laptop music: new modes of musicianship in the age of mobile computing and digital networks

a research paper by Luka Prinčič

Contents

introduction

Short introduction will be writen at the end of writing.

methodeoretical framework

An important part of this research is to define clear theoretical and philosophical *points of departure* which enable the kind of inquiry that is intended here. It wouldn't be wrong to say that such a theoretical framework is crucial to the research and final text produced. Because the researched phenomenon – distinctively different modes od musicianship – is considered to be complex, fragmented, *rhizomatic*, and, in its final manifestations, seriously influenced by post-constructivist and 'postmodernist' *intellectual styles* (as well as, of course, postmodernism as a period), these are taken into consideration when outlining our basic positions. In fact, it seems to have been clear from the very beginning, at the creative moment of a search for the right draft-formulation of research questions, that traditional methodologies of social sciences will not suffice for understanding, not to mention explaining, the motivations and whereabouts of a 'laptop musician' – if we are to use such a general notion.

However, as the following research tries to show, the new modes of musicianship seem to arrive after certain historical changes. The socio-economical conditions that seem to have fueled the spread of computer-based creative sound practices can be understood and explained through fairly traditional methods of inquiry of the past. The suggestion that musicians themselves seem to hear the past *a-referentially* and in a highly 'remix' and 'sampling' kind of fashion, historical facts and truths are not challenged here. What the present text tries to challenge/imply is the idea that new modes of musicianship that emerged through personal 'computing' and digital 'networking' could be understood *fully* using traditional methods of scientific rigour, fitishizing the real and other ideas from enlightment-based toolbox. It is suggested that the phenomenon itself cannot be understood *fully* at all.

Thus, by now it should be clear that our *points of departure* owe a lot to the uncoherent and many times messy area of postmodernist (or pomo) intellectual challenges. Especially for social sciences, postmodernism could seem to be quite a tricky choice, given strong emphasis on relativism, rejection of fixed meanings and celebration of fluidity by researchers from pomo camp. The destructive nature of this framework in its radical form has beein pointed out by many if not most involved in efforts to understand and explain culture. As Edles puts it, “the notion that 'reality' is completely idiosyncratic and fluid, and that interpretation is completely open, undermines the very idea of doing cultural analysis. [...] Indeed, radical postmodernism implies that there are no *patterns* of interpreatation or meaning, [it] denies the very *existence* of the cultural realm, i.e., that the creation and interpretation of texts relies not just on 'subjectivity' but *inter*subjectivity.” (Edles 2002)

However, there seems to exist some consensus within academic community, that pomo-inspired research *can* produce, if nothing else, interesting insights into culture. Usual common ground is that radical head-on challenges to any kind of authorative voice claiming discovery, objectivity and fly-on-the-wall gazing of cultural phenomena are proving these voices false and outdated. Through this argumentation, orthodox realist-inspired research can be more sensitive to further pomo challenges. On the other hand, *moderate* postmodernists do agree, that using exclusively pomo ideas for research makes it impossible to talk about social world 'out there'. So, at some point emerges a usable framework that is pomo-inspired and sensitive to its challenges, but aware of the very

existence of 'culture' and various posible standpoints from which social world 'out there' is still graspable and even explainable "without fetishizing the real". (Edles 2002)

Thus, methodeoretical framework consists of key intertwined philosophical and theoretical references that form the main background for 'the way we think' while asking research questions on laptop music.

Looking firstly at themes of a more challenging and critical nature, themes that appear to be questioning the *authority* and *realism*, the centrality of **discourse** can be safely acknowledged. Through understanding of any discourse as a **text**, the constitutive powers of language are emphasised and 'natural' objects are viewed as discursively produced. Connected to language is also the **critique of the idea of representation** where "the indecideabilities of language takes precedence over language as a mirror of reality and a means for the transport of meaning" (Alvesson 2002). Similar disruptive effect has an emphasis on **fragmentation of identity**, which represents the view of subjectivity as a *process* and foregrounds the death of the individual, autonomous, *meaning-creating* subject. The latter is replaced by the discursive production of the individual. Further in line with pomo thinking is the loss of foundations and power of **grand narratives** while instead multiple voices and local politics are celebrated. Finally, the **power-knowledge connection** is of interest for, at least, pondering about, where knowledge is considered to be *un*separable from power in a more or less Faucauldian sense.

These are fairly important, but at the 'low-brow' level (field practices) they are rather ambitious if not too radical. Alvesson proposes solution to this problem with a concept of *reflexive pragmatism*, which is a somewhat relaxed attitude to rigour and 'holy cows'. It works by "navigating beyond empirical ambitions and methodological rigour on one hand and the kind of hypersceptical understandings of empirical enquiry encouraged by postmodenitst on the other. [...] Reflexivty here works with a meta-theoretical structure that guides and interplay between producing interpretations and challenging them" (Alvesson 2002). To achive that, we look into points raised by Laura Edles when exploring the *comprehensive cultural sociology*.

At the summary of that endeavour Edles roots the suitable framework for exploration of culture of today in acknowledging the importance of both **structure** and **agency** in a rather multidimensional way. Starting with a challenge proposed by Steve Seidman asking what social knowledge would look like, "if we abandon or seriously rethink a modern Enlightment framework, if we no longer fetishize the Real" (Seidman 1997, as quoted by Edles 2002), Edles' conclusions are centered around the work of two important social and cultural analysts: Erving Goffman and Pierre Bourdieu.

Goffman's acknowledgement of structure *and* agency – a focus on overarching social structures that in one way or another influence life combined with no lesser focus on indivual agency. Despite Goffman's interest in *subjective cultural schemas* behind social organization – that he described as *frames* –, he continually emphasized the power of social interaction of which "quality and character constitute the consequential reality of everyday life" (Brisset and Edgley 1990). For various researchers the concept of frame can be developed into multitude of directions. However, Goffmanian approach seem to be characterised by multidimensionality, where *interpenetration* of collective structures and individual agency are foregrounded. One should be, then, vary of easily disregarding the *intersubjective* cultural 'field' where discursive interaction 'games' are played.

Work of French theorist Pierre Bourdieu is difficult to summarize, but many would agree that his most important work is centered around relationship between culture and power. He combines a “Goffmanian concern with people's improvisational, *practical mastery* over complex logic of everyday life; with a *neoMarxist* concern for the reproduction of inequality” (Edles 2002). However most interesting for the direction of our research is Bourdieu's methodological reliance on all sorts of qualitative and quantitative data. It is usual to find extremely varied types of information in his work – ranging from ethnographic observation, literary texts and photograps to statistical surveys and questionairres. Theoretically, Bourdieu's forging of his concepts as correctives to opposing viewpoints serves as an inspiration in theoretical ackowledgement of fluidity and existence of ambiguities in social reality.

A concept of human-social-historical-reality, developed by philosopher Wilhelm Dilthey, is approached here in a somewhat shizophrenic fashion in a Deleuze and Guatarri kind of sense. In other words, it is a hermeneutic version of postmodern deconstructionism, or rather, an experiement in fusion of the two frameworks circling and bouncing between antipositive knowledge produced by pomo thinking on one, and constructive “how things could be understood” line of comprehensive cultural sociology. Pomo offers a challenge and an inspiration to revise and make qualitative research more sophisticated and creative. At the same time, comprehensive sociology proposes that more is gained if, rather than assert “objectivity” or retreat to “subjectivity”, we *intensify* our systematic, *interpretive* search for the real – or hyperreal. Taking this methodology into account, consequential aim of this research is to produce an “informed” and possibly “sophisticated” text.

research question and methodology

First formulation of possible approaches to the “laptop music” phenomenon included an ambitious idea to *fully identify* and *research* the laptop music as a social reality, isolated from contextual and temporal frames within which it seems to exist. This thesis-approach quickly raised two problems. The size of the project and referential multidimensionality required resources unavailable to Honorous BA student. To *cover* – explore and explain – laptop music as an emergent social and cultural phenomenon would be possible only in a post-graduate or similarly supported situation, where enough time would be available to conduct research with an appropriate speed. Secondly, there appears a strong case against fixed and direct onedimensional univocal causality of socio-economic and historical 'facts'. Appearance of *musicians with laptops* in one setting and musical practices without direct relation to laptop *performance* in other, suggested that “laptop music” as *such* is much harder to pin down than, for example, an empirical research within natural sciences. This appears as a classic sociologic dilemma, but, as it is argued in previous chapter, it isn't just a bewilderment over complexities of social world that is stopping this research to rely on 'usual' empirical frameworks.

The characteristic flow of information within digital networks based on tcp/ip protocol – in other words, *the internet* – suggest more or less new types of cultural and power structures/hierarchies available to various interest groups. These structures resonate incredibly well with Deleuze and Guatarri's concept of *rhizome*, “which connects at any point to any point, and its traits are not necessarily linked to traits of the same nature; it brings into play very different regimes of signs, and even nonsign states” (Deleuze and Guatarri 1988). The availability and rise of a *home* computer and information technology (IT) made possible the emergence if *virtual individual*, *virtual social* and *virtual communities*. Within the interplay of these concepts is where happens a *redefinition* and *rediscovery* of new forms of power structures and social realities. So, not only is complex social *non-virtual* reality ('meatspace') perplexing, but it is within cyberspace – and when it becomes a completely transparent dimension – where social and cultural dimension becomes unattainable to fixation of meaning. Hence the postmodernism.

Thus, the ambition of *full identification* and 'total' research is, if nothing else, inappropriate as a goal. So far, it became clear that rigid 'thesis-style' of research is in this case inapplicable, and the question becomes: what kind of research question *can* we put forward in order to approach the phenomenon as appropriately as possible? Which *is* the *appropriate* and *possible* approach? What kind of questions can we ask about laptop music? This research, in fact, tries to propose an (informed) **appropriate background** from which more detailed – theoretical and interpretive – research can be conducted. It asks a question: which socio-historical and cultural developments conditioned the emergence of laptop musician, a musican which primarily uses **one technological device** – a personal computer or laptop – connected to digital networks, conducting **research** (self-education)**, composition, innovation, performance** and **distribution** of his musical works, many times simultaneously? What are manifestations and direct consequences of this seemingly self-sustained creative activity?

The underlined question represents a notion which is *in* fact basic grounds for this research. A hypothetical reality.

Methodologicaly, the research can be observed as multitude of various approaches towards *gathering of data*, or in pomo terms: searching for inspiration. The analysis of amounts of messages on various electronic mailings lists, participation in the dialogue on them, performances at “open wire” events like london's Plug'n'Play, visits of number of events that included laptop performances, all these actions by author-researcher could be understood as **participant observation**. Under the same heading would as well suitable fall active participation in national slovene demoscene, and partially within the international counterpart, as well as many years of sporadic and hobbyist research of virtual audio publishing that emerged from the music side of the demoscene. **Discourse analysis** is seen in critical observation of web pages, literatures, various electronic files with textual and graphical content, demomags (some kind of cyberspace counterpart of fanzines). **Email interviews** are conducted with various contemporary musicans, demoscene programmers, runners of internet music labels, artists and authors. An internet on-line questionairre is programmed and numerous and various creative musicians, programmers, thinkers and writers are invitef to fill out the questionairre (see appendix X).

Although the methodology is systematic in general view, it is not considered as such in full. Concerns put forward in *methodeoretical* chapter are fully ackowledged. Methodology is here understood as multidimensional, critical as well as interpretive, hermeneutic and equally aware of structure *and* agency.

20th century music

(the invention of phonograph 1877 and radio)

The relationship of society towards music in 20th century has been gradually and increasingly transformed by two technological inventions. Electromagnetic wireless emmissions at high frequencies employed as carrier of human voice and music, in other words – radio, and inscriptions of sound into wax, aluminium and black vinyl plastic by means of a vibrating needle creating indentations or grooves. At the time, both of these inventions were hailed as revolutionary, intended for mass production, immediately marketed and were surrounded by strong enthusiastic 'visions' how this technology could be used to make a world the better place (ref.?).

In 1877, using tin foil wrapped around cilinder, Thomas Edison created a first *phonograph* that recorded sound. His idea was later improved by various scientists and researchers like both Bell brothers (Alexander and Chichester) and Charles Tainter, who all used wax instead of tin foil to create *graphophone*. But more significantly, a german immigrant in US, Emile Berliner, patented a 'sideways modulating', groove etching recording device using discs that was called *grammophone*, in year 1887. [1]

On the other hand, precedent for early radio devices, fuelled with Faraday's experiments and Maxwell's electromagnetic "laws", were created by "wireless hackers" Marconi and Tesla at the end of the century: "in 1899, after five years of fiddlling around with induction coils, batteries and primitive aerials (some of which he hung from balloons), Guglielmo Marconi equipped two ships with radio gear that issued speedily telegraphed reports on the yacht race for the Americas Cup. This little sports thrill captured the worlds imagination, and the 20th century can be said to have started on a wireless note." [2]

From the first "juke box" – a coin operating cylinder phonograph with four listening tubes – set up in Los Angeles in 1890, to first US advertisment for "High Fidelity records", and a "Duo Junior record player" attachment for radios sold for $16 in 1934[3], music and sound began to be *mass materialised*. Similarly, through proliferation of radio up until second world war, music and sound began to be *mass communicated*.

The two brotherly ideas of mass materialization and communication of music and sound represent the roots for major shifts in attitude of society. Relationships towards, understanding, experiencing, consumption of and entertainment by music and sound has then radically changed. Gradually, radio and gramophone replace the piano and singing in peoples homes. Music recordings of operas and symphonies (and later more and more pop music) can be bought in shops and brought home or to a friend for listening in family environment. While at one hand, this brings benefits to lower classes who suddenly get access to "sophisticated" and "high-brow" music, on the other hand popularisation and mass production fuel the era of popular music and 'taintment' of purity of classical serious music. Radio transmission of music are understood criticaly by, for example, Theodor Adorno as "avalanche of fetishism which is overtaking music and burying it under the moraine of entertainment".[4]

1 Lowe, James. *Jim's Old* Radios. http://www3.turboweb.net.au/~plowe/Radios/phonogra.htm
2 Davis, Erik. *Recording Angels*. Undercurrents, p.20
3 Shoenherr, Steven. *Recording Technology* History. http://history.acusd.edu/gen/recording/notes.html
4 Adorno, Theodor. *The Radio Symphony*. Essays on Music, p.252

Similarly, and probably not coincidentaly, understanding and a pursue of *art* is marked by basic requestioning of creative expression, especially its role, form, content and various contexts within which it operates and gets voiced. One of many radical departures from, and rejections of preceding music and art practices (mainly in the shadow of Beethoven's romanticism) was the *Art of* Noises manifesto by italian futurist Luigi Russolo in 1913. Apart from the manifesto which he founded on avant-garde sentiment: "*We delight much more in combining in our thoughts the noises of trams, of automobile engines, of cariages and brawling crowds, than in hearing again the* Eroica *or the* Pastorale", Russolo's impact on, though scattered, whole 20th century lies in his practical execution of futurist ideas thought the design of new noise-intoning instruments, the *intonarumori*, and new forms of notation made for them. His radical break into noise provoked positively or negatively many composers and musicians, including Debussy, Stravinsky, Satie, Milhaud, Honneger, Varese, and Cowel. It had an impact on aspects of the Russion avant-garde and Vorticism in England among others. The influence of Russolo's noise eventually waned but was then revived in the wake of *musique concrete* in the 1950s and has become widely recognized as a precursor to a range of artistic activities as the second half of the century rolls to a close.[5]

The message, or legacy, of the Futurists that seems to be echoing thoughout the century creative and art practices, is the *embracing of The Machine* as an aesthetic source of inspiration, working material, processing tool or/and even *it* consisting majority of final work. It is the usage of something seemingly inhuman and alien (a machine) for a human-defining practice (art) that provokes such a loud reverberation.

"Any sounds of any sorts, and in any combinations are natural and conceivable within a rhytmic structure which equally embraces silence," wrote John Cage in an article *Forerunners of Modern Music* published in 1949. As a prelude to his even more radical views and avant-garde compositions throughout the fifties, he sets an important precedent: any sound in any combination *can be* music. With a constant desire to challenge basic elements of music, i.e. structure, form, material and method, with regard to the duality of law and freedom[6], Cage introduced different understanding of music and compositional methods.

Cage wanted to escape, for some, the dead end of tonal and even atonal music that loomed above the composers of the time. Atonal music – in form of serialism of Schenberg, Berg and Webern – represented only a methodological change (and no structural means) that nevertheless affirmed the kingdom of a melody by forcing composers continually to make negative steps – in efforts to *avoid* unwanted combinations of sound. By observing four determinants of sound – pitch, timbre, loudness and duration – with regard to duality and necessity of sound and silence, Cage stressed that it is only *duration* that is common to both sound and silence. Following from that, he radicaly declares that the only "correct" *structure* is the one based on durations and not on pitch of a sound[7]. One of the consequences of this single, for traditional music demolishing, stroke

5 Kahn, D. *Noise, Water, Meat*
6 Pritchett, J. *The Music of John Cage*
7 John Cage as quoted in Nyman, M. *Experimental Music*

is that silence, the – at first presumed to be – *nonexistence* of sound, – but later[8] – the *silent* and unintended *sound*, becomes of equal importance as fully featured traditional pitched 'tone-sound'.

A composition firstly associated with John Cage is *4'33"*, also known as the *silence piece*, in which a musican sits at the piano and lifts and closes the keyboard lid to mark the beginning and end of three parts of the piece respectively while sitting silently during it. In fact, and contrary to popular belief of the uninitiated, *4'33"* is a demonstration of the non-existence of silence, of the permanent presence of sounds around us, of the fact they are worthy of our attention. The silence piece is not a negation of music but an affirmation of its omnipresence. Or, as Douglas Kahn puts it, the tactic implied in *4'33"* "entails rejecting the importance of whether a musical sound was present or absent within a composition and, in the process, extending the field of artistic materiality to all the nonintentional sounds surrounding the performance – that is, by shifting the production of music from the site of *utterance* to that of *audition*"[9] (emphasis added).

Another concept, or view on music, as well as a part of compositional 'toolkit', that was most prominently started by Cage and was embraced by number of artists, musicians and creatives on other fields as well throughout the century, was a processual technique using chance. As part of desire to *free* the music and sounds, composers of experimental music[10] used various chance techniques when creating scores. For example Cage used to consult the Chinese Book of Changes text *I Ching* most frequently to decide on various aspects and directions he needed to take throwing a coin or a dice. By bringing in the chance as a credible and desired *part* of the process of creating a score, mid-century music took a radical shift. The basic question asked became: *who's in control*? Which is exactly the point of freeing the sound and music that was so much desired by those feeling trapped in the dead end of harmonic system of Western music. Furthermore, releasing and spreading the decision-making process into the site of performance by instructing the performer to decide on, for example, order of pages of score to be played, opened another posibility for change in structural means for the new, experimental music.

Chance and indeterminancy suddenly taking a central role in creative process at the time meant that monumentality of a *work of a an author, a genious* started to loose its blind romantic influence. The control and fixation of the work was not desired anymore. What seem to echo from that time to the end of century is a search for non-narrative, processual, nonlinear, fluid and open work[space]s that [re]question authority, ideology and superficiality of a man over nature and life. Cage and others of the 'New Sounds time', wanted to discover the means to "let sounds be themselves rather than vehicles for man-made theories, or expression of human sentiments."[11] It appears to be an influential time, bringing about the philosophical shifts: "Art's obscured the difference between art and life. Now let life obscure the difference between life and art."

-- pierre schaeffer's musique concrete : The Sound object.

8 After Cage experienced the deafness of anechoic chamber realising there is no such thing as true silence. Even in anechoic chamber he heard his own nervous system and thumping of his heart.

9 Kahn, 2001.

10 On discussion on difference between experiemental and traditional/avant-garde music see Nyman, Experiemental music.

11 Cage, 1957. as quoted in Nyman, 1999 p.51

Until the invention of a device that *recorded* – therefore *materialised* – sound, certain dimensions of thinking about sound, voice, music were simply not possible. It was unimaginable to conceptualise about sound as something attainable: fixed and materialisticaly objective. Under influence of the futurists and later symbolism, with a new position within French RadioTelevision (RTF) and latest technological inventions and devices at his disposal, Pierre Schaeffer started to uncover the possibility of a different understanding of sound: the syntax of a *sound object*. With his persistent inquiry into 'fundamental issues of musical communication'[12], a different possible dimension of audial expression emerged.

Schaeffer's basic idea of *musique conrète* was to use recorded sounds and recorded sounds only as source material for music. As it "disrupts the system of actual and potential meanings"[13] by making the sounds unrecognisable, the practice becomes similar to abstract painting. Many scholars outrightly dismissed Pierre's diligent efforts to create a musical taxonomy of concrete sounds, to which, very possibly, further contributed Schaeffer's own dismissal of his entire career, however many, even himself, fail to recognise his contribution which is valuable precisely because he was not trained musical composer. To ask questions on the nature of musical communication, from an radio-engineering point of view, from the *outside* of the musical system, created a possibility to not even think of music but still create sound, which can function as music or not. As Schaeffer himself: "Musique Concrète in its work of assembling sound, produces sound-works, sound-structures, but not music".[14] In other words: a possibility to further explore the borders of what *is*, and *can* be music.

It would be daring, but possible to say, that the ideas behind Musique Concrète were/are unsuitable to resonate with modernist/avant-garde authority and polarities of a/referentiality and freedom/control. Especially within theoretical frames, even until now, Schaeffer's work and ideas have not received enough recognition and proper analytical attention. At the same time, it is telling that his GRM (Groupe Recherche Musicale...) studio has been known as an influential 'test-bed' and starting point for many of the prominent experimental and avant-garde composers in the mid-century. In practice, therefore, Schaeffer and his ideas *were* pioneering and strongly influential. The reverberation continues.

-- stockhausen and electronic music : Focus on electronic sounds.

One of the visitors of GRM studio and Schaeffer's collaborators was also a German avant-garde composer KarlHeinz Stockhausen. To leave ambiguity of father of musique concrète behind and to confront Stockhausen with experiementalism of John Cage, hear how Nyman puts it: while experimental composer is interested in *uniqueness of the moment*, his avant-garde opposition is an interest in uniqueness of *freezed* moment, which makes "its uniqueness un-natural, a jealously guarded possession" (Nyman 1974). This illustrates the various approaches and its consequent methodologies and explorations of 20th century composers.

However, Stockhausen is in focus here because of his use of electronic sound

12 Dack, J. *Pierre Schaeffer & the significance of radiophonic art*.
13 Kahn, D. *Noise Water Meat*
14 Schaeffer, P. ...?

and relationships between noise and tone. He studied with Messaien and worked with Edgar Varese and Pierre Boulez, but is at the same time claimed to be an influence to a diverse range of artists including Beatles, Kraftwerk, members of Mothers of Invention, and Aphex Twin. In fact, most agree he has influenced every twentieth-century composer, especially with his compositional techniques, that had astounded and befuddled his contemporaries, as he moved from conventional to serial to formula and beyond. Even ACIDplanet.com, a community website for users of consumer-level music software ACID ran a 'Stockhausen Composition Contest' in collaboration with 'the professor' in 2002. Notably, Stockhausen has been one of the first to use electronic sound and worked with complicated synthesizers in studios of national radios. His “four criteria of electronic music”[15] remain an invincible reverberation through the end of century electronic music.

-- adorno and critical theory, culture industry, popular music, academic composer and alienated audience

Through the twentieth century a visible rise of culture industry is happening, an industry bound and feed off the desire for the new, electrified entertainment. The peaking of industrial revolution, becoming-electromagnetical, and all the technological inventions that intensely comodified cultural artefacts. Music was not played and 'read' at home, behind the piano, but bought in the shop and brought home to listen to in peace and tranquillity. Transmission of opera through the radio eliminated the need to socialize in big opera houses in clumsy dresses. At the same time, *high-brow* culture reached the ears of the unprivileged, poorer town and country areas, where *an average peasant* could listen to high culture like operas, symphonies and radio-plays.

Issues surrounding these changes was taken into a heavy consideration by a German thinker that immigrated to America, who emmanated from a so called 'Frankfurt School': Theodor Adorno. His critical theory, with a good amount of focus on music, its comodification, transformation into a consumer good, is, as seen from point of today, many times under the bourden created by the horrors of consequences of fascism and dictatorships. At the same time, it opens a critical stance towards *the popular*, to asses comodification by the industry, be it music, film or books, as critically as possible. Critical theory is inclined to quick exclusivistic and absolutistic assertions, but is at the same time valuable in understanding the roots to *resistance*, and how resisting forms of artistic expression appear in order to re-question the comodification and industrialization.

One of more important socio-musical conditions that emerged in the middle of the century for an art-composer, a composer of *serious* music, was that he became more and more alienated from “his” audience. As composers searched for new sounds, radically different compositional techniques, that *freed* the music, that brought indeterminancy, chance, atonality and noise, audience kept being more and more entertained by the energy of jazz, rock'n'roll, blues and other precarious songwriting that was easily put on the record and radiowaves. This audience less and less understood the art-music of the century, as it was, in fact, becoming rebelious and resisting.

Babbitt even called for an acceptance of this situation, where, for him, the “total, resolute, and voluntary withdrawal from [composer's] public world” would enable

15 Lecture in Essen: (1) unified time structuring, (2) splitting (decomposition) of sound, (3) multilayered spatial composition, and (4) equality of tone and noise.

composer's freedom “to pursue a private life of professional achievement, as opposed to a public life of unprofessional compromised and exhibitionism” (Babbitt 1958). This illustrates nicely the gap between the audience (public) and a serious composer, who became a specialised professional. Music has become removed to those who aren't initated in peculiarities and, indeed, big dillemas that, and not only, musical profession faced at the time.

—20th century conclusions: shifting, sliding and challenging of values, roles and meanings ... breaks from the romantic perception of an artist, of creativity, of musical production

A musical sociohistorical view of twentieth century offers a picture, a sound of rumble, changes, transformations in many aspects of peoples' lives. Taking in consideration the “aural” plane—the music, sound and audio—and methods, techniques of creative expression, that are closely tied to various art-istic challenges redefining the art itself, it is possible to hear the remixing of the two infuential shifts. They are like two matrices of various forces, writings, happenings, protests and manifestos, echoing up to the end of the nineties of the century.

Firstly, the redifinition of art, most vividly exclaimed by Marcel Duchamp's urinal put into the gallery as an [ready-made] artwork. It is of course the one that signifies the challenges but is not representative of them. In other words, Duchamp's action drives into the open just one of many questions that tortured creatives at the time. From the Futurists all through the Dada, surrealism, abstract painting, John Cage, avant-garde, minimalism and Fluxus [among many], until the very 'contemporary art' of today, few are really interested in creating a grand narrative, monumentality of power to achieve the beauty and materialize a message through a metaphor. There are of course contra-arguments and important exemptions to this, and even intra-contradictions, but the fact is, most of the art [in a quite loose sense of the word] of twentieth century has a central theme of *testing the boundaries of artistic expression* by shifting basic structural and methodological concepts while reflecting on collective and individual cultural reality. Challenged are constituents and existence of notions like author, institution, gallery, nation, power, state, media, economy and individual *self*.

The second influential matrix is a large intertwined knot of post-colonial anti-ethno-centric cultural studies, feminist challenges to the legacy of *white male history* and post-structural philosophy of power and discourse. The neural cortex of these has connections to so much touted postmodernism in various forms, especially the intellectual style and pomo as a period, a lifestyle. Especially the latter – *postmodernity*, is the one representative of changes in everyday life, of cultural 'reality' which most of mentioned disciplines—art, creativity, thought and philosophy—focus on.

So it can be heard: sound of twentieth century is one of shifting values, sliding perceptions, crushing authorities, rejecting originality. It is of challenging fixation and referentiality, contradictions and truth, relativity and the Absolute living in the romantic soul of post-industrial consumer.

personal computer and the demoscene

while mit, mainframe... there was commodore, apple, spectrum, amiga, intel.

One of the crucial moments of a wide spread of personal computers—processing machines suitable for home use with appropriate software—was when they became available together with games[16]. A fairly probable idea exists, tried in multiple disciplines like economics and social sciences, that the basis of constructive advancement of human society is *play*. To mingle, explore, break rules, compete, innovatively create and to use imagination in variety of ways could be seen as the basis of progress, psychologicaly as well as culturaly. In the same way as it happened with early internet boom by introduction of electronic mail that immediately took over the majority of the tcp/ip traffic, as we will see in a later chapter, similarly was a personal computer embraced by home users when it offered gaming, entertainment and, quickly, connections possibilities.

In 1943 Thomas Watson, then chairman of IBM, outed the infamous quote, “I think there is world market for maybe five computers”, he said, and after thirty years everything was the opposite. Already in 47' a first point-contact transitor was made, and a bipolar junction transistor in 1950, two deciding points on the path to minituarization and greater flexibility in computing machines manufacturing. All the way through number of 'firsts': integrated curcuit (1958), field-effect transistor (1962), static and dynamic RAMs (1970) and a batch of *microprocessors*: 4004, 8008, 4040 and 8080 (1971-1974) made by ntel, of which was the latter followed by the explosion of microprocessors and microcomputers, until the the infamous Apple II in 1977, whose company, Apple Computers, jumped to the forefront of the sudden *pc* market niche by earning huge 7 million dollars. When IBM launched their first PC in 1981 for bare $1.365, it was clear that *personal computer* trend was not “just a *fad* that will never catch on” (Maxwell and Brown 1997, emphasis added).

Watson's exclamation is, of course, through some view, a valid one for the time. As many describing the development of field of computers in second half of twentieth century ackowledge that in 1942 computers were very big, very expensive and very difficult to use. Just for illustration of this fact is the near-historical ethimology of the term *computer bug*, that comes from a failure of one of ancient computers running on vacuum tubes into which an actual living bug of some sort found its way and caused a major disruption by burning on hot tube.

In the eighties, many of the kids in america and europe got hold of an affordable home computer, be it Apple, Commodore, Atari, Amiga or even IBM's compatible PC. One of the attractions were of course number of computer games that come with it, or were accessible trough outlet shops, as well as bundled simple programming language – like Basic. This is the point where *The Scene* starts to take shape. The term is a general one, but what it implies is, as opposed to *The Industry*, that social relationships are based on strong emotional connection to a common cause, in most cases unconnected to material goods or exchange of wealth. *The Scene* has more a smell of specialist, lesser known knowledge, understanding and passion. Usually there is a system of peer review that is a means of ackowledgement of one's skills.

---

16 Personal Computer is throughout here understood strictly as *an affordable, general purpose, microprocessor-based computer intended for consumer market*.

A body of research was done on field of so called *computer underground*, especially in connection to malicious hacking, cracking, corporate systems intrusion and phone *phreaking*[17]. However there is a kind of peripheral activity surrounding the very clearly definable computer underground, or in other words, the more transparent and visible side of the 'underground'. Despite of possible criminal and offensive prosecutions by the authorities, *pirates* and *crackers* were somehow always visible. *The Scene* [here] describes a network of computer- and network-knowledgeable individuals that excert considerable interest in computer systems, software protection methods and techniques to crack them. Skills and brave, seemingly impossible achievements are the currency of this underworld. To gain peer recognition, information about tools and breakthroughs must spread quickly and undeniably. Therefore sharing of information, home-made scripts and programs is crucial. This mode of functioning, non-hierarchical, unregulated, hidden, but yet accessible to those wanting enough to be part of it, combined with decentralized communication network, be it word of mount, buletin board systems, or internet, fulfills some of the dreams and prophecies of socially critical sci-fi literary genre of the eighties: cyberpunk,[18] which later transmutated into a lifestyle, namely with *phreaking* and *cracking*.

While most of adventurous-and sometimes illegal-explorations of computer systems, its backdoors, secret tunnels and programming languages did not function as a kind of productive step towards a, for example, social change, there was a little niche from which a whole new scene, a very creative scene sprung up. One of the activities of the computer underground was also cracking the copy-protections of games and distributing this “wild” copy as further around as possible. Not much insider (or indepth, for that matter) research exist, but cracking and copying of games and other software became a way of getting recognition soon after the introduction of first games and software for home personal computers. Those in the scene exchanged copies of cracked games or software, which came from the one who cracked it, which got the originals from the *suppliers*. “Couriers” were the ones who distributed games or other software – releases – further around. Groups started to form and competition for speed and quality[19] between them sprung up.

Crackers and cracking groups needed to *sign* their releases somehow. At first these were just added sentences to the title of the game, in smaller captions, or, as defacto2.net explains in its insider paper: *In the eighties many cracks where usually created by individuals rather then groups (groups being a collection of people who work under the same name). These individuals would normally leave a signature in the release to identify themselves as the cracker. For example on a game's title screen you might see in the bottom corner "cracked by Lord Blix"* (defacto2.net/monolog.cfm 2003).

After cracking/pirate groups were being more frequently formed they increasingly included a graphic artist and a musician (or more of them) apart from the programmer who looked into visual programming routines[20] in order to create visually more

17 The on-line hacker Jargon File, version 4.3.3, 2002, defines phreaking as the art and science of cracking the phone network (so as, for example, to make free long-distance calls).

18 William Gibson's *Neuromancer* and Bruce Sterling's *???* being the prime and most influential examples.

19 Quality of a “release” is determined by number of factors, but mainly by size and functionality of the “pack”. Pack is re-packaged software that installs and works on user's computer without copy protection.

20 Technically, routine is a set of instructions in computer program which is separated from other code to reduce redundancy, and called by other subprograms or other parts of the program (wikipedia.org 2003)

appealing signatures. These quickly evolved into animated screens, including greeting text, aliases/handles of members of the group, and sometimes even various different scenes/sequences and music. Because floppy disks were small at the time, and, later, modem lines were slow, these additional "introductions"—soon called "intros" or "cracktros"—were deemed to be as small as possible in terms of bytesize, so that they would not present an additional downloading frustration. In fact, this limitation soon presented as a challenge to coders and musicians.

Soon enough, groups specialising only in creating *computer* graphic art, real-time animation and music appeared. For example, as defacto2.net explains, "*ACID (ANSI Creators In Demand) where the first of these international groups, trend setters who originally specialized in ANSI art and ANSIMation ads. They earned their reputation at being one of the best by supporting the best pirate boards of the time.* The format of an "intro" or "cracktro" evolved into bigger, less restrained, independent 'full-blown' audio-visual *demonstrations* of skills of groups' coders, graphic artists and musicians. These are the more known *"demos"* from which a term "*demoscene*" is actually coined. At this point, the creative programming, manipulation of the code, routines, various formats of computer graphics and music became independent from the pirate and cracking scenes and provoked evolution of audio-visual forms using home personal computers.

The transition and connection between the two scenes (pirating and demo) is nicely described by a view from diskmag.de: *It all began one sweet day in the early 90s. A friend of mine did show me a computer which I didn't know so well before. It was an Amiga 500 and he was a graphician in the illegal Amiga cracking group Angels. As he was also mailswapping with other freaks by abusing his PLK, he had a good source for new games. And then it happened. I was infected by a virus that still has its influence on me from that day on until today. The illegal Scene looked very mysterious to me. A sort of underground, a complete different community with own rules. Things you could only learn from somebody that already takes part there. A few years later a good friend of me introduced me into the rules of the /X (Amiexpress) board Scene, I began trading and later drove a bbs on my own. In the year 1993 my interest changed into the demoscene but I never lost the contact to the dark side of the moon. ;-)* (diskmag.de 2003)

Demoscene has been fueled with digital communication possibilities, at first with buletin boards systems (BBSs) utilizing modems, phone lines, personal computers (as opposed to *internet servers)* and simple "home-coded" software, and later in the mid-nineties the internet. The first BBS programs were written for Apple II home computer in the late seventies. Bugy, slow and bloated[21] they provided exchange of messages of anyone who called-in. These programs, mostly written by individuals, allowed for a home computer to answer the phone call by another computer and provide an interactive interface to a dialer (user of a computer dialing in) and offer number of services like message boards, file transfers (uploads and downloads), real-time chat and games. By the course of sophistication and new ideas, these systems started to call nearest neighbouring bbs once or twice a day and exchange [synchronise] messages in specific "*conferences*". A worldwide network of such systems emerged in late eighties, called FidoNet, that was so succesfull in transcending crossnational boundaries that could not have been superceeded by anything else than internet.

21 The Jargon File defines *bloatware* as software that provides minimal functionality while requiring disproportionate amount of diskspace and memory (Jargon File, version 4.4.4, 2003)

Buletin boards offered fast and *semi*-anonymous way to share cracks, pirated material and demoscene productions (not to mention cyberpunk teksts, *phreaking* tutorials, hacking tips and cracker's scripts, among others), a first glimpse of cyberspace – a possible, and in fact a real computer underground haven. Generalisation of BBS usage is, of course, precarious. BBSes sprung up to offer communication at ease with geographicaly separated individuals and marginalized groups that would hardly ever manage to organise a meeting. These systems also fostered entusiastic spread of various *demo* releases and hectic development and forking of its formats. Intros and *demos* were quickly independent audiovisual forms as well as ASCII, ANSI, *pixeldrawn* and *rendered* graphic works. Music itself started to be released independently in a form of so called *modules*.

The *sceners*, now mostly independent of pirating scenes, continued to form groups, distribute releases of independent works and even create coded interactive digital magazines – *diskmags*. The evolution of the demoscene creative forms, social structures and means of engagement is constructed through two channels: already described utilisation of digital networks and the physical gatherings of 'members of the scene' – the *demoparties*. The demoparties consist of various *competitions* clasified in appropriate forms (intro, demo, music, pixel art...), at-place coding, drawing, composing and collectively creating the artefacts and exchange of personal contacts through various social techniques[22]. The demoparties are organized regulary in order to gather the scene (the demomakers) for several days, usually not more than three or four days. The biggest parties are known to be The Assembly in Finland, The Party in Denmark and The Gathering in Norway[23]. These gather from 3000 to more than 5000 participants. Despite of US being superior in information technology, the demoscene cradle is Europe with maximum activity at the north. According to Orange Juice, the demoscene information centre, there is *an average of one party per week* in Europe (ojuice.net 2003).

Under influence of possibilities of internet connections, personal webpages and increasingly transparent global communication through chatrooms and electronic mail in the mid and late nineties, Demoscene flourished easily. With the trend of expansion came a trend of forking. Thus, combined with higher transfer speeds the music scene gained independent groups that were only releasing music in a “tracker module” format. As opposed to more common streaming/digital audio which is in essence *a recording*, tracker modules were created with software called *trackers* and included *separated* sounds and score to which those sounds are played in realtime in a multitracked way. These module format was a necessity but at the same time an invention of the scene[24] to deal with small filesize requirements and realtime inclusion in coded visual routines. Consequentially of these technological limitations, some distinctive features of music made this way were obviously heard, so that a possible research of it could result in description of a separate genre, sometimes using 8-bit samples and small amount of available parallel compositional tracks resulting in low-resolution distortion used in a creative way.

Essentially, demoscene is an anarchical, peer-reviewed, worldwide community

22 A partial insight into which is the on-line demoscene photo archive slengpung.com

23 As of 2003.

24 But also of the gaming industry with, in fact, the demoscene in important connection. In fact number of demosceners find their work in the gaming industry.

of makers of real-time-executed audiovisual non-interactive artefacts that test the limits of technology and use programming knowledge, both available to an *average kid with a home personal computer*. The community develops its own software tools and uses free communication channels for distribution of works, tools and knowledge. As in science where a wide distribution of achievements is necessary for peer review and quotation, the demosceners fully ackowledge the freedom of distribution of the artifacts and therefore is their work available for downloading, storing in viewing free of charge and permission for non-commercial purposes[25]. The motive for months of collectively coding (programing) the *demos* only to show it ath the demoparty, to participate in the competitions and to release it to the public seem to lie in the challenge of breaking the boundaries of the available technology, learning, peer recognition, sharing of ideas and competition.

((
???
motives? :: fun, learning, peer recognition, sharing of ideas, competition,
conclusions: free distribution, own software, peer review driven, kids//?
))

25 This is undisputably demonstrated by the on-line publicly accessible server scene.org (and its crossnational and crosscontinental mirrors) which in 2003 holds ?????? files, served 22 million files from november 1999 until september 2003 and is maintaned by a voluntary team of around 15 members from around the world with help of various sponsors.

internet and free software: the network of freedom?

((Tcp/ip, technological history))

TCP/IP, the *Transfer Control Protocol/Inter-network Protocol*, one of the building stones of the network of computer networks, of the transparent informational architecture of the cyberspace, has came into being as a need to connect different networks between eachother, networks that used directly-incompatible protocols. This protocol was designed to be a glue between two or more computer networks of almost any type. As any invention, it drew from number of previously accomplished networking endaevours, mainly between universities but not excluding european and even havaian[!] research centers and computer networking efforts.

In his extremely insightful book *The Internet Galaxy*, Manuel Castells sources the birth of the internet as "the unlikely intersection of big science, military research, and the culture of freedom" (Castells 2002). Indeed, the protocol was a consequence of the need to connect ARPANET with other communcation networks US' Advance Research Projects Agency (ARPA) was managing in mid seventies[26]. ARPANET came into being as part of an aim of Information Processing Techniques Office (IPTO, one of ARPA's departments) to stimulate research in interactive computing as defined by Joseph Licklider, a psychologist turned computer scientist at the Massachusetts Institute of Technology (MIT). As part of this effort, the building of ARPANET was justified as a way of sharing computing time on-line between various computer centers and research groups working for the agency.

TCP/IP protocol was effectively developed by number of scientists through various cooperative technical groups with one single aim: to establish a stardized protocol that will not "care" *what* will it transmit, as long as packets of information reach their destination in a highly decentralized way. Decentralization was a crucial charateristic of computer networks, as this meant much more efficient and faster transmission of data between various computers. At least at a basic transmission level. On top of TCP/IP various levels of other communication and application protocols could be created (e.g., authentication, identification, interaction, control, multimedia streaming etc). However, one of the most controversial properties of this protocol was its high efficiency to route packets of data *around* obstacles, broken lines, off-line routers, etc, without central control. This feature made constutive basic protocol of the internet such a revolutionary invention.

[see John Naughton...]

"*All the key technological developments that led to the Internet were built around government institutions, major universities, and research centers, The Internet did not originate in the business world. It was too daring a technology, too expensive a project, and too risky an initiative to be assumed by profit-oriented organizations*" (Castells 2002).

However, as John Naughton points out, it would be a mistake to only resort to theories about the computer communication protocols or "the mechanics of digital replication to explain why the Net is different from anything we've seen before. For the conventional definition describing it as a global network of computer networks contains an elementrary schoolboy mistake. It makes no mention of people." (Naughton 1999)

26 Like for example PRNET and SATNET.

((richard stallman, gnu, gpl and free software))

In early eighties, an MIT hacker Richard Stallman saw the collapse of the community of programmers at MIT artificial intelligence (AI) lab, which he was part of. At the time the lab bought a new time-sharing computer that used a proprietary operating system from Digital, for which those who worked with it had to sign a *non-diclosure agreement*, many of the original programers left the lab for various reasons. Stallman found himself in a new, awkward position in which he was not allowed to share the code, the software on which everybody worked for everyone's good. After the visit to a company that made a printer that was used in the lab, to get the source code[27] for the printer driver in order to improve it and got his request rejected, he realized the world of software is changing.

Until then the community of programmers that worked in specialized computer environments, usually closely bound with scientific research, considered software-sharing as natural as is sharing of scientific findings in order to contribute to further research, development, progress. With introduction of a new market od personal computers, it was possible for software to become a commodity, a *cash-cow*. In order to return the costs of commercial development of software like operating systems, printer drivers and games, companies employed number technique of licencing the single copy of software to the its user under various limitations and conditions. For Stallman, this was, and still is, ethically wrong.

Stallman understands software as closely tied to social realm. For him a proprietary-software social system—the system that sais user is not allowed to share or change the software—is effectively *antisocial.* It is based on dividing the public and keeping users helpless not being able to even help each other. He rejects the purely utilitarian viewpoint that the only important thing about software is what jobs it allows user to do, as well as an assumption that usable software would not exist without giving companies power over the users of the software. At first, these resisting positions seem to be far fetched, but in context of increasing 'symbiosis' and interpenetration of various kinds of software into every-day life in post-industrial information society the question of control is in fact very appropriate. Stallman's resistance ultimately provokes a question of weighting between freedom and market, ethics and profit.

This MIT hacker decided to listen to his “moral” voice and set on a path of freeing the software. More precicely, to create trully free software, free as in freedom. As part of his endaevor to write a free operating system, complete with basic tools, he had to invent a way to asure the code he'll write and free cannot be un-freed in any way by anyone while still retaining the freedom for everyone. He created a *general public licence* wich assured that the code that is licenced with it can be freely run for any purpose, it can modified and redistributed, including modified versions of the code while forbidding removal of the licence.[28]

---

27 Source code: the form in which a computer program is written by the programmer. Source code is written in some formal programming language which can be compiled automatically into *object code* or *machine code* or executed by an *interpreter* [The Free On-line Dictionary of Computing (17 May 2003)]. In effect, access to source code in necessary in order to change, fix, update or improve the program.

28 In contrast to works which are in Public Domain whose modified versions can be re-licenced under a different “non-free” licence.

The GNU GPL licence, named after the name of Stallman's operating system (by hacker's tradition a recursive acronym: GNU's Not Unix) created a legally extremely powerful tool that effectively protected software that was intended to be (in whole and in part) a free software by its authors. Although often referred to as copy*left*, it is not the opposite of copyright, but rather its upgrade. It simply removes some of its effects. For GPL to actually be put legally as a licence onto a certain work, that work has to be under copyright first. In other words, without copyright there would be no (need for) copyleft.[29]

In 1985 Richard Stallman founded Free Software Foundation, continued to work on GNU operating system and travelled the states and, soon, continents to give lectures on free and ethical software. Soon enough like-minded followed and programmers increasingly found GNU GPL as a suitable licence for their work. At the time other licences appeared and today there are many of them, but none of them is as strictly aligned towards freedom as is GPL.

In 1991 finnish student of computer science Linus Torvalds created a barely working 'mini-kernel', the *heart* of operating system that serves as an interface between hardware and software, and published it under GPL licence in a internet newsgroup requesting for comments, patches, ideas and improvements from the unix community around the world. Tim Berners-Lee just created the first browser called 'World Wide Web', but the graphical web has not yet been in even born. The communication was textual, among universities and research centers, but the unix community had enough computer hackers that soon enough responded to the challenge of improving the new, Unix-like kernel. The author decided on a name: Linux.

After twelve years of continuous development, explosion of *open source* software, Linux has, in some respect, become a serious threat to the monopoly of Microsoft's Windows family of operating systems. Even more, Linux and most of open source software was created by thousands of volountiers around the world, collaboratively over the internet, just because they think it is fun, challenging and good to create free software. The combined effect of number of programms, applications and hackers themselves, their way of thinking and working through internet, created a serious threat—or at least a not so easily dismissive opposition—to now traditional proprietary software making.

Open source software model and hackerism are now being re-considered as strong cultural forces that seem to change a part of society. In fact, it can be seen as a resistance to number of societal elements, like for example basic money and work ethics. The hacker ethic is a genuinely new kind of work and life attitude that seem to be distinct from both pre-protestant as well as today prevailing protestant work ethics, which has created work as self-referential moral good *per se*. Hacker ethics finds meaning of life not in duality of '*work or leisure*' but in rising out of the nature of activity itself, out of passion, social value, creativity. More specifically, hackers motivate their activity with the goals of social worth and openness, they want to create something valuable to the community and be recognized for that by their peers. And they will allow the results of their creativity to be used, developed and tested by anyone so that everyone can learn from one another. As Pekka Himanen points out in his *The Hacker Ethic*, *e*ven though much of the technological

29 To be sure, Stallman and idea of free software is not against business, but only against proprietary software.

development of our information age has been done within tradiytional capitalism and govermental projects, a significant part of it—including the symbols of our time, the Net and the personal computer[30]—would not exist without hackers who gave their creations to others. (Himanen 2001)

((Influence of cyberpunk and libertarian ideas))

Of course, hacker ethic, the Net, personal computer, as well as computer underground, all these phenomena emerged in US under specific circumstances, out from a matrix of counter-culture resonances, echoes of european year 68 revolution, etc. In terms of observation, cultural phenomena are emergent from simple atractors that appear from the void of complexity. One of stronger visible streams from the sea of intertwined tendencies is cyberpunk vision of cyberspace. As opposed to classical science fiction literature, cyberpunk has a strong socio-critical bent. In fact, if any genre of science fiction fulfils its potential for social criticism through linguistic excess, then cyberpunk does (Clark, 1995, as quoted in Jordan, 1999). Bruce Sterling for example argues that central to cyberpunk's self-conception is that is blends fiction and social criticism (Sterling, 1985, in Jordan, 1999). Or as Steven Gibson, author of cult *Neuromancer*, said, "When I write about technology, I write about how it has *already* affected our lives" (cited in McCafferey, 1991a, Jordan 1999, emphasis in original). Two ideas in particular were prefigured in cyberpunk science fiction that have had a lasting effect on cyberspace: the organisation of information as virtual spaces and the nature of virtual bodies (Jordan 1999).

In cyberpunk, cyberspace has been conceptualised as a net, matrix, metaverse and, universally, as a place constructed out of information. It is a vision of information organization, not a free and equally open, rather an economically divided space, with various types of access to knowledge and information. In cyberspace live bodiless consciousnesses, and it's made is made of information offering great power to those who can manpulate it. Entering the cyberspace consciousness become disembodied. Today, the Net is not a world of disembodied consciousnesses having access to the sum total of human information, but of "myriad acronyms, corporate rivalries and gradually growing sources of information and opportinities to communcate with other humans." John Perry Barlow seem to be the first who used the Gibsonian term cyberspace in connection to existing computer networks, and while many have now recognised that joining together the visions of cyberpunk to the reality of networks creates a concept of cyberspace as a place that curently exists, the central insight of 'Barlovian cyberspace' is that whatever science fiction imagines might be possible, some of its fantasies have limped into real lives, no matter how deeply impoverished the textual and graphical level seem to be compared with Gibson's cyberspace or *metaverse* of another cyberpunk author Stephenson. In other words, "here we find a cyberspace in which finctional ideas inspire the construction of real computer interaction, which constitutes new networks that, in turn, inspire new finctions" (Jordan, 1999).

For Tim Jordan, author of an insightful *Cyberpower*, the power *and* paradox of cyberspace is its ability to liberate and dominate simultaneously. It more and more

30 In 1976 Steve Wozniak built, using the information shared freely within the Homebrew Computer Club, a group of hackers in the Bay Area, at the age of twenty-five, the first personal computer for the use of people without engineering degrees, the Apple I. (Castells 2001, in the epilogue to Himanen, The Hacker Ethic 2001)

appears that cyberspace, the Net and digital communication offered a coplex new world in which the individual, the social and the imaginary parts of the human[ity] could suddenly redefine and reinvent itself. The matrix of simulation to a important extent controlled by individuals and *virtual communities* themselves was an opportunity to create new social conditions, conduct cultural experiements, but above all create virtual, but yet real-simulated environments, fully suited to the needs of inhabitants. Dreams could be realized within a simulation, while simulation has been becoming the only real (Baudrillard?).

((oekonux and open cultures))

The impact that free software and open source had in the world of software, in fact its fascinatingly tremendous functional *and* ethical power it had on lives of the signifant amount of people, brough in attention of social and cultural theorists, postmodern writers and contemporary thinkers to ask whether its model can be brought out of purely software engineering circles. It quickly became evident, especially by understanding software as something that more and more permeates the lives of all, that (1) even by being confined to software engineering it is infuential in other realms of peoples lives, and (2) that it has already inspired number of non-software projects. One of exemplary the efforts is german-based initiative, or rather a debate circle/mailing list Oekonux, who already had two conferences and are preparing a book. The idea behind the philosophical debates is the question if the way how operating system Linux has been created can be applied to economy and society 'at large'.

The other trend that in fact swept around number of cities worldwide, though connected to computers, are open wireless networks. One of the greatest messages that free software and open source brings across is that opennes and sharing in digitial information world does not necessary mean loss of property, and further, that digital property is much more beneficial to humanity when it is freed and disclosed then when it is hidden behind high fences.[31] In this sense, and within context of a *public* free-licenced radiowave band at 2.4GHz, initiative sprung up that encouraged installation of wireless equipment that enables network connectivty of computers in smaller *neighbourhood* radius and thus connecting local *meatspace* communities without the need for high investment and nationwide ISPs. Even more, users of such equipment are encouraged to open wireless nodes for free access to local services, including the gateway to the Net. Such practice, which has proven to become widespread, is directly connected to the spirit of open source and free software.

Conclusions...

"*The Internet is, above all else, a cultural creation,*" wrote Manuel Castells, one of least utopian sociologists who researched Information Age that is cautous and wary of any form of 'futurology'. Despite of strong privatization and commercialization of the Internet, its culture has proved to indeed be an open one. In june 2003 at the *Open Cultures* conference in Vienna, among various speakers and activist ranging from art curators to activist programmers from open squated cyberspaces, a lawer working for Free Software Foundation for free, Eblen Moglen held a slow, extremely persuasive lecture in which he, after describing winning battles for free software called for liberation of hardware

31 Of course the issue of privacy and anonymity is part of different attitude among hackers and alike. In essence these issues are highly regarded as important in a sense that the right to privacy and anonymous communication is one of most basic rights a *netizen* must have.

and bandwidth.[32] The undeniable example of success of free software, resulting in fully operational and usable operating system with all applications a digitally-literate contemporary wo-man would need, with complete source code and 'no strings attached' for a full program-away, fully used in underdeveloped countries like India, proves that an open, sharing, freedom-loving attutide can and does bring about a greater social good. The internet played unmistakably crucial role in establishing worldwide global resistance to privatisation of human knowledge and thought while openning an open field, a plateaux of liberated imagination for most daring mediated creativity and human expression.

32 See opencores.org and consume.net, as well as opencultures.t0.or.at.

recording industry in 21st century

(([very!] quick history: origins of music industry))

In the early years of the phonograph in late 19th century, the music industry was dominated by the publishers of sheet music. With the start of 20th century the importance of recorded sound grew in the business, and about the end of the first World War records supplanted sheet music as the largest player in the music business. The business has largely been dominated and controlled by the record industry, as the economics of mass-production of copies allow the manufacture of valuable music recordings for a tiny fraction of their sale price. There have been repeated allegations of illegal price fixing by the record industry. (wikipedia.org)

As put nicely by Simon Frith, "the history of the record industry is an aspect of the general history of the electrical goods industry, and has to be related to the development of radio, the cinema, and television. The new media had a profound effect on the social and economic organization of entertainment so that, for example, the rise of record companies meant the decline of the music publishing and piano-making empires, shifting roles for concert hall owners and live-music promoters." (Frith, 1992)

The effect on social and economic organization of entertainment meant also profoundly different ways of consumption (if *consumption* existed before late capitalism) and shifting and sliding of values, signifiers and general semantics propagated by the recording industry. One of starting points in understanding of contemporary dilemmas the music and recording history face lies in its roots, in mechanical reproduction and repetition, a loop, radio-televised electromagnetic mantra, where art-work becomes a meme, audio-visual sign that through repetition hypnotises the mass audience. "*Quantity has been transmuted into quality. The greatly increased mass of participants has produced a change in the mode of participation*." (Benjamin, 1935)

((Critical Theory: Culture Industry, mass production))

In fact, it si through the eyes of Critical Theory that it is possible to understand the *infotainment* phenomena of the end of the 20th century, like for example *the celebrity* among others. Despite of this critical philosphical stance's extremity, the concept, and frankfurt school's further exploration, of the *culture industry* still enables an astonishing perspective into *mechanics* of mass deception and consumption. In an elaborate context Adorno and Horkheimer write: "The culture industry perpetually cheats its consumers of what it perpetually promises." (Adorno and Horkheimer, 19944)

At the end of the century that state of recording industry is polarized between major five record and distribution companies – the *majors*[33], and so called independent labels – the *indies*, which aren't, however, so independent as they often need to utilize the distribution channels of the majors in order to have a distribution at all.[34] Despite of the fact that competition between the majors exists they are usually prepared to step together for the common cause – which would include lobbying for majors-favourable legislations, investing in copyright-protection technologies and mechanisms, and making sure small players in the industry do not become big and too threatening. This situation, of course,

33 The majors, also commonly referred to as the "big five", are Sony Music, Universal, EMI, Warnes Brothers, and MBG (Bertelsmann Music Group)

34 Apart from that, many smaller labels are increasingly owned by the big five: Geffen, Atlantic, and Virgin records have been brough under greater umbrellas of Universal, Warnes, and EMI, respectively.

hints at a high level of monopoly by seemingly unconnected competitive companies, and thus at a concentration of power. The consequence is a very high cost of consumer products that are relatively inexpensive to make, and streams of profit that return to the major labels, "the bastions of wealth and prestige that have the capital to dominate the markets, from the airwaves to the chain stores and the networks of physical distribution." (Alderman, 2001)

This domination of big players in the record industry, excluding authors, has been sustained by way of the particualr shape of copyright legislation and crossnational conventions (e.g., Berne convention) that are increasingly seen as not protective of author's rights but of big profit industry players. Indeed, it is a fairly overlooked fact that it was the publishers who pushed for copyright legislation in 17th century (Licencing Act 1662, Statute of Anne 16??) and their view was that copyright protection is something given to books published by authorized publishers (according http://www.patent.gov.uk). At first an excuse for state-approved monopoly for a work, the notion of *authorship* got further fuelled in romantic frenzy cult of genious, giving the publishers opportunity to strengthen the case for protection of authors rights.

The very technology and reproduction-enabling inventions that had *made* the infotainment industries had continuously been their greatest fear and enemy. Because for every new reproduction and transmission medium invented, the plateaux of reproduction-monopoly control had to be expanded, which everytime meant a possibility of breaking the status quo, a state of stillness within which consumer could be cought in a loop without a choice. If progress would stop, control would be perfectly excerted and profits would never cease. The smell of self-collapsing capitalism.

((the meaning of copyright law (lawrence lessig) .. intellectual property?))

The recording industry, specifically the "big five", use their own Recording Industry Association of America (RIAA) for watching out for their common interests in United States and around the world. Since 1952 when it was formed it is lobbying Congress to pass favourable laws and taking on their adversaries, usually in court. Last decade has been especially difficult for RIAA. In fact, "the advent of the Internet has been a relentless series of wrenching headaches and embarrasing mistakes for the music industry" (Alderman, 2000), as something, that was confined to inscription in the very tangible plastic disc, suddenly lost the apparent need to be inscribed anywhere but could seemingly exist in-between, inside the electromagnetic imaginary,[35] in this non-existant, virtual place, the cyberspace, freed from the confines that defined it. Or, paraphrasing John Perry Barlow, the author of *Declaration of Independence of Cyberspace*, "*the wine lost its bottle*". Music, in its nature already so intangible, has been freed from the cage, from the packging that made the music market possible at all.

((sounds of the free networks, mp3)):

Similarly as with software, which could be considered as *a collection of ideas*, that found a life on its own when two realized concepts of the Cyberspace and Free Software cought their resonating frequency, music became first kind of information other than the hyper-text, that wanted to be free. Already in 1995, a former Microsoft VP Rob Glasser, with a great interest in the "nexus between media communications infrastructure and interactive digital technology", introduced RealAudio to the internet masses. However,

35 Davies, in Undercurrents...

Real was an internet equivalent to radiowave broadcasting, and with target employ-ers being radio stations it represents a common mistake: replicating the mediated experience of already established non-Net media onto the Net. The cyberspace's most radical technologies *re-define the simulation* to create new conditions within which a more flexible environments are expirienced. Real was embraced by companies, some netizens, but the revolution was about to come in form of mp3.

"MPEG 1, Layer 3" format, shortened MP3, enabled high quality audio recordings, in near-CD fidelity, that were ten times smaller than uncompressed CD digital audio, was copiable costlessly between computers, over the digital networks. In contrast to Real, this was an equivalent of a compact disc with a twist: it was *almost* free.[36] It could be copied indefinitely and nothing in the format specification could be set up that way that it would prevent it.[37] Mp3 made music free, it made it behave like a pure information and therfore subject to the same "desire", as understood by Barlow when he exclaimed that "information *wants* to be free".[38] (Barlow, 1994)

((napster, artists and status quo)):

Music wants to be free as well, so after mp3.com - a site that offered many features to unsigned bands and artists (like cd-burning and ordering from merely uploading mp3s by artist) -, the infamous Napster came along and provoked an uproar. After launch in june 1999, the application written by three young hackers who met on chat network (IRC) spread with lightning speed among all those who felt what music they thought they owned really "desired". Napster avoided the problems of all previous efforts to use the Net as distribution for music files. These efforts usually included a technique of serving the music files from a web page or ftp server, waiting openly to be discovered by the RIAA that subsequently usually requested from internet service provider (ISP) or university to take the public files off-line and disable the user's account. The web is like a bulleting board. Napster on the other hand seem more analoguous to telephone: by looking into yellow pages seeker of certain artist's music finds the right phone number that leads to the owner of a copy of music searched for. Napster connected music owners[39] themselves using their own computers as 'servers' of music files as well as 'browsers' browsing other sharer's repositories of files. This approach bypassed the 'rented' web-space from ISPs and therefore their control and censorship. The marginal cost of music on the Net was zero.

Napster had one flaw, however, that in the end helped the industry to shut it down (or bought out / found guilty of infringing copyright): the "yelllow pages". The very location of music files is at the user's home computer's hard drive. Napster is not an application specifically written for sharing "copyright infringing" material. The exchange of

36 As it turned out, after the mp3 explosion on the Net, Fraunhoffer Institute, who created the codec/algorhithm wanted revenue from the whole boom and started charging the makers of software encoders a special licence. Consequentially, this tactics disabled any possibility to make a m3p encoder that would be Free Software.

37 As opposed to Real streaming format that would enable listening to the audio streams but not saving or copying music.

38 Of course, Barlow is not the original author of the attitude. The understanding that information wants to be free has been around from the early beginning of communication networks.

39 Here the seemingly "wrong" use of *owner* of music is deliberate as an opposition to rhetoric of the recording industry, who are continuously decieving the public into thinking that ownership of ideas [f.k.a. Intellectual property] can be treated the same as ownership of the real estate property. It is a much complex issue than many want to present.

files is being done over the Net itself and directly between users. None of these are directly involving Napster as a company into act of "infringing copyright" but one: keeping indexes of all files in the network on their servers – the yellow pages.

((2nd gen. p2p, stealing revisited))

The field of debate is a varied one. From one extreme to the other, a cloud of ideas, propositions, efforts, business models are put forward, everyone is looking for a solution that would offer intangible music to users, at the click of the mouse, and, at the same time, keep the industry alive. At the extremes, file sharers would be the happiest bunch in the world if the music industry would dissapear, while the industry until not so long ago kept its eyes closed and wanted the Net to simply go away with all the troubles it is bringing. It is not quite clear why the industry is so unflexible in seeing a *market niche* in the cyberspace, but many attribute its slow "brain-pace" to a strong incentive to keep things as they were, to keep the status quo where consumers as well as artists can be exploited, decieved, blinded with simple advertising ploys, promises and celebrity spectacles.

After napster number of second generation peer-2-peer appliactions appeared. One of them was gnutella, a Napster-like sharing program but without the need for any central servers to store the "yellow pages" of all the files. Gnutella worked in a similar way as the TCP/IP protocol: by telling the neighbours where is what and this way routing around. In other words, Gnutella users themselves with their computers serve as ad-hoc indexing services for the near area of the gnutella network as well. This second generation of p2p technology was created with much deeper concern for privacy, control and evolution of the Net. Like for example another open source free software intended to be a publishing system completely resistant to any censorship, Freenet. In essence it is almost like web-page serving system with a difference that one file is shared among many hosts, therfore exists in many places at the same time while it is impossible to find out where *exactly*.

One of the main programmers that pioneered the internals of Gnutella network, sadly late Gene Kan testified before the Senate Judiciary Commettee in june 2001, advising record industry that "the toothpase is already out of the tube," and it would be to adjust their businesses to the new reality of file sharing, as opposed to ban it.[40] And indeed, the very consequence of aggressive industry using every power it has to excert it on file-sharers and endeavours like Napster, is that file-sharers will write themselves sharing platforms completely decentralized and therefore impossible to shut-down or control. Which also means that very little chance is left to excert *any* copyright protection at all.

((the rhetorics of piracy))

It is not characteristic of the recording industry only, but to sofware business as well, that one of strongest notions which self-referentialy make a case is *piracy*. It is also frequently use in other form of "stealing intellectual property", and "stealing music". Some analogies go so far to compare copying a soundfile to taking away money or stealing Cds from the shops. These acts are many time followed by rhetorics of "stealing from the artists themselves" and "contributing to downfall of creativty". These claims are part of ideological campain directed toward creating a psychological opposition on form of guilt and morality.

40 Wired News, 09 Jul. 2001, *Quiet, Sad Death of Net Pioneer*. wired.com

Many think this kind of tactic is part of pro control and continuing exploitation propaganda. The argument against being that exchange of creativity, appropriation, quotation and reinterpretation have been and still are crucial elements of artistic and creative progression and evolution. Or as *virtual reality prodigy* Jaron Lanier wrote in 1999: "*Piracy is a phony issue that record labels are hyping to rip off artists. Piracy has always existed. That's why there's a mountain of blank cassettes in any big electronic store*."[41]

((changing face of music consumption today and conclusions))

The way music is consumed has changed radicaly in twentieth century. Technological inventions created a fertile ground for a wider and global distribution of creative musical works mediated through radio, television, vinyl record, tape, compact disc and other laser and digital formats for professional and consumer use. Musicans, composers, artists and bands were able to reach worldwide public. This was exceptional. However, culture industry is inherently problematic for its top-level strategies that result in deception of the public and artists themselves. The music industry today relies on legislation that is a direct descendant of one pushed forward by publishing industry in sixteenth and nineteenth centuries to gain short term monopoly over the works of art under the excuse to protect author's rights. With advent of costless copiing, instant worldwide communications, where singing and free speech in "real" world has an equivalent of copying in cyberspace, and where thought is formalized identicaly as a sound recording, authors *and* consumers need to be protected from the industry's attempt to enforce monopoly on knowledge.

41 New York Times, 9 May, 1999. Jaron Lanier: *Piracy is your Friend*.

freed music and virtual audio publishing

((from demo/tracking scene to virtual audio publishing)):

After the huge expansion of the internet and sudden availability of tcp/ip connectivity in america and europe, through universities and commercial sector, demoscene 'attutude' and possibilities it offered quickly spread around. Anyone with an interest in music and bit of exploratory talents could soon enough find *trackers*, programs that enabled composition of music on a home personal computer, written by demosceners themselves. In the very beginning these programs that were in fact a combo of sequencer and sampler, even used the little computer speaker usually used for beeps for errors as an audio output. A more adventurous ones could put together a so called *covox*, a knot of basic electronic parts and pieces soldered together and connected to printer port that gave out a stereo phono-jack output. Extremely DIY and extremely affordable for kids using amigas and 386 IBM-compatibles Pcs.

As alredy described in chapter on demoscene, musicians within the demoscene began to form independent – tracking – groups, that were releasing music in *tracker module* format over bulletin board systems and soon enough over the internet. Many such self-thought computer musicians simultaneously found out about the demoscene, which hints at a situation in which the demoscene ceases to be a *pre*requisite for one to become a *tracking musician*. Tracking scene showed examples of music groups using all the tactics of the demoscene but never really claimed belonging to it. However, the borders are extremely blurred on this issue. In any case, this scene used demoscene-created software, the same release-tactics, file-formats (tracker modules) and art-work attitude (free to use and distribute for noncommercial purposes, seek permission otherwise).

With introduction of mp3 format and greater availability of higher bandwidth, cheaper webspace[42] and on basis of already established tradition of full self-organisation the format of tracking groups usually consisting of geographically proximated friends changed shape in some instances. Releases were not mostly from good friends anymore but were accepted from around the world as long as they passed quality or style control by the person running the group. Music was not necessarily composed using trackers but any kind of software and hardware, and distributed in form of mp3s put on the [many times] carefully designed web page. The *tracking group* evolved into *netmusic label*. As *Goodstuff, the netmusic guide* – a 'high quality netmusic review site' – explains its philosophy: "*this site is dedicated to quality music, made by musicians from the netmusic scene which has grown out of the international demoscene movement which started in the early '80s*." (konsumer.de/goodstuff)

((theralite))

One of many such *netmusic labels* was Theralite[43], specialized in different electronic music styles like techno, breakbeat, experiements and drum'n'bass. It was run by one of the very few, if not the only one person from Croatia who was aware of netmusic scene. Named Argus, he sustained number of contacts with various musicians over the IRC chat networks to create a steady stream of releases in years from 1998 to 2000.

42 Number of demoscene and trackerscene-focused non-profit advertising based sites were active that supported the scene by providing free web-space.

43 Its original address was theralite.avalon.hr, which is not available anymore. However, archive.org gives an insight into the web page while the releases are available at ftp.scene.org

Theralite released a bit over hundred releases in tracker module formats and in middle of 2000 switched to mp3 format of releases after which of 15 releases suddenly froze. The direction the label was run by Argus was ackowledged and very positively considered in the scene in terms of quality, regularity and clean visible representation with web page design that communicated dedication to releasing.

Monotonik.com

Another example of highly ackowledged netlabel that traces its roots clearly in the demo/tracker scene while it is today possibly the most widely known – still active – is *monotonik and friends*[44]. Started as independently run very loose tracker group whose founder actually composed couple of songs that quickly acquired memebrs around the world while still considering submitted and passed songs by non-mebers as *guest releases*, it was dubbed as 'The Ninja Tune of the Net' at some point. Its first releases in 1996 were in tracker module formats covering quirky breakbeat and techno influenced electronic music. The label had couple of 'restructurings' in terms of creating sublabels[45] and even an initiative to morph into 'real-life' record label, the endavour which was abandoned by the founder Simon 'h0l' Carless. Monotonik switched to mp3 format in midddle for 99' and it keeps on regularly releasing music by independent artists once or twice a month. This project owes a bit of its reputation also to the fact that Carless was nominated as one of the experts of Prix Ars Electronica 2001 in category Net Vision/Net Excellence. In fact, Simon has a strong background as a scener and is now working in game industry in US. One of the interesting features of monotonik releases or the way Carless runs the netlabel is a considerable number of releases from artists that also have releases at independend electronic "real-life" record labels. It seems that today (2003) the border between what has left of tracker scene and indie IDM record scene has, at least through monotonik, become increasingly blurred to the point of unrecognition. Monotonik virtual label web page was visited by xxxxx visitors in xxxx 2003.

((tokyodawnrecords .. reavmping catalogue, labeling modules as open source))

A netlabel that also reflects certain efforts in connecting the net distribution methods with more tangible music products in a different way is Tokyo Dawn Records. Focused mainly on hiphop-influenced and jungle/drum'n'bass music it is run by germany-based Prymer, who simultaneously of running the virtual netlabel, releases drum'n'bass singles at real-life record label. Since 1997 Tokyo Dawn Records release music in module format, later introduce mp3, but then sometime in 2000 Prymer "revamps" their whole back catalogue, deletes number of releases from ftp server, converts all mp3s to ogg format[46] and labels those in tracker module format as "open source". As a matter of fact, the awareness of open source is not so surprising, as Tokyo Dawn Records web page features a full excerpt from Manifesto of Futurist Musicians by Balilla Pratella calling for rebellion against institutionalized forms of knowledge and creativity, tradition, imitation of the past, etc. The web page and other texts also clearly state that TDR is "*an idealistic, non-profit-orientated, friendship-based group releasing free music online*." (tokyodawn.org)

---

44 monotonik.com

45 In fact, the label was at first called only "mono" and later split into breakbeat part "mono211" and more techno, electronic experimental and idm part "monotonik".

46 Ogg extension belongs to the first open source free multimedia audio and video compression codec developed by vorbis.org. It is meant to replace mp3 and number of proprietary video codecs.

((notype.com))

From the roots completely other than the tracking and demo scene is a netlabel of “freed” music called notype.com. At first meant to be a full featured visual/press/audio net.zine in 1998, but other sections were eventually dropped and all that was left was an experiemental “drones” releasing web-page. It is run by canadian contemporary electroacoustic composer and graphic designer David Turgeon and in essense functions exactly the same way as previously described net.audio labels. It also features a short but strictly defined licence for use (as opposed to many majority of other netlabels). Notype release experimental, mostly electronic music of artists from canada and features diverse and ear-provoking array of music works. It is an example of a net.label whose starting points seem to be unrelated to the demoscene.

((soulseek-records on scene.org))

Another peculiar connection between online distribution chanells offered an exploration of scene.org's ftp servers. One of the directories in the music section is called *soulseek-records* and it actually contains compilations released by soulseek. Soulseek is in fact a file sharing p2p application which is an almost direct clone of the Napster. It uses one central server to store the indexes of user's shared files and didn't get shut down by the RIAA mainly due to the fact that most of music files traded on soulseek network comes from the small experiemental labels. It is an ideal place for leftfield electronica, off-beat hiphop and similar non-mainstream genres. Creators of the network decided to use peer-to-peer for what was mentioned many times in p2p debates: to promote unsigned artists. The mission statement of Soulseek Records is therefore to “*prove that musicsharing is not the evil demon that many believe it to be, but rather that it can actually be the foundation for a positive new relationship between artists, labels, and listeners*.” (soulseekrecords.com) This non-profit label actually realized a new way of virtual audio publishing, releasing compilations of unsigned artists, a way for which is strange that no one has really realized it until now. The peculiarity of finding a folder dedicated to Soulseek Records on scene.org's ftp server is based in the fact that the demoscene and its self-organization efforts were left unobserved, nonutilized and somewhat marginal.

((summary/conclusions))

The examples above show that the demosceners where probably the first to utilize the Net in trully DIY manner in the context of free music. The movement away from the demoscene origins was probably the main cause for blurring the boundaries with other creative “scenes”. The net.audio publishing also clearly demonstrates the bypassing of traditional (20th century?) music industry conditions and practices to freely distribute musical works without opposing it. Despite the fact that there are cases when a virtual label removed releases from the internet because the artist signed a contract with a record label[47], the power of free distribution seem to reverberate strongly.

47 Couple of opposite cases exist where record label released a full-length album from which about 50% of material was previously released on virtual music labels. Specifically Lackluster's *Container* at Defocus and Esem's *Serial Human* at Merck.

microsound community and other laptop music primers

Microsound community, Curtis Roads..

On of the places/spaces where there seem to be much talk about the role of a laptop—lightweight mobile personal computer—in production of music is the *.microsound* community. In essence a mailing list dedicated to DSP (digital signal processing) aspect of manipulation of audio and 'contemporary' music composition practices. As the recently updated web-page proclaims, *".microsound presents itself as a forum for the discussion and exploration of a more general 'digital aesthetic' manifesting across a wide variety of styles and disciplines – from academic computer music to post-industrial noise to experimental ambient and post-techno*." The concept is to encourage topics of historical, conceptual, or experiential relevance to [post]-digital music.

The community produces traffic of approximately ten to twenty messages a day which range from short utterances as comments to other's posts to fairly elaborate theoretical perspectives concerning contemporary phenomena, and anouncements of events and playlists of radioshows. The name microsound can be traced to the title of the book by Curtis Roads that explores sound synthesis techniques and algorhythms based on a new previously hardly possible sonic-manipulation paradigm: access to microscopic particles of sound by way of digital sound editing tools and dsp. The increasingly more powerfull computers can use micro-samples as building blocks for the low-level sound synthesis. One of more known such techniques is called *granular synthesis*. Road's Microsound book is considered as an exhaustive, almost defining research in the field.

((max.msp, laptops, mailing lists, web-projects...))

Judging from the messeges in the mailing list, members of microsound are mostly musicans themselves and they almost exclusively use a personal computer for sound synthesis, editing, sampling, sequencing, and composing. However, because the focus of musical composition are the intricate details of complex sound synthesis, sometimes sourced/generated exclusively in the digital domain, in other cases field recordings or samplings being subject to extensive deconstructive process, the choice of software and especially its flexibity becomes of great importance. Most of consumer-market music software is created to be easy to use, offering predictable results and quickly deployable presets and banks of sounds.These tools do not offer enough flexibilty to explore the field of experimental innovative sound synthesis. *.microsounders* therefore rather choose a highly flexible environment that would enable great number of combinations, linking components, sound sources, waveform generators, mathematical functions, like patching cables on old modular analogue synthesizers. Which is precisely what MAX/MSP manages to deliver in digital domain. It is in fact an object-oriented programming environment that uses graphical representation of mathematical functions, sound in/outputs and generators to allow for composer to use and connect them in indefinitely different and any desired way. By help of graphical environements, basic interface elements like buttons and sliders, it enables high level of innovation on multiple levels: sound synthesis, time-based level, interaction level and performative level. It also enables for a pathc to be exported as a standalone application that could be run on other computers without the need for the native application.

With eliminated need for external musical equipment (apart from very usefull one or two small midi controllers) composers, that long ago became synonimous with

musicans and vice versa (not to mention programmers), have therefore moved their entire studio into computer environemnt, the desktop. Furthermore, those who were performing and touring, or any way traveling, quickly understood the ultimate most logical solution: the laptop. It sounds scarily similar to advertising campains with phrases like "*all in one solution*", however after more than thirty years of increasing informationalization of human activities, if not total computerization, the *laptop* as a device represents the ultimate multi-tool for communication, expression, work, entertainment, etc. In other words, with present context in mind, it is, if nothing else, a very usefull tool. And microsound musicians use it.

Apart from sharing experience, knowledge and much talk on "laptop musician", microsound members also collectively collaborate in microsound on-line music projects. These usually revolve around a particular issue mostly raised in the discussion and called for by the founders/owners of the list. A call is made with instructions which soundsources to use, what particular technique or process to use and to upload finished works to microsound server in mp3 format not long after a project web-page is made with all the works online. One such example is *The McDonna Project, A Microsound Reconstruction* which uses and "deconstruct" samples from Madonna on-line remix project and feeds off the discussion on effects and tactics of most powerfull sign[ifier]s of mass produced popular culture artifacts and phenomena: Madonna and McDonalds. (microsound.org/mcdonna)

((Kim Cascone: laptop perfromance, the aesthetic of failure))

One of the co-founders of .microsound project is Kim Cascone, a sound artist with background in music and electronics and more thatn 15 released albums of electronic music. He also writes for Computer Music Journal and Artbyte Magazine. He performs with a laptop, gives workshops on MAX/MSP and writes about *glitch* and laptop music. His writings on usage of a laptop by musicans is geared towards strong opposition against *pop culture*. He sees laptop music and performance in a context of "aesthetics of failure", so called *post-digital* music that emerges from the failures of digital technology: glitches, the source for new sounds. The glitch music movement of digitally fully literate artists is closely connected to *power tools* combined with the Net: "*Computers have become the primary tools for creating and performing electronic music, while the Internet has become a logical new distribution medium. For the first time in history, creative output and the means of its distribution have been inextricably linked*." (Cascone, 2000) In another paper Cascone writes that laptop music is a result of rhizomatic growth, the consequence of technology that liberates the user and changes the way they organize their work (Cascone, 2003). He observes the audience reactions to a laptop perfromance and finds it as a site of conflict in which *society of spectacle*, *counterfeiting aura* and passivity of audience interact and provoke in a mix. For Cascone laptop musican – with his motionless performance – represents parasitic resistance to super-culture pop industry.

((share, NY))

Use of mobile computing, however, exists in many different cultural settings. One example is "Share", a New York weekly sunday gathering of portable equipment and its creative owners for an audio-visual feat in a three room bar featuring live performances, realtime video-art mixing and laptop jamming using various server software. As their web-page describes: "*open jam / walk-in sets: prepared and spontaneous music from 4+*

simultaneous performers in 3 rooms. bring your laptop/gameboy/groovebox/keyboard and an rca or 1/4" cable to join. this is the time and place to: perform a pop song you've written, try out that new max patch or software, hear your composition on a large sound system, improvise rhythms or melodies, get feedback on your latest project." (share.dj)

In London exists a similar, though *monthly* event, also on sundays, called Plug and Play. It allows people to "plug in their laptops or any other a/v technology and play music they have made or interests them and project a visual output." This kind of event also blends the distinction between audience and perfomers as audience *is* performing and performers are *auditing*. Happening in a one-space bar under the pavement, providing internet access, sometimes even WiFi (wireless) for laptop owners it does not attract masses and is entertaining, relaxing and filled with innovative sounds and video projections.

The 'laptop music' meme also cought bigger institutions, as ICA, the London's Institute for Contemporary Arts, in 2001 and 2002 staged series of concerts called Laptops Live that featured established names of contemporary electronic music scene where most of them indeed used laptops for their performance. However, the use of laptops is much more striking at occasions when its mobility is pronounced by the context. Smallfish is indeed a small record shop in central london that about bimonthly features a free "instore" performance, frequently by more than one artist. Invited to bring their favourite drink and allowed to smoke, interested audience stands by the cd-racks and enjoy a perfromance by an artist nodding her head to the beats in a glow of laptop screen standing behind the till. Everybody enthusiasticaly applaud at the end and while the next artist already starts the previous mingle into the audience to freely chat with her listeners.

((Arden duul_drv europe tour.))

In summer of 2003 Arden Hill, canadian minimalist sound maker and painter had a European tour. He performed in London, Amsterdam, Paris, Berlin, Vilnius, Copenhagen and Ljubljana. He is on microsound list and so far (2003) released three full albums, and appeared on more than ten compilations. His tour seemingly wasn't intended to make any money but just to make it through without serious personal investments and especially to meet new people and see new places. For his performance he used a laptop and external mouse. Software he used was Audiomulch, a shareware *interactive musician's environment* software whose beta-stage versions are a free download.

conclusions

The relationship between a human and music, if such separations are possible at all, with all local manifestations and dependencies on cultural, economic and social realm, has been subject to radical change throughout the twentieth century. It has been frequently shown in what ways have recording of sound pressure changed appreciation, habits and consumtion of musical works. It has been also demonstrated how the changes have subsequently changed music production. It is still hard to hear deeper, maybe even philosophical implication of these changes.

As part of artistic and academic changes, music left its strict tonal framework of control, already long screaming from chains of cult of genious. Resistance to rationality, enlightment and restraining tradition has forced composer to reach for new paradigms. These, once discovered and used, contributed to changing perspectives on questions of music and sound, art and expression, institution and communication. Every sound could become music. The perspective is free.

The advent of personal computers, its quick spread across developed countries set imagination of the skillful free. In combination with first digital networks, using existing communication infrastructure, a networld of new spirit for creation was released. Realtime audio-visual artefacts, made a simple point: knowing the code means power to create the means to create: power tools.

The Net, with a deserved capital N, enabled resonances to resonate. As cyberworld openned a dreamplace, it was unlike any other, because it was so real. While the new medium redefined body, self and notion of information, censorship almost didn't existed and liberties were discussed in an open, free dialogue. Questions of freedom and ownership, combined with new hacker ethic created an imense amazing collective work: free and open source software. Freedom stands for information as well. Power redefined.

Costless copying and transmission of digital data, combined with DIY attitude made music more etheric as it is in radioether. “Access for all” makes the middlemen obsolete and it all seems nobody really needs them. Music is free and for free. Rethink: value.

Laptop music is a new mode of musicianship: fusing education, composition, innovation, performance and distribution in one technological device.

“Composition is inscribed not in a repetitive world, but in the permanent fragility of meaning after the disappearance of usage and exchange. It is neither a wish nor anxiety, but the future conatined in the history fo the economy and in the predictive reality of music. It is already present—in its fragility and instability, in its transcedence and fortuitousness, in its requirement of tolerance and autonomy, in its estrangement from the commodity and materiability—implicit in our everyday relation to music. It is also the only utopia that is not a mask for pessimism, the only Carnival that is not a Lenten ruse.

It announces something that is perhaps the most difficult thing to accept: henceforth *there will be no more society without lack*, for the commodity is absolutely incapable of filling the void it created by suppressing ritual sacrifice, by deritualizing usage, by pulverizing all meaning, by obliging man to communicate first to himself.” (Atalli, 1985)

((Tobias c van Veen: Laptops and Loops))

bibliography

Adorno, T. and Horkheimer, ??. (1944) "The Culture Industry: Enlightment as Mass Deception," in *Dialectic of Enlightment*. Marxists.org

Alderman, J. *Sonic Boom: Napster, P2P and the Future of Music*. London: Fourth Estate

Alvesson, M. (2002). *Postmodernism and Social Research*. London: Open University Press

Atalli, J. (1985). *Noise: The Political Economy of Music*. Minneapolis: University of Minessota Press

Barlow, J.P. (1994). "The Economy of Ideas" in *Wired*...

Benjamin, W. (1935). *Work of Art in the Age of Mechanical Reproduction*. http://www.student.cs.uwaterloo.ca/~cs492/Benjamin.html

Cascone, K. (2000). "The Aesthetics of Failure: 'Post-Digital' Tendencies in Contemporary Computer Music." *Computer Music Journal, 24:4 Winter*. MIT Press?

Davies, E. (2002) *Recording Angels: Esoteric Origins of the Phonograph*. in Young, R., ed. *Undercurrents: the Hidden Wiring of Modern Music*. London: Continuum/The Wire

Davies, E. ... TechGnosis

Frith, S. "The Industrialization of Popular Music," in *Popular Music and Communication*, James Lull, ed., (NY: Sage) 1992, p. 51

Gere, C. (2002). *Digital Culture*. London: Reaktion Books

Maxfield, M. and Brown, A. (1997). *Bepop Bytes Back (An unconventional Guide to Computers)*. Madison: Doone Publications

Schoenherr, S. E. (2003). *Recording Technology History Notes*. http://history.sandiego.edu/gen/recording/notes.html

internet links

microsound.org

wikipedia.org

(appendix: ?)