

TECHNOLOGICAL VOICING OF TRAUMATIC MEMORY

[Lecture presented at workshop *Techno-Trauma. From Analog to Digital*, Humboldt University Berlin, April 2014]

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Introduction

Audiovisual signal recording has resulted in new kinds of awareness and practices of temporalities. From the phenomenological perspective, signal replay in photography, phonography, cinematography, videography, the magnetic tape, and finally digital recording affects the human and even animal sense of time. Specifically the phonographic irritation has been iconized by the HMV record label logo (derived from Barraud's original painting) where the dog Nipper literally listens to "His Master's Voice". This situation has been described by Walter Benjamin (referring to cinema) more acutely as a "chock" for sensation. Although for generations media records as text, sound or images have become accommodated in every day consumption, this intrusion into the sense of presence has not yet been cognitively digested and continues to irritate what might be called the "unconscious" of cultural time - in an explicit analogy to Walter Benjamin's neologism of an "optical unconscious" (inspired by Sigmund Freud's psychoanalysis), describing evidence which is not accessible to human senses but to the camera only - as revealed in slow motion and fast forward display.

Such media-induced temporal interruptions and incisions are traumatic *temporealities* - pluralising the tightly coupled time triad of past-present-future into a whole cosm of micro-temporal figures of delay, anticipation and intra-temporal (time-critical) moments. These temporealities share central features with what in recent academic memory studies has become known as the unhistoricizable of traumatic remembrance. Next to "the distinctive role of media in mediating collective trauma"¹, there is trauma induced by media technologies themselves.

Let us therefore turn from the phenomenological to the media-archaeological perspective and concentrate on the time-critical element within and induced by technical media.

An escalation of this situation is so-called *media witnessing*

1 Amit Pinchevski and Tamar Liebes, *Severed Voices: Radio and the Mediation of Trauma in the Eichmann Trial*, in: *Public Culture* 22:2 (2010), 265-291 (267)

where crisis is not experienced as an exceptional eventuality any more like historical revolutions or natural disasters in the past but "as a generalized and routine background condition - a persistent crisis-readiness" (Frosh / Pinchevski). In a more techno-radical reading, this background is no diffuse condition of contemporary society as described by sociology but is rooted in the time-critical conditions of such media technologies.

Media memory of traumatic experience is primarily being discussed in the context of visual devices such as the Holocaust witnesses video recordings. The following analysis rather concentrates on the audio-specific qualities of traumatic memories and its chronopsychic implications. Whereas *aura* as defined by Walter Benjamin depends on the impression of being uniquely "here and now", technological temporality and specifically its sonic articulations culminate in the archetype of a deferred and delayed presence, the electrified voice and its media-temporality. Instead of "oral history", we might rather say: aural presence of the past.

The media-specificity of "traumatic" aurality will be shortly discussed in case studies of "broken presence": the Christmas 1943 *Ringsendung* broadcast from war fronts by German national radio; "Future in the past": archival storage driven by a virtual trauma; David Boder's magnetic voice recordings immediately from (and beyond) the concentration camps; and finally "Disembodied voices from analog to digital".

Broken presence: "Ringsendung" x-mas 1943

"Electrified voices" do not simply refer to the originating body but embody the index of the transmission technology itself. The recording of the radio Christmas-greetings from several points of the war front, broadcasted by the German Großdeutscher Rundfunk on December 24, 1942², is such a case of sonic articulation of traumatically distorted forms of what is known from phonographic listening to "his master's voice".

The booklet of the Compact Disc edition of this recording declares: "Zur Darstellung der Geschichte des 20. Jahrhunderts sind Ton- und Filmaufnahmen unverzichtbar. Ohne sie können Mentalitäten und Stimmungen dieser Epoche nur schwer vermittelt werden" ("Audiovisual recordings are essential for the presentation of 20th century history. Without them mentalities and sentiments of that epoch can hardly be communicated").³ But such

2 See Dominik Schrage, "Singt alle mit uns gemeinsam in dieser Minute". Sound als Politik in der Weihnachtsringsendung 1942, in: Daniel Gethmann / Markus Stauff (eds.), *Politiken der Medien*, Berlin (diaphanes) 2005, 267-285

3 CD Booklet to the Compact Disc published by the Institut für Zeitgeschichte (Munich / Berlin) 2003, *Dokumentation Obersalzberg. Tondokumente. Täter Gegner Opfer*, ed. by Albert A.

moods are not only cultural mentalities but the tuning by the technical mode of transmission itself.

Audiovisual recording is not a witnessing of "Geschichte" which rather takes place in historiographic narrative. Instead, signal recordings break the monopoly of "history" in the 20th century, by means of an auto-referentiality of the transmission technology itself. The original (or even studio-manipulated) distortions serve as an index of authenticity of a radio live transmission across long distances, a short-cut between soldiers at the war front and their families at home which can only take place in the technological radio-sphere. While this was meant to have a comforting effect of synchronicity between relatives, sensation at home was at the same time irritated by the technical reminder of the spatial gap, the "shock of absence" as incorporated within the apparent temporal immediacy (Jan-Claas van Treeck).

This presence is a distorted one, though; technical distortions of sound fidelity are essential features of phonographic and grammophonic records.⁴ There is a bandwidth limit of transmission of sound recordings from the past. The Freudian "Es" (the media-induced traumatic *momentum*) expresses itself media-archaeologically.

The reverberations which take place (just like the spectral distortions and filters) give the "live" transmission (if true at all, or pre-recorded in anticipated presence) a quasi-temporal affect of distance. The presence is already distanced to itself, while at the same time letting a most intimate signifier of the German soul (the singing of *Stille Nacht*) shine through.

Amit Pinchevski and Tamar Liebes define radio wave transmission as "signals from afar that make intimate contact". While this applies to electronic communication media in general, "radio constitutes a distinctive configuration of presence-at-a-distance through the separation of body and voice and the reconstruction of a disembodied voice. [...] the body cannot endure transmission, whereas the voice can."⁵

This corresponds with the split between an original sound and its electroacoustical recording, resulting in what R. Murray Schafer called "schizophonia"⁶ - a dissonance between the affective and the

Feiber / Volker Dahm

4 See Ferdinand Trendelenburg, *Klänge und Geräusche. Methoden und Ergebnisse der Klangforschung, Schallwahrnehmung, grundlegende Fragen der Klangübertragung*, Berlin (Julius Springer) 1935, 51

5 Amit Pinchevski and Tamar Liebes, *Severed Voices: Radio and the Mediation of Trauma in the Eichmann Trial*, in: *Public Culture* 22:2 (2010), 265-291 (271)

6 "Schizophonia is a term coined by R. Murray Schafer to describe the splitting of an original sound and its electroacoustic reproduction." en.wikipedia.org/wiki/Schizophonia#cite_note-1, accessed December 23, 2013, referring to: R. Murray Schafer, *The*

cognitive awareness of sound-based time consciousness.

In such an "acoustic space" (McLuhan⁷), a different tempor(e)ality reigns which allows for a rather synchronous and "symphonic" resonance between past and the present which finds its technical correlation in the "resonant circuit" in electronics itself (German *Schwingkreis*).

Even generations later the impact of such acoustic transmission of an event can still be "re-presented" (Vivian Sobchack) in acoustic memory. This proves the impact of the acoustic "real" which irritates and micro-traumatically deconstructs the the familiar discourse of historical distance.

More than half a century after the recorded audio-drama, the gap between the time elapsed and the extent to which it can still radio-phonically be remembered and affect present sensation does not only "serve to affirm the effect of the original event"⁸ but as well gives a clue to the power of the technological event of voice recording itself.

Future in the past: Storage driven by a virtual trauma

Some phonographic recording and subsequent transcription of oral memory cultures has been undertaken for philological purposes like the recording of *guslari* epic songs in former Yugoslavia by Milman Parry and Albert Lord have been made primarily for the purpose of academic analysis, to answer by anachronistic analogy the "Homeric" question of how extended oral poetry works in a culture without writing. But in early twentieth century a couple of comparable projects in ethno-musicology such as performed by the Berlin Lautarchiv (resulting from prisoner recordings in World War One) are a technological function of traumatic anxiety about the disappearance of indigenous cultures, resulting in techno-archiving practices in the temporal mode of "future in the past".

Just like Alan Lomax' notorious recording of American folk songs had been commissioned by the Music Division of the Library on Congress, the same institution commissioned Paul Bowles (an American resident in Algier) to record native Moroccan folk songs and rhythms on magnetic tape (financed by a Rockefeller Foundation Grant) in 1959. Bowles' initiative was driven by the fear that recently independent Morocco was about to destroy that native folk music culture in an effort of national modernization.

New Soundscape: A handbook for the modern music teacher, BMI Canada, 1969

7 See Carpenter, Edmund, and Marshall McLuhan, Acoustic space. In: Explorations in communication, edited by Edmund Carpenter and Marshall McLuhan. Boston (Beacon) 1960

8 Pinchevski / Liebes 2010: 274

In fact, the "cultural" reverse of the trauma linked with real genocides (notably the Armenian case or the Holocaust) is the persistent fearful anticipation of the future extinction of ethnic articulations of which the emerging audio-visual recording media like phonotgraphy, phonography, and cinematography are *both a symptom and an answer* since early 20th century.

Inbetween is the use of material (museum), signal-based (audio-visual recording) and symbolic (alphabetical) records to replace a living cultural memory by manipulatable storage, is was the case for the present with the *Theresienstadt* ghetto film from 1944/45 and the Central Jewish Museum project in Prague under German occupation 1940-43 to create a *futurum exactum*⁹

[- just like Albrecht Meydenbauers German Monument Archive (Deutsches Denkmälerarchiv), based around 1900 on photogrammetric measuring of historic architectural heritage, anticipated future destruction of the originals caused by possible wars already.]

The pre-emptive media archive embodies the time-reversed trauma, known from grammar as "future in the past". It is from the technological condition of photography, cinematography and phonography itself that the traumatic *futurum exactum* as a kind of reverse non-historical trauma arose: the concept that a cultural articulation might *possibly* be extinguished and thus in anticipatory ways needs technical pre-recording.

[This temporal figuration which became even much more time-critical in the subsequent World War II when electronic analog, then digital computers performed predictive calculation of enemy moves in real time, applied to anti-aircraft defence, by literally *calculating* future in the past - like nowadays the predictive analytics algorithms exercised by the NSA in the survey of current telecommunication data. This is no archive from the past but actually an archive of the future.]

Just like the phonographic archives established in Vienna and in Berlin around 1900, the photographic expeditions undertaken by Albert Kahn for his *Archives de la Planète* in the 1930 and further projects, Bowles' Marroccean folk song recordings was driven by a kind of anticipatory trauma that the indigene culture he referred to was about to be extinguished. Appararently he never listened himself to the tapes he feverishly recorded; almost forgotten they time-invariantly rested in magnetic (rather than cultural) latency until they were discovered for re-play.¹⁰

This is not collective memory but a collection of recordings in technical storage - meant as memory of an anticipated *futurum*

9 See W. E., Symbolischer Tausch und der Tod (die Unmöglichkeit des Museum): das nationalsozialistische Projekt eines jüdischen Zentralmuseums in Prag, in: Geschichtswerkstatt 24 (July 1991), 45-56

10 See Hans Ulrich Gumbrecht, Latency (forthcoming)

exactum, driven by a virtual trauma.¹¹

"The archival potential of such <sc. phonographic> recordings came at a time when many indigenous cultures were already severely threatened, or had already disappeared, ironically as a result of the same Western industrialization that produces the technology used for the documentation. [...] the fact remains that the technology provided a literal documentation that surpassed the results of even the most sensitive transcriber. <...>

["[M]any ethnomusicologists were so conditioned by Western musical practice that they interpreted what they heard and transcribed it according to Western musical notation, ignoring the microtonal variations that can still be heard on original recordings. Therefore, such objective documentation can be said <...> to preserve the aural artifacts of a culture"¹² - in fact its sonic *aura*. The technical recording (that is, the media-archaeological ear) preserves acoustic signals which might have already been obscured by symbolically coded cultural memory. Even if "[t]here is no guarantee that one can ever bridge the gaps between cultures" - and temporal distance between sonic articulations -, "the perspective of time and familiarity can certainly clear a way some of the veils that obscure a culture from us"¹³ - revealing the sonicity of the cultural unconscious.]

Voice recordings from (beyond) the concentration camps

Storage media create a technical memory which differs from the dynamics of collective memory which linguistically emanates from social communication. But once biased by electric current again, the volatile magnetic remanence and the induced electric flux are as close as possible to what Maurice Halbwachs described as the mobile character of social memory. Especially when it comes to witnessing traumatic experience, a double structure arises:

On the level of direct evidence, *media record*, thus: technically witness traumatic experience; on the other hand there is a deeper, hidden traumatic irritation of a continuously present, that is: non-historicisable past which is a function of signal recording media themselves¹⁴

11 The reverse is the current "Retromania" (Simon Reynolds) in popular music which compensates for the absence of utopian or avantgardist perspectives in current musical culture - a thought expressed by Jan Rohlf for the 2014 theme of CTM - Festival for Adventurous Music and Art "DIS CONTINUITY", Berlin (January / February, 2014)

12 Barry Truax, *Acoustic Communication*, Norwood, N. J. (Ablex) 1984, 118

13 Truax *ibid.*

14 This is one of the guiding theses in the research project *Archiving Presence* between Media Studies at Humboldt University, Berlin (W. E.) and Communication Studies at Hebrew University in

- as has been in a less deadly context been demonstrated in Dan Graham's classic video installation *Present- Continuous - Past* (1974).

Let us pay attention to the recording of voices of surviving prisoners in former Concentration Camps immediately after WWII on wire recorder (a machine used Albert Lord as well when re-recording oral poetry from the same *guslari* singers decades after their first recording by Milman Parry's on aluminium discs¹⁵):

"The first to record Holocaust survivors shortly after the war was David P. Boder, an American psychologist at Illinois Institute of Technology. Boder traveled to Europe in 1946 equipped with a wire recorder, an audio recording device developed by his ITT colleague, Marvin Camras, for the Armour Research Foundation during the war. He published the interviews in his *I Did Not Interview the Dead* (Urbana, Ill., 1949)."¹⁶

The real wonder, though, is the bodiless, time-shifted repeatability of voices through technology (signal recording of the *logos*),

since this time-shift is governed by technological rather than "collective memory" dis-continuities. A set of copies of Boder's spools arrived at the Library of Congress in Washington in the 1960s, about 20 years later - a period of latency both in the electro-magnetic essence and in the sense of historical time.

the responsible sound engineer John Howell had to struggle with playback machines apt for spools of different sizes. He had to "recondition" it technically.¹⁷

Where the replay apparatus is missing, the signal carrier (esp. wire spools different from magnetic tapes) remain closed. They are there, but do not "speak".¹⁸

The logic of memory maintenance and transmission of such records at first glance looks contingent but in fact "beneath the surface" - which is the media-archaeological level - "there was some rhyme and reason"¹⁹ - the laws of techno-logic timing.

The "technical" difference between signal memory (audio recordings) and symbolic memory (textual transcription), in

Jerusalem (Amit Pinchevski) 2013-2015

15 See Drubek 2013: 250

16 Pinchevski 2012: 145, note 6

17 See Alan Rosen, *The Wonder of Their Voices. The 1946 Holocaust Interviews of David Boder*, Oxford 2010 168, and 280, note 55

18 See the different wire recorder spool sizes as demonstrated in: Video Interchange (May 26, 2008) =

http://www.videointerchange.com/wire_recorder1.htm

19 Rosen 2010: 167

Boder's case especially, is crucial for the re-discovery and the technical recovery of Boder's interviews.

"Boder's written work lived a life separate from the recordings that gave birth to them." Chronicling the destiny of the Boder materials "dramatizes how archival divisions splintered unified work into discrete components. Scholarship has likewise followed the shifting winds of technology; what is <literally: electro-magnetic> current is what defines the field."²⁰ In Kittler's sense this means: Media determine the situation of collective memory.²¹

The case of the Boder interview argues the need to retain a *technical* knowledge of origins in the media-archaeological sense as a means to define what is significant, that is: what can be recognized as *signals* literally. "Otherwise, the wonder of their voice may never be heard."²²

But against being affectively being absorbed by the wonderful acoustic testimony, the media-archaeological ear keeps distance. Distancing through technology is indicated in John Hersey's epic novel *The Wall*: "[...] if for Boder the wire recorder aided in a quest for verisimilitude, in the case of Hersey is helped to liberate him from it."²³ There is an inherent paradox and a traumatic irritation for humanities in the fact that the most immediate reminder of a crime against humanity is itself of a completely non-human nature: wire recording. In her book *How We Became Posthuman*, Katherine Hayles writes about Boder's association with the Illinois Institute of Technology where Camras propagated and improved the wire recording technology.²⁴ Camras obviously played a role in moving Boder to undertake what others did in more conventional ways of alphabetic recording. The 90 hours of Boder's vocal recordings can now be heard on the "Voices of the Holocaust" website.²⁵ Such recordings are not simply voices from the past but voices from survivors among the community of the otherwise dead: reverse "collective memory", traumatic suspense resisting historic memorization.

Disembodied voices from analog to digital analytics

20 Rosen 2010: 174

21 See the "Preface" to Friedrich Kittler, *Grammophone - Film - Typewriter* [German Original 1986], Stanford 1999

22 Rosen 2010: 174

23 See the sub-chapter "Filtered from Documents: The Wire Recorder and John Hersey's *The Wall*", in: Rosen 2010: 171-174 (171)

24 Katherine Hayles, *How We Became Posthuman. Virtual Bodies in Cybernetics, Literature, and Informatics*, Chicago: University of Chicago Press, 1999. See David Morton, *Armour Research Foundation and the Wire Recorder: How Academic Entrepreneurs Fail*, in: *Technology and Culture*, vol. 39 (1998), 213-244

25 <http://voices.iit.edu>; see FN 4 in Drubek 2013: 250

The German Service of the BBC recorded voices of survivors immediately after the liberation of the concentration camp Bergen-Belsen to be broadcasted repeatedly *via* radio.

There is a specific sonic momentum of temporal indexicality, as expressed in the CD Booklet: The recordings are in manifold ways more authentic ("authentischer") than more recent statements of witnesses which have been transformed by new experiences and mental processing - signal-witnessing. The recordings of the Jewish cellist Anita Lasker and Lotte Grunow are preserved in the Phonotheek of Deutsches Rundfunkarchiv in Wiesbaden.²⁶ The booklet of its edition on Compact Disc tries to catch the medium specificity of such *signal memory*; referring to tape system-internal recordings "which illustrate the 'spirit' and character of the regime much more impressively than any printed text might ever achieve"²⁷ - or archive.]

On track 21 concentration camp survivor Lotte Grunow expresses her despair with trying to organize her fresh memories into narratable form: "Da weiß man nicht, wo man anfangen soll" ("One does not know where to begin"). This rupture is the traumatic moment. At several instants of the recording, her voice seems to hesitate or to double for a micro-phonetic moment. Is this an index of *read* text, of traumatic speech iteration, or a technical effect of digital buffering of the audio file itself? In the latter case, the apparent traumatic shock turns out to be a function of technology itself.

A techno-sonic analysis of such recorded voices allows for the memorization of such traumatically experienced presence in revealing subtle nuances of voicing (somewhat deconstructing the message of the official "acousmatic" commentator voice from the *off*²⁸).

Instead of traditional alphabetical transcription, linguistic analysis software like Praat allows for (and incites) new kinds of rather signal- than archive-b(i)ased mobilization of recorded memory: phonetic speech analysis, active archaeology of past sounds. In such algorithmic analysis, audio recordings from the the past are not just archival objects any more, but become items in an experimental laboratory of "archived presence". Semantic emphasis can be identified as a function of tonal pitch in the recorded voice, just as Max Planck - in a recording from 1939 in

26 They have been published on Compact Disc by the Institut für Zeitgeschichte (Munich / Berlin) 2003 *Dokumentation Obersalzberg. Tondokumente. Täter Gegner Opfer*, ed. by Albert A. Feiber / Volker Dahm, track 20 and 21

27 "<...> die <...> 'Geist' und Charakter des Regimes sehr viel eindringlicher veranschaulichen, als dies ein gedruckter Text je könnte"

28 See Michel Chion, *Audio-vision. Sound on screen*, New York (Columbia University Press) 1990

the Lautarchiv collection "Stimmen berühmter Persönlichkeiten"²⁹

raises (in German: "erhebt") his voice with the very German word "erhebt" itself, and lowers it with rhetorical skill at the end of his phrase in the last word "Gelehrten" (scholars). The techno-mathematical analysis of intonation, performed by Nikita Braguinski with the software Sonic Visualizer, reveals Planck's application of quasi-musical phrasing and thereby bridges the gap between semantics and affect:

Fig.: LAUTANALYSE-PLANCK.jpg

Let us apply such sonic analytics to sonic records from traumatic past as well. Recent experiments with the "archival" *a priori* of digital audio memory organization have resulted in more dynamical tools of inquiry: search algorithms which are closer to the mechanism of human remembrance which is always in motion itself.

This allows e. g. for automatically tagging both intentional and non-intentional (even traumatic) "silence" in audio files - inaudible sound where nothing but time (and the recording medium) speaks, as provided by the "Analysis"-toolbar of the audio software Audacity under the explicit term of "Silence Finder".

This tool might be applied to the magnetic tapes from the historic Frankfurt Auschwitz trial.

The "Effects" tool, on the other hand, allows for "removing silence" or to create "echo" from audio signals, which is manipulation of the sonic time event on its minutest level. The "echo" itself embodies the time figure of delayed presence or even "archiving presence": Only recorded presence can be echoed. In reverse, the echo is a temporal mirror of presence itself, thereby undercutting the clear observational distinction between presence and past which is emphasized by systems theory (Spencer-Brown / Luhmann).

The notion of "crisis" is linked to the very time-criticality of real-time signal processing technologies of today like *online* and *streaming* media. Whereas analog live electronics in its potential transmissibility of almost all events still adhered to the linear temporal unfolding of events as represented in historiography, the almost immediate, non-linear accessibility of Internet websites is more akin to what physicists call a 'wormhole' - a shortcut connecting distant points in space and time³⁰. This tunneling of temporal distance (to refer to the quantum-mechanical terminology) undermines the dominance of historical discourse in negotiating emphatic time experience.

Media technologies starting with photography have been associated with attempts to communicate with the dead. "By extending

29 See Web site of the Lautarchiv = B8-29 Max Planck

30 Frosh / Pinchevski 2009: 303

indefinitely the gap between the body and its traces, by exceeding the ontological opposition between presence and absence, media technologies conjure up a 'spectral logic'."³¹

Derrida defines his sensation of the *anima* in voice recording: "I am always overwhelmed when I hear the voice of someone who is dead, as I am not when I see a photograph or an image of the dead person"³²

- in spite of the Barthean *punctum*. Visual presence is based on electro-magnetic wave signal transmission ("radio"-like): almost immediate, whereas acoustic sensation is based on slow run-time in mechanical matter:

"I can be touched, *presently*, by the recorded speech of someone who is dead. I can, *here and now*, be affected <!--> by a voice beyond the grave."³³

But according to an hypothesis developed by John Durham Peters, this double *media* only takes place with analogue media and abruptly ends with digital data processing.

Signal recording performs the *indistinction* between message and noise, referential recording and the articulation of the recording device itself - while binary data - though technically still being embodied in electrophysics and driven by current energy - *per definitionem* in communication theory abstract from the material implementation.

Different from reading historiographical writing, the audio channel has an almost ahistorical power of presence, even if cognitively the recording from the past is immediately contextualized as historical. The recording of the acoustically or optically "real" physical signal is opposed to symbolic notation by the alphabet not only in a technical but also in an epistemological way: the difference between physical signal as indexical and the arbitrary cultural symbol. With computing, though, this dialectic opposition becomes synthesized, since Digital Signal Processing (notably sampling of audio events) is a function of discrete symbolization, a re-entry of the "alphabet" in numerical and logical form.

[If according to Walter Ong the electronic revolution in mass

31 Amit Pinchevski and Tamar Liebes, *Severed Voices: Radio and the Mediation of Trauma in the Eichmann Trial*, in: *Public Culture* 22:2 (2010), 265-291 (283, quoting an expression by Jacques Derrida and Bernard Stiegler, *Echographies of Television*, Cambridge (Polity) 2002, 117

32 Jacques Derrida, *Above all, no journalism*, in: H. de Vries / Samuel Weber (eds), *Religion and Media*, Stanford, CA (Stanford University Press) 2001, 56-94 (71). See Paddy Scannell, *Television and the Meaning of Life*, Cambridge (Polity) 2014, 126

33 Derrida 2001: 71

media communication devices like radio and television has led to a "secondary orality", communication based on the symbolic machine (computing) has led to a (hidden) secondary alphabetic revolution, with bits and bytes inheriting the typeset, but different from the printing culture in a dynamic way.]

The voice turns silent and still articulates - in implicit mathematical sonicity which is the ultimate shock to occidental logocentrism.