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The Dimension of Sound in Flusser

Introduction:

The writings of Vilém Flusser are not often associated with music, sound and listening. This is unsurprising, given the relatively small amount of writings on these topics by Flusser. Accordingly, the majority of Flusser scholarship has up until now, not deeply addressed the role of the auditive in his work.[1] Given the breadth of topics and disciplines dealt with in his writings, as well as the large amount of unpublished and untranslated material, studies of Flusser's work, over twenty years since his death, are in a state of continual development. Despite Flusser's thought offering fewer explicit references than his contemporaries - for example to auditive media or music and mathematics in the work of Friedrich Kittler (Kittler 1986, Kittler 2009), or to 'acoustic space' in the work of Marshall McLuhan (McLuhan 1992), the rise of the 'acoustic turn' and the birth of the field of sound studies in recent decades can now be applied to Flusser's work in hope of a fruitful dialog.

The following essay presents a revised reading of the text "Crisis of Linearity" (Krise der Linearität), a lecture given in 1988 in Bern (Flusser 1988). The step-by-step model of cultural history he proposes here is emblematic of his work of the 1980s, in which these thoughts re-occur in various guises, and appear to represent his central preoccupations of this time. Reading this text today, it still reads as a strong and relevant media-philosophical hypothesis, if one affords it the space aside from the simplistic dualism of enthusiasts versus enemies of new media. Yet Flusser, as was fairly typical in his work, used examples entirely from the visual domain to make his argument, and almost no mention is made of the auditive in the text. Sound appears to be a missing dimension, not only in Flusser's work generally, but in this crucial theory of his as well.

Dietmar Kamper, who inaugurated the International Flusser Lecture series in 1999 searched for a way to reconcile Flusser's step-by-step model of abstraction with his own approach, in which the body and the "anthropos" play a central role. He refers to Flusser's essay "A New Imagination" [Eine Neue Einbildungskraft], which has many similarities to "Crisis of Linearity" but is devoid of a discussion of speech and language (which has a limited but nonetheless notable presence). Therefore, Kamper comments with curiosity upon the lack of consideration of speaking and listening in Flusser's thought and asks "did Flusser forget them, or did he consciously leave them out?" (Kamper 1999: 8, [translation

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[1] This issue of Flusser Studies and articles by its authors Marta Castello Branco, Rodrigo Maltez Novaes and Paulo Chagas & Rainer Guldin seek to address the way music is used in Flusser's writings.

AG]).[2] Although there is some brief discussion of speech and language in the text I will later focus upon, the overall perception is, that Flusser was indeed "deaf" to the sonic[3] in his thought, a position reflected in the fields of study which have continued to engage with his work. Yet recent work[4] has begun to show, contrary to the general perception of Flusser, that the role of sound, music and listening was not completely neglected, not least at times of his choosing.

Before proceeding with a search for the sonic dimension of "Crisis of Linearity", some of Flusser's writings (perhaps surprising to some), which do directly address music, sound and listening will be examined. These are all taken from his later German period "Chamber Music", "The Gesture of Listening to Music" and "Hörigkeit/Hearing Aids".

This essay is divided into two parts. The first part looks at these three Flusser texts mentioned above, and attempts to understand Flusser's position and usage of music and sound for his larger body of work. Read from a contemporary sound studies perspectives, these essays seem partially ahead of their time, yet simultaneously seem to espouse somewhat problematic views. The second part then turns to looks at the crisis of linearity thesis. As Kamper states, the body seems strangely absent in Flusser's model, as does speaking, listening and all to do with the aural and oral. In search of the sonic dimension of Flusser's crisis of linearity, in light of the limited material where Flusser does address sound and music, the second part seeks to expand and challenge the hypothesis, using methods of sound studies to assess its relevance for contemporary media theory since the acoustic turn.

1) Flusser, Sound and Music

On an elementary level, there is strong evidence that Flusser had a personal passion for music; not least in the biographical anecdotes of Flusser's attempt to earn a living writing jazz reviews in London in 1939 (Flusser 2003: 29), and a personal correspondence with Flusser's daughter Dinah Flusser who commented, that her father "enjoyed listening to Baroque music and Indian ragas, he was also interested in modern electronic music"(Flusser, Dinah 2011).[5] Yet a mere personal interest or passion for music can be argued as insignificant for Flusser's thought as a whole. It is moreover of unequivocal relevance, that Flusser did directly address music in several texts.

A tentative summary of Flusser's writings on music can be begun as follows. Beginning from Flusser's early writings in Brazil in the 1960a, two essays "On Music" (Flusser 1965a) and "On Modern Music" (Flusser 1965b) part of a lecture series at the Brazilian Institute of Philosophy, Sao Paulo in

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[2] All translations from the German into English are by myself unless otherwise stated.

[3] Flusser was indeed physiologically hard of hearing and enjoyed using the off-function of his hearing-aid to "switch off" from the outside world. Anecdote from Siegfried Zielinski. See essay on "Hörapparate" ("Hearing Aids") (n.d.b).

[4] See for example the recent translations by Rodrigo Maltez Novaes of two essays by Flusser on music from 1965, "On Music" (Flusser 2012a) and "On Modern Music" (Flusser 2012b).

[5] Original quote: "Er hat sehr gerne Barockmusik gehört, aber interessierte sich auch für moderne elektronische Musik. Ich kann mich erinnern dass er indische Musik gehört hat, Ragas."

1965, and passages of "History of the Devil" (Portuguese version "A História Do Diabo) (Flusser 1965c) on music seem to point to a facet of Flusser's early writings currently largely unknown amongst Flusser researchers.[6] Amongst his later German writings, a few on music and hearing can be found scattered in books and single essays – "Chamber Music" (Kammermusik"), the effective closing chapter of "Into the Universe of Technical Images" (Flusser 1985), "The Gesture of Listening to Music" in the essay collection "Gestures" (Flusser 1991), the corresponding chapter "Hörigkeit" in "Angenommen" ("Suppose That"), as well as the undated essay manuscripts "Hoerapparate" ("Hearing Aids") (Flusser, n.d.b), "Negertrommel" (Negro-drums) (Flusser, n.d.c) and "Tribuene der Kritiker von Schallplatten" (Tribune of Record Critics) (Flusser, n.d.d).[7]

Widening this scope to include references Flusser makes to the musicality of language could also provide interesting impetuses for further research. Here, from the diagram in the appendix of "Lingua e Realidade" (Flusser 1963) spanning music and plastic arts from *oração* (prayer) to *balbuciar* (babble or mumbling), as well as references to the musicality of the Brazilian-Portuguese language and the apparent "anti-melodic form" of English and German in the chapter "The Brazilian Language" (Die brasilianische Sprache) (Flusser 1999: 88). These themes also occur in the unpublished essay "Die Melodie der Sprachen" (Flusser, n.d.a).[8]

The following exegesis of the three aforementioned German texts attempts to carve out an understanding for the role music and sound played for Flusser's thought. For the sake of simplicity, the relationship between music and sound will presume the common working definition of music as "organized sound"[9] coined by Edgar Varèse, and its consequent Cagean reformulations.

i) Chamber Music

Preceding his introduction of Chamber Music as a model of a future telematic society, he states "As the reader has surely noticed with surprise and displeasure, I have eliminated everything to do with ear and mouth, with sound and word, from my considerations. I have kept the 'audiovisual' character of the emerging universe of technical images a secret. I am namely convinced, that it is only now that the moment has come, to talk about this" (Flusser 1985: 137). It is a dramatic unveiling gesture, with which Flusser introduces the sonic character of technical images. It would seem that in the mid-1980s, after not having mentioned music in writings at length since the mid-1960s, he returns to the role of music

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[6] Thanks to the translations of Flusser scholar Rodrigo Maltez Novaes, these works are currently reaching the international audience of Flusser scholars.

[7] For an analysis of mainly the German texts with respect to semiotics and sound, see: Annie Goh "Zeichen, Symbol, Symptom – Zur (spekulativen) Semiotik der Klänge bei Vilém Flusser" in Zeitschrift für Semiotik, Band 34, Heft 1-2 2012, Tübingen: Stauffenberg

[8] See also: Sebastian Schulz, "Das Strahlen in der Black Box – Sprechen und Hören in der Medienphilosophie Vilém Flussers" in Flusser Studies 16, November 2013.

[9] Edgard Varese and Chou Wen-chung "The Liberation of Sound" in *Perspectives of New Music*, Vol. 5, No. 1 (Autumn - Winter, 1966).

at this pivotal point of his argument. Only in this final chapter, does the audiovisual character of technical images become revealed and indeed, a central feature of technical images as sounding images. The title of the chapter "Chamber Music" indicates this, and as Flusser remarks, it is a substantive, where all other chapter titles were infinitives. His wry reasoning here is, "to express the hope, that the previous considerations might have arrived at something substantial" (ibidem: 133). The significance of why this "substantial" conclusion, which Flusser clearly aspires to in this chapter, takes chamber music as its main form, seems sudden and surprising to the reader, especially to the German-speaking audience who are unlikely to know of his writings on music in the 1960s.

Flusser sketches out Schopenhauer's "The World as Will and Representation" in which the universe of images is the world as representation [Vorstellung], and the universe of music is the world as will [Wille]. He claims to argue against Schopenhauer, and does so by attacking the division of images and music, so that technical images as sounding images are "'pure' art, in the sense that previously only music was" (ibidem: 138). Although the universe of technical images is presented by Flusser as a synthesis of these two "worlds", of will and representation, he states, "[it] reminds us in many ways of the musical universe" (ibidem: 137). Flusser places his utopic hopes in the possibility of audio-visual technical images, as products of the new imagination ("neue Einbildungskraft"), which is closely aligned to the idea of specifically named "musical imagination" ("musikalische Einbildungskraft").

Chamber Music is described as a cybernetic system, in which humans communicate in dialogue with one another via computers, to create "improbable situations" i.e. for Flusser "information". It becomes a metaphor for Flusser's model of a musical, computational and cybernetic game, "computation and composition are synonyms" (ibidem: 137). It is the creative, productive power of the "new imagination" ("neue Einbildungskraft") which is responsible for the "emergence of a new level of consciousness, namely one in which music will be made with the power of imagination [Einbildungskraft]" (ibidem: 137). Given the gravity, with which Flusser deals with the "new imagination" of the emerging level of consciousness, once more, it is clear that so-called *musical* imagination specifically is vested with being able to realise this transformation.

As Flusser is at pains to point out, the role of improvisation within this "game" is pivotal here. He contrasts today's concert halls, where music is played strictly from the score, with the musicians of his model of chamber music, who are likened to the musicians of the Renaissance, where the musicians improvised from scores (ibidem: 135). The rules are decided by consensus and the changes are also decided by consensus, here he makes a mention to jazz improvisation. "It is not watching (theory) but playing (strategy) which is its method" (ibidem:136). The participants are playing for themselves, as a "pure game", observers are "superfluous and disturbing". The figure of the homo ludens, which occurs on various occasions in Flusser's work is of great relevance here: the players of chamber music epitomise Flusser's concept of homo ludens, whose use of "new imagination" and "musical

imagination" explore the possibilities of the universe of technical images.

Undoubtedly, this turn to music in the closing chapter is intended to startle, which cannot be read as an arbitrary decision by the author, particularly not an author who so meticulously and adamantly revised his work before its publication. It is unforeseen and unpredictable, perhaps a stylistic echo of his description of "true catastrophes" as "new information... ex definitione, surprising adventures" (ibidem: 134). Yet, it must be noted that Flusser's usage of music in this chapter is entirely metaphorical. The mystery lies in, *why* he chose to turn to music here. Perhaps his motley group of motifs of the homo ludens, as "the playing man", and the cybernetic system incidentally lent themselves to a motif of chamber musicians, which would render them little more than arbitrary. Looking to his (recently translated) writings on music from the 1960s, where "music is the expression of itself" and music is rendered as "the most concrete experience that we have" (Flusser 2012a: 3), might well give further clues to decoding his intention.

The bittersweet tone in which Flusser ends this book with, is also not to be overlooked. "What this essay sought to narrate, is a fable. It tells of a fabulous universe, that of technical images. Of a fabulous society, that of cybernetic dialog. Of a fabulous consciousness, that of musical imagination. It tells of this full of hope, and at the same time with fear and trembling" (Flusser 1985: 139). At this point at the end of the book, after many largely pessimistic comments in his survey of the effect of images on society, the long and detailed description of the complex problematic with which current society is faced, Flusser thrusts responsibility into the hands of the reader, "de te fabula narratur" (ibidem: 139), something he alluded to earlier in the chapter "It is not about future music [Zukunftsmusik], but rather about a critique of the present" (ibidem: 134).

This forms in principal a type of ultimatum to the reader, typical of Flusser's provocative writing style. The utopia he paints as the universe of technical images, often led Flusser to be read as a brazen enthusiast of cybernetic and digital technologies, and contributed to the image of Flusser as a prophet of all-pervasive networks. He states, "this "new" [das Neue], I believe, I can seize within the dreaminess [Traumhaften] of the emerging sounding image-world. A dreamworld in which the dreamers are exceptionally awake. … A dreamworld then, which does not lie "under" an alert consciousness, but "above", a conscious and consciously produced, an "over-conscious" [überbewußte] dreamworld" (ibidem: 139). His belief in "the new" is however not to be taken at face-value. Amidst the ebullient tone of Flusser's utopia, his warning tone is nevertheless strongly present. His turn towards music, can only be read as a strategic one, a metaphor for what he considers the "most concrete". As a sort of "post-iconoclast",[10] he treads a fine line in between his critique of the power of images and the possibility of "the new" he seeks to create in his conception of technical images. Music as a metaphor in Chamber Music aids his critique of the "world of representation", of images, of the visual.

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[10] See for example: Rainer Guldin, "Iconoclasm and Beyond: Vilém Flusser's Concept of Techno-Imagination," Journal of the Swiss Association of Communication and Media Research, Vol. 7, N. 2, 2007, pp. 63-83.

ii) The Gesture of Listening to Music

Flusser approaches music in an entirely different way in the essay "Gesture of Listening to Music" (Die Geste des Musikhörens) (Flusser 1991: 193-203, Flusser 2011 [Translation Elizabeth Mortimer]),[11] which as the title suggests focuses on the act or gesture of listening to music itself. Kamper was likely unaware of this essay when commenting on the absence of listening and speaking in Flusser's work mentioned above. This essay deals with remarkable detail touching upon the physical, physiological, psychological, aesthetic and semantic processes at work during listening.

Flusser compares the more strongly stylized gesture of seeing, using examples of the image of the statesman with his gaze to the stars and Rodin's "The Thinker" as producing clichés, and points with a favourable tone to the relative lack of stereotyping of the gesture of listening. He describes the gesture of listening as, "not a matter of a movement but a position of the body" (eine Körperstellung) (Flusser 2011: 21). He also contrasts the act of listening to words and language as "a semantic reading" with the act of listening to music, whereupon Flusser hints at the complexity of musical reception, "Listening to music also means deciphering […] but it is not […] a deciphering of a codified meaning. Despite centuries of discussion, agreement has not been reached about what is deciphered when music is heard." (ibidem: 21). These comments share similarities with the critique of the dominance of the visual, also named 'ocularcentrism', which pervade the field of sound and sensory studies.[12]

Indeed Flusser's account of listening processes is quite striking when read in contemporary sound studies. He relates a physiological description of the process of listening (to music) with his information theory. The "acoustic message" involves the "adjustment (Anpassung) of the body to an acoustic message" (ibidem: 22), a gesture which differentiates it from other gestures. Flusser draws specifically on the movement of sound waves through the permeable surface of the skin to physically move not only the auditory nerve in the ear but also as vibrations felt by the entire body. Listening to music means adapting to the music "and indeed becoming music" (ibidem: 22). The specific and unavoidably empathetic character of listening (to music) is likened to the Greek concept of "pathein" – "The reception of music in the stomach (and in the breast, in the genitals, in the head, in brief in all parts of the body disposed to vibration) is pathos, and its effect is empathy with the message" (ibidem: 22). For Flusser's information theory, the acoustic message bears these characteristics uniquely, which lead him to propose "in listening to music, in this acoustic massage, one of the highest forms, indeed perhaps the highest form of mind, soul, intellect is received, and in such a way that in this acoustic message the own mind and that of the emitter of the message concur" (ibidem: 22-23). Sound is

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[11] All further quotes from the essay "The Gesture of Listening to Music" use translations by Elizabeth Mortimer.
[12] See for example: Martin Jay, Downcast Eyes – The Denigration of Vision in Twentieth-Century French Thought (Berkeley: University of California Press, 1994) & David Howes, (ed.), Empire of the Senses (Oxford: Berg Publishers, 2004).

understood as a medium via which communication occurs, this treads much common ground with the discipline of sound studies as a study of acoustic communication. Furthermore, Flusser's notion of the acoustic message is undeniably given the highest position, "This pathetic character is true literally only for acoustic messages, for all the others it is valid only metaphorically" (ibidem: 22).

In this sense, Flusser's text appears not only extraordinarily uncharacteristic for his work in general, it also appears impressively advanced for its time; one of the most crucial hurdles of sound studies was to deal with sound as materiality, and music as a system which uses sound as a medium. It has strived to position itself aside from traditional musicology, absorbing thereby the efforts of critical and new musicology to relate music to its materiality, including its social and political reality. Although the landmark book of R. Murray Schafer's "The Soundscape" appeared in 1977 (Schafer 1977), sound studies was first enacted as a field of study in the 2000s and the so-called "acoustic turn" was first declared in 2010 (Meyer 2010). The recent inception of affect theory into musicology is a further testament to this development.[13] Flusser's essay ignores a separation of sound's materiality from "music", binding the physicality of sound with its psychological and emotional effect, in a way that appears anachronistic in its contemporaneity.

For Flusser, the vibrational quality of sound, also affords the listener the possibility to overcome the dilemma of Hegel's "unhappy consciousness", which occurs in his work in various places. "When listening to music, the human being finds himself without losing the world, by finding himself as the world and the world as himself. For he finds himself and the world not as a contradiction between subject and object but as a "pure relationship", namely acoustic vibration" (ibidem: 23). The physical and material bridge formed by acoustic messages is once more raised above other types of messages, to overcome one of the fundamental tensions he sketches between man and society.

In Flusser's close attention to the body in this text, he implicitly aligns himself with the endeavours of sound studies and critical musicology in questioning the long-reigning autonomy of music, in which the Cartesian mind triumphed over the "base" concerns of the body. It is interesting to note that Flusser seems careful not to assume an uncritical standpoint about a transcendental subject of music, his account is expressly aligned to the material, so that his statement about "becoming music" is keenly relativised, "this has nothing to do with romanticism" (ibidem: 22). This will become important in the discussion of "pure music" below.

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[13] "Affect" in this sense is used in context of affect theory in the tradition of Spinoza, Bergson, Deleuze and Guattari. See for example, Steve Goodman's "Ontology of Vibrational Force", in "Sonic Warfare - Sound, Affect, and the Ecology of Fear" Massachusetts: MIT Press, 2010 & Marie Thompson and Ian Biddle (eds) Sound, Music, Affect: Theorizing Sonic Experience, New York: Bloomsbury, 2013.

iii) "Hörigkeit" and "Hearing Aids"

The third text used in this attempt to sketch out Flusser's position towards sound and music is "Hörigkeit", which appears as an abridged form of the lecture manuscript "Hearing Aids" (Hörapparate) (Flusser n.d.b), as mentioned above. "Hörigkeit" is a German word approximately translatable into "submission" or "devotedness", and indeed Flusser undertakes a play on words between "hören" (listening or hearing) and "hörigkeit" (submissiveness or devotedness) and "gehorchen" (to obey). Once more, in this lesser known Flusser text, he dedicates himself to the acoustic, and this time independent of a discussion of music, but more similarly to Chamber Music, on a predominantly metaphorical level.

His discussion of hearing aids and "Hörigkeit" has a strongly political dimension. He once again contrasts the visual with the auditive and criticizes the idea of having political "views" (politische Ansichten) and proposes a new term of political "Hörigkeit" (submissiveness). He states, "audition, much more than vision, is political" [das Gehör, weit mehr als das Gesicht, ist politisch] (Flusser n.d.b: 2, Flusser 1989: 77). His reasoning for this is the all embodying and inescapable nature of sound or noise, "political engagement is an engagement with noise, with the "voices of the people" [Stimmen der Völker]. These voices [Stimmen] should, for example via votes [Abstimmungen], be harmonised"[14] (Flusser n.d.b.: 2). Being submersed into the "noise" of everyday political interactions is how Flusser characterizes one's relationship to society.

Thus, he constructs the hearing aid as an apparatus of freedom, which allows one to switch on and off between the political and the private. An emphasis is made on this choice of switching on the apparatus as a conscious engagement with society, and switching it off is a choice to be alone. However, he is careful not to let this analogy run too far: as is commonly mentioned in sound studies texts – we have eyelids but no "earlids"; instead Flusser highlights the dialectic of this – that eyelids too are only controllable to a certain extent, "in the eyelids, it is not freedom itself, but the dialectic of freedom which is expressed" (ibidem: 3). One is afforded a type of freedom, or a limited freedom, "one can never know, whether our views of the world are devised by ourselves, or whether they are an involuntary reaction to the world" (ibidem: 3). This is a crucial dichotomy which runs through Flusser's work – the impossibility of freedom, yet nevertheless the pursuit thereof. His analysis of the technical possibilities of the hearing aid lead him to carve out a metaphor for political freedom. The programmed noise of the outside world which flows into our ears must be examined – just as Flusser's close examination of his hearing aid allows him to "see" it better, those without hearing aids can learn from an examination of the apparatus which programmed their ears, referring to his broader notion of societal apparatus which pervades his work.

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[14] Note the German word for both political vote and voice is "Stimme".

iv) Music and "pure music"

As touched upon above, in Chamber Music, some ideas of "pure music" and "concreteness" which appeared in his two essays on music from 1965 return: "It is then, in contrast to the musical universe, a surface universe, but it is, just as the musical one, a 'pure' universe, one emancipated from semantic dimensions" (Flusser 1985: 137). In 1965 Flusser wrote of "pure music", as "the very nucleus of our sense of reality" (Flusser 2012a: 4) and as the articulation of "pure thought" and ultimately as the "utmost contribution of modern Western man to culture in general" (Flusser 2012b: 1). Yet these statements around "pure music" sit highly problematically with theorists of critical or new musicology from the 1960s onwards. Theodor W. Adorno's first works of music sociology radically requestioned of the autonomy traditionally endowed in a piece of music, its transcendental character was brought under fire and great musical works were seen increasingly more as products of social, political and cultural tensions. Drawing on Adorno's work, feminist musicologist Susan McClary went on to criticize the notion of "absolute music", often used interchangeably with "pure music", for its claims to "remain essentially pure, ineffable, and emphatically not concerned with such mundane issues [of the social]" (McClary 2002: 55). The idea of "pure music" being non-representative and therefore above "the social" has come under heavy attack in recent decades.

It is clear that Flusser was well acquainted with Adorno's writings and the Frankfurt school, and a copy of Adorno's "Introduction to Music Sociology" (Einleitung in die Musiksoziologie) can even be found in Flusser's "Travel Library" (Reisebibliothek).[15] Yet although the widespread legacy of Romanticism has been brought under scrutiny in newer musicological studies, Flusser's own opinion on and usage of Romantic ideas and aesthetics regarding music appears ambiguous. He quotes one of German Romanticism's most famed proponents, Wilhelm Heinrich Wackenroder in his closing comments of "On Music", although it carries the tone of a guilty pleasure, "And I cannot avoid to close these considerations with a verse by Wackenroder. *Entfernter noch, um mehr gesucht zu sein, Verbarg er in die Töne sich hinein*; (Further distant, yet to be more sought, He hid himself in the tones;) The sacred is, for us, hidden in pure music" (Flusser 2012a: 11).

A complex relationship emerges out of this discussion of Flusser, music and Romanticism. His evocation of "pure music" and "pure thought" appear – at least at face value – to be guided by values about aesthetics and philosophy pre-critical theory of the twentieth century. Statements such as "music, for being the articulation of the very structure of the thinking thing, is the most concrete experience that we have" (Flusser 2012a: 3), read in a contemporary context, without prior knowledge of Flusser's style, appear highly problematic for sound studies and critical musicology. The notion of a subject, who can access "pure thought", is strongly aligned to ideas of metaphysical transcendence and have

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[15] Situated at the Vilém Flusser Archive, at the University of Arts (UdK) Berlin.

perpetuated the autonomy of music and the artistic genius of composers; these are notions treated with firm skepticism in contemporary musicology. The question remains as to how to reconcile these seemingly Romantic notions of music which Flusser apparently harbours, or indeed how to understand his notion of "pure music" and "pure thought" aside from how they are connoted within ideas of the transcendental subject? These questions will be returned to in the final conclusion.

2) Flusser's "Crisis of Linearity" and the missing dimension of sound

Contextualising these three essays, they can be fairer considered exceptions in Flusser's work as a whole. Despite highlighting the sonic dimension of technical images in Chamber Music in 1985, more typically for him, in his lecture "Crisis of Linearity", he almost completely neglects it throughout his step-by-step model. The examples Flusser uses in "Crisis of Linearity" are almost exclusively from the visual domain (more specifically painting, photography, technical images). Was this a retreat from his highly enthusiastic ideas about music? Was he dissatisfied with it within his greater schema? Was he lacking the methods with which to express the auditive domain in his theories? Or was it just not important enough?

In the spirit in which Flusser continually asked his interlocutors and laid it out clearly to his readers to build upon, challenge and contradict his thoughts, this reading of Flusser's "Crisis of Linearity" alongside contemporary sound studies theory and his own comments on music is an attempt to take up this challenge. Within sound studies, as mentioned above, the discourse of ocularcentrism and the dominance of vision over the other senses characterizes Western culture and its philosophy is highly criticized. One could infer that Flusser's strong focus on the visual is a result of the ocularcentric Western society. Where Kamper's search for the body in Flusser's seemingly bodyless thesis began, a sound studies reading will focus more specifically on sound as an aspect – missing – as it is from Flusser's crisis of linearity.

In Flusser's famous thesis he carves out five epochs which are differentiated by the techniques of abstraction they can be described in brief as following: four-dimensionality (three space dimensions plus time), in which humans experienced the world purely as concrete experience; three-dimensionality, in which humans grasped and formed objects; two-dimensionality, in which humans made images upon surfaces; one-dimensionality, in which pictograms were placed in a sequence and linear writing emerged; and zero-dimensionality, in which mathematics and computational code of "point-elements" emerges. Flusser states in his hypothesis, "occidental culture is a discourse whose most important information is encoded in alphanumeric code, and this code is about to be superseded by codes of different structures. Should this hypothesis come true, then far-reaching changes in our culture will take place in the near future. These changes will be far-reaching because our thinking, feeling, wishing and

acting, and even our perceiving and imagining [Vorstellen], are formed to a large degree by the structures of these codes, in which we experience the world and ourselves" (Flusser 1988: 7).

The crisis of linearity thesis is a media-technological and media-philosophical one. More precisely it can be expressed as an media-epistemological analysis as well as posing an epistemological and political challenge to his audience. The core of Flusser's argument rests upon the changes in how knowledge is transmitted at its most mundane level (as media theory would typically examine), but furthermore he is pointing to the new categories of knowledge [Erkenntniskategorien] *and* "new categories as a whole (particularly values)" (ibidem: 34) that new codes bring with it. Crucially it is to be noted here, that Flusser counts himself amongst the generation so strongly formed by the linear code of writing (textolatry), that he does not claim to prophesize exactly *how* the generation informed by zero-dimensional code will think, he only merely claims *that* they will be different and that these differences will be far-reaching [tiefgreifend]. He clearly emphasizes this momentous change as a *possibility* to "mobilise a new imagination [neue Einbildungskraft]" (ibidem: 40), and this precarious enthusiasm allows him to stand in contrast to the cultural pessimism of other media theorists such as Baudrillard and Virilio.

i) From three-dimensionality into two-dimensionality

The step from three-dimensionality into two-dimensionality is determined largely by Flusser as the inception of image-making. He describes the paintings found at the palaeolithic caves at Pech-Merle, "It is about visions recorded onto rock faces" [Es geht um an Felswänden festgehalten Anschauungen] (ibidem: 10). The image-maker stepped back from a pony and examined it, then recorded the fleeing image on to the cave wall, "so that others recognize what was seen [das Ersehene]" (ibidem: 10). Flusser's reasoning for this action seems to be that what was seen could consequently be used as an orientation for future action, for example, hunting ponies. The human ability to step-back, and become a subject, and to exist, he names "(the power of) imagination" [Einbildungskraft]. The crucial point of this act for Flusser, is the inner dialectic of images; instead of bridging the gap between human and world, they ironically block the way between humans and the world, "humans no longer use images as orientation in the world, but vice versa, they use their experiences in the world as orientation in the images. And they no longer treat the images in function of the world, but the world in function of images" (ibidem: 12). He names this "idolatry" and the consequent action "magical".

Flusser's usage of the oldest known images – the ponies at Pech-Merle – likely reflects the archaeological debate and popular interpretation thereof since their discovery in 1922. The intention of these images, or how and why they were made and used, along with other rock-art images from caves at other locations, were hotly debated. One of these interpretations focussed on hunting, and this is the

one Flusser too focuses on. Other interpretations include for spiritualistic or animalistic beliefs, so-called "shamanistic" rituals and art "for art's sake". Related to sound studies, the recent sub-discipline of archaeoacoustics has emerged in recent years, which has specifically investigated the acoustic properties of archaeological sites – the caves at Pech-Merle being one of them. Work of researchers such as Iegor Reznikoff[16] paved the way for startling results; acoustic measurements and the collection of empirical evidence have proven that positive correlations exist between the locations of rock art and unusual acoustics (for example large echoes) at these places. Not only has research covered this correlation, that the qualities of the acoustics at rock-art locations could have indeed determined where rock-art was placed, but also suggested it could have determined its content too.[17] In its mildest form, it radically requestions our understanding of rock-art. In its stronger form, archaeoacoustics has firm grounding to argue that sound played a much larger role for pre-historic cultures than it does for modern society. The dimension of sound has long been ignored in archaeology to the detriment of our understanding of them.

This brief foray into archaeoacoustics serves only to emphasize from the position of sound studies, how ocularcentrism, in this case, within the academic field of archaeology – its methods, interpretations most directly, have led for many years to the dominant sense of the visual to overshadow other forms of knowledge. Flusser's own interpretation of the paintings of Pech-Merle also follow a visually-dominated conclusion. Other theories about rock-art intentionality do not contribute so neatly to Flusser's ideas about creating images for further action, as his presumption about their use for hunting. The use of what Flusser terms "traditional images" and traditional imagination within the lineage of his communication theory could be seen to show weaknesses of a model too reliant on the visual. Reading the crisis of linearity as an epistemological thesis, the dominance of the visual in the construction of knowledge, exemplified here with archaeoacoustics appears to demonstrate a key inadequacy of the ocularcentrism in our construction of knowledge. Had Flusser's own eloquent thoughts on sound as vibrations, as he says "not only permeate the bodily skin, but cause it to vibrate" (Flusser 2011: 23) and his passionate portrayal of music as "ecstatic experience", been applied to specific experience of cave-art which he uses in his thesis, might he have structured his thesis somewhat differently?

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[16] See for example: Reznikoff, I. "Sur la dimension sonore des grottes du paléolithique". Comptes rendus de l'Académie des Sciences 304 (II/3), 153-156 & 305 (II), 307-310. (1987) & Waller, Steven J.,"Intentionality of Rock-art Placement Deduced from Acoustical Measurements and Echo Myths" in *Archaeoacoustics,* Chris Scarre and Graeme Lawson (eds), Cambridge: MacDonald Institute for Archaeological Research, 2006.
[17] See earlier work by Steven J Waller on the correlation between different types of acoustic properties and the relationship to depictions of types of animals.

ii) From two-dimensionality into one-dimensionality

Flusser determines the step from two-dimensionality into one-dimensionality as the emergence of the alphabet or alphanumeric code. For this, he refers to the evolution of writing, from the stringing together of pictograms until the formation of phonetic characters, pointing to the modern alphabet as letters and numbers as it has emerged around 2,500 years B.C. In Flusser's thesis, linear writing was invented to clarify images, "Imagination [Einbildung] is an ontologically dubious standpoint, the images which arise from this are connotative and subject to the inner dialectic of all meditation. […] These images must be subject to a critique, which allows its ontological position to be clarified, its codes to be denoted and to clear away the ideological confusion caused by this" (Flusser 1988: 13). The connotative nature of images, which allows for many interpretations, is fundamentally transformed by written language, so that denotative, unambiguous images were only possible since the invention of language. Flusser states, "one sees in this formulation, that the invention of linear writing arrives like a germ within future western culture, linear writing as a description of images, as a critique of imagination [Einbildung] due to a new way of thinking" (ibidem: 13).

As mentioned in the introduction, contrary to the essay "Eine Neue Einbildungskraft", to which Kamper primarily refers to in his lecture, "Crisis of Linearity" does address some aspects of speaking and the oral, when Flusser discusses language. He observes, "alphabetic code forces written thought under spoken thought, and when it becomes dominant, all other forms of thought are impoverished (apart from those, which can penetrate the code as numbers)". He, surprisingly for his German audience at least, includes the complex relationship between speech, writing and language in relation to the discussion and criticism of images in his model, "the intention of linear writing, is to criticize imagination [Einbildung]. … Now we have – since earliest times – a code at our disposal, namely spoken language, which achieves this task. Images were always criticized, when they were discussed. … Only this discussion was, prior to the invention of the alphabet, a rather undisciplined process: one spoke, without precise articulation. With an almost closed mouth (mythical). This means, the code of spoken language was quite possibly even more connotative than images. … The alphabet was invented, in order to articulate speech clearly (to de-mythicize it), and then to criticize imagination [Einbildung] (to de-magicize the images)" (ibidem: 15-16).

Thus, Kamper overlooked this small passage of "Crisis of Linearity", and likely the content of Flusser's first book in Portuguese entitled "Language And Reality" ("Lingua e Realidade") (Flusser 1963), (which is still yet to be translated into English or German) in which Flusser discusses linguistics, language philosophy and the constitution of reality (or realities).[18] Nonetheless, according to the narrow line of argument his thesis follows, he typically only uses this brief meditation on the very complex

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[18] German readers can refer to Michael Hanke's essay, "Vilém Flussers Sprache und Wirklichkeit von 1963 im Kontext seiner Medienphilosophie", Flusser Studies 02, (May 2006).

history and relationship of language to writing, to apply his argument about criticizing images and further his step-by-step model as swiftly as possible. His focus on language in its function "to discuss images... and criticize imagination" restricts it only to a consideration related to image-making, which is perhaps a knowingly precarious presumption on Flusser's part. Referring to the implications of recent archaeoacoustic research, it seems increasingly unfounded to presume the function of images, such as cave-art paintings. His assumption of the primacy of the image, as well as the clear cultural function he assigns it (to hunt ponies better), although it appears in an ironic and playful tone, is nevertheless one which uncritically reproduces the dominant narrative of the male subject as hunter in pre-historic times, a narrative which has naturally come under criticism for example from works of gender archaeology.

He comments on the impoverishment of other forms of thought, as the stage of one-dimensional linear consciousness was reached. The magical-mythical consciousness he refers to as disappearing in this step of the model, is directly related to speech. The image of the "almost closed mouth" and implications of the connotative and ambiguous nature of speech prior to the alphabet is echoed in his statement, "since the alphabet, we have learned with discipline to speak and think." [Seit dem Alphabet lernen wir diszipliniert, diskursiv sprechen und denken]."[19] This demonstrates that relationship between writing and speech was not as completely overlooked in his work as Kamper amongst many others, have previously thought.

The impoverishment of all other forms of thought except for numbers can also be addressed with the running critique of ocularcentrism from sound studies. Flusser, formed as a subject by the visually dominated *forma mentis* of Western culture, has a clear distaste for this very bias, as he alludes to in the simple stereotyping and making of clichés in the visual in "The Gesture of Listening to Music". Yet despite this recognition of his complex relationship with iconoclasm and fascination with images, he does not strive to account for the loss of "other forms of thought" for example via human sensory perception (visual, auditory, olfactory, tactile, gustatory and others forming the whole human sensorium) in their relationship to construction of knowledge. Thus, a critique can be made from sound studies that the epistemological model of the crisis of linearity perhaps most crucially lacks the dimension of how the auditory (or from other sensory faculties, from the argument of sensory studies) can strongly shape and form knowledge.

iii) From one-dimensionality into zero-dimensionality

The final step from one-dimensionality into zero-dimensionality is characterised by the inception of computational code and mathematics. It is this stage of the historical consciousness of one-dimensionality, characterized by causality and progress, which according to Flusser's theory is in

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[19] Vilém Flusser, cited in "Flussers Fluss", Michael Bielicky, Vilém Flusser Archive Best-Nr: VHS_022a, 00:16:00.

"crisis". Although this process began in the Renaissance, and these two types of thought could go "hand-in-hand" for a long time, Flusser's declaration is that mathematical, abstract thought structured by point-elements is now about to replace linear, causal, logical thought.

In "Crisis of Linearity", Flusser typically uses the example of the image from the photographic image – with photographs (like films and videos) as "transitional phenomena" [Übergangsphänomene] and only with completely synthetic computer images, will the "new imagination" [neue Einbildungskraft] come into play. Indeed, Flusser stays strictly "silent" in this text when dealing with "new imagination", a puzzling occurrence, when one reads "Chamber Music" with its clear equation of computation and composition and new imagination with musical imagination. The imagery he had so adamantly harnessed to deliver the powerful final chapter of "Into the Universe of Technical Images", with technical images unveiled as sounding images, is not even alluded to in this essay, nor in the essay "Eine Neue Einbildungskraft" treated by Kamper.

The audio-visual character of the universe of technical images, which Flusser so dramatically underlines in "Chamber Music" is grounded in his observation of the affinity of computer code to realise itself simultaneously as visual and auditive outputs. "Ever since computerisation, technical images hasten spontaneously towards sound, and sound hastens spontaneously towards images. […] So that only in the technical image, image becomes music, and music becomes image" (Flusser 1985: 138). But more than this mere dual genesis of image and sound, as a technical feature of computer code, it is on the epistemological level to which Flusser is drawing our attention. "In the sounding image, image and sound do not "intermix", rather they are both raised up onto a new level, to a level which the concept "audio-visual" means, but up until now could not grasp, because it emerges from the previous level." (ibidem: 138). This statement echoes back to his essay "On Modern Music" from 1965, in which "electronic music is the first step towards the musicalization, that is, concretization, of our reality […] Electronic music appeals directly to our intellect, and traditional music still mobilizes our sensitivity, in order to attack our intellect through it" (Flusser 2012b: 4). It is not about a mere "intermixing", akin to Flusser's definition of a discourse, but a situation in which both synthesize to create something new, akin to Flusser's definition of a dialog, in which new information is produced.

The sonic dimension of this final step does not need to be expanded with arguments from sound studies. It is quite adequately covered by Flusser himself, by looking at "Chamber Music" and his essay "On Modern Music". He was apparently not lacking the technical knowledge here, nor over-looking a relevant field of research. The absence of its mention in both "Crisis of Linearity" and "Eine neue Einbildungskraft" seem more mundanely explained by a lack of space or essayistic strategy, in the short texts they both constitute. This crucial step in the model, whose effects on consciousness Flusser is unable to categorize as he had done with "magical", "mythical" and "historical" is only known by its formal characteristics – punctual, abstract, mathematical. As he crystallizes near the end of the lecture,

it brings "not only new epistemological categories (such as probability calculations instead of causal explanation, or propositional calculus instead of logic), but completely new categories (and above all values)…" (Flusser 1988: 34).

Where Kamper lamented the absence of body in Flusser's model, his schema to flesh out Flusser's step-by-step model with his own "anthropological quadrilateral" of body, image, writing/language and time (Kamper 1999: 11), he aligned Flusser's zero-dimensional with category (un)time, the competence "calculation" [Rechnen], the body part "brain" and the spatial dimension of a "point". (See table in Kamper 1999: 23). As Kamper was apparently unaware of any of Flusser's writings mentioning sound or music, he likely saw Flusser's zero-dimension as almost irreconcilable with the body. But in fact, a more detailed look into Flusser's own (albeit seldom expressed) words shows his readiness to let the body make appearances in every stage of the model. "It is only when one takes music back to acoustics and the mind to nerves and muscles that sees the secret of pathos, the Orphic mystery, the Pythagorean "theorem" […] Listening to music is a gesture, in which the body adjusts itself to the *mathesis universalis*" (Flusser 2011: 23). The computation and calculation of zero-dimensionality indeed provides Flusser with the occasion to link mathematics to the body, via music, sound as vibrational force, via acoustics. "Once we have learnt to listen to electronic music, we will have learnt to grasp the beauty of pure thought" (Flusser 2012b: 4).

Conclusion – the "most concrete" experience we have:

This search for the dimension of sound in Flusser took two parts. Firstly, by looking at Flusser's own writings on music and sound, in which he discussed and used music, sound and the auditive in his works. The second part attempted to read Flusser's central thesis of his late period "Crisis of Linearity", which lacked a substantial sonic dimension within the contemporary field of sound studies. With particular emphasis on Flusser's endeavour as a media philosopher to draw on the epistemological importance of this thesis, and the transformations of consciousness he foresaw as accompanying each substantial change in the medial communication of each historical era, the arguments of ocularcentrism from within sound and sensory studies, attempted to highlight the oversights made by Western culture and philosophy, as it is, dominated by the visual sense.

Commenting upon the role of music and sound for Flusser as a scholar is done with a speculative gesture. As is typical for Flusser, it is often not advised to take all his comments at face value, and with the exegesis of "Chamber Music", "The Gesture of Listening to Music" and "Hörigkeit/Hearing Aids", there are many curious statements which resist simple interpretation. Flusser's use and characterization of music and sound respectively, though difficult to generalise, can be described. His depiction of music is tendentially of a passionate nature, music occupies a special place in his thought,

as a potentially "ecstatic experience" and as the expression of "the most concrete experience we have" with "pure music" articulating "pure thought". In accordance to the information from his daughter Dinah Flusser, Vilém Flusser was generally well informed about music, and on occasion he demonstrated his knowledge of music, for example his knowledge of electronic and electroacoustic music, with brief references to specific works of Stockhausen and Pierre Schaefer in his essays in the 1960s. His use of Chamber Music as a metaphor in the closing chapter of "Into the Universe of Technical Images" and seemingly sudden redefinition of technical images as sounding images provide a striking and powerful twist, with an intentional jarring effect in which the inception of music and sound could appear out of place. Yet as discussed, within the context of his other ideas, chamber music is intended to expose a new and compelling facet of his thought (new imagination) but in fact reinforces many arguments and ideas he have occurred elsewhere in his work, for example music as concreteness.

Sound itself is also given due attention by Flusser, in some ways that appear impressively contemporary, given the recent emergence of the field of sound studies since the 2000s. His detailed description of sound as vibration, and the physiological act of the body "hearing" sound is integrated not only in his essay on the gesture of listening to music, but more broadly into his philosophy and communication theory. Sound, as acoustic message, for its quality to bridge the physical and the intellectual is prized as overcoming the Hegelian "unhappy consciousness", in which uniquely, music (and thus sound) allow the sender and receiver of the message can "concur" in "perhaps the highest form of mind, soul, [and] intellect" (Flusser 2011: 23). The celebration of this potential profundity reveals that Flusser was not only deeply passionate about music, but that he also – apparently only in selected moments – purposefully integrated music into his larger scheme of thoughts.

In "Hörigkeit", the political nature of listening (and seeing) is discussed. Sound is depicted as a force which links us inextricably to sociality, from which we cannot escape. Comparing and contrasting vision and audition next to one another, both are conceived as channels of communication between the public and the private. The hearing aid as an apparatus is examined, and praised by Flusser, for its demonstration of freedom. The inescapable dialectic which binds one to his society is played out with parallel to the all-embodying and all-pervasive nature of sound. His final point, in which he seeks to expose the programmed nature and apparatus, not only of "machines" such as his electrical hearing aid, but also of the "natural" apparatuses of our ears, which listen continuously to a sort of "programmed noise".

It is in this final point, about the programmed nature of our ears, as sensory organs, that links in to the second part of the essay. Having collected these scattered treatments of music and sound by Flusser, the second part dealt with his famous thesis of the crisis of linearity – notable for its near-complete absence of sound. The closer examination of how hearing, via our "natural" ears produces

knowledge at the end of "Hearing Aids", is not developed further. Given the increasing prevalence of sound studies in past decades, and particularly within media studies, the generally perceived absence of sound and the auditive in Flusser's work has often been remarked on as odd. It would be hard to theorise why his sparse and sporadic use of sound and music do come about when they do, but it can at least be shown that he had some role for them in his thoughts.

The media-philosophical and media-epistemological thesis of crisis of linearity, which is still of great relevance today, in its almost complete neglect of the sonic domain can be taken to task by the critique of ocularcentrism of sound studies. Rather than just highlighting the absence of the sonic, particular attention paid to the epistemological as constituted by the visual and auditory senses respectively provides more substantial grounds for critique. Had Flusser indeed developed his train of thought at the end of "Hearing Aids", he may have conceivably applied this idea of how sensory information is processed and has been processed over his broad sweeps of time in his model of the crisis of linearity. His humble conclusion in this essay, that by examining the machine of his hearing aid, he can see its intentions and therefore "look through the apparatus" [den Apparatus durchblicken], but more importantly this leads him only "to see better than you, but not much further" (Flusser n.d.b.: 4). He confronts his inability to free himself from the greater apparatus in which he exists, "Even I, when I think I am listen attentively [aufhorchen], am obeying [gehorchen]".

Flusser's call to action to, "namely, the challenge to look at hearing aids" – meant in this sense not as the small electronic devices, but more generally as that communication channels via which we are linked to society, we arrive at a conclusion Flusser himself had not. Proceeding, step-by-step through the model of "crisis of linearity", his demand to "look at hearing aids" can be broadly translated from "hearing aids" to "auditory perception of the world" and "sensory perception" more generally, to an hidden call to examine how perception and knowledge relate, aside from the dominant visual nature of Western philosophy. This demand can be aligned with the impetus from sound studies to look at sensory perception as a complex whole, as well as its greater epistemological implications. Thus, Flusser, with his clear preoccupation with the visual – photographic images, digital images, holograms, and his clear disdain thereof, could still not depart from the visual substantially. Why he chose to critique the visual with the visual is perhaps commonsensical. But that he did put into writing some expressions of "the second sense", uncovers a facet that Flusser never substantially explored. These disparate references to sound and music, gathered and analysed, give ground to suggest the dimension of sound certainly did play an important role for Flusser, as absent as it was in most of his work.

Finally, one of the most pronounced aspects of Flusser's writings on music is the overtly passionate nature, and its almost puzzling glorification of music, in the few mentions it gets in Flusser's work as a whole. As discussed in part 1(iv), his notions of "pure music" sit uncomfortably with critical and new musicology theorists, seemingly propounding antiquated and expressly Romantic notions of

the meaning of music. Flusser was adamantly rejected the Cartesian dualism of mind and body, yet it is this very division of mind and body which is reflected in the struggle of these in typical works of musical Romanticism. Flusser's relationship to these notions seems highly ambiguous. It can be postulated that Flusser's notion of "pure music" departs substantially from the commonly accepted notions of "pure music", given the frequency with which he adopted and changed common notions from philosophy this does not seem unlikely. Indeed, he seems to relativise his owns excessively ebullient claims about music periodically, with his remarks that music is "the most concrete experience we have". Read carefully, we can point to the *most* to emphasize "*most* concrete"; therefore music comes close to the concrete, the articulation of thought, *close* to not symbolizing anything but itself. Music sociologists and music semioticians would dispute any notion of music not symbolizing anything, but accounting for Flusser's disposition towards reinvention and redefinition, "pure music" can only be understood above and beyond its common usage. Pure music, pure thought, technical images as sounding images, do in fact form a fairly coherent motif in Flusser's work. This rare quote from his early lecture on music in 1965 anticipates his later conception of technical images and sounding images, and his ostentatious enthusiasm for electronic music is relativised when one contemplates the double-sided nature of his utopian claims of the future, "Once we have learnt to listen to electronic music, we will have learnt to grasp the beauty of pure thought. We will have learnt to grasp experientially the reality that our theoretical sciences reveal. We will have recaptured a new sense of reality, which is a new faculty, perhaps simultaneously epistemological, aesthetic and ethical. And in this electronic music is our master" (Flusser 2012b: 4).

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