable these models to be “concretized.” This concretization ensues, according to Flusser, in the present in the form of images, but in the future it will ensue in the form of synthetic three-dimensional objects that, from an ontological perspective, will be no less real than the “physical” things we originally encounter in the world. With the essay “Text and Image,” which Flusser published in 1984, he foreshadowed the structure of *Into the Universe of Technical Images*, on which he was working intensively at the time. In his essay, he formulates the book’s hypothesis: “The gesture of imagining (of photographing, of synthesizing images with the help of a computer) is a concretizing gesture. It allows apparatuses to project zero-dimensional points onto the two dimensions of the surface. Technical images are projections.” (Flusser 1984: 9; transl. D. I.)

The “new imagination,” which manifests itself in the novel images and is at the same time the capacity of the human subject to produce techno-images, will lead, according to Flusser, to an entirely new type of human being. From this point forward, a new anthropology will need to be developed—not for the “subjects of objects,” as “subordinates of things,” but for “projects” that effectively realize inherent *new* possibilities (Flusser 1989: 5; transl. D. I.). This last of Flusser’s projects should “have three names: ‘Vorderhand, Augenblick, Spurlos’ (Makeshift, Momentary, Without Trace). This I will do before I die, because Felix Philipp Ingold from Zurich has said to me that one doesn’t die over a book” (Flusser 2008: 226; transl. D. I.), Flusser announced in a series of lectures he held at the University of Bochum, following an invitation by the media theorist Friedrich Kittler in the summer of 1991. The project remained unfinished in the form of two book fragments: “Von Subjekt zu Projekt” (From Subject to Project) and “Menschwerdung” (Humanization/Becoming Human).⁶ On November 27, 1991, Flusser died in a car accident.⁷

⁵ Early on, Flusser for the most part uses the term “techno-imagination” for this new imagination, later just “new imagination” or, in German, *Einbildungskraft* when he wants to demarcate it etymologically from the “imagination” or, in German, *Imagination* (in the traditional sense). In the present text, I will use the terms “new imagination” and “traditional imagination.”

⁶ Posthumously published as *Vom Subjekt zum Projekt. Menschwerdung* (Flusser 1994).

⁷ For this and much of the following biographical detail, see Irrgang and Marburger 2015.

Flusser and the Swiss cultural theorist Felix Philipp Ingold enjoyed a friendship that lasted nearly ten years. Their correspondence between 1981 and 1990 documents the phase during which Flusser was developing and concretizing his *explicit* concept of the techno-image. Ingold characterized Flusser's intellectual career—beginning with his engagement with the philosophy of language in the 1950s through the 1960s, then turning to communication theory around the end of the 1960s, then expanding this into a theory of the image, then a theory of media—as a “turn away from writing, toward the image.”⁸ Their correspondence, in the course of which both thinkers shared their working manuscripts with one another, reflects the development in Flusser's concept of the image that I have elsewhere described as a move away from the “technical” to the “synthetic image” (Irrgang 2015).

Throughout the 1980s, and due in no small part to his collaborations with artists and researchers working in the field of informatics, the computer came to occupy the center of focus of Flusser's phenomenological analyses. Computer-generated images—or synthetic images, as they were now more often referred to by Flusser—were in his view the preliminary completion of the technical image that could now effectively sever any representational sign-relation with a physically present object. This would enable, according to Flusser, not only the projection of entirely new models but also, more importantly, their computation and concretization—and thus the realization of previously abstract possibilities.

The definition of the techno-image Flusser had given in 1985 in *Into the Universe of Technical Images* was basically his most developed one. In the subsequent years until his death he would only marginally modify this definition—while shifting to a rather existential dimension of the “new imagination” of human subjects becoming “projects”. Yet, the definition of the techno-image remained fuzzy, in a sense that Flusser himself had a hard time to give examples for what he actually meant when he was talking about those new images. He sometimes referred to computer visualizations of fractal equations like the Mandelbrot set, which were popular at the time (postmodernism discourses) and which conveyed a picture of the principle of self-similarity (cf. e.g. Flusser 2008: 231).

In 1989, in the small, experimental essay booklet, *Angenommen. Eine Szenenfolge* (Supposing that: A Sequence of Scenes), Flusser formulated a series of “scenarios” and published them with a call for “anyone, whose imagination they empower,”⁹ to transpose the scenes into techno-images. For Flusser this compilation of scenarios was intended as an “experiment to write a text that is a pretext for synthetic computer clips.” (Flusser, cited in Sander 2002; transl. D. I.) The plan is a surprising one, since techno-

⁸ Felix Philip Ingold, in a letter to Vilém Flusser, July 30, 1988 (Correspondence in the Vilém Flusser Archive, Item no. Cor97); transl. D. I.

⁹ From the pre-script titled “Fahndung” (Manhunt) in the imprint of Flusser 1989b; transl. D. I.

images, synthetic images in particular, are precisely not supposed to convey a picture of traditional scenes, but “concepts”. *Angenommen*, however, reads in large parts like a collection of descriptions of scenes or narrations. Not surprisingly, Ingold criticized the manuscript as “conceived more rhetorically than pictorially”; he could “not at the moment see how these strictly authorial texts should be transposed into image, into moving scenes.”¹⁰ Flusser replied, rather unsatisfactorily: “What I have in mind are precisely not traditional images (those that depict or represent what is perceived), but images that attempt to depict and represent concepts. I myself am fully incapable of imagining such a thing (although I am familiar with images of fractal equations, for instance).”¹¹

But if Flusser had, even as late as 1989, difficulties to find examples for concrete techno-images, he, in an earlier phase of his writing, as the techno-image concept was still in a state of defining, actually gave quite useful examples for technical images. In 1977 Flusser began working on the manuscript “Umbruch der menschlichen Beziehungen” (“Mutations in human relations”), which was only published posthumously, together with other texts, as *Kommunikologie*. In the chapter on techno-images, Flusser explains the primary criterion of this new type of image by way of experimental video: “So-called ‘video art,’ which ostensibly seeks originality, self-interest, in brief aesthetic effect, is ‘beautiful’ insofar as the video tapes are maps and models.” (Flusser 1996b: 139; transl. D. I.) The specificity of the techno-images—and this is what still significantly differentiates the 1977 definition from the one that appears in *Into the Universe of Technical Images*—resides neither in the technical conditionality of its production nor in its technical materiality or structure, but in its *meaning*. “They don’t mean scenes but concepts. Ontologically, they stand on a wholly different plane and have a wholly different genesis.” (Flusser 1996b: 139; transl. D. I.) Their technical conditionality plays only a subordinate role here, and in fact Flusser even includes in his classification “more or less traditionally produced images, provided they mean concepts (such as blueprints, designs, curves in statistics, or the drawings contained in the present text)” (Flusser 1996b: 140; transl. D. I.). I will come back again to these diagrammatic sketches or drawings at a later point. For precisely such diagrammatic signs are, to use Flusser’s final definition of the techno-image, “reflexive and speculative” as well as “extraordinarily ‘abstract’—that is, concept-representing symbols” (Flusser 1996b: 188; transl. D. I. – Flusser does not use the term symbol in the Peircian sense, but more generally as sign).

Once techno-images came to mean “concepts,” Flusser was able to position himself against a *trivial* definition of the image as an apparently objective depiction of objects in the world. It was this “projective” character of techno-images that was essential to him. From this perspective, there is no

¹⁰ Ingold in a letter to Flusser, Oct. 28, 1981 (Correspondence in the Vilém Flusser Archive, Item no. Cor97); transl. D. I.

¹¹ Flusser in a letter to Ingold, Oct. 31, 1981 (Correspondence in the Vilém Flusser Archive, Item no. Cor97); transl. D. I.

“causal link between reality and image” (Flusser 1996b: 138; transl. D. I.); such images do not depict phenomena in the world but stand as models of the world: “It has to do with a reversal of the conventional relations between the world and its ‘explanation.’” (Flusser 1996b: 136; transl. D. I.) This “reversal of the vectors of meaning,” as it came to be called in his later writings, entails not only ontological consequences for the images but also existential ones for those who create, manipulate and learn to exploit their reflexive potential. The projection of techno-images thus becomes a “changing of the world” (Flusser 1996b: 136; transl. D. I.) that expresses itself in the emergence of a new imagination.

In the lecture manuscript which he purportedly wrote in 1980—“Image and Text” (Flusser 1980)¹²—Flusser went straight to the heart of these strange semantics of the techno-image: “They seem to be effects of the things they mean, not their symbols.” (Flusser 1996b: 6; transl. D. I.) This dialectical relation results from exactly that reversal of the vectors of meaning between sign and object. Techno-images are both symptom and cause of a contemporary “post-historical” mood which manifests in the dissolution of the models and truths that images previously obtained.

3. Some notes on (Flusserian) diagrammatics

I find Flusser’s coupling, in his later writings, of the technical apparatus to the techno-image as a necessary condition somewhat problematic. Of course, computer generated images, especially when they are based in complex data, allow for visualizations that would not be possible without the calculating computer. Algorithmically generated representations in three or four dimensions usually distinguish themselves, both epistemologically and aesthetically, from painting and drawing. And whether, in the future, synthetic images will have reached the point of Flusserian concretion, whether they will “create an alternative life world” that “is just as concrete as that which is perceived,” (Flusser 2008: 79; transl. D. I.) must, for now, be left to our imagination.

Nevertheless, we do still find, in images and signs that have *not* passed through the apparatus’s program or calculation, the epistemological components of the Flusserian techno-image—that which enables them to realize “extraordinarily ‘abstract’—that is, concept-representing symbols.” (Flusser 1996b: 188; transl. D. I.) Thus diagrammatic signs distinguish themselves from images, which represent a phenomenon in the world, by not representing their object through visual similarity, but by *projecting* it via the visualization of a structure. In so doing, they use the projection of spatial relations onto a

¹² The manuscript is undated, but its subtitle reads, “A lecture to be held at the Hebrew University, Jerusalem.” Since Flusser traveled to Jerusalem to give a lecture in April 1980, the manuscript was probably written that same year.

two-dimensional surface, in order to both couple sensibility (or spatial orientation, such as up-down, left-right, etc.) with abstract concepts or models – such as, in fig. 1, the DNA base pair coupling – to efficiently reduce cognitive effort.¹³ Thus, for instance, a diagram of the DNA double helix, and the pioneering sketch shown here in particular, “draws” a hypothesis about the structure and coupling mechanisms of DNA by visualizing the hypothesis as a relational representation or diagram. In so doing, it establishes a sign-relation which is at the same time the result of an analytical process, thereby presenting the object as a, so to speak, “visual hypothesis” (Gansterer 2011). Diagrammatic signs not only allow the reading of information about an object but, through configuration and reconfiguration of graphical elements (in the mode of *thought experiment*, one might say), they also permit the generation of new information about that object. This – I quote from a diagrammatics textbook – “control loop, of visualizable thinking and testing, of acts of projection and processes of cognition” (Bauer and Ernst 2010: 15; transl. D.I.), is what the epistemic power of diagrammatic signs consists in.

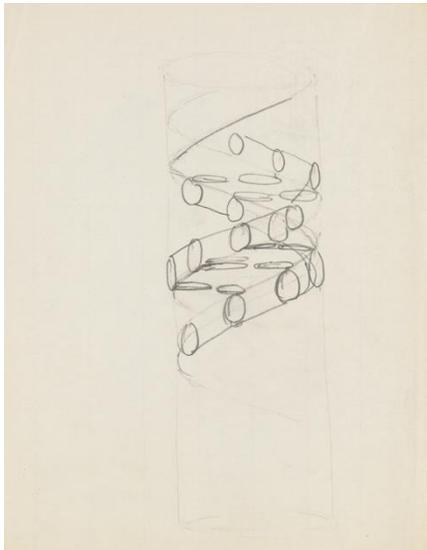


Fig. 1: Sketch of the DNA double helix, probably drawn by Francis Crick in 1953 (Library of Congress, World Digital Library)

It is this recursive relation between drawing, analysis and the object of fascination—in combination with the rapid growth of diagrammatic signs in information societies (information visualization, UX design etc.)¹⁴—that accounts for the increasing number of academic studies on diagrammatics.¹⁵ The

¹³ On spatiality as the determining factor of the structure of the diagrammatic sign, cf. Irrgang 2016.

¹⁴ On the capacity of diagrams to mediate information in efficient cognitive economies, cf. Larkin and Simon 1987 as well as Tufte 2020.

¹⁵ Diagrammatics—or, diagrammatology—as a field of research is nearer the domains of cognitive science, logic and semiotics in the United States; by contrast, in Europe this field is more concerned with cultural studies, media studies, philosophy, aesthetics and semiotics. For an overview of the state of research, see Gerner and Pombo 2010; Bauer and 2010, Schneider, Ernst and Wöpking 2016; Krämer 2016; for further titles, cf. Irrgang 2013.

object of diagrammatics is the production of knowledge *in process, as a practice of configuration and reconfiguration*, that unfolds between external-material signs and internal-mental representations. Here, new knowledge can be generated—knowledge that was not invested in the diagram by its maker in the first place. Charles S. Peirce, who placed the pragmatic dimension of the sign—its *operativity*, in other words—at the center of his work on logics and semiotics, began grappling very early on with precisely what diagrams might imply as means of cognition. In one of his famous classification triads, diagrams represent a subcategory of the Peircian icon (fig. 2):¹⁶ While icons operate with the notion of “similarity” (between signifier and object), in the case of diagrams this similarity is not of a visual nature (such as with images), rather it is a *structural* similarity.

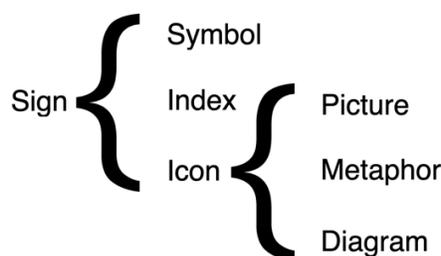


Fig. 2: Charles S. Peirce’s classification of signs (sketch: D.I.)

Peirce conceived of diagrammatic operations as the founding principle of analytic thinking, thus extending his own thought about diagrammatics far beyond its semiotic classification contexts. The question for him was not (only) how signs represent their object but—from the perspective of pragmatism—what one can actually “do” with them in order to solve a given problem. Peirce identified the synthesizing power of icons, especially diagrams, precisely in its capacity to “introduce an idea not contained in the data, which gives connections which they would not otherwise have had. [. . .] The work of the poet or the novelist is not so utterly different from that of the scientific man. The artist introduces a fiction; but it is not an arbitrary one. [. . .] The geometer draws a diagram, which if not exactly a fiction, is at least a creation, and by means of observation of that diagram he is able to synthesize and show relations between elements which before seemed to have no necessary connection. [. . .] Intuition is the regarding of the abstract in concrete form, by the realistic hypostatization of relations.” (Peirce 2006: 187)

¹⁶ Diagrammatics and diagrammatic signs occupy a key position in Peirce’s work; cf. Stjernfelt 2007.

Peirce's studies on diagrammatics do not amount to a coherent theory; they appear dispersed throughout his work. Nevertheless, they are the principal reference point for contemporary diagrammatological research. This is, above all, due to his open concept of diagrammatics, which is concerned not only with how the mind operates with concrete signs but, more so, with broader questions of (analytical) thinking. Considering, as he does, their foundational relation to human cognition, Peirce develops his thoughts on diagrammatics from the basis of Kant's schemata, which, as agents of the imagination, mediate between intuition and the concepts of reason (cf. Stjernfelt 2007: 50). Thus icons, and diagrams in particular, enable us to make conclusions regarding the most diverse sets of facts and circumstances, even at the level of abstraction. But what is interesting is that Peirce's pragmatic concept of the sign attempts to relativize somewhat the dualism in Kant's epistemology: Diagrammatic reasoning appears, in Peirce's work, as a recursive process between sensibility and understanding—a process that is nevertheless essentially conceived of as dualistic (i.e. the dualism “sensuality ↔ intellect”), though the sensible components are deeply incorporated into the cognitive process. Peirce criticizes Kant's rigid division between the operations of “observing” and “endowing with meaning”:

“He [Kant] allows himself to fall into the habit of thinking that the latter only begins after the former is complete; and wholly fails to see that even the simplest syllogistic conclusion can only be drawn by *observing* the relations of the term in the premise and the conclusion.” (Charles S. Peirce, *Collected Papers*, 1.35; cited in Bauer and Ernst 2010: 50; transl. D. I.)

In another text, Peirce is putting this intimate interrelation of thought and sensuality more poetically: “Thought is a thread of melody running through the succession of our sensations.” (Peirce 1968: 52)

With this expansion of the Kantian imagination, we are nearing Peircean diagrammatics to Flusser's new imagination, which he developed, as did Peirce, starting from Kant's term of imagination (*Einbildungskraft*). This new imagination is likewise only thinkable in a relation of interdependence with operative signs, which themselves exist in an analytic-projective relation to their objects.¹⁷ Even Flusser's remarks concerning the linearity of writing and synchronicity of images exhibit parallels to epistemological approaches to diagrammatics (cf. Bogen and Thürlemann 2003).

Against this background it is now not surprising that Flusser, as already quoted above, also includes within the ranks of techno-images “even more or less traditionally produced images, provided

¹⁷ Bauer and Ernst (2010) also touch on the parallels between diagrammatic operations and the operative dimension of the Flusserian techno-image: “It would be an interesting proposition to reread Flusser's concept of the techno-image now, especially in light of a cultural-technological interpretation of diagrammatics, within the framework of an operative imagery” (loc. cit., p. 177, fn. 135). But Bauer and Ernst are referring here only to Flusser's early definition in *Kommunikologie*.

they mean concepts (such as blueprints, designs, curves in statistics, or the drawings contained in the present text).” (Flusser 1996b: 140; transl. D. I.) And in fact, the epistemic strength of experimental diagrammatic practices is precisely found in the way they demonstrate the potential of techno-images to, as Flusser put it, “cast [. . .] possibilities into reality.” (Flusser 1987: 5; transl. D. I.)

4. Drafts of techno-images: Flusser’s diagrammatic sketches

Not only does Flusser’s concept of the techno-image lend itself to diagrammatic analysis. In his own writing process, Flusser himself crafted various diagrammatic sketches that are of interest for at least two reasons. First, as mentioned above, they belong to the few artifacts in the Flusser Archive which provide a glimpse into Flusser’s working process. The diagrammatic sketches that he kept—whether as notes jotted down during conferences, as explanations in his correspondence, or as illustrations for his actual writings, are rare artifacts of Flusser’s thoughts before they became text. Further, I want to propose that a non-trivial relation exists between Flusser’s image-concept and his diagrammatic projections—that, in other words, these sketches, as artifacts of a thought process, have played an important role in the development of the concept of the techno-image in particular.

Following this line of thought, Flusser’s diagrammatic sketches can be regarded as “epistemic things” or “graphematic traces” that construct an “interface between the material and conceptual aspects of science.” (Rheinberger 2006: 244) But just to clarify: I don’t want to somehow “derive” Flusser’s theory formation from his sketching practice. Flusser counted himself among the *literati*, which he considered a dying species with the rise of techno-images replacing in the long run, as he believed, written text. New generations had to learn to design techno-images, he himself was bound to the age of writing (Flusser 1987c). Nevertheless, I would like to emphasize a non-trivial relationship between Flusser’s sketches and his concept of techno-images. The assumed significance of this relationship is, as already mentioned, supported by the fact that Flusser himself referred to some of his own sketches as examples of techno-images, while, in this early definition, he had not yet set a technical apparatus as constitutive to their production. The specific form and materiality or aesthetics of *hand-drawn* diagrammatic representations is, like the practice of sketching itself, also a subject of art studies, where the *epistemic* capacity of sketching is emphasized, for example for design processes. The art historian Norman Bryson, for example, notes that while sketching, “the process points the way and the mind follows: first the material signifier, traces on the paper; then, after that, the signifier, the scene depicted, the nominal referent.” (Bryson 2009: 33; transl. D.I.)

With the two examples of Flusser’s diagrammatic sketches I am going to discuss, I want to show that his own diagrammatic practice influenced his theory formation, probably even in ways that he himself was not aware of, or at least did not reflect on in his writings, as far as I know. The examples are related to the “tree and network structures” (4.1) of his communication theory and to his “post-historical model of time” (4.2) of what could be considered a postmodern element in his philosophy.

4.1 Tree and network structures

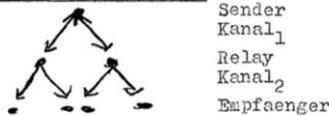
In his “communicology”, Flusser contrasted *discourse* with *dialogue* in a first classification of communication structures. In 1977, he summarized his communicological considerations, which he had developed particularly in teaching at various universities in Brazil, in the above-mentioned manuscript “Mutations in human relations”. Flusser divided his models of discourse and dialogue into several subcategories, including the “tree discourse”, with hierarchical relationships between the actors involved yet leaving room for dialogue, the “amphitheatre discourse”, which corresponds to the mass media circuit, the “circular dialogue”, which is egalitarian but also elitist in structure, and the “net dialogue”. The latter outlines the structure of the utopian “telematic society” envisioned by Flusser. Similar net-dialogue principles and their intersubjective implications have been repeatedly referred to since the 1990s (and even earlier), in the exponentially growing literature of various Internet utopias, as “the most democratic form of communication, since it is uncontrollable and through it new information is spontaneously created and passed on” (Heibach 2000: 44; transl. D. I.).

(a) Theaterdiskurse koennen wie folgt dargestellt werden:



Beispiele fuer diese Struktur sind nicht nur das Theater selbst, (und scheinbar, aber irrtuemlicherweise, das Kino), sondern auch das Klassenzimmer, der Konzertsaal, und vor allem ein buergerliches Wohnzimmer.

(b) Pyramidale Diskurse folgen etwa diesem Schema:



Beispiele fuer diese Struktur sind Armeen, Kirchen, politische Parteien von faschistischen und kommunistischen Typ.

(c) Baumdiskursen, fuhrten:



Die Skizze beabsichtigt, zu zeigen, dass das Ersetzen der Autoritaeten, (relays), durch Dialoge zu zwei weiteren, und schicksalsschweren, Aenderungen der Diskursstruktur fuehrte. Naemlich zum Kreuzen der Kanale, und zum Ausschalten eines entgueltigen Empfaengers des Diskurses.

(d) Amphitheaterdiskurse. Ihre Struktur ist diese:



Die Skizze beabsichtigt, die Horizontlosigkeit, "kosmische Offenheit", eines Theaterdiskurses zu illustrieren, sobald man daraus die konkave Wand entfernt. (Vergleiche mit Skizze a). Beispiele fuer diese Diskursstruktur sind selbstredend die sogenannten "mass media" wie Presse, Fernseh und Plakate, aber ihr Prototyp ist der Zirkus, etwa das roemische Kolosseum.

(e) Kreisdialoge koennen wie folgt dargestellt werden:



Das ist, selbstredend, die Struktur der "runden Tische", und Beispiele sind Komitees, Laboratorien, Kongresse und Parlamente. Das Prinzip dieser Struktur ist einfach: man finde einen gemeinsamen Nenner aller Informationen, welche in den Gedaechnnissen der am Dialog Beteiligten gespeichert sind, und erhebe diesen gemeinsamen Nenner zum Rang einer neuen Information.

(f) Netzdialoge haben folgende Struktur:



Diese diffuse Kommunikationsform bildet das Grundnetz, ("reseau fondamental"), welches alle uebrigen menschlichen Kommunikationsformen stuetzt, und letztlich alle von Menschen ausgearbeiteten Informationen in sich aufsaugt. Beispiele sind Gerede, Geschwaetz, Plauderei, Verbreitung von Geruechten, und die Post und die Telefonsysteme stellen die "entwickelteste" Form dieser Kommunikatonsstruktur dar.

Fig. 3: Vilém Flusser, discourse and dialogue models in the manuscript „Umbruch der menschlichen Beziehungen“; excerpts (Vilém Flusser Archive, Item no. 1610)

I do not want to go into further detail here. Flusser’s communication theory is one of the best-known aspects of his work and has become even better known posthumously in the course of the discourses on the aforementioned Internet utopias. Here I rather want to concentrate on the diagrammatic sketches for these models of discourse that Flusser interspersed throughout the manuscript “Mutations in human relations” —they were later published together with the text in *Kommunikologie*. This is worth mentioning because even in manuscripts published during Flusser’s lifetime, although Flusser had pro-

vided extensive diagrammatic sketches in some cases, those were usually not published. A clear example of this, which I will come back to later, are the sketches in the manuscript for *Into the Universe of Technical Images*.

Let us first look at the sketches for the different discourse models. For all these models Flusser has chosen strongly hierarchical forms of representation. Not only in the case of the explicit tree discourse model, but also for the theatre discourse and pyramid discourse, the representations bear characteristics of tree diagrams. Even the representation of the amphitheatre discourse, which at first seems to follow a different principle of representation, reveals itself on closer inspection as a “view from above” on a tree structure. It is the view on a treetop, the highest center in the hierarchy, from which all information, unidirectional of course, is sent out to a subordinate level—the receiving masses. From an iconological perspective, the tree (including its structural abstractions, e.g. in taxonomies) is probably one of the most influential “canonical icons” (Gould 1995) in the histories of art and science when it comes to signifying hierarchies—and dominance. The hierarchy implied by it becomes explicit, even central to Flusser’s argument, which aims at the *egalitarian* structure of the net dialogue as a fundamental counter-model to the hierarchical structure of discourse. Flusser’s argument is thus subtly reinforced (consciously or not) by the diagrammatic representation of apparently factual communication models, but which, however, is based on a certain normative model—namely Flusser’s prioritization of the dialogue, where information is generated and intersubjective relations are built; in contrast to the discourse, where information is rather distributed and power structures are cemented. It is fascinating to read how here two of Flusser’s decisive intellectual roots—dialogue philosophy and information theory—coincide in his utopian projection: The production of new information with the other in an existential experience of dialogue is the starting point of Flusser’s “Telematic Society”. Dialogue produces information and is the driving force behind human creativity. Flusser’s diagrammatic sketches for his dialogue models subtly reinforce this premise. Thus, the depiction of the circular dialogue is reminiscent of the conversation situation at a round table and thus refers to the image of an egalitarian dialogue. This becomes even clearer in the representation of the network dialogue: Each subject within the network dialogue can interact with each other on the same hierarchical level—they constitute the nodes of a quasi-reciprocal communication network.

At the latest with Paul Baran’s influential text from 1964, “On Distributed Communications”, the network structure is the cipher, perhaps even the symbolic form (Cassirer), of the information society that was to receive this name about a decade later. Baran sketched the possibility of networked coupling of several mainframes, not only to share computing power, but also to guarantee the function

of the network in case one or more nodes are destroyed. This report was written for the RAND Corporation, the influential think tank connected to US military research. Baran's proposal is considered an important basis for the ARPANET, from which, according to technological (and quite Western) historiography, the Internet was ultimately to develop. Often quoted are Baran's schematic representations (fig. 4), with which he wanted to clarify the differences between the "hierarchical or more centralized systems" and the proposed distributed communication of the computing machines, which he represented in form of a network. They differ both aesthetically and technically from Flusser's sketches but refer to similar communication structures as his discourse and dialogue models.

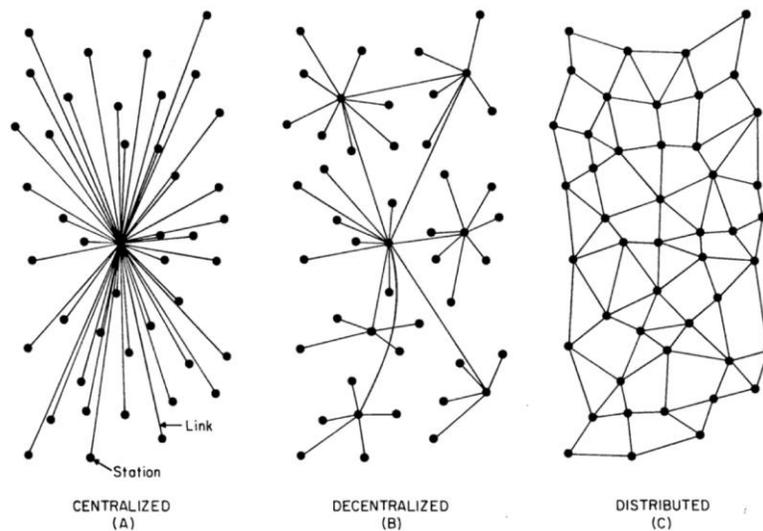


Fig. 4: Paul Baran, "On Distributed Communications", I: Introduction to distributed communications networks (Santa Monica 1964), p. 2

In this subchapter, I have tried to show what role Flusser's sketches on discourse and dialogue structures play in his work and which positions of contemporaries are close to them. I would like to conclude this part with another series of Flusser's sketches on tree and net structures that have remained yet unpublished (fig. 5). These figures are taken from the manuscript of Flusser's major work, *Into the Universe of technical images*. They were not included in the book. This is regrettable, especially since they not only show how one diagrammatic representation has resulted from the other—*structurally isomorphic* in form and as *the result of operative iconicity*, in a movement from one icon to the next by changing parts of it. They also illustrate how Flusser used to interweave various facets from his 40 years of research in his late work (here specifically his communicatological theses with his theory of the techno-image).

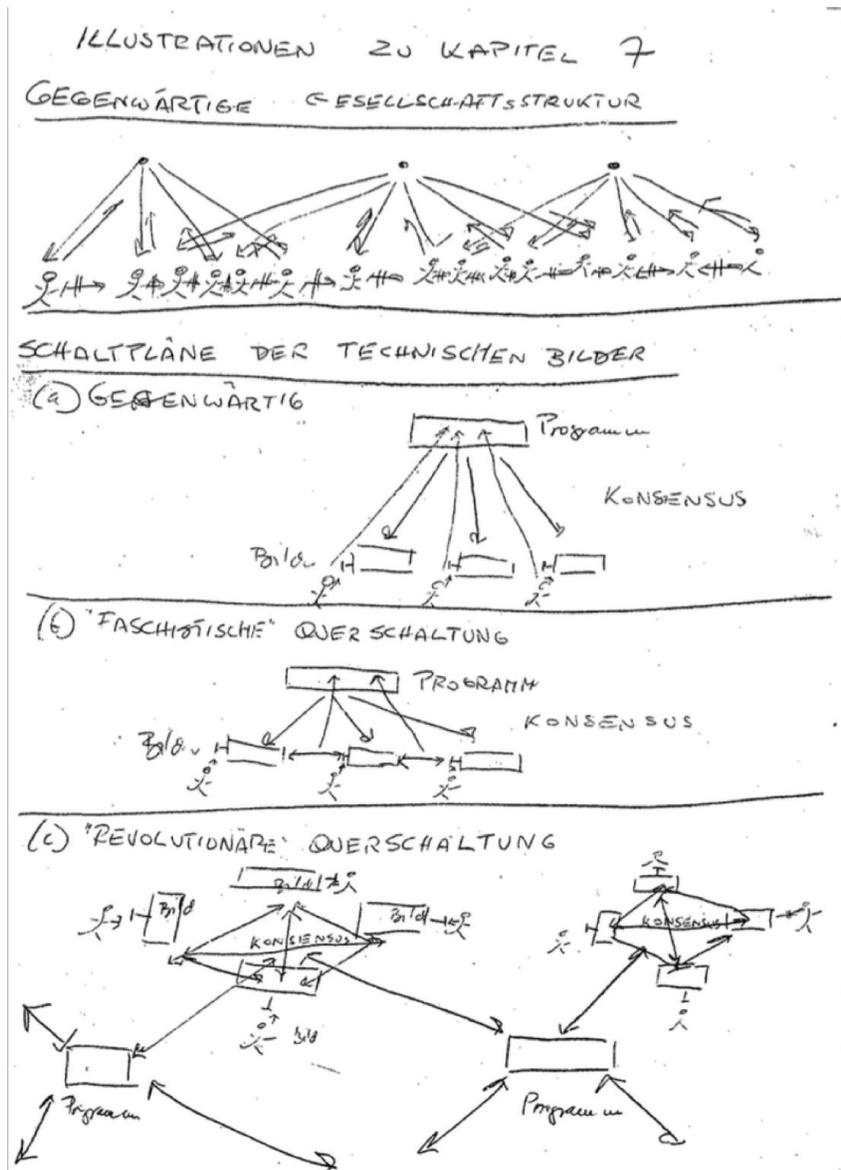


Fig. 5: Vilém Flusser, „Illustrationen zu Kapitel 7“ for the manuscript “Ins Universum der technischen Bilder“
(Vilém Flusser Archive, Item no. 2227)

4.2 Post-historical model of time

The second example is less known and less obviously anchored in Flusser’s work. In fact, as far as I know, diagrammatic representations of this complex have not been published in any of Flusser’s texts. They revolve around his model of time, which he explicitly formulated from the early 1980s onwards and which can be considered as a typical postmodern or “*post-histoire*” model. Here, time is not conceived as a linear concept, in the sense of a time stream according to which time “is experienced as a

sequence of things (as an event, as history)” (Flusser 1987: 9; transl. D. I.). Rather, the Flusserian post-historical subject is always in the present (or more precisely: its existence constitutes what it perceives as present), from where it looks back at the past and is at the same time turned towards the future. However, it does not move towards the future, but perceives “future” as possibilities that flow towards the present. Its own point of view, “the inner and outer world”, is in turn perceived as “a context of presences that condense from possibilities” (Flusser 1987: 9; transl. D. I.). The diagrammatic representation thus conceives time not as running linearly towards the future, but as a “field of possibilities” stretching “from the future into the present” (Flusser 1987: 1; transl. D. I.).

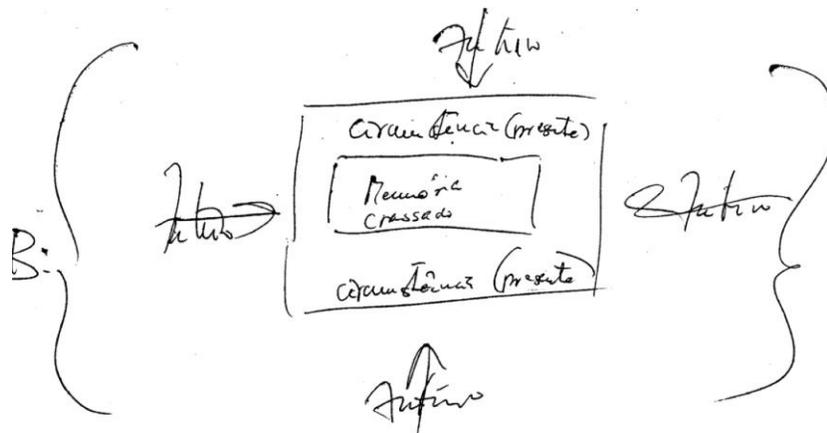


Fig. 6: Vilém Flusser, sketch in a letter to Milton Vargas, May 1, 1974
(Vilém Flusser Archive, Item no. Cor MV 3117, document 71b)

These considerations are closely related to Flusser’s concept of “truth”: In a postmodern gesture, the great truths are abandoned in favor of possibilities, which are conceived as probabilities entering our field of knowledge as future possibilities, which we judge based on past experiences. This has far-reaching epistemological consequences comparable to those formulated by Jean-François Lyotard in his proclamation of postmodernity from 1979, who also attributed a central role to the emerging information technologies. In 1987 Flusser explained: “If time is experienced as an intrusion of the future into the present, then the term ‘progress’ no longer has any meaning. Such a world view is no longer based on causal thinking, but on probability theory [...]” (Flusser 1987b: 5; transl. D. I.)

At this point it is particularly interesting where Flusser locates the (human) subject in his model. It is not only located in an eternal present but is also the point of attraction where future possibilities converge: “I am the black hole wherein all the virtualities flow to become real.” (Flusser 1983: 3)

The sketch shown here as fig. 6 is, to my knowledge, the earliest of a series of diagrammatic sketches of this model. It’s taken from a letter Flusser had written to his friend Milton Vargas on 1

May 1974. In this representation, the future (“*Futuro*”) falls from all sides onto the memory (“*Memória (passado)*”), which is enclosed as a rectangle by another rectangle, the present circumstances (“*circunstância (presente)*”).

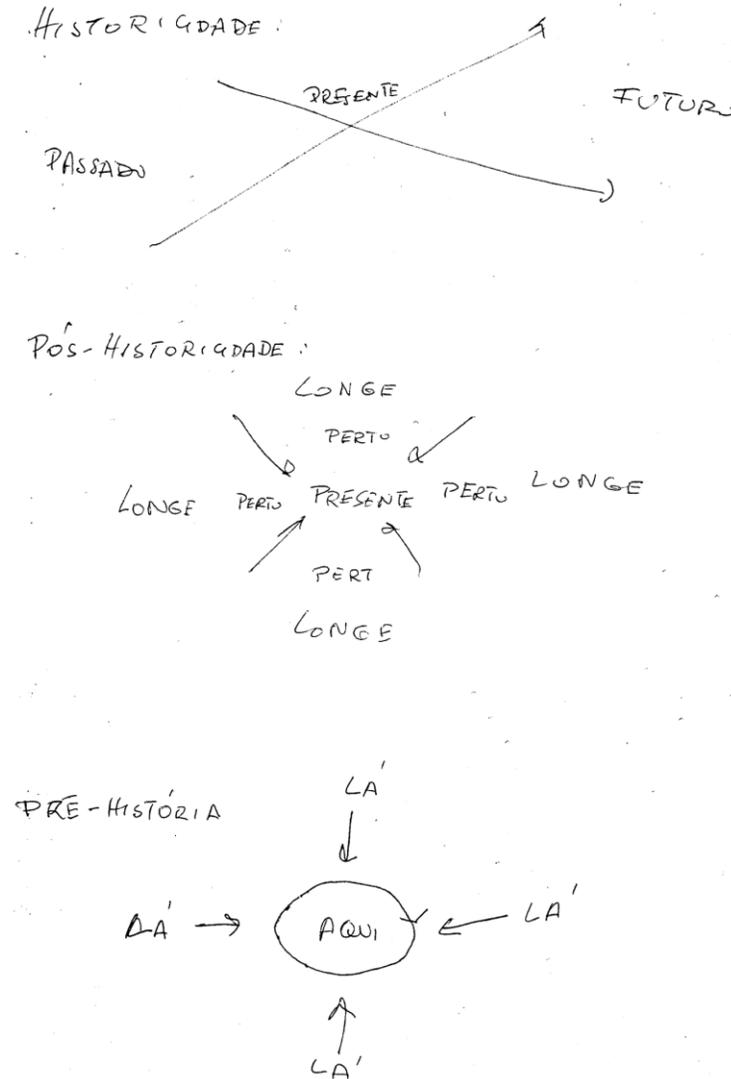


Fig. 7: Vilém Flusser, sketch in a letter to Milton Vargas, September 20, 1989
 (Vilém Flusser Archive, Item no. Cor MV 3120, Dokument 101b)

The last letter I know of which contains similar sketches (fig. 7), also addressed to Vargas, dates from September 20, 1989 and was thus written during the period of Flusser’s late work. Here, again as a sequence of a diagrammatic thought movement, different time models are juxtaposed in contrast:

- 1) The model of history (“*Historidade*”), according to which the past (“*Passado*”) runs into the future (“*Futuro*”), thwarting the present.
- 2) The model of post-history (“*Pós-Historidade*”). It is structured similarly to Flusser’s sketch from the letter to Vargas 15 years earlier but has a different inscription: The distance (“*longe*”, actually “*longe de*” = “*in the distance of*”) at the outer edge, the proximity (“*perto*”, actually “*perto de*” = “*near*”) and the present (“*Presente*”) in the center, towards which the other elements are heading. This modification of the diagrammatic representation shows a further interweaving of Flusser’s theses from different periods of his work: his time model comes up against his theses on “proxemics” from his late work, in which he discussed the telematic proximity to the Other (by means of networked media) as the existential center of the future telematic society.
- 3) Last but not least, the model of a prehistory (“*Pré-História*”)—to be found in the synchronicity of the here (“*Aqui*”) and there (“*Lá*”) of Flusser’s concept of prehistoric consciousness.

There is also a third document containing diagrammatic drawings of Flusser’s model of time. It is part of the notes he took during the now legendary conference “Open Circuits—The Future of Television” at MoMA in New York in January 1974, organized by Electronic Arts Intermix and Gerald O’Grady and with participants such as Nam June Paik or Hollis Frampton; Flusser delivered a paper as well. The sketches are actually jotted on the backside of Flusser’s copy of the conference program (fig. 8). Here, too, we find Flusser’s diagrammatic comparison between a time model of history, which is linearly conceived (“Dynamic in Historical Progress”), and his post-historical model, in which future possibilities are oriented towards the subject in the present (“within Present”). Since one central aspect of the Open Circuits conference was the new video technology and its possibilities to manipulate the time axis of moving images—actually, Flusser’s own paper, “Two Approaches to the Phenomenon ‘Television’” (Flusser 1974) discusses the specific time-based character of the video image—it is possible that Flusser developed his “post-modern” concept of time already in 1974, inspired by the practices of manipulating time that are inherent in video art.

The speculation about the long genesis of Flusser’s post-historical time model is exciting. And I would like to emphasize that my tracing of these connections—connections that developed over the course of 15 years and which seem to be sparked by Flusser’s experiences in New York—was only possible through the analysis of the diagrammatic artifacts in Flusser’s notes.

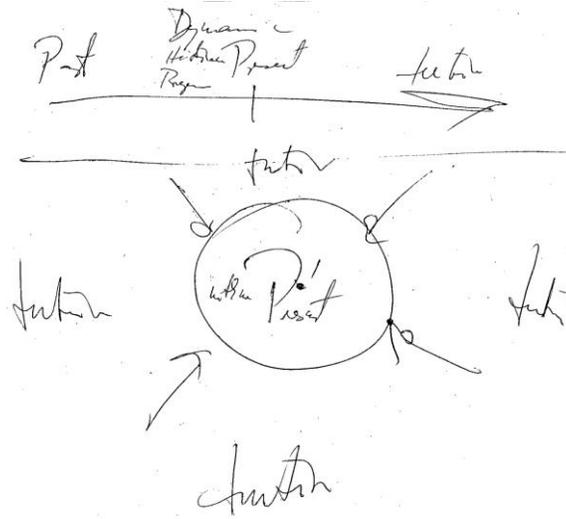


Fig. 8: Vilém Flusser, sketch on the backside of his conference programme copy for “Open Circuits”, January 23–25, 1974 (Vilém Flusser Archive, Item no. Cor 55, 6, R, document 13)

Flusser’s sketches of his time model differ in their design and impetus from the sketches of his communication models: While the first set of examples show relations in the “two-dimensional space” of the diagrammatic domain that are itself already spatial constellations (such as group relations, technical circuits, institutional structures, etc.), the second example shows the more difficult attempt to bring time, which can be added as a fourth dimension to the three spatial ones but which is itself not spatial, into the two-dimensional space of diagrammatics. With his attempts Flusser can be listed among other authors and artists who intend to counter the determinisms of the traditional, linearly progressing time model—along with its cumbersome narratives of history, progress and teleology. Among them would be Michel Serres and his efforts to make a pluralistic historiography possible, entirely in the spirit of the genealogies of his friend Michel Foucault (fig. 9). George Maciunas represents a position from the arts (Fluxus, to be precise): As part of his experiments in synoptic representations of history, he developed alternatives to linear chronological structures (fig. 10). The draft shown here, however never developed by Maciunas into one of his large-scale drawings, is strongly reminiscent of Mircea Eliade’s combined thinking of linearity and circularity in a model of time that can assume several dimensions. And which is thus perhaps able to escape the “terror of history” (Eliade 1989: 139), as Eliade called the deterministic inevitability which comes with a linear, sometimes teleological concept of time.

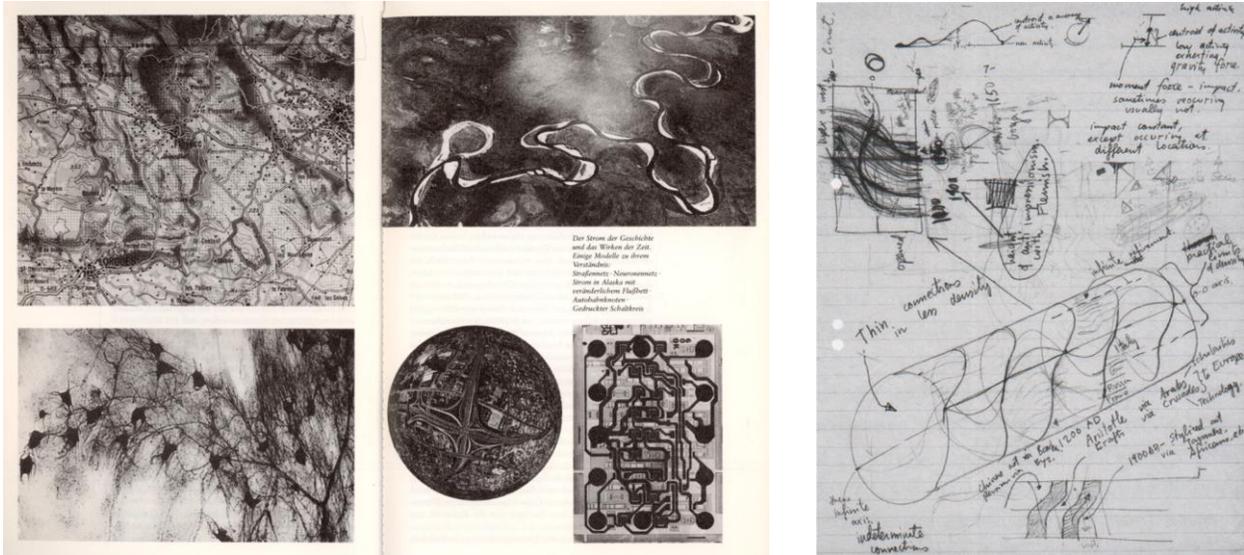


Fig. 9 (left): “The stream of history and the imprint of time”, in: *Elemente einer Geschichte der Wissenschaft*, ed. Michel Serres (Frankfurt/M.: Suhrkamp, 1994), pp. 20/21

Fig. 10 (right): George Maciunas, “Notations for Sinosoidal Cycle” (1959/60), in: Astrit Schmidt-Burkhardt, *Maciunas’ Learning Machines. From Art History to a Chronology of Fluxus* (Berlin: Vice Versa, 2003), p. 37

5. Conclusion

The exemplary analyses of Flusser’s sketches carried out here are partly speculative. They do not aim to reconstruct some kind of “hidden” intention on the part of Flusser. Rather, the analysis is intended to show that his concept of the techno-image, his theory formation and his diagrammatic sketches may be significantly interrelated. In the examples analyzed here, such a connection has become clear. And it becomes particularly clear in the post-historical time model and its diagrammatic formations. And, again, this insight could only be gained through a diagrammatic analysis. Motivated by those insights, this paper also understands itself as an invitation for further research into Flusserian diagrammatics.

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