

New Scenes, New Markets: The Global Expansion of the Cracking Scene, Late 1980s to Early 1990s

[crackers](#) [history](#) [home computers](#) [media economy](#) [piracy](#)

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The article reconstructs the history of underground software transfer in the second half of the 1980s between the core countries of the home computer software industry and its ‘peripheries’ both in the Eastern Bloc and in the ‘Global South’. Utilizing contemporary sources and oral history interviews, it tells the story of how the cracking scene and the informal software markets in the ‘peripheries’ interacted and influences each other, and how, in this process, the cracking scene expanded beyond its original geographical core. The article contributes to the ongoing discussions about informal media economies, adding to them a historical dimension which was hitherto overlooked.

The introduction of home computers into private households in the 1980s and early 1990s (Sumner 2012; Faulstich 2005) brought several particular developments with it – such as the establishment of new cultural practices connected with home computing, such as gaming (Fuchs 2014) or ‘bedroom coding’ (Wade 2016). Also, home-computerisation brought with it new fields of commerce – not just concerning hardware, but also software (both business and entertainment), user literature or maintenance. Furthermore, it gave birth not just to a new public sphere of computer usage, but also new subsets of computer user culture – such as hackers, crackers, BBS users, demosceners, or gamers. (Alberts and Oldenziel 2014) And last but not least, the mass spread of home computers with their inherent possibilities of lossless data replication brought about new concepts of copyright, which in the end resulted in new legislations.[\[1\]](#)

Those particular developments have been researched in case studies over the last decade. However, in order to analyse how these developments influenced each other, it might be productive to do it in a case study that takes a focus on transnational entanglements. After all, *WiderScreen* 2-3/2020: *Home Computer Cultures and Society Before the Internet Age* (vol. 23 no. 2–3)

home computerisation did not take place simultaneously all over the globe, but rather it was a process that developed (and, on a global scale, is still developing) for several decades, and its manifestations in particular countries were always bound to developments and events occurring outside the respective countries' borders, as the triumphant march of the home computer took place against the backdrop both of a new wave of economical globalisation and massive changes in world politics.

A perspective on transnational entanglements taken here should not just focus on the level of development and marketing of computers, but take the user as its object of research (cf. Oudshoorn and Pinch 2003). The advantage of a user-centred history of technology is, according to David Edgerton, that it can be “truly global”, as it potentially covers “all places that use technology, not just the small number of places where invention and innovation is concentrated.” (Edgerton 2007, XIII) Especially concerning home computer history, a user-based approach has already shown its strength (Alberts and Oldenziel 2014), yet transnational connections of users have been explored only rarely (Wasiak 2014a). Furthermore, an analysis of the usage of one particular technology – like the home computer – on a global scale can show not only different user cultures, but also different forms of markets forming around this technology, as Tom O'Regan shows on the example of the VCR (O'Regan 2012).

The following pages present an analysis of how, at the end of the Cold War, a ‘Western’ home computer subculture, the ‘crackers’, not only spread across borders, but also *nolens volens* contributed to the surfacing of new markets and new cohorts of computer users outside the core countries of the home computer industry – both on the other side of the ‘Iron Curtain’ and in the countries of the ‘Global South’.

As the crackers were a subculture that was not only operating outside the official public sphere of home computing, but also one that has hardly received any attention as a historical subject within the institutions of computing history heritage, the source base for such an analysis is necessarily disparate. It includes the subculture's digital artefacts and magazines preserved and meticulously sorted by amateur enthusiasts in various web databases, as well as physical artefacts such as paper-based correspondence collected by the author from former participants. It furthermore includes contemporary sources of mainstream home computer culture such as computer magazines, as well as oral history interviews with former active members of the subculture from a number of countries.

A remark on the territorial terms of the analysis: By describing the territorial expansion of the crackers' subculture as 'globalisation', I do not employ the term as a description of a present state, but as a process (cf. Conrad 2013, 160). Obviously, the presence of home computers was spanning the whole globe neither in the beginning nor in the end of the time frame analysed here. 'Globalisation', however, can also be understood as a term describing a process in order to make tangible "the construction, the consolidation and the rising importance of world-wide interconnectedness" (Osterhammel and Petersson 2003, 24). My contribution sets out to explore this "rising importance of world-wide interconnectedness" among home computer users on the example of the cracking scene in the last years of the Cold War and the final phase of decolonisation. While there is a bias towards the developments in Eastern Europe due to the availability of sources and my knowledge of languages, the study also strives to employ sources from other parts of the world, particularly Latin America and the Middle East, insofar as they are available.

The Scene

The subculture in question never gained the same predominance in academia and popular memory as its more prominent contemporaries such as the punks, the mods, or the skinheads. Also, unlike the 'new social movements' that surfaced in the preceding decades, it was a 'post-subculture' or 'scene' (Bennett 2013; Hodkinson and Deicke 2007) with no explicit political goal or programme. At the time of its activity, however, it probably had an even stronger public presence, even if in a subliminal form: the digital artefacts that it produced ended up in disk drives of millions of teenagers (and quite some adults, too). The crackers – an international community composed of mostly young males – surfaced in the USA in the early 1980s yet came to full development in mid- to late-1980s Western and Northern Europe. They set themselves the goal of subjecting commercial software (mostly games) to 'cracking', that is removing their copy protection routines, and circulating these modified programs, dubbed 'cracks' or 'releases', past the formal distribution channels. For this goal, they organised themselves in teams or 'groups' which, hiding behind colourful names, fiercely competed not only with the software industry, but also with each other concerning the best 'cracks' and the most efficient ways of informal distribution. The goal of every cracker group was to become first in cracking and circulating a particular piece of software – an achievement that became symbolically fixed by marking the cracked version with a self-

produced audiovisual opening credits, the so called ‘crack intro’ or ‘cracktro’. (Wasiak 2012; Reunanen, Wasiak, and Botz 2015; Albert 2017)

On the one hand, this ‘scene’ cultivated a self-image of a mysterious elite high above the casual computer user, and perpetuated this image in its own ranks through rigorous competition and a meritocratic hierarchy. On the other hand, however, the scene was, one could say, open towards the bottom: for each ‘elite’ group, there were dozens of ‘lame’ groups, many of them merely being cliques of school friends, who probably did not have access to brand new original software to crack, but contributed to the spreading of cracked games as well as of the knowledge about the existence of the scene itself. Many computer users knew someone who was a scene member or knew someone else who knew someone. As a Swedish cracker recalls, “[i]n the 5 schools I had friends in, I can count 15 active groups in 1986.” (Newscoy 2006; also, along the same lines: Chucky 2015) Thanks to informal software exchange networks, modified program versions with ‘crack intros’ were a common sight for the majority of computer users who were not able or willing to buy high-priced originals. This led to an omnipresence of the cracker scene as a topic in the home computing public sphere, occasionally even making it outside the specialised computer press and into the opinion columns of national magazines and into TV talk shows. There, the scene was presented as a mysterious phenomenon, with the connotation of something criminal and forbidden.

The discourse of ‘illegality’, however, was more a part of the scene’s self-image than a fact corresponding to judicial reality. As copyright for software became a mandatory part of the European Community’s legislation only from 1993 onwards (Jongen and Meijboom 1993), the crackers’ activities remained exempt of punishment in many European states throughout the 1980s. Even in countries where copyright had been readjusted in the mid-1980s, such as West Germany and the United Kingdom (Commission of the European Communities 1986), the possible consequences for participants mostly remained within the limits of house searches and either charges being dismissed or the culprits being sentenced to relatively low fines (Tai 1986). However, while the consequences appear relatively negligible compared to other forms of crime, they still were substantial for teenagers, and raised the prestige of the persecuted in the eyes of their peers.

It is essential to say a few words about the ethical premises and economic practices of the cracking scene. The crackers' approach to software, data and information does not fit into the well-known framework of subversive digital subcultures such as hackers or open source activists. Crackers, even while 'liberating' proprietary software of its user-crippling copy protection, did not follow the hackers' philosophy of 'All information must be free' (cf. Levy 2001; Thomas 2003). They did not adhere to the idea of 'open source' either – on the contrary, they zealously hid their own disassembling and programming tricks both from their competitors within the scene and even more so from the general computer public (Hartmann 2012).^[2] Programs were cracked neither to enable others to do the same nor to release them into 'public domain'. By adding their 'crack intro' as a signature to the modified programs, crackers did not 'liberate' commercial software, but symbolically re-appropriated it. The signature served as a 'copyright notice' for the crack, and removing it (or, even worse, replacing it with another intro) meant breaking a taboo. (Vuorinen 2007; Reunanen, Wasiak, and Botz 2015)

Additionally, the ways of software circulation employed by the scene were everything but open, even though crackers often portrayed themselves as selfless Robin Hoods in contrast to commercially operating software pirates. Internally, software circulation happened in the form of a barter and status economy, with cracked software as a currency and speedy access to it as a status marker. Providing access to software for money was frowned upon – but this taboo concerned, in the first place, transactions within the scene itself. Computer users outside the scene were condoned to wait for cracks to trickle down from the 'elite' to the 'normal' users. However, in order to get hold of cracked software as fast as it was released by the scene, outsiders sometimes had the option of obtaining access to them through monetary investment. Several cracking groups sold cracked software on the side, often in forms of monthly subscriptions advertised in the classified ads of the computer press. It was not an honourable thing to do with regard to the scene's own ethics, and those on the offering end rarely did so using the same pseudonyms as in the scene, but it gave them enough money to maintain their scene operations by paying their expenses (e.g. 'Kawajoe & Geier Interview' 1989; Saturnus the Invincible e.a. 2019).

The scene's fragmentation ran along platform lines: Groups active on one platform rarely were active in cracking software on other platforms. This had to do with teenagers hardly being able financially to purchase multiple computer systems, as well as with 'platform
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loyalties' maintained by users of particular computer systems (Saarikoski and Reunanen 2014). As for geographical boundaries, the scene acted transnationally from the very beginning. However, it was not 'global' in any meaningful sense. Its original perimeter of action until the late 1980s was mostly confined to certain parts of the 'West', namely the USA, Canada, Scandinavia, Finland, the Benelux states, Great Britain, West Germany, France, Austria and Switzerland. This radius corresponds to the regions where home computers managed to become mass commodities at that time. More important for the scene, however, was the fact that these were the regions which featured formalised market structures for software, and most importantly, for computer games. After all, a subculture whose core activity consisted in 'cracking' commercial software had to rely on the availability of such software, ideally before or shortly after store date.

At the same time, however, contemporary sources attest to a territorial expansion of the scene from the late 1980s onwards. While scene activity had already been documented in Eastern Europe during the second half of the 1980s, by the early 1990s the scene finally surpassed its 'Western'/'Northern' boundaries. A list of scene-affiliated bulletin board systems^[3] from 1994 testifies to the presence of such scene hubs all around the globe – from Argentina and Uruguay, to Hungary and Turkey, to Kuwait, Saudi Arabia and New Zealand ('World BBS List' 1994). This expansion, particularly into Eastern Europe, is obviously connected to the conquest of new markets by the computer industry after the fall of communism – but this is just a partial explanation. Thus, the following pages set out to take a closer look at the expansion of the scene through the contacts between the cracking scene in the 'centre' and commercial software pirates in the 'peripheries'.

'Centre' and 'Peripheries'

What are 'peripheries' in this context, and what would be the 'centre', accordingly? The latter is to be understood as being congruent with the aforementioned countries constituting the core regions of the cracker scene's activity – these are the same countries which hosted producers of hard- and/or software, or, at least, had formalised market structures for such goods. The 'periphery', however, i.e. the rest of the world, is not to be understood as a homogenous entity. It encompasses a wide range of regions, from those which did not have any noteworthy number of home computer users during the timeframe investigated (and thus

fall outside the focus of this paper) to those with a growing number of computer users during the second half of the 1980s, but without access to the formal computer economies coordinated from the ‘centre’. It is important to point out that with a shifting focus from invention and marketing to actual usage of computer technology, the ‘peripheries’ were not an exception but rather the norm. As Jaroslav Švelch remarks, “in the 1980s, before international retail infrastructure and, later, digital distribution came into place, peripheries were arguably larger than centers, and much of the microcomputer world was running on pirated copies of games.” (Švelch 2018, 152)

In his introductory notes on the development of the global computer games industry, Mark J. P. Wolf (Wolf 2015a) draws up three levels of preconditions for national game industries. Firstly, these are basic preconditions such as electrification, a high degree of alphabetisation, and the presence of lifestyles which involve significant amounts of leisure time. If these preconditions are in place, a second level involves the presence of technical know-how and access to international software distribution and marketing channels. The third level is the presence of a computer-related public sphere, including clubs, specialised press, and other communication channels and networks connecting users. The regions that are considered ‘peripheries’ in our case are those where the first level of preconditions is given, yet the second and third are present only partially.

The common traits of the regions in question, encompassing such diverse regions as the already disintegrating Eastern Bloc, Southern Europe, Latin America, and the Middle East, are the following: Firstly, it is the weak presence (or even the complete absence) of formalised production and distribution structures of hardware and particularly software.[\[4\]](#) Secondly, it is either the complete absence of software copyright, or the negligent enforcement of existing legislation. Both preconditions lead to the appearance of informal economies facilitating the dissemination of hardware and software, taking place through grey markets, unofficial imports, and barter.

One might assume at first glance that in these regions an objective demand for a subculture dealing with illegitimate dissemination of software would not exist – as the whole realm of software circulation was, one might say, a sort of informal culture. There was no industry which rebellious teenagers could have targeted as their opponent. Instead, young computer fans could easily get involved in the grey market, which was, in absence of software

copyright and/or its enforcement, much more open and risk-free than in countries with a formalised software economy. In Poland, for example, the motivation of teenagers to get involved in selling software copies was often not driven by the desire to earn money, but rather by thirst for new software (Grabarczyk 2015; Wasiak 2016) – a motive which corresponds to the motivations of ‘computer kids’ in the countries of the ‘centre’ to join the cracking scene.

Nevertheless, the scene *did* establish itself in regions outside the ‘centre’ – and this is a fact in need of explanation.

Home computer usage in the ‘peripheries’

The conditions for computer usage differed significantly between the ‘peripheral’ regions, yet they bore some common traits as well. In the countries of the Eastern Bloc (as well as in non-aligned Yugoslavia) home computers were a scarce commodity. On the one hand, the regimes saw little priority in private computer usage, and, accordingly, invested very little (and very late) in home computer development.^[5] As Švelch notes for the CSSR, home computers “were not part of the plan” and were being “left out of the state agenda and available for appropriation by prospective users.” (Švelch 2018: 34) On the other hand, the high-technology embargo imposed by the Western powers on the countries of the Warsaw Pact was in place until the second half of the 1980s and made official home computer imports impossible. (Danyl 2012, 204ff; Švelch 2018) Thus, Western home computers were mostly imported privately,^[6] until the first models were offered in valuta stores (such as Pewex and Baltona in Poland or Tuzex in Czechoslovakia) at the end of the decade.^[7] Without official distribution networks for hardware, it made little sense for foreign software producers to look at the Eastern Bloc as a key market.

Such constellations outside the ‘centre’ were, however, not always due to consequences of the Cold War. Certain countries in Southern Europe and Latin America simply did not appear attractive enough for the decision makers in the ‘centre’ to consider them potential markets. (Lekkas 2014; Frasca 2015) Furthermore, import restrictions imposed by the governments in some of these countries, like Peru in the 1980s, prevented official imports of foreign home computer models (Marisca Alvarez 2014, 54). In other countries, such as Italy or Turkey, the American and European hardware industry did set up official distribution channels. For

software producers, however, the entry into the market was not profitable enough,[\[8\]](#) either because software copyright legislation was absent, as was the case in Turkey, or it had hardly ever been enforced, like in Italy (‘Amiga Szene Türkei’ 1993; Lord Lotek 2003; Grussu 2012).

Thus, while citizens of the ‘peripheral’ regions had different levels of access to hardware, what they had in common was the lack of access to original software, while the demand for software was growing with the increasing number of home computers. This demand was met by informal economies. The concrete economic practices differed only slightly between both sides of the Iron Curtain. Whereas street markets dedicated to computer hard- and software, which thrived in the second half of the 1980s and were more or less tolerated by the authorities, were rather an East European phenomenon (Wasiak 2014b, 133ff; Beregi 2015; Polgár 2005, 59; Kiriya 2012), small shops selling unlicensed software copies were rather present in market economies such as Turkey, Greece, Italy or Argentina (Vigo 2016; ‘Amiga Szene Türkei’ 1993; Lekkas 2014; the woz 2009; Grussu 2012). Selling software copies through classified ads was a quite common practice across the cold-war divide and also not unknown to the countries of the ‘centre’. However, in the ‘peripheries’, due to absence of persecution, this practice took a much more prominent form and has been documented across the world, from Czechoslovakia and Yugoslavia to Israel and Peru (Švelch 2010; Dr.J/The Force 2004; AJ and Nafcom 2014). Apart from these formalised practices one should not forget that the bulk of software exchange took place at a low-threshold level, by means of gifts, barter and low-scale trade among friends and colleagues. (Švelch 2018)

Those protagonists of the informal economy, however, who practiced software sales on a semi-professional level, did more than just copying disks. Not only did they create their own, often quite creative packaging for their goods, but they also added – not unlike cracking groups – intros to the software they imported and sold, with texts advertising their business.[\[9\]](#) These sellers did not only appropriate practices of the crackers, but also of the ‘other side’, of the software industry: They often built copy protection routines into their unlicensed copies in order to construct monopolies around software and to prevent both competitors and customers to copy their products (Schneider 1986; AJ and Nafcom 2014; ‘Perestroika Software’ n.d.).

Platform simultaneity

The question that necessarily arises before the reader at this point is where these sellers got their software from. As hinted earlier, ‘Western’ crackers were an important source for the software peddlers in the peripheries. However, if one looks at the national level, this was not always the case. For such transnational contacts and software transfers, there had to be one important precondition, namely the simultaneity of an active cracking scene on a particular computer platform in the ‘centre’ on the one hand, and the popularity of the same platform in the particular ‘periphery’ on the other hand.

Home computing in the 1980s was shaped by mutually incompatible computer platforms competing on an oversaturated market. The ZX Spectrum (1982), the Atari ST (1985), the Commodore 64 (C64, 1982) and the Commodore Amiga (1985) were merely the most popular ones, while dozens of more or less successful competitors were hitting the market each year. Those platforms, however, did not co-exist on the market throughout the whole decade. Home computer models grew old quickly, were replaced by more powerful machines, or disappeared from the market for other reasons such as mismanagement or bad marketing. The ‘peripheral’ regions, however, particularly the economically isolated Eastern Bloc, were cut off from this development until the second half of the 1980s. When computers started seeping in into these countries, the potential users often just strove to have a ‘proper’ computer at all, its market success notwithstanding (Kirkpatrick 2007). In this situation, platform loyalties, common to computer users in the ‘centre’ (Saarikoski and Reunanen 2014), did not play a role at first.

After the import embargo against the Eastern Bloc had been loosened by the mid-1980s, this situation was taken advantage of by ‘Western’ hardware companies, who used to opportunity to create “secondary markets” (Lobato and Thomas 2015, 98) for outdated computers. In cooperation with the local valuta store chains Pewex and Baltona, Atari exported their XL/XE model (1983/84), which had already lost the fight against the C64 on the market, into Poland in the second half of the 1980s (Wasiak 2014b, 134–35). In the Czechoslovak valuta store chain Tuzex, one could buy the obscure Sharp MZ 800 microcomputer (1985) which enjoyed little success anywhere else besides its native Japan (Švelch 2018: 50-52). Likewise, Commodore managed to sell significant numbers of their less successful C16 home computer

(1985) to users in Hungary and Mexico in the course of the second half of the 1980s. The most prominent example, however, was the ZX Spectrum which gained a second life in the late 1980s all over Eastern Europe, particularly in Czechoslovakia, Poland, and the USSR (as well as its follow-up states after 1991) – a British 8-bit home computer, immensely popular at first, but by the mid-1980s swept away from the market by the C64. (Stachniak 2015; Švelch 2018)

The users may have been very happy with these machines – but they were confronted with the problem that, by the time these computers became popular in their countries, no commercial software was being produced for them anymore. Thus, there were also no more crackers left in the ‘centre’ that were active on these platforms. As the cracking scene was dependent on a steady flow of commercial software to be cracked, the commercial death of a platform caused scene activity on the platform to cease and its protagonists to move on to other computers. Consequently, software peddlers in the ‘peripheries’ could not count on the cracking scene as a software source for these platforms. Both the shadow economies and the subcultural communities that formed around such machines in the ‘peripheries’ did so rather independently from the ‘West’. Transnational contacts and software exchange between ‘peripheral’ regions – e.g. between Czechoslovak and Yugoslav, or between Polish and Soviet users and grey market protagonists – were more important for them than the contacts to (scarce) co-users of these platforms in the ‘centre’. (Švelch 2018, ch. 5; Stachniak 2015, 19; Wlodek Black, n.d.)

There were, however, platforms that were being actively used in the ‘centre’ and the ‘peripheries’ at the same time. This was the case with the C64, which, despite having a hard time to prevail against its cheaper outdated competitors, still had significant user bases in Poland, Hungary, Yugoslavia, as well as Latin America (thanks to the relative proximity to the USA and the resulting possibility of private imports through family members and migrant workers). This was even more the case with the Amiga, which came out only in mid-1985, and could thus develop its user base almost simultaneously in the ‘centre’ and in the ‘peripheries’. Hence, on these platforms there were possibilities for exchange and software transfer between crackers in the ‘centre’ on the one hand, and grey market software dealers and users in the ‘peripheries’ on the other hand.

Setting out for contacts

It is not completely clear how exactly the grey market protagonists in the ‘peripheries’ became aware of the cracking scene as a potential software source. Probably it was through software copies with crack intros that had come into the countries through private imports, or knowledge of the scene that derived from migrant labour networks between ‘peripheries’ and ‘centre’ – e.g. between Yugoslavia, Greece, Turkey, Italy or Mexico on the one side, and Germany, Austria, or the United States on the other (Cervera and Quesnel 2015; Vigo 2016). Primary sources and recollections, however, attest to numerous contact attempts from the ‘peripheries’ directed at the cracking groups in the ‘central’ regions.

Not all those contact attempts were as spectacular as the one retold by a former scene protagonist from Cologne, Germany, a member of the Amiga cracking group *Vision Factory*: One day around 1989–1990, as his story goes, the group received a letter in their P.O. box, sent by a businessman from the United Arab Emirates asking them for a meeting. After their curiosity had won over their nervousness, the group members went to a high class restaurant where the meeting was to be held. There, the elegant businessman laid out his request: He wished to be supplied with cracked software on a regular basis in order to resell it in his chain of computer stores in Abu Dhabi. Moreover, he asked for exclusive copy protection to be added to the cracked programs to prevent them from being copied by his customers. After some hesitations, the crackers gave in, and from there on they received a monthly cheque worth 2000 German marks for a period of time – money which they would use to sustain their group’s operations. (Subzero 2016)

One could take this for a cock-and-bull story, common among software pirates just as much as among maritime ones – if only there were no mentions of dubious software dealers from the Arabian Peninsula in the contemporary computer press (Butscher 1990), and numerous primary sources hinting at similar, even if less spectacular, contacts. [\[10\]](#) The letter of a Yugoslav software dealer named Dragoslav to the Dutch cracking group *1001 Crew* from December 1986 (fig. 1) can serve as an example of how such contacts would take place. The author of the letter, even while being a complete nobody in the eyes of the recipient – a crew that had a legendary standing in the scene and beyond –, emerges as a highly self-confident and determined business partner who knows exactly what he wants, namely “to make good

and all-inclusive connection for buying all top new cracked programs”. And as if to make himself appear knowledgeable of scene-internal quality standards, he specifies that he wishes “no freez[e] frame, no icepick” – terms for inferior ways of cracking with the help of hardware tools. (Dragoslav V. 1986)

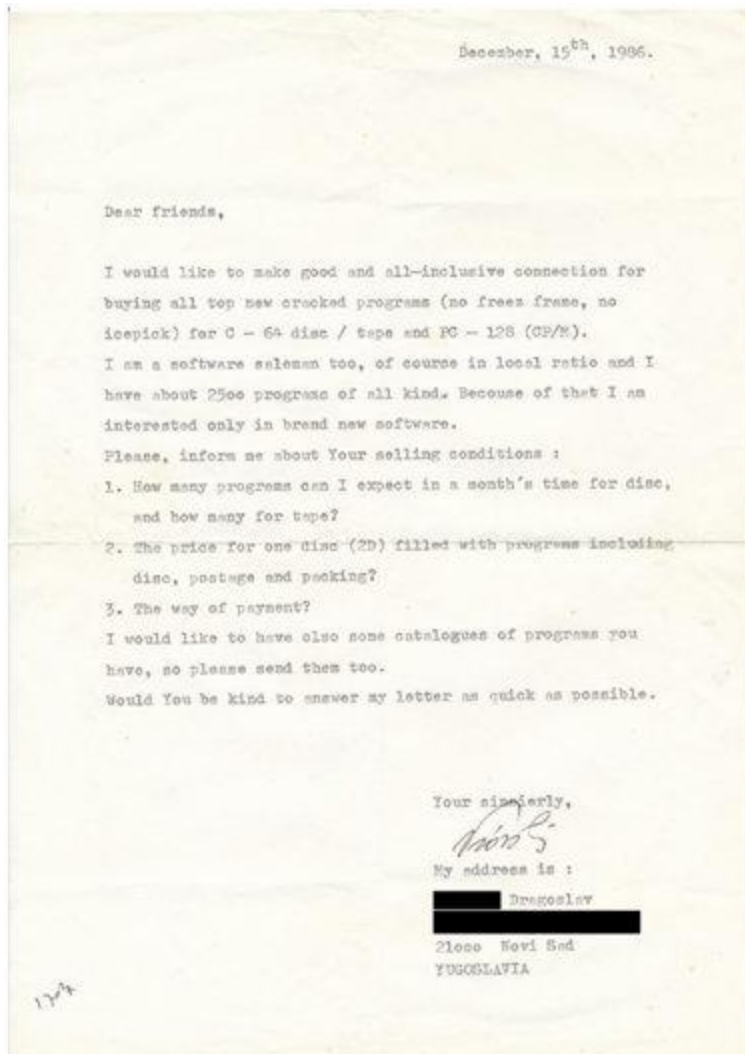


Figure 1. Letter from Dragoslav V. to Honey/1001 Crew, 15 December 1986.

The taboo surrounding such forms of monetary transactions is so powerful that it remains impossible to establish whether a business relation came out of this first encounter. [11] After all, the cracking ‘game’ was not ‘played’ to generate monetary income, and such practices were frowned upon in the scene’s internal media discourse, as they were considered to further the risk of persecution. At the same time, however, scene members in an underground magazine argued that selling cracked software was, ‘as long as it stays within limit, indispensable for the swappers’ (‘Kawajoe & Geier Interview’ 1989), that is, for those

members of a group whose job was to spread the cracked software via postal networks. This scene ‘job’ brought about rather high running costs – 200 to 300 German marks a month, according to the same authors. (‘Kawajoe & Geier Interview’ 1989) The bigger the cracker group and the higher its position in the scene-internal hierarchy, the more were its running costs, even more so from the late 1980s onwards, when spreading software through the post made way for landline data transfers via modem, resulting in either high phone bills or the need to acquire stolen calling card numbers, not to forget the high prices of the appropriate hardware. The monthly sum of 2000 marks which the German crackers received from the Arabian businessman was mostly spent on acquiring modems and other hardware for the group members (Subzero 2016).

However, it was not just the money that made deals with ‘peripheral’ software salesmen attractive for crackers. It was also the appeal of transnational communication, which was not an everyday occurrence in the days before WWW and social media. As a scene veteran remembers, “with [...] software we suddenly got a means into our hands [...] to make contacts with people in other countries with whom we otherwise would have never gotten in touch.” (MWS 2015) The more far-away and ‘exotic’ such contacts were, the more fascinating they seemed to ‘Western’ teenagers. While top cracking scene members usually were quite picky when it came to software exchange partners in their own region, they were willing to drop their elitist attitude for the sake of an exotic contact. Irata, for example, a swapper from Düsseldorf and one of the most prominent figures of the 1980s German cracking scene, maintained an intensive floppy disk penpalship with a Japanese C64 user. (Irata 2015) From the point of the scene’s barter economy (and monetary economy, too), this contact was useless to Irata, since a contact from Japan, famous for arcades and video consoles but not for home computer games, could not provide him with any new or exclusive software, and, for that matter, did not offer him any money for cracked software from Germany either. It simply was considered ‘cool’ and interesting to be in touch with someone from a country that seemed exotic and far away.

From mimicry to transformation

The software peddlers from the ‘peripheries’, however, could not just rely on their partners’ goodwill and thirst for exotic contacts. They needed reliable sources for freshly cracked

software, and thus had to pay for it. Gradually, however, they began to understand the economic principle of the cracking scene, by which outsiders had to pay for software, while members of the scene were able to partake in the internal barter economy. The Arab businessman with his full wallet was rather an exception among ‘peripheral’ grey market protagonists, many of which were teenagers and young adults who peddled software first and foremost because they wanted to have some fresh games for themselves.

Thus, eager to save money, many ‘peripheral’ protagonists attempted to become part of the scene’s internal barter economy by acting like scene members themselves. However, there was often more to it than just a performance of mimicry in order to get free software. Some of the software sellers fell prey to what Roger Caillois, in his writings on the roots of mimicry in nature, described as “temptation by space” (Caillois 1984, 28). Operating in the subcultural milieu and mimicking scene groups, they, in the end, really *became* scene members on their own right.

This subcultural mimicry took place on different levels – first of all, on the level of etymology. Software sellers began appearing under English names based on typical cracking groups names. In Yugoslavia, names like *Yugoslav Cracking Service*, *North Slovene Cracking Service*, *Dubrava Cracking Service* or *Maribor Crackers* emerged (see [The C-64 Scene Database](#)); in Turkey, as a contemporary computer journalist noted down, one could meet cliques of young software pirates operating under the guise of *Istanbul Cracking Organisation* or *United Crackers of Turkey* (‘Amiga Szene Türkei’ 1993). These individuals and collectives did hardly do any cracking in a meaningful sense – after all, there was no original software in these countries that needed to be cracked. The protagonists hiding behind such names were almost exclusively pirate software importers and resellers who obtained cracked programs from abroad and resold them locally. Like ‘real’ cracker groups, however, they added intros to the games they imported, in order to take credit for the import and local distribution of the piece of software, and to promote their business.

These mimetic gestures were aimed both at the local and the transnational audience. The appearance as a ‘real’ scene group was meant to enable the local pirates to enter the transnational networks of the scene and use them on equal terms with those in the ‘centre’. A Turkish contemporary witness describes the motivation for doing so as follows:

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The Joker Crew was also running a computer shop called ‘Compushop’ [...] Like, originally they are shop but they recognized that being a group has some advantages... [...] If you run a computer shop in [these] days, you need software to sell. Where can you find software? There is no thing called ‘original software’. Shops must buy games from groups. Why pay to groups? If you become a group, you can swap and import games for free :) and sell them in your shop. (Vigo 2016)

Unlike the quote suggests, though, this was more than just a masquerade of a computer shop owner to obtain access to free software. *The Joker Crew*, active between 1989 and 1992, became known to their international partners not just as a software importer, but as a creative computer collective, producing their own software tools and computer-generated music. [13]



Figure 2. Classified ad by “Lonely Cracker Man”, 1987.

The appearance as a scene group was also attractive in the local context, as the customers of the local pirates had already been at least superficially familiar with the cracking scene through the crack intros which they could often see featured in the games they bought. By taking on the guise of a cracking group, the local pirates could provide their products with more credibility. A case in point is a classified ad from *Moj Mikro*, one of the leading Yugoslav home computer magazines, by a software seller from Zaječar which is now in Serbia (fig. 2). Here, one can observe mimicry going in two directions, mimicking both the professional industry and the cracking scene. On the one hand, the design of the advert is

sober and professional, and the logo is clearly inspired by IBM. On the other hand, though, the seller calls himself ‘Lonely Cracker Man’ and advertises his services with the argument that he is “the only Yugoslav group [!] which cooperates with famous European groups” such as Triad or Hotline. (Lonely Cracker Man 1987) The latter sales pitch points to the fact that cracking groups from the ‘centre’ (and their crack intros) functioned as seals of quality – and by posing as contacts of these groups, the local commercial pirates could claim this level of quality for their goods.



Figure 3. Classified ad by “Eagle Soft”, 1989.

These mimetic practices could sometimes take rather excessive forms, such as a Yugoslav seller introducing their street address in their intro as a ‘PLK’ (Yugoslav Cracking Service, n.d.) – the acronym for ‘Postlagerkarte’, an anonymous P.O. box service offered by the German Post which was often used by crackers (Albert 2015), with PLK numbers frequently displayed in German crack intros as contact addresses for the cracking groups. Also, appropriations of groups’ ‘trademarks’ were common, such as in the case of another Yugoslav software vendor (Eagle Soft 1989) not only advertising under the name ‘Eagle Soft’ – the name of a famous US cracking group –, but also using Eagle Soft’s trademark intro, an eagle carrying a floppy disk in its beak, as their logo (fig. 3).

It can be safely assumed that the author of the advert did not ask the original Eagle Soft group for permission to use their logo. However, such appropriations became ‘legalised’ (and the borders between subculture and commercial piracy became even more blurred) in the early 1990s, when internationally operating cracking groups in the ‘centre’ began awarding software market protagonists in the ‘peripheries’ the privilege of being their official regional sections – a privilege paid for in cash. Such franchising practices, reported particularly from Italy and Latin America, were mentioned only as part of gossip and mutual accusations in the

contemporary subcultural media (Red Sector 1990; Scorpie/F4CG 1992; DHS/IBB 1992; E\$g 1990; ‘Pand(or)a’s Box & Gossips’ 1991), yet oral history interviews (Irata 2015; Subzero 2016) confirm the omnipresence of these practices. Both sides profited from such interactions. For the cracking groups in the ‘centre’ they meant, besides having an additional source of revenue, a growth of prestige: with ‘headquarters’ in regions beneath Western Europe and North America, they could stage themselves as true global players. For the ‘peripheral’ protagonists who resold the software gained through such franchising this meant a growth of prestige as well, which could be used both locally and transnationally: in their contacts to cracking groups abroad, they could act as members of an internationally well-respected group, while in the eyes of their local customers, they were representatives of a global ‘brand’ that stood for quality software.

New sceners

The availability of pirate software both in the Eastern Bloc and in the ‘Global South’ had far-reaching consequences which have already been highlighted in several case studies (Lekkas 2014, 2013; Wasiak 2014b; Marisca Alvarez 2014, 2013; generally: Castells and Cardoso 2012). Not only did the transnational activities of the cracking scene, which (either unknowingly or consciously) supplied the goods for this shadow economy, help advance software distribution to regions that were not covered by formalised commercial channels.^[14] The fact that users who were cut off from the global software distribution networks were supplied with software by shadow economies also had long-term consequences: When economic globalisation reached its highest point and copyright laws were adjusted to digital content in the majority of countries by the mid-1990s, the ‘peripheries’ had noteworthy strata of computer-literate users and, thus, the preconditions for the emergence of national IT and entertainment software industries. (Wolf 2015b)

Moreover, informal markets tend to be a fertile ground for the emergence of cultural structures that surpass the actual economic activities (Mörtenböck and Mooshammer 2016, 182). This is the case with a less explored consequence of piracy in the ‘peripheries’: the territorial expansion of the cracking scene itself. In the ‘peripheral’ regions, more and more computer collectives surfaced in the late 1980s and early 1990s that saw themselves not as

protagonists of the shadow economy, but as ‘scene groups’, i.e. as being part of the global scene networks and embodying the cracker scene’s barter-economic ethos.

Through the visual marks that crackers had been leaving behind in the software sold by ‘peripheral’ dealers, computer users became aware that besides the local pirates and the foreign software companies, there must be some other protagonists involved in the digital artefacts they were using. Many users were fascinated by the crack intros and indulged in speculations about their origins. As a teenage protagonist of the software street markets in Poland recalled, “I think that I thought of [crackers] as... well I think that I imagined them to be basically older than me. [...] I was thinking about them as wizards.” (Grabarczyk 2015) While he never had dared to try and contact these mysterious crackers using the P.O. box addresses found in their intros because he did not consider his English to be good enough (Grabarczyk 2015), other users on the ‘peripheries’ were more courageous (Wasiak 2014b, 147). For the aforementioned Turkish contemporary witness, it was already his attempt to get new games as quickly as the shops that brought him in contact with foreign cracking groups:

I was in a shop and buying some games with my friend. I asked the shop owner ‘Hey Abi, how do you import games here?’ He said he was buying games from groups... What? What group? What is group? Where can I find a group? [...] While we were talking, a guy entered the shop. Owner: ‘Look, he is one of them’ [...] I asked him ‘Hey, I heard that it is possible to bring games to Istanbul via groups’. [...] Guy asked if I could write a letter in English... He gave me a disk and [said:] ‘Look, there are some programs called disk-mags [i.e. disk magazines]... There is a corner in the mag called contacts... Look there.... Prepare a disk and copy the thing you like [on] that disk... And send that disk to those addresses you choose’. I went back home like light-speed. (Vigo 2016)[\[15\]](#)

Soon, this teenager would become an important protagonist of the scene in Turkey – a scene which brought forward many groups that didn’t regard themselves merely as local software distributors, but looked for (and found) connections to the international scene. Similar developments took place in Eastern Europe from the late 1980s onwards. The crackers in the ‘centre’ reacted to this at first with bewilderment, like the Austrian scene member who wrote in 1988 under the headline “The East is Coming”: “Have you ever heard of groups like

‘H.I.C.’ or ‘F.B.I.’? Well, these crews are from Hungary!” (Big Ben/Cosmos 1988) Soon, however, as the first Western European teenagers got to travel behind the Iron Curtain, they were excited to meet computer kids who were interested in the same machines like themselves. [\[16\]](#) Quickly, this transnational exchange became a normality, resulting in cooperation projects between ‘Western’ and ‘Eastern’ groups – such as the *Transcom & Victory Copyparty*, which took place in August 1991, on the eve of the Yugoslav Wars, in the Serbian town of Subotica and was organised by the local group *Victory* and the Belgian group *Transcom*. While the former took care of the venue, the latter advertised the gathering in ‘Western’ cracker magazines and organised a trip of Belgian scene members to the event. In the end, the ‘Westerners’ could enjoy a summer vacation and software swapping without fear of persecution, while the locals had a chance to expand their international contacts and meet them in person. [\[17\]](#)

But before such personal encounters could take place, the new scene groups used the international scene diskmag (‘disk-magazines’, digital magazines on floppy disks), and particularly their classified ads sections, to make themselves heard and to obtain international contacts. At the end of the 1980s, one could find in them contact adverts from countries which were neither on the scene’s map nor on the map of home computing altogether in the previous years – like South Africa or Costa Rica (‘Advertisements’ 1989). These new scene protagonists did not only send in adverts. They also contributed opinion pieces and reports on their countries. In the latter, they frequently used the opportunity to write themselves into the scene discourse of barter economy, friendship and meritocracy – and they did so by rhetorically distancing themselves from the local practices of selling cracked software. (Luxury Boy 1990; E\$g 1990)

Of course, these new scene groups were confronted with the dilemma that, due to the lack of software industries in their regions, they had nothing to contribute to the scene’s barter economy. As a Turkish scene member wrote in his diskmag article: “In Turkey SWAPPING software is not illegal. That is great. But you can’t find any original [software] here. So there is no chance for the cracking.” (Microchip/TACS 1989) Acting as crackers for foreign groups was not feasible either, as it would have taken too long for suppliers from the “centre” to send them any original software.

Many scene groups from the ‘peripheries’, however, were able to solve this problem: they began to create content that was acceptable as a currency in the scene’s barter economy besides cracked games (Vigo 2016): intros, compilations of self-produced computer music (‘musicdisks’), disk magazines, and, most importantly, demos – that is, programmed audiovisual demonstrations that were not put in front of a cracked game anymore, but were released as stand-alone productions. These new groups came just in time for the differentiation of the cracking scene that was happening at the same time, around 1989–1991, when more and more programmers, graphics artists and musicians who had previously created crack intros began to focus on producing audiovisual content in the aesthetic tradition of the intros. This process of differentiation resulted in a new digital subculture, the demoscene, which retained many of the cracking scene’s practices, aesthetical preferences and ethical traits, yet did not engage in the circulation of cracked software. (Botz 2011; Reunanen 2014; Hartmann 2017) Out of the need to have something to contribute, some of the groups from the ‘peripheral’ regions quickly came to prominence in this new environment as creative computer artists.

Between transnational and local piracy ethics

As mentioned above, many of those ‘new’ scene groups in the ‘peripheries’ used every opportunity to distance themselves from selling software. This made them attractive for those local computer users who felt being ripped off by commercial pirates. At the same time, those who were active in the informal software trade felt alienated and even intimidated by this new habitus: the derogatory diskmag articles against commercial pirates held back those teenagers who had been active as grey market salesmen on a small scale from joining the ‘new’ scene. (Grabarczyk 2015)

This conflict between different ethics of software circulation – the local informal markets and the new ‘imported’ subcultural ethics – can be illustrated using the example of Peru. During the 1980s, the Latin American country’s economy was in ruins and suffered from international isolation. (Oertzen and Goedeking 2004, 98–112) There were no official distribution networks for foreign hardware and software; Peruvians obtained their home computers from relatives in the USA or on trips abroad. In order to meet the demand for spare parts and software, small computer shops began to appear in Peru’s capital, Lima. Due

to the lack of official software imports, the store keepers obtained cracked software, mostly from the USA, removed the crack intros, often implemented their own copy protection routines, and resold the software in their shops. (Marisca Alvarez 2013, 2014)

A Peruvian teenager, who later would assume the nickname *Mr. Byte*, moved to Lima with his parents in 1986 after having grown up in Italy. There he had bought his C64 and received a first glimpse of the European cracking scene. In Peru, he was bewildered at first by the way local entrepreneurs dealt with cracked and re-protected software, but then he reacted in a way he had learned in Europe: Together with some friends, he founded Peru's first 'real' cracking group under the colourful name of *Twin Eagles Group* (TEG). Unlike other early 'peripheral' groups, they were indeed worth calling themselves a cracking group: they removed the copy protection routines from the Peruvian pirate copies, added their own intros to the software, and circulated the newly re-cracked programs widely, drawing the ire of shop owners, but at the same time earning a Robin-Hood-like reputation among local home computer users. Additionally, they were able to quickly establish contacts with cracking groups abroad, and thus often had new software before the local software peddlers had it. Soon, other groups inspired by TEG began to form in Lima, and in December 1991, the first 'TEG Copy Party' in the capital was able to attract over 60 participants ('TEG Copyparty' 1992). After the Peruvian copyright reform of 1996, which would outlaw the selling of pirate software and drive the local grey market sellers out of business (and, additionally, derive TEG of programs to crack), the group would move on to become a game development collective, releasing the first commercial Peruvian game in 1999.

With their self-confident path from cracking group to national games development pioneer, TEG succeeded in "negotiating their inclusion into global practices of software development and of gaming culture", as concluded by Peruvian researcher Eduardo Marisca Alvarez (Marisca Alvarez 2013, 5). However, this success story, recently retold by *Mr. Byte* in a podcast episode (AJ and Nafcom 2014), leaves out one crucial detail that is exemplary of the crackers' ambiguous relationship with monetary economy as well as the contradictions between the different ethics of software circulation in the 'centre' and the 'peripheries'. While TEG are retrospectively staging themselves as digital Robin Hoods, their own diskmag, released between 1990 and 1992, shows that they had to succumb, from time to time, to the monetary practices of the local software economy. In the interviews and *WiderScreen 2-3/2020: Home Computer Cultures and Society Before the Internet Age* (vol. 23 no. 2-3)

individual portraits published in their periodical, they frankly admitted to selling their cracks for money sometimes. Otherwise, so their justification went, they would not have been able to afford the postal fees for software swapping with their international scene contacts. ('Entrevista a Mr.ByteTEG' 1991; 'Entrevista a Overmind/TEG' 1991; 'Entrevista a Hawkins' 1992) Thus, TEG took on the task of bringing scene ethics from the 'centre' into the local context as well as putting Peru on the international scene map. However, in order to achieve this, they had to partake in local grey market practices.

Conclusion

The processes of transformation, exchange and entanglement outlined here still require closer scrutiny. However, this outline already allows to draw some conclusions which embed the topic in wider historiography beyond the history of home computing.

Firstly, the combined study of informal economies and subcultural practices offers a new perspective on the processes of home computerisation, its dependence on political and social factors, and its transnational aspects. Home computerisation appears not as a process that unfolds only between development, research and marketing, but as a bundle of processes which are shaped by (mis-)use of technology and unintended consequences (cf. Söderberg 2010). Also, the findings provide a historical underpinning to Ramon Lobato's and Julian Thomas' deconstruction of the stereotype of 'unproductive' piracy. (Lobato and Thomas 2015, 59–60) This case study highlights the role software piracy played in the global triumphant march of the home computer – and said triumphant march cannot be reduced to a success story of invention, entrepreneurship and economic globalisation. Furthermore, the analysis of the interactions between the cracker subculture and commercial pirates as well as the consequences of these encounters allow for a history of new markets and industries beyond the narratives of innovation that are omnipresent in the historiography of the computer and IT industries. The new economies that surfaced through the interaction of subcultural and commercial piracy were not shaped by 'disruptive innovation', but by multilayered mimetic processes.

Secondly, the findings foreground the role of subcultures in the process of the creation of new markets. In supplying the 'peripheries' with software, shadow economy entrepreneurs were

not the only protagonists: the contribution of teenagers in the ‘centres’, partaking in the process not primarily for money but for fun and competition, was just as crucial. At the same time, the fact that their subcultural activities had ‘entrepreneurial’ traits raises the question whether there can be observed a change in the character of youth cultures and subcultures corresponding with the appearance of early digital technologies as mass consumer commodities. (Albert 2017)

Furthermore, it is possible to embed the findings of this study into broader questions of contemporary history. It has been often pointed out that the period ‘after the boom’ (Doering-Manteuffel and Raphael 2012), the end of Fordism and the onset of neoliberal policies in the 1980s produced not only victims, but also significant strata of ‘winners’, particularly in connection with the new wave of globalisation (Bösch 2016; Wirsching 2006, 442).

Computer kids expanding their subculture into new territories and even making some pocket money out of this can surely be considered a prime example of such ‘winner’ strata beyond the political and financial elites, benefitting from the structural interruptions of late-Cold War societies. Enterprising computer enthusiasts – both crackers and unofficial software vendors – were the ‘winners’ of both the Cold War and early neoliberalism, yet winners whose story still waits to be told and put in context.

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Notes

[1] A legal history of home computing still remains to be written. For precursor debates from the mainframe age on software copyright, see Con Díaz 2016. For the connection between the appearance of new technical media and debates over intellectual property rights, see Dommann 2019. Particularly the debates around the Xerox machine (p. 161–163) are considered by her as predecessors of similar debates over computing.

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[2] For a contrarian retrospective view of a scene veteran on this question, see Walleij, n.d.

[3] Bulletin board systems (BBS, also colloquially known as ‘boards’ or ‘mailboxes’) were an early form of online communication which took place outside the Internet. The hubs of this decentralised network were home computers running special BBS software, allowing

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other users to log in using modems attached to landlines in order to exchange data and messages. BBSs became the most popular form of social networking and data exchange in the cracking scene from the late 1980s onwards, making obsolete the older tradition of ‘mailswapping’, i.e. exchanging disks by the post. On BBSs, see most recently, Driscoll 2014, as well as Driscoll’s contribution in the present volume.

[4] The case of Hungary, where professional game programmers existed already in the mid-1980s, is just an exception that proves the rule: These programmers functioned, with blessing of the authorities, as outsourced manpower for the British industry, and the games they created were not intended for the domestic market. See Beregi 2015.

[5] For some of the rather unsuccessful home computer models developed in the Eastern Bloc, see Malý 2014.

[6] These private imports could take on substantial dimensions: For 1987 alone, the number of home computers privately imported to Poland is estimated at 30.000 (Budziszweski 2015, 401). In Czechoslovakia, the number of ZX Spectrum machines for the same year is estimated to be between 80.000 and 100.000 (Švelch 2018: 52), a substantial number of them having entered the country as a result of private imports and smuggling.

[7] On Poland: Wasiak 2014b. On Czechoslovakia: Švelch 2018. On Hungary: Beregi 2015. Yugoslavia was a special case, as the domestic home computer assembly kit ‘Galaksija’ enjoyed a wide popularity and could, to a certain extent, meet the demand for home computers. See Jakic 2014.

[8] See for the case of Brazil as discussed by the US software industry: Executive Director’s Report, May 1988, in: Brøderbund Software, Inc. collection, Brian Sutton-Smith Library and Archives of Play at The Strong (Rochester, NY), box 13, folder 9.

[9] On Polish grey market software dealers and their creativity, see Wasiak 2015. On Argentina: the woz 2009. For an example from Yugoslavia: Belgrade Software Dealer 1993.

[10] For examples from Israel, see Dr.J/The Force 2004.

[11] E-mail correspondence with recipient of the letter, January to March 2016.

[12] For the ambivalence between “groups” and “firms” in the Polish context of the 1980s, see Wasiak 2016, 162–64.

[13] See the group’s entry at the Commodore 64 Scene Database:
<http://csdb.dk/group/?id=1462>.

[14] This effect of the cracking scene’s activity was also felt within the regions of the ‘centre’. See: Wade 2016, 56–57; Wasiak 2014a.

[15] For a similar contact letter from Turkey to a German scener, see S.W.A.T./Bronx 1990.

[16] See, for example, the detailed travel report by a US-American scene member to the Soviet Union in mid-1991: Lord Reagan 1991.

[17] Advertises for the party: 'Transcom Holidays Party' 1990; 'Transcom Party in Yugoslavia!!!' 1990; travel report: LKJ/Transcom 1990.