Geeks on Stage? Investigations in the World of (Live) Chipmusic

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In a spate of wobbling handmade film clips, the popular American video-game blog Destructoid documents a very specific kind of busking event. In front of the Washington State Convention Center in Seattle a remarkable crowd is gathering to celebrate some musicians having set up their instruments and amplifiers there. One of the videos shows a good three minutes of the guerilla-concert, in which the musician SeanBad, a lank, inconspicuously-dressed man in his early twenties, gets the audience to spontaneously dance to his clubbeat and EDM-like music, finally throwing himself to the ground in a perfect Indie-Rock manner. Following SeanBad's highly-acclaimed performance, the next musician steps into the ring. The whole event, arranged by Seattle artist group CrunchyCo, under the telling name of Lo-Tek Resistance, lasted, as the amateur film-maker notes on Destructoid, about three hours.[2]

At first sight a setting like this could be associated with several well-known stereotypes of subcultures and scenes of pop culture such as hip hop, punk or rave-scene: a short-term acoustical and performative occupation of public space by a group of young (in this case, solely white and male) people, the subliminal battle style of the performances, the combination of a street party and a refractory attitude of any nature whatsoever. However, the new thing in the scenery described above is the instrument used: it is amplified and with special software-equipped Game Boys, which are employed here to make music in the open street. Of all things, the Game Boy, such a bulk article of the 1990s, especially in Europe and the USA, perceived as emblem of mind-dulling entertainment with the uncool touch of a nerdy toy, becomes here the centre of a hip-urban subculture, both as a sound generator and as an instrument for live performances. The specific occasion for this Lo-Tek Resistance event was the Penny Arcade Expo (PAX) 2009, a video game festival, held in Seattle or Boston since 2004 and, surely no coincidence, the Game Boy musicians located themselves in front of the doors of the proper festival area, similar to uninvited guests with inconvenient opinions, in this case protesting against the overproduced and highly-polished products of today's video game

[1] My special thanks for inspiring discussions and a bunch of forwarded links go to the participants of the game music course which I gave at University of Arts, Berlin, in 2009/10.

[2] http://www.destructoid.com/chiptunes-in-the-streets-of-seattle-at-pax-09-147943.phtml [05/05/2012]

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industry (while leaving unclear if this is really meant to be taken seriously or if it is just an ironic attitude of a pop subculture of the 21st century).

In this article, the focus will be on such live-performing chiptune artists, especially Game Boy musicians, for some specific reasons (which will also be discussed) the biggest, most noticeable and most prominent group in this scene. With the big success of the first Blip Festival 2006 in New York, live performed chiptune-music, which means music generated by or sampled from (sound) chips of obsolete home computers, video game consoles or handhelds such as the Game Boy or its emulations[3], received considerable interest from a broad public and gained significant media coverage. Since then the scene has quickly developed: New York stars such as Bit Shifter, Nullsleep or the chiptune rockband Anamanaguchi, and also 8 Bit Weapon from California and Sabrepulse from Great Britain, tour extensively and achieve up to three million replays on internet radio Last.fm. The Blip Festival itself has developed into an annual and professionally organized event with impressive line-ups, and has been successfully exported to other countries and continents.[4] Therefore it seems to be no exaggeration to interpret the chiptunes scene as being beyond the novelty aspect, and as an outstanding new movement within popular culture which attracts artists and followers in many parts of the world, not only in the USA and Europe, but also especially in Asian countries such as Japan, Singapore and even China.[5]

But beyond increasing popularity, is there a particular noteworthiness in chiptunes and Game Boy concerts? Do they perhaps spearhead a broader upheaval of western popular culture, whose manifestations median historians and culture sociologists try to explain with catchwords like "bricolage" (Levi-Strauss 1968: 29-36), "age of the prosumers", "participatory media" as well as "the cult of the amateur"[6], "material culture" (Tilley 2006, Vannini 2009, passim.) and "cultural hacking" (Düllo/Liebl 2005)? In other words, is chiptune music "one of the most original and innovative artistic movements of the 21st century" (Yabsley 2007: 27), raising general politico-cultural as well as esthetic questions? Or is it just another kind of retro-music/computing/gaming[7], a scope for nostalgic geeks, who romantically try to recall the look and feel, and especially the sound, of their childhood and youth? And is there only one chipmusic scene, since, for some years, a generation gap within the community has become apparent between a young, pop-oriented kind of

[3] Emulators reproduce (emulate) the functions and behaviour of a specific computer system on another computer system. With the help of emulators, most old video and computer games can be executed on contemporary computer systems.

[4] Blip Festival Europe, Aalborg/Denmark 2009; Blip Festival Tokyo 2010.

[5] An extensive interview with chines chipmusic artist Sun Dawai, aka Sulumi, can be found at http://thecreatorsproject.com/de/creators/sulumi [05/05/2012].

[6] See chapter Prosumer Cultures in: Reichert 2006: 66-70.

[7] Recently, in a very pessimistic manner, concerning retro trends in pop music in Reynolds 2011. See also Felzmann 2010, Guffey 2006, passim.

chipmusic artist, more interested in giving thrilling live performances than in gaining technical background knowledge, and an older generation bound to the cultural and ethnical codes of the 1980s/90s hacker and demoscene? (Yabsley 2007: 4) Finally it is necessary to enquire into the relationship between supposed "subcultural" chipmusic and "commercial" pop music. On the one hand, a lot of chipmusicians (as in the above-mentioned street-music event) stress the similarities between their art and former (emphatically political) subcultures of pop music such as punk or hip hop. On the other hand, chipmusic has very quickly made its way into mainstream as is proved by numerous examples such as the Remix-EP Hell Yes (subtitle: GameBoy Variations)[8] commissioned by the self-appointed Indie Star Beck, the Nelly Furtado-Track "Do it" from 2006, produced by Timbaland (and in large parts stolen from Scandinavian chiptune musicians)[9], and, recently, the clearly-noticeable video-game beat in Ke$ha's 2010 topseller "Tik Tok".[10]

Following these lead questions, some introductory investigations of the chiptune phenomenon will be undertaken here. Since, within the last few years, the chipmusic scene has grown into a widespread musical culture with hundreds of artists of different subgenres, scenes and regional groups, a lot of topics have inevitably to be left unmentioned. Neither the technical or techno-historical backgrounds of (sound)chipmusic can be explained here: e.g. which soundchips were assembled in certain particular systems and which specific kinds of soundshaping they offered (see in detail Dittbrenner 2007), nor is an extensive chronology of the history of chipmusic and its origins within the demoscene the goal of this article. (Carlsson 2007, Driscoll/Diaz 2009) In addition, a development of a general (sound)aesthetics of chiptune music seems to be not very helpful, as there are too many different technical and conceptual approaches, too various stylistic models reaching from pop to classical music. Instead of this, I will focus on chipmusic as live performed music, on the musical as well as the performative aspects of such concerts. For this purpose, the first section is used for a short definition of terms combined with a description of the origins of the chipmusic scene within the earlier hacker and MOD-scene as well as their specific cultural codes and practices. The second section specifies the different approach of today's mostly pop and performance-oriented chipmusic scene, the third analyses such performances in detail, especially those of Game Boy musicians, asking for the frame of reference

[8] The EP consists of four remixes of tracks from the 2005 published album *Guero*. The remixes were created by the comparatively unknown artists 8-Bit and Paza Rahm.

[9] Timbaland had taken most parts of the song from a track by the Finnish chiptune-artists Janne Suni (aka Tempest) and a remix of this song by the Norwegian chiptune-artist Glenn Rune Gallefoss (aka GRG) without asking for permission or mentioning the source. The law suit about this case is still not settled. See http://en.wikipedia.org/wiki/Timbaland_plagiarism_controversy for the collection of press and other source material http://www.pelulamu.net/timbaland/ [05/05/2012].

[10] As Robin Guha noted: "The sound of Super Mario jumping over a koopa shell as a dance beat." (Guha 2009).

for these performances and how they play on a musical as well as on a gestural level with connotations from pop music and video game culture. Besides artists' self-descriptions, soundfiles, pictures and videos on the musicians' websites or myspace profiles and multitudinous clips of concerts or club gigs at video-sharing websites, the documentary movie about the New York chipmusic scene Reformat the Planet[11] (hereafter referred to as RTP) was therefore used as a main source.

3 Roots and Definitions

From the beginning, discussions about terminology have belonged to the main topics of conversation within the virtual communities and message boards of the chipmusic scene, and often these discussions have been used as an instrument for both inclusion and exclusion. Needless to say, the definition of the term chipmusic during the years has undergone certain transformations. If one applies a popular definition of the 1990s, which, from a technological point of view, says that chipmusic is only music which is generated solely by soundchips (of home computers, game consoles, etc.), one has to exclude today's very popular subgenres Game Boy music and Amiga music, because these systems do not have discrete soundchips[12] or, rather, use early forms of sampling such as the legendary Paula 8364 chip assembled in the Commodore Amiga (ibid: 44). On the other hand, some of today's rock bands covering computer game music with ordinary instruments denote their own musical style as chipmusic without using any of the original sound generators.[13] Moreover, the last few years have shown extensive internal differentiation within the chipmusic scene, creating numerous subgenres such as, to name just a few, Game Boy music, (8-)bitpop, blipblop, Amigacore and even Nintendo (black) metal.[14] Furthermore, concerning terminology, the above-mentioned generation gap has led to a division between chiptunes and micromusic, even though the boundaries between the terms still remain fluid and one can often find a synonymous way of using them. To describe the differences in a nutshell, chiptunes were originally based on the later-discussed rules and aesthetics of the demoscene in a rather puristic way, maxing out the sounds and (technical) limitations of a certain

[11] USA 2008, DVD release with bonus material, USA 2010, Director: Paul Owens, Producer: Paul Levering.

[12] The Game Boy uses the CPU for sound generation (Dittbrenner 2007: 33).

[13] From another point of view, there is a sort of competition to reproduce the sound of (old) computer games with regular rock band equipment, examples of which are the bands Press Play on Tape (http://www.pressplayontape.com/) and Axes Denied (http://www.axesdenied.net/index.html [05/05/2012].

[14] For example, artists such as 8 Bit Mayhem, who calls his style NESBM, satirically referring to neo-fascist NSBM (National Socialist Black Metal), see http://www.myspace.com/8bitmayhem [05/05/2012].

platform or soundchip without mixing the sound source by using sampling or even "regular" instruments. In contrast, micromusic focuses on the sound aesthetics of old computer and video games in general, no matter if they are evoked by the original equipment or by samplers, normal musical instruments or whatever. This division also becomes significant in the existence of separated virtual communities: chiptune.com, chiptunes.org and micromusic.net.

The Swedish blogger and musician Anders Carlsson (aka Goto80), one of the masterminds and spokesmen of chipmusic, suggests systematization to solve the general terminological imbroglio within the scene:

> "I distinguish between chipmusic as medium and chipmusic as form. Chipmusic as medium is any music made with a specific medium (typically a range of soundchips from the 1980s) and chipmusic as form is a music genre made with any kind of technology. Chipmusic can also be analyzed as a subculture with its own communication media, norms, status makers, artifacts, and software."[15]

But, as Carlsson himself mentions, such a classification harbours new problems, especially in further dissociation, e.g. because of soundchips having been assembled not just in game consoles and home computers, but also in toys, telephones, musical instruments (such as different kinds of electronic keyboards) and various other devices (ibid.). From another point of view, one could also add differing categories: for example, chipmusic as a specific kind of performance; or one could focus on the different ways of saving the music, such as: is it in the end a (mp3)soundfile, exported by a sequencer program, is it the recording of a live jam, or does it just exist as tracking code? In the following, the main lines of the historical development of terminology within the chipmusic scene will be explained, and which will, at the same time, allow at least a cursory look at the origins of the scene itself.

While computer generated "digital" music emerged in experimental surroundings in the middle of the 20th century[16], the beginning of a scene, calling itself the chipmusic scene, cannot be dated earlier than the late 1980s. Beginning with the late 1970s, most of the game consoles and arcade machines were equipped with soundchips and the majority of games came with music, but dealing with these devices, especially composing music for them, was a subject for the professional game music composers, software engineers and sound designers of the video game industry (Dittbrenner 2007: 9-38). This did not change until the end of the 1980s

[15] Anders Carlsson: CHIPMUSIC. In: Idem: http://chipflip.wordpress.com/chipmusic/ [05/05/2012]. See also Carlsson 2010.

[16] In 1951 the first digital computer considered capable of producing music appeared: Australian mainframe computer CSIRAC played, coded by George Hill, the title melody of the "Colonel Bogey March". The website of Melbourne University offers extensive documentation about the musical repertoire of CSIRAC including some reconstructions of the sound of the music: http://www.csse.unimelb.edu.au/dept/about/csirac/music/reconstruction.html [05/05/2012].

and the beginning of the early 1990s due to two pivotal developments in the history of chipmusic.

First one has to mention the appearance of the demoscene, which was connected to the market launch of three of the most important home computer systems of this era, the Commodore 64 (C64), the Commodore Amiga and the Atari ST, platforms, which, in contrast to consoles, offered the users the possibility of accessing and manipulating the functions of the system.[17] The demoscene, at the beginning, emanated from the so-called crackers, members of the computer underground, who, on a large scale, passed on cracked software (mainly games), thus avoiding implemented copyright protection. Similar to the tags of graffiti culture, it was common practice for the cracker or the cracking group to leave a signature within the cracked program. Usually this was done by a graphic and often also an acoustic or, rather, musical intro (so-called cracktro) which ran automatically after the first (floppy) disk of the game was inserted, thereby spreading credits to the authors of the crack over the monitor. In the course of time, these intros emancipated themselves from the cracking background and the so-called demos were generated independent of games or other cracked software. The underlying ambition behind these elaborated real-time animations was to bring the particular computer system to the edge of its technical limitations, especially in matters of graphics and sound possibilities, as well as for the creators to demonstrate their own skills as programmers. Soon the demoscene developed its own aesthetics and also judged the demos in terms of their artistic value. Due to the very limited CPU and memory capacities of the early home computer systems (e.g. the lack of hard drives), the demos had to be programmed as very small code files. The challenge for (and competitive aspect between) the demosceners lay especially in these limitations and led to avant-garde tactics of programming which, for example, could result in the intentional generation of fatal graphic errors in order to use them as a special effect in the demo. Soon an international network was established, in the beginning by sending demos and scene magazines on floppy discs by mail, later by modem and early forms of Bulletin Board Systems. From around 1988[18], the most important social events of the demoscene occurred, the so-called demoparties, where single programmers and especially teams of programmers (demogroups) came together and – highlight of every demoparty – held competitions (so called compos) in several disciplines. Many of these demogroups had fixed work-sharing structures with graphic experts, code programmers and, very often, also one or more sound specialists to create the background sounds and music of the demo. From the end of the 1980s, at the latest, these demo soundtracks were called chiptunes and an own subgroup of music experts emerged from the demoscene, which dealt primarily with

[17] For a detailed history of the demoscene, see Tasajärvi 2004, Botz 2011: 14 et sqq.

[18] Following Anders Carlsson's timeline of the development of chipmusic, posted on his website http://chipflip.wordpress.com/timeline/ [05/05/2012].

technical, aesthetical problems as well as the problems of programming music on early home computer systems. Chipmusic as a musical subculture was born.

The second development that played an important role on the way to chipmusic in its present-day forms was the appearance of special music software (most notably, so-called trackers), often initiated or, in a specific way, adapted by the members of the demoscene itself. The trackers were a particular kind of sequencer software, unlike today's common DAWs such as Cubase or ProTools, showing the timeline of the music top down and dealing with a numeric instead of a graphic interface. What made the trackers so attractive for the demoscene was the possibility to share the music in an open-source form. At the end of the composition or arranging process there was no need to export the music to a – in a certain way, closed – soundfile (often including a loss of sound quality), but the music existed (and was spread) as a module file (the so-called MOD), which contained all the used samples and pattern information and remained, in every way, editable for everyone.[19] This particular way of fixing the music in an open-source format in parts defines the self-conception of the chipmusic scene to this day, since working with trackers themselves can directly refer to the aesthetics of the demoscene, as elegance and effectiveness in terms of using the software and technical capabilities can be perceived to be as important as the quality of the music: for example, when storing complex tracks on a 880 kbyte Amiga floppy disk. Accordingly micromusic.net, one of the essential websites for chipmusic communities, formulates in its site info area: "fuck ProTools! start tracking!"[20] An early model of such tracker software was *Soundmonitor* for the C64, written by Chris Hülsbeck. However, the real breakthrough for the formation of a tracker scene was the initial release of *Ultimate Soundtracker* (Karsten Obarski/EAS) in 1987, which established the Amiga as the leading home computer system for musical purposes. The MODs generated with this software received wide distribution as soundtracks for demos and it was then when the name "chiptunes" became the vernacular for such music. That *Ultimate Soundtracker* uses Amiga's ability to reproduce four-channel samples, and because the Paula-soundchip does not itself generate the sound in real time and that, consequently, the chiptunes of the MOD era, according to later purists' definitions, are not real chipmusic, can be taken as an irony of history (or of terminology).[21] Shortly afterwards relevant trackers for other platforms appeared, such as *Audio Sculpture* (1990) for Atari ST, *Scream Tracker* (1990) for IBM-compatible PCs, the latter of which, moreover, was written by the Finnish programmer group Future Crew, core members of the demoscene. Comparatively

[19] For an overview of the functionality of trackers, see Dittbrenner 2007: 45-46.

[20] The whole text can be found as "micromusic concept" in the help and info area of www.micromusic.net [05/05/2012].

[21] See Dittbrenner 2007: 44 and Anders Carlsson's blog entry "Chipmusic – hardware or software?", http://chipflip.wordpress.com/2008/04/14/chipmusic-hardware-or-software/ [05/05/2012].

late trackers specially developed for the Game Boy emerged: in 1998, the former university project *Nanoloop* by Oliver Wittchow was released and, in 2000, the very successful software *Little Sound Dj* by Johan Kotlinski. It was this software which especially initiated the lasting boom of Game Boy music due to his rather intuitive user interface and the implemented tools for live performances.[22]

What conclusions can now be drawn from this excursive passage through the early history of chipmusic and its terminology, particularly with regard to the focussed on subject area of chipmusic as live music? First one has to note that, in the beginning of the chipmusic scene, traditional live performances were immaterial or, in fact, did not exist. It was rather the programming itself that was considered as a performance, especially if, as usual in the demoscene, everybody brought their own computer system to the demoparty and publicly polished his or her demo to the last second. Though the comparative battle form of the compositions is normally highlighted by presenting them as live events in front of big audiences, including appropriate dramaturgical elements such as darkening the hall at the beginning, announcements, applause etc., during the presentation of the demos, it is, however, only the computer system itself which is performing.[23] This is to be understood literally, since exact knowledge about the limitations of particular systems belongs to the cultural code of the demoscene, as well as recognizing when special programming tricks get the computers to create graphic or acoustic outputs which no one would have suggested them to be capable of (Botz 2011: 15). In this respect, chiptuners take the independent life of computers seriously, or, as Daniel Botz writes, following the theories of Friedrich Kittler: "[Demos] are not based on purposes of shaping following an ideal form and realized with adequate computer technique. They are in terms of production and reproduction very closely connected to the possibilities and limitations of a particular piece of hardware. [...] The idea doesn't come first, but the machine." (ibid: 29) This conclusion can also be applied to the music of the demos: for example, when the demoscene musicians and composers refuse to work with emulators[24] or – almost as in the early music scene –

[22] For a detailed discussion of the functionality of both programs as well as for screenshots of the user interfaces, see Yabsley 2007.

[23] The visual performance of pure music compos is often limited to projecting the tracker surface onto the screen.

[24] The using of emulators within the demoscene is highly controversial. Some systems like C64's legendary SID-soundchip, which works with analogue filters, to this day resists satisfying software emulation. See Dittbrenner 2007: 28-29, Botz 2011: 29 and several websites such as http://gallium.prg.dtu.dk/misc/sid_vs_emu/ or http://hafnium.prg.dtu.dk/HVSC/C64Music/DOCUMENTS/Creators.txt [05/05/2012].

extensive comparative studies about the sound of several soundchips, model lines or device types are undertaken.[25]

To speak from a sociological point of view, the demoscene rather than anything else can be compared with a certain kind of a hermetic-elitist craft or science guild with, in some ways, different rules than any regular pop subculture. Here it is not (reassessed) popcultural symbols such as clothing, habits or a particular sound which can be used in public space and create a common identity for a specific subculture, but the learning and using of, and also the discussing of technical and software secrets or expert knowledge which is needed to judge the works of the other scene members and shape the cohesion of the subculture. Accordingly, it is not the goal of the demoscene members to be noticed by a broader public or to achieve great popularity (for example, due to deliberate provocation), but to reach a certain status within the insider discourse. Other characteristics of the demoscene are the more or less strictly followed self-conception as a non-profit scene, the importance of the open-source model and a rather group-oriented concept of authorship (2011: 21). It is no wonder that the demoscene for a long time had no real relationship to the popcultural mainstream (not even in the sense of identity-forming concepts of the enemy) and vice versa; they were just two different worlds. The 2003 *Wired*-article of the former Sex Pistols manager (and inventor) Malcolm McLaren, who praised the chiptune scene as 21st-century punk, can be interpreted as a changing point in this relationship, which, within the demo and chiptune scene, significantly caused mostly negative reactions (McLaren 2003, Carlsson 2008: 161).

4 A different approach? The "second generation" of chip musicians

Unlike the demoscene, the so-called "second generation" or "new school" of chip-musicians (Dittbrenner 2007: 116, Yabsley 2007: 15), from its beginning around the year 2000, has been much more open to conventions and communities of popular music. New tracker programs, first of all *LSDj* for Game Boy as well as NES/Famicom-trackers like *MCK/MCKC* and *FamiTracker*, have made it possible to focus on just playing with the sounds and the possible application of the systems as instruments for live music performances rather than only on technical backgrounds – the reason why some parts of the demoscene coined the snide term "cubase-chipmusicians" (Carlsson 2007: 156). Since this performance-oriented scene emerged, the terminology has also changed. For example, the definition of the term chipmusic has been widened: "Ideally, it should be danceable music with square waves. I would say that's the new millennium (stereo) type of chipmusic.

[25] This has mainly been done for the Game Boy, see Tomczak 2007, 2008, and especially Weixelbaum 2007. For the C64 there are also some investigations and descriptions of the different sound of several models, see Dittbrenner 2007: 28.

And the purists grunt..." (Carlsson 2010: 5) Sometimes the term fakebit (instead of 8-bit) occurs in this context, defining music which uses the sound of 1980s chipmusic but is completely produced with regular modern samplers, synthesizers and sequencer programs.[26]

The above-mentioned documentary RTP extensively describes the approach of this new generation of chipmusicians. The movie mainly covers the New York chipmusic scene by holding a lot of detailed interviews with artists and documents the breakthrough moment of chipmusic as a live event, i.e. the Blip Festival 2006, later called the "Woodstock of chiptunes".[27] Beyond the question of how the movie itself, by canonization and mystification, develops a particular kind of historiography of chipmusic, the huge amount of interview material (supplemented by the bonus DVD) as well as the film clips of the live performances allow one to follow the self-conception and self-perception of this scene.

Right at the beginning of the movie, in a series of soundbites, some of the best-known New York chipartists and their, partly quite contrary, aesthetical positions are introduced. First of all, a fundamental difference to the demoscene can be recognized concerning the self-conception of these chipmusicians: "they are not just gamers, they are artists, they are musicians".[28] To become distinguishable as such, these musicians need and search for regular (pop)cultural presentation formats, evidenced by an increasing amount of concerts, festivals, busking events, widespread internet coverage (especially in form of video clips) and even by the existence of a documentary such as *RTP*.

For the question of where the new-school chipmusic belongs – to the demoscene or to popular music culture – the New York chipmusicians also have a clear answer. In this context, the liner notes of the RTP DVD booklets contain an unequivocal statement:

> "Once you have experienced this film though, it will be much easier to look past the retro novelty of the scene and enjoy it as an up-close account of a musical subculture revolution. The revolution is compared to that of the Punk scene of the mid 1970s, in which that movement was lashing out at the polished sound of classic rock. These ChipMusic performers are lashing out at the high-resolution world, and using primitive tools to create a new expression of music." (Gibson 2010: 2)

The film very often draws these explicit parallels with moments of the history of pop culture, especially with the (American) punk movement of the 1970s, e.g. the comparison made between the New York chipmusic scene's home base, The Tank,

[26] http://en.wikipedia.org/wiki/Fakebit [05/05/2012]
[27] Chris Gampat: Blip Festival 2009: Music and Gaming Combine To Rock Brooklyn's Bell House. In: www.2d-x.com December 18, 2009. http://www.2d-x.com/blip-festival-2009-music-and-gaming-combine-to-rock-brooklyns-bell-house/ [05/05/2012].
[28] Interview with an unknown person, *RTP*.

with the 1970/80s most famous punk club, CBGBs. This kind of historical borrowing is also made by some of the interviewed musicians, first of all by Jeremiah Johnson (aka Nullsleep). For him, punk gave back the spirit of rock'n'roll to pop culture; today "chipmusic [could be] like that to electronic music".[29] Interestingly the crucial factor of this argument is the well-known, almost stereotyped postulate of roughness, rawness and simplicity of the sounds used as well as the arrangement, thus being factors standing for the authenticity, natural energy and honesty of a band, recording or scene (Keightley 2001, van Appen 2003). Accordingly, for parts of the chipmusic scene, the sounds of the 8bit-era are perceived as rough and authentic, bringing back the spirit of rock'n'roll to overly-complex and slick electronic music represented by IDM-artists such as Aphex Twin. This rather paradoxical shift in the perception of technical devices and their sound, which back in the 1980s and 1990s widely were seen (and heard) as soulless, artificial and (painfully) limited, will be discussed later.

Hip hop, the other frame of reference often drawn on by the chipmusic scene, takes the same line of critical approach towards the media and pop culture: like "hacking the turntable"[30] the basic principle of the chiptune artists would be to "take something from corporate culture and say 'now this is ours'" (ibid.). Sharpening the cultural ethics and also the particular aesthetics of the chipmusicians in this way opens connections to broader concepts such as bricolage, cultural hacking[31] and also the situationist's idea of détournement,[32] especially as some members of the chipmusic scene refer to and discuss some of these concepts themselves.[33] But concerning this aspect, one has of course to consider a high bandwidth between substantiality and mere attitude. While some chipmusicians still (in the sense of the

[29] Interview with Jeremiah Johnson (aka Nullsleep) in *RTP*.

[30] Interview with Chris Burke (aka Glomag) in *RTP*.

[31] In 1960s the anthropologist and ethnologist Claude Lévi-Strauss sketched out the figure of the bricoleur, which later on was applied especially to describe the behaviour and creativity of youth and subcultures. According to Lévi-Strauss the bricoleur uses heterogeneous and accidentally chosen means and assembles them – as a bricolage – in a totally new sense. As a famous example for such a bricoleur subculture in the world of pop and rock music, the punk scene and its eclectically-provoking style is often mentioned (Lévi-Strauss 1968: 29-36). Following up on Lévi-Strauss, some authors from cultural and media studies have recently, and with explicit reference to computer culture, talked about the principle of cultural hacking to explain special subversive forms of art and artistic acting such as flash mobs, brand hacking, street arts etc. The Swiss artist Johannes M. Hedinger describes it as such: "Cultural Hacking can be understood as infiltration into systems and the changing of their coding. It is a critical, often even subversive game with cultural codes, messages and values" http://culturalhacking.wordpress. com/cultural-hacking/ [05/05/2012]. For a definition of the term cultural hacking, see also Düllo/Liebl 2005: 28.

[32] The situationists created détournements by taking elements not only from different art forms, but also from mass culture and the world of consumption, using them in new contexts, commenting on them, splicing them together etc. to stimulate a process of decoding and recoding of meanings.

[33] Anders Carlsson: Fox News presents Chipmusic (2010), published at http://chipflip.wordpress.com/2010/07/16/fox-news-presents-chipmusic/ [05/05/2012].

demoscene) engage in the programs or even the circuits of the used technical devices, most of these musicians use existent and easy accessible software such as *LSDj* and, in extreme, but obviously rather common cases, carry out their live performances as simple playback.[34] The idea of semiotic hacking of entrenched cultural codes, which is stressed by many of today's chipmusicians concerts, will assumedly wear away very fast with the increasing success and presence of live performed chipmusic. Accordingly, it seems to be a main interest of the present chipmusic scene to free the Game Boy and other used systems from their toy image and to establish them as respectable musical instruments.[35] This will be further discussed later. Furthermore, one has to ask if there are any and, if yes, which political goals the chipmusic scene is pursuing, a question which also has a wide spectrum. Some artists point to the Game Boy as a symbol of mass consumption and dulling entertainment, whose recoding to a musical instrument could – like a situationist détournement – be understood as an act of resistance (Yabsley 2007: 24). Others with a rather "puristic" approach take the position of "chiptunes could be fun".[36]

Another position held by the artists interviewed in *RTP* is retrospective nostalgia, notwithstanding the protest against this aspect that is enunciated by some artists in the film. "The sound of games is meaningful for my generation," says, for instance, Tristan Perich from the artists' group, Loud Objects, in the interview in *RTP*.[37] Old video games, and especially their music, have recently become an enormous growing field for collectors and retrofans of any kind, using the Internet as the main communication medium and knowledge resource. One reason for this development seems to be the rapid technological progress in the field of computers within the last thirty years, always tried out and pushed ahead with games. These historical technological and, thus, cultural changes, very difficult for the individual to understand in all their details, were for a long time ignored by established institutions of a high-culture-oriented historiography such as universities or museums. Now gamers and fans fill this gap with great passion, and with nostalgia and a sense of keeping these cultural artifacts as driving forces behind this writing of history "from below" (Felzmann 2010). At the same time, this nostalgia is based on the desire to evoke, if not to create, intense and highly-emotional collective childhood and youth memories of several generations strongly connected to computer games. As the emerging genre of live performed game music shows, the concert seems to be the most attractive social form for this kind of shared childhood nostalgia (ibid.). In addition, the game music scene of the 2000s comes up again (or better, with) a

[34] Anders Carlsson: Lft's Chipophone: Playing Chipmusic by Hand (2010), published on http://chipflip.wordpress.com/2010/07/22/lfts-chipophone-playing-chipmusic-by-hand/ [05/05/2012].
[35] Which is what some of the chipmusicians interviewed in *RTP 1.5* claim. *RTP 1.5* is a half-hour expansion of *RTP* from 2008 coming as a bonus track with the DVD of *RTP*.
[36] Interview with the Japanese chipmusician Hally, *RTP*.
[37] Interview with Tristan Perich, *RTP*.

pop (music) culture, which is in a state of a growing (if not exclusive, to speak for the mainstream) historicist self-reflection (Reynolds 2011). In this connection, the loads of 8bit cover versions of classical rock and pop songs (as, in the meantime, also of classical music)[38] let chipmusic no longer appear as part of an elitist avant-garde (such as the demoscene at the moment of its emerging), but as just another form of more or less retrospective, allusive and playful phenomena such as mash-ups, plunderphonics[39] etc., which live on the high degree of historicity of today's popular culture and play (ironical) games with its semantics and stereotypes. This could be also an explanation for the very fast, almost simultaneous inclusion of 8bit sounds in mainstream productions after the rise of live performed chipmusic.

If one tries to draw connecting lines between today's chipmusic scene and the demoscene, first of all one has to mention the usage of similar or even the same software (trackers) and the same sound material. Furthermore, today's live chip-musicians are also non-profit orientated and have strong international inter-connections, which does not really distinguish them from a lot of other rather small scenes and subcultures of today's pluralistic and individualized popular music culture. However, a clear separation between the demoscene and chipmusic scene is very often not possible, as a lot of the artists involved play(ed) in both fields. And even the idea of outwitting or pushing technology to its limits can play an important role in the world of live chipmusic. For example, Nullsleep's Depeche Mode-Megamix from 2005 exhausted the potential of LSDj and, for this, was highly acclaimed by the scene (Dittbrenner 2007: 115). Accordingly the chipmusic blogger Peter Swimm sees the demoscene and live chipmusic scene as two sides of one and the same coin.[40]

To sum up, today's chipmusic scene shows a lot of more or less deliberate parallels to well-known pop culture developments and historical trends. The drawing of connection lines to the contexts and practices of punk und hip hop seems especially like the attempt to "ennoble" its own style of music by placing it in the long-term development of pop music's history. The question of if live performed chipmusic and, particularly, Game Boy music largely relies on established cultural codes and the value categories of pop will be discussed in the next section.

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[38] The big video portals hold a lot of 8bit remixes with a spectrum ranging from Beethoven's symphonies via film score classics such as the *Ghostbusters*' theme through anything from pop and rock music from Elvis Presley to Lady Gaga.

[39] A mashup (also called bootleg) combines two or more recordings of songs (and, as a visual mashup, often the corresponding video clips) by blending the vocal track (called acapella) of one song and the instrumental track of the other together. The main structure of the two songs is mostly kept and recognizable following the goal of mashing up two songs as contrasting as possible (e.g. Sex Pistols vs. Madonna, http://www.youtube.com/watch?v=rZGnOIBAYSg [05/05/2012]). Plunderphonics bring together different and also very short elements of one or more tracks or songs, building a new musical form in the manner of a collage of sounds.

[40] Interview with Peter Swimm, *RTP 1.5*. See also http://truechiptilldeath.com/ [05/05/2012].

5 "Ich bin der Musikant mit dem Gay Boy in der Hand" – Performative strategies of live chip music concerts

Since the release of *LSDj* in the year 2000, Game Boy music especially has become the most prominent form of live performed chipmusic. Meanwhile one can find a huge number of Game Boy musicians in different genres.[41] Besides using the Game Boy as a solo instrument for club gigs in the sense of a DJ set, a lot of other instrument combinations and performance venues for Game Boy music have been tried out. For example, the German duo *Pornophonique,* under the slogan "gameboy meets campfire",[42] brings together acoustic guitar, Game Boy and singing, which, especially in the German-speaking areas, is a picturesque blending, if not rather a collision of the gamers' sphere and phenomena such as the youth music movement, the church congress and the leftwing singer-songwriters of the '68 generation.[43] US-artist Bud Melvin, who uses American country and bluegrass musical instruments such as banjo and steel-pedal guitar together with the Game Boy, follows a similar concept.[44] Furthermore, at relevant video portals, one can find clips showing Game Boy street musicians in Japan, not so much "staged" as the Seattle busking event discussed at the beginning of this article, but rather as a matter of course.[45] The Game Boy was also used as an instrument for the interpretation of classical music, for example, in Herbert Weixelbaum's performances of sacred works by Wolfgang Amadeus Mozart during the Austrian Cellensis-Festivals 2006 (interestingly not showing the Game Boy on stage).[46] In Vienna, the artist community, gameboy-musicclub, chose the Game Boy as its aesthetical centre. The group locates itself close to the new music scene, uses stylish photographs beyond the stereotyped 8bit-look and cultivates an attitude of media policies and culture criticism or even a didactic attitude which are especially expressed by the live performances of the group. The group's official press release states:

> "Contemporary music requires an almost endless variety of methods to produce. To spotlight a toy from the early eighties, on the contrary, acts as a salutary medium of simplification and reduction. Looking into the eye of pop-stardom's dazzling spotlight,

[41] See, for example, the list at http://www.herbertweixelbaum.com/gb_links.html [05/05/2012].
[42] http://www.pornophonique.de/info.php [05/05/2012].
[43] This combination seems the more amusing if one knows that, even today, the Game Boy is especially demonized as the "absolute community killer" by certain sections of youth activity organizations. See http://www.efg-herborn.de/uploads/media/2011_Anmeldung_Zeltlager.pdf [05/05/2012].
[44] See Melvin's self-description on his website: "Clashing the suburban nostalgia of 8-bit with the rural nostalgia of bluegrass, Melvin produces music that sounds like a clear and pure present, a droll summation of the here and now". http://www.budmelvin.com/presskit/ [05/05/2012].
[45] http://www.youtube.com/watch?v=ZzTiEm7_gTA [05/05/2012].
[46] http://www.musicaustria.at/musicaustria/pop-rock-elektronik/mica-interview-herbert-weixelbaum [05/05/2012]. The concert is documented in several web clips, e.g. http://www.youtube.com/watch?v=OBwejNKTg8M [05/05/2012].

> the operating amateur is the focus of attention and overrides popular structures and stereotypes with the simplest tonal material. [...] Another intention of the project is creating easy access and understanding of contemporary music."[47]

Among regular club gigs, the group tries to get out of its niche: for example, by organizing crossover projects with brass bands.[48] The Mikro Orchestra (formerly known as Gameboyzz Orchestra) from Poland, who have the objective "to create irony in the electronic music scene with low-tech hardware and relatively simple software in a world dominated by ever more advanced digital music processing and creation technologies", acts in a similar way.[49] As part of band line-ups, a field where some conventions already seem to occur, the Game Boy especially has achieved a large circulation. So there are many examples of the type of the crazy spectacular trash show with Game Boy musicians wearing absurd costumes as an integral part of the staging of this very weirdness. Groups such as Sputnik Booster from Germany,[50] the Spanish-Japanese Band Pepino[51] and Teamtendo from France epitomize this trend. Above all, the last-mentioned played a formative role, two Game Boy musicians under the names ATM Cougar and C. Groundhog, performed as manic groundhog and cougar mascots (and not, as occasionally stated, as hamsters) (Dittbrenner 2007: 117).[52] Rather "respectable" mainstream rock bands with game sounds and devices as important elements of their musical style interestingly, to speak for the USA, mostly do not use the Game Boy, but the NES: for example, the aforementioned top act Anamanaguchi and the Chicago rock band I fight dragons, who, concerning sound and image, could best be described as college

[47] "Kontemporäre Musik bedingt einen nahezu unendlich [!] methodischen Pluralismus der Produktionsmittel, dem entgegengesetzt wirkt ein Kinderspielzeug aus den frühen 80ern ins Rampenlicht gerückt wie ein heilsames Kontrastmittel der Simplifizierung und Reduktion. Dem gleißend schillernden Bühnenlicht des Popstartums ins Auge blickend, stellt sich ein namenloser Amateur in den Fokus der Aufmerksamkeit, um sich über gängige Strukturen und Klischees mit einfachsten tonalen Mittel hinwegzusetzen. [...] Eine weitere Intention ist es, Verständnis und einfachen Zugang zu zeitgenössischer Musik zu schaffen [...]." Translation of the German version by the author, http://gameboymusicclub.org/press/?page_id=59 The English version of the press release differs in some details, see http://gameboymusicclub.org/press/?page_id=59&lang=en [05/05/2012].

[48] http://diepresse.com/home/kultur/popco/619652/Musik-fuer-Blaskapelle-und-Gameboy [05/05/2012].

[49] http://mikroorchestra.com/info.htm [05/05/2012]

[50] http://sputnik-booster.com [05/05/2012]

[51] http://www.pepinismo.net/tag/pepino/ [05/05/2012]

[52] Teamtendo quit in 2009 after ten years in existence. In their own words: "Since ~~you're all too weird~~ we don't really belong with humans, we have finally returned to the wild." [crossing is original] (http://teamtendo.com/ [05/05/2012]). Photos and video clips of their legendary live shows can be found easily in the internet.

or alternative nerd rock bands (their live performances being accordingly dominated by the classical setting of "singing white men with electric guitars").[53]

Besides their usage in regular live concerts, a lot of internet music clips are made with and around the Game Boy, such as numerous (in parts, very popular) mashups.[54] How familiar in this terrain the Game Boy has become as a particular musical instrument can be seen by the existence of popular viral videos such as "GAME BOY MUSIC (but not the kind you're thinking of)", which shows the Game Boy as an "analogue" percussion instrument.[55] Finally, it has to be mentioned that the circuit bending scene[56] has naturally also discovered the Game Boy. However, due to its relatively complex technology, a real bending has not very often been achieved.[57]

But what are the reasons for the enormous popularity the Game Boy has reached as a musical instrument in a very short time? Presumably it is not just the sound. In this respect, other devices, above all, the C64, offer a lot more possibilities. Also emerging tracker software such as *LSDj* and *Nanoloop* are probably rather the trigger and not the cause of this development, even though, in this respect, the *LSDj* especially, with its special live features, opens completely new opportunities. Certainly, one important reason is accessibility. With more than 118 million units sold all over the world up to now, it is relatively easy (and cheap) to get one of these devices. Portability and intuitive usability are also crucial aspects in favour of using the Game Boy as a musical instrument (Yabsley 2007: 24-25). Over and above that, however, it seems to be the status of the Game Boy as a popcultural symbol known by everyone in the western world and, for some generations, a part of multi-sensual collective memory, which makes it so attractive. In this connection, Alex Yabsley rightly speaks of the Game Boy as a "symbol with a lot of semiotic meaning already attached to it", which, for this reason, could develop into a trademark for the whole chipmusic scene (Yabsley 2007: 23). A current example is the merchandising package of the RTP DVD, coming with a personalized papercraft Game Boy.

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[53] In their press release, I fight dragons call their sound as "equally nodding to Weezer and Final Fantasy". http://www.ifightdragons.com/bio/#bioBandInfo [05/05/2012].

[54] E.g. the Michael Jackson-Mashup *Beat it on gameboy*, http://www.youtube.com/watch?v=26ho9yEAOrI&feature=related [05/05/2012].

[55] http://www.youtube.com/watch?v=gpdYKamOjUo&feature=related [05/05/2012].

[56] Circuit bending means to modify electronic devices of any kind (especially toys and old synthesizers) "to create strange, outlandish, unintended, and unpredictable sounds". The circuit-bending scene sees itself as strongly connected to the DIY movement and, since the beginning of the 2000s, regularly organizes festivals and meetings. See http://bentfestival.org/2011/ [quotation] and http://www.anti-theory.com/, the website of the "inventor" of circuit bending, Qubais Reed Ghazala [05/05/2012].

[57] See Circuit Bent Nintendo Gameboy, http://www.youtube.com/watch?v=amB2N3xT4jQ&feature=player_embedded#! [05/05/2012]. Julien Daigremont, aka Computer Truck, according to his own information, also uses Game Boys for his very popular circuit-bending EDM-tracks, although it remains vague if they are actually bended. http://computertruck.parishq.net/ [05/05/2012].

But not just the look, feel, sound and graphics of the Game Boy can evoke and transport such meanings and memories, but also the physical expression of the player, or to quote the media philosopher Vilém Flusser, the gesture of playing the Game Boy can be read (and staged) in different or even contradictory ways.[58] Referring to Umberto Eco, Yabsley coins the term "semiotic guerilla warfare" for the experience someone has visiting a Game Boy concert (Yabsley 2007: 23). On the one hand, you see, with the majority, the stereotyped, rather pity-stirring silhouette of the gamer huddled over a console and immersed in his or her "artificial world". On the other hand, there is the highly-appreciated figure of the artist, the (rock) musician, who, with the exalted movements of his (at best, sweat-covered) body, stands for the authenticity and expressivity of his artistic creativity (Frith 1998: 210-211). It is this moment of confusion in using the Game Boy as a musical instrument, this shifting of gesture between expressivity and immersion, which was, at least in the first years of the scene, a cornerstone of the attractiveness of Game Boy concerts and which is brought to the point by Beck's cover of his *Hell Yes* EP.

It is nothing new that pop musicians in their works deal with the relationship between man, body and (computer) technology, as the use of (electronic) technology has been, from the beginning, a sine qua non of pop and rock music culture. The albums and live shows of Kraftwerk are probably the best known examples for this tendency, culminating in the famous song lyric "Ich bin der Musikant mit dem Taschenrechner in der Hand" ("I am the musician with the pocket calculator in my hand") from their song *Taschenrechner* (pocket calculator).[59] But Kraftwerk used the aesthetics of electronics and computers, and created their sounds, robotic live shows and their image as sound researchers and engineers with the goal of ironically cooling down the overheated expressivity of Krautrock and other rock music genres of their time. Thirty years after Computerwelt, the theme "pop music and computers" seems to run under different (or even reversed) auspices. More than just a few chipmusicians want to be taken seriously as authentic artists, making expressive and emotional rock or pop music. This is one message of many of the interviews and live performances in RTP. In this context, talking about the supposed rawness of the 8bit sounds also fits; not only about the "human" touch of the computers and game consoles of the 1980s, but also about the typical rock musician's or DJ's stage behaviour during the concerts. An additional dimension offers some of the performances such as Nullsleep's computer keyboard

[58] Flusser calls gestures "symbolical" movements of the human body or a tool connected to it which are charged with meaning. This meaning can be read, understood and interpreted. Flusser himself examines, e.g. the gesture of writing, of taking photos, of filming and of listening to music (Flusser 1991: 7-21).

[59] This line only appears in the German version of the song. The song was also released in several other languages. The same line in the original English version is: "I'm the operator with my pocket calculator."

solo at the 2006 blip festival, which ironically undermines rock star clichés and, at the same time, uses them as the highlight and final point of the performance.[60]

6 Conclusion

Looking at the rapid development of the chipmusic scene within the last few years from a distance, one gets the impression that, with the help of the "vehicle" music, the cultural value of computer and video games is newly negotiated. Generally the reception of home computers, game consoles and computer games of the 80s and 90s within the last years has, to speak for Europe and the USA, undergone some changes. As the former increasingly find admittance in museums and archives, and attract interest in academic research, European and American music culture has also opened up to the age-long scorned sphere of game music. This refers equally to the so-called high culture with its booming videogame orchestra concerts and the increasing intersection between game music and the concepts and events of the so-called New Music (Neue Musik)[61] as well as to the field of pop music, where, besides the new chipmusic "subculture", a lot of the elements of gamer and programmer culture were absorbed. A single ostensible trivial example for this is the lasting gain in status of the figure of the nerd or geek in popular culture. Phenomena like new music subgenres such as nerd-hop, nerdcore hip hop and geeksta[62] can be seen in this connection, and the inclusion of nerd/geek glasses in the product range of eyewear manufacturers and opticians shows the geek has already reached the mainstream as a popcultural stereotype.[63]

Besides these aspects, the chipmusic scene contributes a lot to the "Historiography of Computer History" ("Beitrag zur Historisierung der Computergeschichte"), as Daniel Botz similarly describes it for the demo scene (Botz 2011: 22). But in this case, the process of writing history is not performed in a national, academic or institutional64 context and in a text-oriented form, but in a

[60] A part of the performance can be found on youtube: http://www.youtube.com/watch?v=tAzL10smpqU [05/05/2012].

[61] One example is Tristan Perich's performance of his piece *Interface for string quartet and 4-channel 1-bit electronics* at the Blip-Festival 2008. A part of it is shown on the *RTP 1.5* DVD.

[62] These are subgenres of hip hop focussing on the nerd as rapper and MC. One of the most famous and successful representatives of this genre is *MC Frontalot*. http://frontalot.com/index.php/ [05/05/2012].

[63] The online shopping portal ThisNext advertises its geek glasses collection with the slogans: "Being a geek has never been so cool." and "It's time to get geeky." http://www.thisnext.com/collection/677F6C80/Trend-Alert-Geek-Glasses [05/05/2012].

[64] However, currently there seems to be a boom in founding institutes dealing with the history of computer software and games such as the video game exhibition at the London Science Museum in 2006 (http://news.bbc.co.uk/2/hi/uk_news/5354020.stm), the exhibition "The Art of Video Games" at the Smithsonian American Art Museum (http://americanart.si.edu/exhibitions/archive/2012/games/) and

playful, object-orientated, ironical, international and sonic-based form. In doing this, chipmusicians explore the dialectics of (computer) game historiography, which otherwise is often narrated as a history of simple progress. They point us to the loss of this progress, by showing outdated computer systems and games as limited, but also as authentic, raw, natural, understandable, and, in a way, as "human" attributes which, according to them, are lacking in the powerful systems and sophisticated games of our days.

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