

The Forgotten Pioneers of Creative Hacking and Social Networking – Introducing the Demoscene

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During mid 1980s evolved a networked culture that brought together tens of thousands of teenagers within the computerized world: the demoscene. This culture revolved around the production, dissemination, and competition of realtime generated audiovisual works (demos), demonstrating how to maximize specific hardware through unorthodox programming. The old demoscene was a closed community with its own infrastructure, artifacts, software tools, copyright system, aesthetics, economy, and social stratification, but new questions arise with its presence on the internet.

With modems and illegal tricks to use telecommunications, teenagers at remote places could reach fame with their technical efforts in a subculture fenced off from real life identities. They were programmers, composers, and visual artists but also dedicated people that formed the backbone of the social network. Traders and swappers sent data around the world using modems or postal mail, sysops operated the bulletin board systems that people dialled with modems, while ascii artists designed the text-graphics for these boards.

The demoscene receives very little attention in media, academia, and the arts. The paper will focus on communication but also explain the aesthetical aspects in order to fuel current discussions about open source creativity, remix culture, hacker art, digital communicative autonomy, and competition.

Keywords: demoscene, network culture, creative hacking

Intro

In the postindustrial world, networking is becoming a ubiquitous part of everyday life. Blogs and social networking sites create new forms of connectivity, while outside the Internet, other forms of social networking take place with the help of radios, telephones, and modems. These later forms might seem primitive compared to the hyperlinked networks today, but are important objects for research, for studying this past not only fills historiographical gaps but can also provide new insights into the future of networked cultures.

Already in 1979, North American Apple II software crackers were organized in modem networks to exchange data (Walleij 1999). During mid 1980s, teenagers formed possibly the earliest transnational networked digital subculture that centered around creating artifacts: the demoscene. This culture revolved around the production, dissemination, and competition of realtime generated audiovisual works (demos) and competitions, demonstrating how to maximize specific hardware through unorthodox programming to show the most stunning sound and visuals within specific computers.

Throughout the years the demoscene has undergone changes and today the scene is mostly organized on the Internet, even if there are parts of the demoscene still maintaining oldschool traditions. The demoscene concerns two contemporary fields of technosocial studies: network cultures and the politics of computers. While the demoscene is ideal to study hardcore appropriation of technology, the main focus of this paper is the demoscene as a network culture.

In June 2009, The Institute of Network Cultures in Amsterdam published a new book on network cultures in which Geert Lovink put forward important questions for studying contemporary networks. In this paper I will attend to similar questions about the history, ownership, scale, the handling of conflicts, collaborations, social organisation, and dissemination within the demoscene network.

The Illegal Heritage – Hacking, Phreaking, Cracking

As a direct result from the 1980s home computer revolution, children obtained a growing desire to play the newest video games. Unfortunately, most kids did not have the money to buy games. *Crackers* brought the solution to copy games illegally, which was made possible by removing copy protections.

Some of the crackers were driven by old hacker ethics (Walleij 1999, Scott 2005) and others did it e.g. for the challenge or rebellious excitement. Nevertheless, they all wanted recognition for their work, which they achieved by displaying a text screen with their name prior to the game starting. This text screen is in many ways similar to graffiti, although the so called *crack-intros* invaded the private sphere and not the public space.

As the number of software companies increased, so did the amount of crackers and the competition between them. The best crackers would not only unprotect the software, but also fix bugs and decrease the filesize, and upload it to an important node in the network. Usually, this was a *Bulletin Board System* (BBS) in USA, a computer with a modem that can be remotely dialed into. BBSs were not only used for the exchange of files but also to play games, chat, or send messages. An important BBS was for instance *Pirate's Harbor* (Walleij 1999). BBSs were also important meeting places for hackers and phreakers who provided methods for crackers to (illegally) obtain very cheap access to telecommunications, which enabled a globalized communication.

The feeling of community was strengthened when physical meetings started to occur. As the meetings became more regular in 1988 they became known as *copy parties*. In these parties not only demos were copied; games, applications, VHS-tapes and audio cassettes were duplicated, as well as information about hacking/phreaking and other legally dubious activities (Walleij 1999). These parties contributed to the demoscene's publicly obscure nature. Today illegal activities are mostly disconnected from the demoscene, but had a substantial influence on the demoscene.

The Early Demoscene

Around 1985 the crack-intros became stand-alone artifacts (demos) that gradually grew into more complex works. These productions were group efforts that involved *coders*, *musicians*, and *graphicians*. Even so, the coder played the main part in the production, as music and graphics were attached after the work of the coder. The group also included e.g. *swappers* who mailed floppy disks to each other, *traders* that sent data using modems, and *sysops* (system operators) who operated the BBSs. Members were predominantly middle class teenage males from OECD-countries, residing mostly in Northern Europe. It is difficult to say how many people were involved in the demoscene. 10,000 is a very low estimate, while 100,000 is probably too much (Csdb 2009). Furthermore, there has been at least 40,000 demos and intros released in the demoscene to this day (Pouet 2009).

Speed, quality and originality were important ideals for the members of the demoscene – just like for the crackers. It was important to be the first to invent a special trick, or to refine previous achievements, e.g. displaying as much graphics as possible in the borders of the C64-screen. Queries about who was first could even turn into aggressive battles. *Flame wars* between individuals and groups were common; they occurred in the digital realm but could even cross over into physical violence. Incidentally, these battles are known to have lead sceners to report their (criminal) rivals to the police. This shows how important the demoscene identity was for many people in the oldschool scene, and shows the competitive atmosphere.

Artifacts and Aesthetics in the Demoscene

There are several different types of artifacts in the demoscene e.g. demos, intros, disk mags, text art, music disks, or slideshows. Most of these different artifacts are platform-specific, performative productions, that are distributed for free. Tasajärvi (2004) explains this performativity through the difference between theater and cinema. While movies are static recordings, a theater play (and a demo) is something that is performed in front of your eyes with (minor) differences between each execution. Theater, as well as a demo is platform-specific; while a theater play uses the room's unique features (lighting, floor and space) to enhance a performance, the demo uses the hardware of a specific computer model.

In the early stage of the demoscene, between 1986 and 1996, the methods and aesthetics of demos were not very diverse. Typical demos used elements like scroll texts, hand-pixeled logotypes that would move in sinus curves, rotating 3D-cubes, black backgrounds, fantasy graphics, rasterbars, Western dance music, and tunnels. Another way of describing demos is to list what they were (usually) *not*; most demos

were typically not glitchy (or buggy), interactive, conceptual, following a narrative or generative. In the early 1990s design-demos were introduced, taking an important step towards an increased aesthetical diversity (Tasajärvi 2004). With the variety in contemporary demos it is now more difficult to define what a demo is (or what a demo is not).

The coders of demos used *assembly language* – a complex and time consuming way to gain maximum control of the hardware to make optimized software. The coder would assume that the viewer had the same hardware to his disposal, which enabled more experimental programming in which s/he did not need not to worry about programming “system friendly” software – s/he could freely explore undocumented features of the hardware through trial and error. This was also done by musicians and graphicicians, albeit to a lesser extent. In other words, in the early demoscene artifacts were platform specific due to their unorthodox production methods.

In order to show that groups could make something that no one had achieved before, an aesthetical maximalism permeated the demoscene. More graphical elements, more mathematical effects and more sounds made a *better* demo, while bugs, glitches, and irregularities made the demo *worse*.

Demos and Ownership

Since the artifacts of the demoscene were performatives, they were distributed in non-recorded data formats (executables instead of video). This made them suitable for remixing and reverse engineering. The Amiga’s music format MOD for instance, was easy to rip by using a program to extract the MOD-song from a demo or game. By loading the ripped file into the correct music software, the ripper could have the same possibilities as the original composer. These possibilities however, did not amount to a thriving remix culture within the demoscene. One reason for this could be the demoscene’s norm of clean slate originality: generally it was ‘better’ to do everything yourself, from scratch. Even if some people used parts of other demoscene works, they ran the risk be called *lame* instead of *elite*. The romantic notion of the isolated author-genius was thus highly present in the demoscene.

Paradoxically then, it has been common practice within the demoscene to make graphics based on paintings or pop culture products, to use songs ripped from video games, or to sample sounds from recording artists. In Amiga MOD-music the rights of samples were simply claimed because you had sampled them – regardless of where the original sound came from. “Don’t steal my samples!” was a usual exclamation in these sample cases. By sampling music from a recording artist you appropriated it, which can be explained considering sampling as a creative endeavor in itself. Due to the limited amount of RAM and storage space as well as the sonic bit-rate and resolution of the Amiga, sampling was way more complicated than the flawless cut-and-paste methods of today. Also, it is important to remember that samples were crucial for composers to maintain a personal style. Other than the samples, everyone had the exact same working conditions. In the case of ‘sample theft’ within the scene, there were no institutions to help the so called victim – instead the sanction would be to discredit the sampler around the scene.

Demoscene artifacts never reached (far) outside the scene, on the one hand because the wider public was not interested, and on the other hand because generally demosceners did not try to reach an outsider public. Moreover, it has always been difficult to contextualize demos since they are neither arty, poppy nor scientific. But this isolation also meant that demosceners never had to bother about official copyright laws – which is still true today and is something that gave the demoscene the freedom to create a unique sampling culture.

The autonomy of the subculture and the importance of originality, aswell as the lack of influence from art world concepts and formal copyright laws, lead me to describe the demoscene as a bounded subculture in which participants primarily compete for respect for their digital craftsmanship amongst their peers.

Social Stratification

So far the demoscene has been described as a single entity. But as we move to the social organization of

this networked culture, it might be more helpful to think of the demoscene as an umbrella term for different clusters. Cultural geographical factors gave rise to a rather self-organized Polish C64 scene, while the choice of computers was cause for a separation between e.g. Atari and Amiga sceners. Still, all these individual groups and scenes created performative demos, communicated in similar ways and shared aesthetical attitudes; and in that sense they were part of the same demoscene.

The demoscene is a meritocracy in which anyone can join and have their work judged, regardless of who or what they are (Ratliff 2007). Ratliff describes the demoscenes meritocracy as egalitarian, which I think is suitable for the demoscene today. But like many other social network, the demoscene maintains some forms of stratification, and even more so before 1996. One of the most clear manifestations of these hierarchies were the different *charts*: at demo parties there were competitions where the artifacts were ranked, usually by public voting. In *diskmags* (disk magazines) there were charts for groups, productions and individuals, and on the BBSs there were charts about up- and downloads. The practice of absolute measurements of quality dates back to cracking, as does the related distinction between *the elite* and the *lamers*. If you were elite you knew how to behave, how to talk (elite = eL17E), and how to produce (from scratch).

Communication Art Forms

Just as the demo had once grown out of the cracker scene, the communication channels of the demoscene spawned new artifacts, that on their turn developed their own subcultures. One example of such a subculture is for instance the *text-art scene*. Because a BBS was limited to text graphics, some graphicicians specialized in making graphics in text mode (Ascii, Petscii, Atascii, Ansi, etc). These graphics were also released as stand alone *ascii collections* showing refined graffiti-inspired logotypes quite different from the generated text art common on the web today.

Another example is *chip music* – a music style built on the 8-bit sounds of old computers. Due to its minimal use of resources, coders and crackers were grateful since they could minimize the size and maximize the output. Musicians were also happy to work with these restrictions due to aesthetical or nostalgic reasons (Ratliff 2007). These songs opposed the developments towards more acoustic, ‘real’ sounds in digital music. So during the 1990s chip music became soundtracks for the demoscene and crack-intros, while today it has expanded into large festivals such as Blip Festival and communities such as 8bitcollective.org.

I think it is also worth considering *warez* as artifacts – the software that traders and swappers distributed. Like crackers tagged their cracks, swappers and sysops also tagged the wares they copied with their pseudonyms. Rehn (2001) describes this warez culture not as a gift economy completely opposed to capitalism but as a hybrid economy for honour and gifts, which also describes the demoscene. Trading is a *conspicuous production* which “*has no other (real) purpose than signifying the abilities of the producer*” (p.155).

Conclusions

Copyright made the demoscene because it is a subculture that grew out of the will to copy. Still, the importance of originality and ownership within the scene separates it from the common discourses of copyleft remix culture. It seems that the easy access to rather open artifacts made remixing less challenging and interesting, because of the aesthetical attitudes in the scene.

As a bounded culture with its dogmas in methodology, the demoscene would disregard of signifiers of style. A focus on craft can result in an increased tolerance for alternative styles; as long as there is good craftsmanship it is, atleast partly, a good artifact. This seems to be a good starting point for a sustainable network culture.

Artifacts in the demoscene have nothing to do with money and everything to do with showing skills for a bounded culture, and are thus conspicuous productions. This is different from the digital communities that generate money to share holders or reach a wider audience. This is not to say that only demosceners can

appreciate demos or that demos never reached a wider audience (although it was rare). But it seems fair to assume that in general, especially before 1996, if someone obtained and liked demos, they were either part of the demoscene or planned to be. Demos were thus indistinguishable from the scene.

Today that has changed because the Internet has given easy access to the artifacts, and demos are maybe also more experimental and suitable for decontextualisation. The sustainability of the demoscene network is going to be tested by its online presence. Will it remain its boundaries? One indication of that is the controversy surrounding the hip hop producer Timbaland. When he sampled demoscene music in 2007 there were hostile reactions in the demoscene that used a discourse bordering to communitarian protectionism.

On the other hand, there are tendencies in digital art and pop culture that approaches demoscene methodologies by programming limited systems and engaging in low-level subversion of technology. There are experimental demos that include more interaction and generativity, which would bring them closer to the art world by emphasizing the difference from recorded artifacts.

There are demosceners that choose to still use 8-bit computers, in fact even more so than during the 1990s. There are new people joining, which I consider as cutting edge appropriation of technology rather than conservative nostalgia. Maybe what happens here is more media material than Kittler could ever imagine and more magical than any software that Cramer is aware of.

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