

The Dimension of Sound in Flusser

Implications for a Sonic Media Archaeology

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Introduction: The missing dimension?

It is unsurprising that the role of sound and music in the work of Vilém Flusser has long been considered marginal. While the number of essays that directly address sound and music is indeed relatively small,¹ recent scholarship exploring the meanings of sound and music in his work has asserted their previously overlooked importance.² Attempting to understand how Flusser used ideas of music and sound is part of these recent scholarly undertakings, and an emerging body of work tries to gauge their limited place in his writings. An alternative approach from the field of sound studies might instead attempt to *think through sound* and apply this to Flusser's oeuvre. In the following, this thinking through sound will be used as "a matter of working through the medium of sound as thought" (Henriques 2011: xviii). It asks what epistemic gains can be made via thinking through sound.

Research in the growing field of sound studies often draws on work of sensory studies to demonstrate how the hierarchy of the senses has historically emerged in Western modernity, with vision taking on the status of the primary source of knowledge, and hearing, smell, touch and taste following lower down.³ Scholars provide many historical examples where the auditive has been neglected in favour of the visual. However, the reiteration of clichéd attributes of the auditive and the visual, points to the limitations of this approach; Jonathan Sterne's formulation of an "audiovisual litany" is the most notable problematisation of this (Sterne 2003: 15). Sterne's suggestion to approach sound as a modality for understanding relations of power and subjectivity does not involve attempting to simply prioritize the ear *over* the eye, but rather promotes a method for doing sound studies which seeks to describe and redescribe "what sound does in the human world, and what humans do in the sonic world" (Sterne 2012: 9; *ibid.*: 2).

In order to create a fruitful dialogue with Flusser's work and its "neglected" sonic dimension, the aim of this paper is not to replicate a simplistic approach of preaching the lost sonic dimension of his work and proclaim his previous ignorance. Instead, thinking through sound draws on Julian Henriques' emphasis on sound as a "dynamic model of thinking" and as enabling the crossing of traditional barriers "between thinking and doing, or interior and exterior worlds, or mind and

body” (Henriques 2011: xviii). The present essay attempts a productive fusion of two approaches. First, I will consider what Flusser might mean by a gesture of listening, reinterpreting his essay “The Gesture of Listening to Music” within sound studies. Secondly, I will use thinking through sound, in Flusser’s macro–perspective theory of media–philosophy or “crisis of linearity,” to point to new perspectives in his historical–epistemological model. Using the example of archaeoacoustics, I will examine the problematics of ocularcentric models, in order to apply a new interpretation of Flusser’s “crisis of linearity” model via the “gesture of listening”. This cross–reading of two apparently disparate parts of Flusser’s work will draw from research in sound studies, media studies and media archaeology.

Finally, this essay will conclude by examining how thinking the sonic dimension of Flusser’s writings contributes more broadly towards a sonic media archaeology. The field of media archaeology has tended to focus on visual media (such as film and photography) thereby not only neglecting the sonic as a research object, but more crucially failing to explore potential an auditory epistemology might offer.⁴ Thus, a *sonic* media archaeology would acknowledge the value of sonic knowledge and strive to characterize histories of audible pasts.

1. The Gesture of Listening

1.1 Considerations on Flusser’s gestures

Flusser’s work on gestures began around 1974, two years after his move back to Europe, following decades of living in Brazil. “The Gesture of Listening to Music” is believed to have been written around this time, as part of a series of lectures and essays on various “gestures” which he developed in Paris and which were later collected and published as a book.⁵ At this point in the mid–1970s, Flusser’s philosophical and intellectual interests were clearly focused on communication, but his theories were not as strongly formulated within contemporary media technological discourse as they would later be, in the mid–1980s.⁶ However, it is conceivable that work had begun on the book project “Mutations in Human Relations,” principally written in 1977 and 1978, around the time Flusser was writing his essays on gestures.⁷ Indeed, a continuity can be seen between ideas in “Mutations...” in the mid–1970s with ideas later formulated in the “crisis of linearity” in 1988.

As part of Flusser’s larger project on a “phenomenology of human gestures,” his intention can be understood as reading gestures in their everyday mundanity, in order to explore their meaning in relationship to his notion of “freedom.” In an early version of an introduction to this project, he defines gesture as “a movement, which expresses freedom, in order to uncover or cover it” (Flusser n.d.a: 3 [trans. AG]). He later reformulates this in the essay “Geste und Gestimmtheit” (“Gesture and Mood”) as “a movement of the body of a tool attached to the body, for which there is no satisfactory causal explanation” (Flusser 1994: 10 [trans. AG]). In yet another essay, he writes that “gestures are bodily movements, in which existence [Dasein] is expressed. One can read from

them how the person gesticulating is in the world and one can do so because this person is convinced that his movements are carried out voluntarily, despite knowing that these, as all movements, are conditioned [bedingt]" (ibid.: 79). This plurality of definitions is typical of Flusser's anti-academic and anti-formalistic style. However, in understanding the *gesture* of Flusser's "gestures," it is clear that his intention is to closely analyze that which is hidden within everyday actions. Thus, his wry reformulation of "phenomenology" takes gestures to be bodily movements which "express *something*" whether this is voluntary or involuntary. Gestures in Flusser are inextricably linked to automatisms of the everyday.

Given the focus throughout the series of lectures on technology and tools (from "The Gesture of Taking A Photograph" to "The Gesture of Shaving"), and his allusion to gestures vis-à-vis freedom, his work which later formed the essay collection *Post-History (Pos-Historia/Nachgeschichte)* can be seen as integral in understanding his motivation for this focus on the repetitive, mundane nature of gestures. The opening essay of *Post-History*, entitled "The Ground We Tread," which heavily but silently references Hannah Arendt,⁸ explicates Arendt's famed thesis on the "banality of evil." Regarding Auschwitz he writes, "for the first time in the history of humanity, an apparatus was put into operation that was programmed with the most advanced techniques available, which realized the objectification of man, together with the functional collaboration of man" (Flusser 2013: 7), reiterating Arendt's core argument in his own terminological framework of technology, apparatus and function. What is at stake for Flusser in the apparatus of Western culture is – in the worse case – the impossibility of functionaries to realize anything but the existing program. This is understood as a technological question, as far as gestures, movements of the body with or without a tool can be understood to "express freedom, or uncover or cover it" or "express existence." Each essay on gestures can be examined within this framework. Although Flusser's tone is often one of a playful optimism, his thoughts on apparatuses and technology are based within these grave considerations of the dangers of automatism, traceable throughout his work.

1.2 Rethinking "The Gesture of Listening to Music"

The essay "The Gesture of Listening to Music" is remarkable and unusual in many ways. Not only is the topic of music a rarity in Flusser's work, the strongly passionate tone of the text is striking. Flusser's enthusiasm for music is attested in his biography⁹ which often surprises those who know Flusser's work¹⁰. It is notable that Flusser asserts that music "differs from other gestures" as it involves a bodily adjustment to the message received (Flusser 2011: 22) and he devotes much of the text to considering this uniqueness amongst other gestures. Flusser avoids distinguishing "music" from "sound" by focusing on the affective force of sound implicit *in* music. Whether it was his intention or not, Flusser's thoughts in this essay align with a standard definition of music as "organized sound," as became widely accepted in the post-war period (Varese and Chou 1966). Therefore, while Flusser's focus remains on "music," his inclusion of a physical-material description of sound-waves and their interaction with the body make his analysis surprisingly contemporary.

Flusser differentiates between listening to speech and listening to music (Flusser 2011: 21) and he also refers to the different forms of listening which are at work when listening to operas or ragas, television sport events or political discussions (ibid.: 21). However, his focus on music can be read as substantiating his intention to draw on the ecstatic potential which music can invoke. “Listening to music is the gesture that overcomes the skin by transforming it from a barrier to a link. It is the gesture of ecstasy” (ibid.: 23). His description of the physicality of music shares some commonalities with a contemporary understanding of sound as an affective, vibrational force. Flusser’s statement that “the listener while listening is himself the music heard, because his ‘self’ is the music, this means adapting to the music and indeed becoming music” (ibid.: 22) could be misread as a devoutly romantic account, yet Flusser insists against such a possible interpretation, writing that “this has nothing to do with romanticism” (ibid.: 22). In typically self-contradictory style, he apparently embellishes some apparently romantic notions of music whilst claiming his anti-romanticism by emphasizing the physical workings of sound-waves on the human auditory system: “[T]he mathematical vibration of the skin when listening to music, which is then transferred to the innards is ecstasy, it is the ‘mystic experience’” (ibid.: 23). Whether indeed Flusser truly frees himself from romantic inclinations is debatable.¹¹ Irrespective, his emphasis on music’s physical power to induce ecstatic experience resonates compellingly.

Flusser’s careful differentiation between a body movement and a bodily position (or *Körperstellung*), which he ascribes to listening to music, is significant in its unique status. The gesture of listening is therefore not an outwardly visible movement, but a movement of sound-waves permeating the body. Flusser pays particular attention to the idea that permanent interconnections between sound and bodies produces a situation that is not explicitly active, yet also not simply passive. For Flusser this experience remains “complex” and “mysterious,” and perhaps crucially for this essay the act of listening is constant; it does not require taking up a position, for the body is always receiving sound, reminiscent of the commonly-cited sound studies dictum that we have eyelids but no ear-lids.

Although Sterne’s “audiovisual litany” warns against exaggerating ideas such as “hearing immerses its subject; vision offers a perspective” and “hearing tends toward subjectivity; vision tends toward objectivity” (Sterne 2003: 15) and declaims their accuracy (Sterne 2011: 212), Flusser’s emphasis on the capacity of listening (to music) to physically and intellectually *move* its subject in ways that other senses cannot, is nevertheless an idea with much purchase. The task facing sound studies is how to assess and use *how* sound moves, without uncritically replicating culturally conditioned notions attached to hearing.

1.3 Generalizing the gesture of listening

In summary, redefining Flusser's gesture of listening to music as simply a gesture of listening means two things. Firstly, by taking a common sound studies approach to music as "organized sound," the question of music becomes a terminological one. This enforces a *generalization of his gesture of listening* – aside from listening to music specifically. Secondly, the gesture of listening is constant and ubiquitous,¹² and can grasp the ecstatic potential of sound whilst simultaneously grounding it in its everyday mundanity. Within his larger project of gestures, it is worth pausing to note how Flusser's own caveat on the automatism of gestures can be applied. If, according to Flusser, listening to music is a "gesture of ecstasy" which can overcome Hegel's "unhappy consciousness" and the dichotomy between public and private spheres (Flusser 2012: 23), what does it mean if a force this powerful is *not* understood in its mundane form? Aside from a terminological discussion of what constitutes "music" and "sound," should the powerful potential of the gesture of listening itself not first be understood as a mundane gesture? Does the automatism involved in listening not also provide a springboard upon which to launch an investigation into the gesture of listening – and not only to music – vis-à-vis his concept of freedom?

2. Thinking through sound in Flusser's crisis of linearity

2.1 "Crisis of linearity" as media-philosophical model

Flusser is well-known for a macro-philosophical thesis which appears in his 1988 lecture at the Art Museum of Bern under the title "Crisis of Linearity" ("Krise der Linearität") (Flusser 1988). Although he offers similar models elsewhere in his work, what I refer to here as "crisis of linearity" draws from this particular 'essay.¹³ In brief, Flusser's broad historical sweeps describe stages of human communication and interaction with technology. The step-by-step model moves from the so-called "fourth dimensionality" of space-time into the "three dimensionality" of object-making, followed by further historical steps into the "two-dimensionality" of image-making and the "one-dimensionality" of linear writing, culminating in the present stage of a transition into the "zero-dimensionality" of digital code. The division into steps is intended to expose the creation of specific stages of historical consciousness which the communication in these modalities enforced and enacted. His greater intention is to show the radical epistemological potential brought forth by the inception of digital technology, which he then thrusts into the hands of his readers – "de te fabula narratur" (Flusser 1985: 139).

The sweeping generality of his model can be grasped simultaneously as its major asset as well as its major fault; the model falls victim to the very linearity which he seeks to challenge, as well as being fallible for its massive generalizations. However, despite its drawbacks, Flusser's media-philosophical hypothesis regarding fundamental epistemological changes in various epochs, bringing about changes in historical consciousness is a thesis which justifies further consideration for its ambition and wide-reaching scope.

2.2 Archaeoacoustics as a challenge to “crisis of linearity”

Flusser’s “crisis of linearity” model is strongly called into question if we consider the case study of archaeoacoustics in Flusser’s conceptual steps from four-, to three- and into two-dimensionality (from space-time, to object-making to image-making). A sub-field of archaeology, archaeoacoustics is part of a multi-sensory archaeology which has emerged in recent decades to incorporate the senses of smell, touch, taste and hearing. Archaeoacoustic researchers have noted that in sites such as tombs, caves and other structures such as stone circles or pyramids, sound has been profoundly ignored to the great detriment to our understanding. Recent work has established the study of acoustics at archaeological sites as a legitimate field (Scarre and Watson 2006). For example, empirical research has sought to demonstrate positive correlations between appearances of rock art and peculiar acoustics (such as echoes, reverberation, resonance and sound carrying unusually far) in specific geographical locations such as Niaux and Le Portel in France, to Horseshoe Canyon Utah and Tito Bustillo in Northern Spain (See Reznikoff and Dauvois 1988; Waller 2006; Till et al 2013, respectively). All this work has been motivated by recent attention to the sounding dimension of the past. Just as gender archaeology threw light on the androcentric analyses of predominantly male archaeologists on their findings, criticizing the “man-the-hunter” model, amongst other things (Conkey and Spector 1984), the ocularcentrism of archaeology has only recently been brought into question through research in the field of archaeoacoustics. In this very real sense, a visually-dominant method has long hindered better understandings of archaeological sites. Thus, archaeoacoustics acts as a stark example of how sonic knowledge and thinking through sound make significant contributions to previous bodies of knowledge, demonstrated here in archaeology.

Archaeologists today would have much ground to criticize Flusser’s statement in the “crisis of linearity” that interpret the paintings of ponies found in the cave of Pêche-Merle “for future action, such as hunting” (Flusser 1988: 10), as the theory that cave paintings were linked to hunting is only one theory among many.¹⁴ These new discoveries, through archaeoacoustics, jar many previously accepted theories and presumptions about prehistory and expose the precarity of a such a model. For Flusser’s ocularcentric media-philosophical model, archaeoacoustics points to an epistemic lack in the status quo. It ignores the potential significance of knowledge produced through sound and listening.

Using a sound studies approach to thinking through sound in the “crisis of linearity” thesis results in a speculative sonic dimension at each stage. The clear visual bias in the model (objects, images, writing, technical images) can be faulted at a basic level for an implied silence of or deafness to the past. Each stage, explored sonically, offers multiple potential enactments of sonic knowledge, despite in each of these stages the “gesture of listening” being ignored by Flusser. Thinking through sound blurs the boundaries of the stages of historical consciousness. As I have discussed elsewhere, listening closely to the model at each stage exposes the sonic in various ways – be it via the resonant acoustics in the move from three-dimensionality to two-dimensionality, the

complex interaction between speech and writing in the move from two-dimensionality to one-dimensionality, or the sounds inherent in circuitry of technical media in the move from one-dimensionality into zero-dimensionality.¹⁵ The clarity of his step-by-step model from four-dimensionality down to zero-dimensionality is made clumsier with the consideration of sound.¹⁶ Instead of delineated segments, we have a messier, fleshier system which complicates the analysis of “progressive” mediated ways of being.¹⁷ Each of these oversights potentially have massive implications for his own media-philosophical model, yet further work is required to analyze more precisely how. Due to the epochal timescale of the model, these will remain speculative.

2.3 Negotiating the listening “other”

Sterne’s criticism of the “oral-literate-electronic” triad in the work of the Toronto School including Walter Ong and Marshall McLuhan is a strong argument against the inherent exoticization and crass simplification of “oral man.”¹⁸ From the viewpoint of post-colonial theory, many of Flusser’s descriptions of non-Western/non-White cultures were similarly problematic to Ong and McLuhan’s. However, it is Flusser’s historical model under examination here and a projection onto “prehistoric man” falls into similar problematic positions. Thus, it remains to be asked: how is it possible to reach beyond “antiquated notions of sensation and cultural difference” (Sterne 2011: 222) and to negotiate the questions of listening regarding the past?

3. Caves as early media

So far, in section one I re-thought and expanded Flusser’s “gesture of listening to music” into a general gesture of listening, seen within his greater project on gestures as a whole. Section two explored the sonic in Flusser’s crisis of linearity, and the example of archaeoacoustics was used to demonstrate the gains to be made via thinking through sound. In this third section, these findings will be summarized and assessed for their implications both within Flusser’s thought and more broadly in media-philosophy and sound studies.

If the gesture of listening can be endowed with the same ecstatic potential which Flusser ascribes to listening to music, paying attention to the gesture of listening at each stage of his step-by-step model opens up his considerations to profound consequences at each stage. As Henriques points out, “A founding metaphor [of Western philosophy] is Plato’s cave where the shadow images of the real world play on the wall. Indeed the visual imperative is so strong few stop to remark that by far the most striking sensory feature of any cave is not visual at all but sonic – the echo” (Henriques 2003: 465). Flusser’s gesture of listening, in light of its ecstatic potential and the permanent interconnection between sound and body, can be harmonized with archaeoacoustic researchers’ descriptions of the “powerful sonic impressions” and “ghostly and distant” nature of cave sounds, and their suggestion of caves’ strong potential for ritual use (Till et al 2014: 6–7). Re-thinking the

gesture of listening vis-à-vis its potential for sonic knowledge opens many questions still to be explored.

Flusser's "crisis of linearity" thesis remains a powerful media-philosophical and epistemological model for contemporary media theory. Sterne – who does not appear to address Flusser in his work – argues for a relativization of the historical significance placed by McLuhan on the invention of the phonetic alphabet (Sterne 2011: 221).¹⁹ Instead, he proposes other major communication technologies that predate writing as alternatives, which could have conceivably contributed to the functions of externalized memory as "early media": painting, sculpture, architecture and musical instruments (Sterne 2011: 221). On this front, Flusser's model surpasses McLuhan's, at least providing for sculpture and architecture in the move from four-dimensionality into three-dimensionality, and providing for painting in the move from three-dimensionality into two-dimensionality. It is architecture which becomes key in attempts to explore the audible past in archaeoacoustics. The architectonic spaces of caves can also be construed as "early media," where human use has been discerned.

The gesture of listening, which Flusser so passionately details, can be seen to be caught within the automatism he so passionately warns against. Flusser's ocularcentrism may be a shortcoming, but a constant theme in his work is his open acknowledgement of his struggle towards the possibility or impossibility of realizing anything outside of his role as a programmed functionary of the larger apparatus: "I do not have free will; I am not free. I am a functionary of programs that are alien to me; I am an instrument... Can I rebel? I believe I can. The sensation of boredom and nausea that the programs cause in me are experiential proof that I am not completely programmed" (Flusser 2013: xi).²⁰ Thus, the undertaking of the present essay can be understood within the automatism of Western culture's dominant visuality. In light of Flusser's ready acceptance of his own automatism and his constant requests to his interlocutors to communicate with him and challenge his theses, by thinking through sound in the "crisis of linearity", as I have in this essay, I have endeavored towards an archaeology of sonic knowledge.

The broad sweeps of time offered in Flusser's crisis of linearity thesis are mirrored by the broad sweeps of time of much archaeoacoustic research. The radical otherness proposed in both archaeoacoustics and Flusser's crisis of linearity is not only seductive but also problematic. Yet, despite the impossibility of drawing steadfast conclusions, this vast epochal timescale affords a certain speculative elasticity. Arguably the strongest offering from the project of archaeoacoustics to cultural studies is the ambitious endeavor to conceive of a radical otherness which departs drastically from default modern Western paradigms, bearing in mind the danger of unintentionally reproducing these. How this can be seized productively in sound studies remains to be seen.

4. Conclusion: Towards a Sonic Media Archaeology

As Sterne's *The Audible Past* reminds us, "We can listen to recorded traces of past history, but we cannot presume to know exactly what it was like to hear at a particular time or place in the past" (Sterne 2003: 19). This is precisely the same predicament faced by archaeoacoustics – it cannot be proven exactly how prehistoric humans heard or used sound, but the aim (at least for some) is to demonstrate an intentionality in the design of archaeological sites, or a correlation between sound and designed features (such as rock-art). Where Sterne's research stays close to the actual exteriorities of sound's past via artefacts, documents and traces of sound-reproduction technologies, the extended timescale of many archaeoacoustical sites into prehistory naturally make the task much more speculative.

For an archaeology of sonic knowledge, Foucault's call to action on "subjugated" knowledge is pertinent, although he wrote within the specific context of student protests and the political struggles of the 1960s. "By subjugated knowledge, I mean [...] the historical contents that have been buried and disguised in a functionalist coherence of formal systemization. [...] [and] something which in a sense is altogether different, namely, a whole set of knowledges that have been disqualified as inadequate to their task or insufficiently elaborated: naïve knowledges, located low down on the hierarchy, beneath the required level of cognition or scientificity" (Foucault 1976: 81–82). If sonic knowledge can be grasped as subjugated knowledge, then a Foucauldian archaeology of media forms and communication has the potential to pose radical challenges about current understandings of the past and present.

Conceiving of caves (or other archaeological sites) as a type of "early audio media" opens up the scope of a sonic media archaeology, one which takes its Foucauldian influence seriously and calls into question structures and concepts of knowledge and power as fundamentally as possible. In the field of media archaeology, work by Friedrich Kittler and Wolfgang Ernst amongst others has undertaken in-depth examinations of auditive media. Ernst's concept of "sonicity" (*das Sonische*) can be grasped as a vital concept in the advancement of sonic knowledge; it proposes "sonicity" as a neologism which incorporates oscillations both audible and inaudible to humans as an epistemic form (Ernst 2012: 2). Thinking through sound, "ways of knowing" through sound and concepts of auditory epistemology and sonic knowledge via Henriques are still yet to be developed extensively in the field of sound studies, these concepts would be crucial in developing a sonic media archaeology.

Within Flusser's limited writing on sound and listening, there are at least a few impulses how his sonic thought can be understood. Most significantly for media-philosophy, his crisis of linearity model remains a powerful framework upon which to think through epochs of communication technologies (in their broadest sense) and how this has changed historical consciousness over time. Despite the aforementioned potential risks and dangers of a model as sweeping as his, there is still much to be assessed if we can open up the model to different forms of communication and communication technologies, as widely conceived as possible.

Flusser's call to examine the gestures of everyday life against his technological framework of tools, function and apparatus overlaps with a Foucauldian archaeology of knowledge, where interrogating structures of power and knowledge creates new understandings of the past and the present. Sterne has many criticisms of the Toronto school and many of these criticisms could justifiably be applied to Flusser too. However, Sterne still commends the Torontonians "intense curiosity" and accepts that their research was done in a time different to ours (Sterne 2011: 222). Sterne pleads for a more rigorous technological history of communication and suggests a renewal of asking basic questions and following them through to new conclusions, in light of post-colonial theory and with a separation of the secular efforts of cultural studies from the explicitly religious aims of Ong. However, to re-examine a model such as Flusser's crisis of linearity, I would add to this list a sound studies approach that tempers and accounts for previous ocularcentrism, and attempts to "describe and re-describe what sound does in the human world" without replicating any undue litanies.

1 For a list of known writings by Flusser mentioning sound and music see Appendix of "Introduction: Music and Sound in Vilém Flusser's Work" (Castello Branco et al. 2014)

2 See for example *Flusser Studies* 17 – Special Issue on Sound and Music from May 2014 co-edited by Marta Castello Branco, Annie Goh & Rodrigo Maltez Novaes.

3 See the work of sensory studies, for example Constance Classen and David Howes. (Classen 1993, Howes 2003)

4 For example, in Huhtamo and Parikka's introduction to their edited volume on Media Archaeology, the historical tracing focuses predominantly on visual media and moving image history. This is partly due to precedents in this field. However, a criticism of the continued visual dominance and lack of attention to auditive media forms is justified. (Huhtamo & Parikka 2011).

5 Given his relocation to France during this period, the first version of this essay was likely written in French, although this cannot be unequivocally proven and the original manuscript of "Les gestes d'écouter la musique" has long been missing from the Vilém Flusser Archive.

6 See biographical details in Wagnermaier and Röller 2009, e.g. p. 57 and p. 59 regarding Milton Vargas and Flusser's job at Stabivolt and p. 194 regarding Flusser's positioning within contemporary media issues by the time of the publication of *Into the Universe of Technical Images (Ins Universum der technischen Bilder)* in 1985 and *Does Writing Have a Future (Die Schrift – Hat Schreiben Zukunft?)* in 1987; see also Flusser's own autobiography, written in 1969, in Edición Loyola (Flusser 1975).

7 The unpublished book manuscript of "Umbruch der menschlichen Beziehungen" ("Mutations in Human Relations") was written around 1977–78. (Sander 2002: 23)

8 As confirmed by Rodrigo Maltez Novaes with reference to a letter from Flusser to his friend Milton Vargas from October 1980. (Maltez Novaes 2013: XI)

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- 9 For example, see anecdotal evidence of Flusser's life-long interest in music and comments by his daughter Dinah Flusser (Goh 2014: 2)
- 10 See for example Wolfgang Ernst's essay "Discovering the Ears on Flusser's Face. A respectful revision" (Ernst 2014).
- 11 Sterne critiques Walter Ong's concept of orality as part of a long tradition of "iconoclastic anti-modernism" intricately linked to Ong's religiosity and (Judeo-)Christian spirituality (Sterne 2011), which shares overarching commonalities with Flusser's ideas as expressed in "Crisis of Linearity" and elsewhere. Additionally, Sterne's citation of Thorlief Boman's *Hebrew Thought Compared to Greek* (1960) where, "Jews lived in a world of sound, Greeks in a world of light... Jews were primarily oral and his Greeks were primarily literate" (Sterne 2011: 214) is reflected in Flusser's comments on orality and visuality of Jews and Greeks respectively in his essays "Hörigkeit" (Flusser 1989) and "Hoerapparate" (Flusser n.d.b).
- 12 See for example Anahid Kassabian's work on "ubiquitous listening" as an analysis of different kinds of listening brought about by multiple everyday encounters with music in contemporary life (Kassabian 2013).
- 13 For example, his unpublished book project "Umbruch der Menschlichen Beziehungen" ("Mutations in Human Relations") and numerous essays from the mid-1970s onwards.
- 14 For example, David Lewis-Williams' theories on shamanism and rock-art have risen to prominence since the 1980s. See e.g. Lewis-Williams and Clottes 1998.
- 15 Although it lies outside the scope of this essay, it was worth noting that Flusser does insert a sonic dimension into the zero-dimensional level of technical images as sounding images in the chapter "Chamber Music" in *Into the Universe of Technical Images* and in a discussion on electronic music in the essay "On Modern Music." For a more detailed step-by-step account of the sonic dimension of Flusser's "crisis of linearity" model, see Goh 2014: 3-5 and 14-16.
- 16 Dietmar Kamper commented notably on the strange absence of considerations of the body in Flusser's work in the First International Flusser Lecture (Kamper 1999).
- 17 Flusser's critique of notions of "progress" runs throughout his work. See for example Post-History. (Flusser 2013).
- 18 For example, as Sterne notes, McLuhan's problematic othering of non-White cultures is evidenced in "The Gutenberg Galaxy," where he approvingly cites J.C. Carothers who equates Greek culture before the invention of writing with modern Kenyan culture. (Sterne 2011: 220)
- 19 Due to Flusser's multi-lingualism and his outsider status to intellectual and educational establishments particularly in Europe, he is still not yet widely-read or integrated into Anglo-American media theory and media philosophy discourses. Jonathan Sterne's work and this essay (Sterne 2011) address only the Toronto School and Walter Ong and Marshall McLuhan in particular. It can be assumed Sterne has not engaged extensively with Flusser's work.
- 20 From the essay "On Program" in the newspaper *O Diario* from 1966, as translated by and quoted in the "Translator's Introduction" to Post-History by Rodrigo Maltez Novaes. (Flusser 2013).

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