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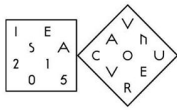
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The audiovisual ghetto blaster effect

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Abstract

In this paper I explore the transition from static to mobile audiovisual media and the implications of this transition in the construction of collective or individualised audiovisual experiences. The focus is on how the transition from static to mobile technologies enables novel audiovisual experiences in the public realm. To explore the transition, I delve into how technological developments reduced the size of the devices that facilitate the display of audiovisual content, and how the size constrains or expands the affordances for interaction with audiovisual media in public space. Although the current trend of reducing the size and improving battery autonomy of portable electronic devices might amplify the isolation from the immediate environment and lessen opportunities to engage with other people in the public realm, I argue that with the incorporation of mini or embedded speakers and portable projectors into portable electronic devices (PED) audiovisual content can be brought back into the public space.

Keywords

portable electronic devices, portable projectors, expanding and sharing audiovisuals

1. Size dependency, from static to mobile

Collective audiovisual experiences and static media

In this section, the focus is placed on the size and weight of the first devices that enabled access to audiovisual content such as cinema projectors, screens, radios, and later televisions and computers. The size and availability of technology influences the interaction of people with its content. It had also an effect on the cultural environment in which people encountered the audiovisual material and the communities that were build around the devices.

If we consider the size of devices as constrains upon their affordances to be moved around and present anywhere, then the bigger, heavier and bulkier the device the more difficult it is to move. Like the foundations of a house (Bachelard 1994, 20), the traditional cinema-theatre is fixed to the screen and projection device, each strategically installed in the room, like the upholstered seats, carpet and speakers. Although the cinematic experience was initially a temporary setting, an event for which projectors would be installed, tested and de-rigged, as Wim Wenders illustrates in *Die Gebrüder Skladanowsky* (Wenders 1995), or as the Brothers Lumiere showed when

presenting *The Arrival of a Train at La Ciotat Station* in the Grand Café (Bolter and Grusin 1999, 155). The experience of projected moving images soon became attached to a location, normally inside a building where its fluid content and its rolling film became anchored to the bolts and wheels of the cinema projector and the well-fitted projection screen. The fixity of the cinematic experience was caused by the size and weight of the device required for the projection and the accessibility to electricity supply to power lightbulbs and mechanics of the projector.

In the case of the first radios or televisions, the device may have become the centre of the household in a similar manner the chimney, patio or kitchen were previously. The gathering around a place or object served to share everyday, historical and cultural experiences. Although these rooms were not necessarily public, the activities that took place in them seem to be related to the public realm described by Hannah Arendt in *The Human Condition* (Arendt 1998). Arendt in her extensive account of public and private realms and how these and the relationships that take place in them have changed through time, describes the origins of the term public in association with ancient Greece. The public sphere is where individuals are relieved from the duties of their homes and are able to start dialogues and discussion with their peers (Arendt 1998, 28-37). Martijn de Waal in his article "The Urban Culture of Sentient Cities" (Shepard 2011) discusses Arendt's ideas of the public sphere and refers to Habermas' account of the activities in 17th Century cafes and the importance of the information provided by newspapers to offer topics of discussions and opening up conversations about the role of media in public spaces.

With the arrival of the first radios in the early nineteen hundred and later with that of the television (TV), the places for gathering shifted towards the AV devices, and the locations these devices occupied. As Arendt elaborates, with the rise of the social and the convergence, and even inversion of the functions of the public and private realms, conversations and public discourse moved indoors before the arrival of AV devices. Devices like the radio were initially restricted in their mobility and probably only present in domestic and professional bourgeois environments. Although initially inaccessible to everybody, furniture-like radio devices may have become a gathering point for people, not all which were necessarily part of the household (neighbours, friends and relatives

were also attracted), who could engage with the broadcasted content together. This notion of radios being hubs of social engagement also applies to devices that offered the possibility of displaying visual content such as TVs. Once the receptors of mediated content are embedded in everyday life and camouflaged as furniture, broadcasted information becomes more readily available, but still limited to broadcasting times and scarce amount of content. The content travelled in the form of waves in the air, and accordingly, existed in motion. In contrast, the first AV devices were static, dependent on electrical power, and were plugged into architectural infrastructure. Devices were constrained to specific locations while information was able to move from one place, that of the broadcasting studio, to a multitude of places simultaneously.

People gathered around these devices eager of new content, but the nascent broadcasting industry was still developing methods to produce compelling audio and visual content. The amount of AV material depended on the ability of the media industry to develop new techniques and gadgets with which to produce AV content. There seems to be a constant: development and innovation accelerates exponentially and correlates with the pursue of mobility and the transition from static to mobile practices. Nicolas Negroponte in *Being Digital* (1995) reflects on the development of technology and media up to the mid nineties, addressing examples such as the development of computers and the rise of the internet. To sustain the claim that innovation has sped up with the advent of electronic and digital technologies he refers back to one innovation in the production of moving images:

From a historical perspective, the incubation period of a new medium can be quite long. It took many years for people to think of moving a movie camera, versus just letting the actors move in front of it. It took thirty-two years to think of adding sound. Sooner or later, dozens of new ideas emerged to give a totally new vocabulary to film and video (Negroponte 1995).

The incubation period as Negroponte mentions *can be quite long*. However, the moment it takes place and the technologies and methodologies are accessible to others, emphasis sooner or later *others* start building on these innovations. When comparing the content the industry was able to produce back when the camera had a static point of observation with the wealth of content that is produced now, we can see an exponential increase in the amount and variety of content and the routes available to access AV content. The different devices and locations where AV material can be accessed have an impact on the strategies people use to engage with others and the environment. There is no room here to argue for or against technological determinism in relation to the size of and the interactions that AV devices afford. Michael Punt in *Early Cinema and the Technological Imaginery* extensively discusses technological developments of early cinema, and challenges advocates of hard technological determinism for not taking into account the correlations of a 'network of social, economic and technological determinants' (Punt 2000, 101). For our purpose, it is worth noting that it is the interrelationships between individuals, places and devices that are significant in the transformation of AV content from static to

mobile. In this respect, the devices shape the interaction to the same extent that people shape the devices to suit certain needs and requirements.

Personalised AV experiences and mobile media

In this section section, the key is the reduction in the size of devices that enabled access to and production of AV content. When the devices for displaying and producing audiovisual content became smaller, and to somehow portable, they moved out from their static locations and people started to move around carrying them to the beach, park, boat. The leap from analogue to digital technology, is what ultimately made the reduction of the size of the devices possible.

Although the focus is to enquire into the reduction in size of the devices that enable the display of AV content, it also applied to the devices that recorded this content. Both types of devices are becoming smaller as their electronic circuits and components become smaller every day. To significantly reduce the size of the devices, the analogue mechanics had to become digital. This change, was a slow transition throughout decades rather than a sudden technology leap. It is worth noting that the change from analogue to digital, as Negroponte fleshes out, seems like a leap because of the speed with which digital technology has evolved since its conception. The change started slowly. First the components in radios, televisions and computers -valves, capacitors, resistors and the like- had to be designed and engineered to be smaller, and so furniture-like devices slowly became portable. Only when the size of the electronics shrunk could the devices that produce and displayed AV material shrink as well.



Figure 1: Image by Mikey G Ottawa, CC BY-NC-ND 2.0

Mikey G Ottawa's picture *Figure 1* shows a PED which is still big if compared with later devices such as walkmans or audio players (i.e. iPods). The person carrying the battery-powered Ghetto Blaster is able to move, and is not restricted to the immediacy of a power socket (Ottawa 1987). The fact that the device is not small enough to fit in a pocket or handbag, affords for a collective engagement with technology and the environment. Battery-powered PEDs like the Ghetto Blaster enable people to gather around and engage with the audio content collectively. Whether in motion or in a static

location sound permeates the public and private spheres, and although the PED may only be directly accessible to a small group, its content permeates outside this group. Unlike visual content which is directional and concentrated in a specific surface, audio can move into contiguous areas. The content played on the Ghetto Blaster may not suit everyone in its vicinity, but it is blasted outwards into the environment no matter who is around. An indoors analogy could be the Jukebox, a device that due to its size is constrained by its power cable to a location, normally a bar or public establishment. The device plays the content that an individual, or group, selects, pays for and wants to listen. The decision is temporal, but affects all those who happen to be in the establishment. If the selected tune is appropriate, the sound could bring people together, but if not, it could also encounter critics or detractors.

The reduction in size of the television set presents a different engagement than that of the Ghetto Blaster. Portable TVs moved people away from the group with which they would have normally engaged when watching TV. Portable TVs favoured one-to-one experiences with the AV material the facilitated access to. Mauricio Kagel addresses the break from static to mobile AV devices in his experimental black and white film *Antithese* (18:35 min) (Kagel 1962). In the film, the main character is operating, playing and breaking AV devices, tangling himself in a mesh of film and tape strings, shooting and hammering television and radio sets, coming in and out of the frame. At the beginning of the film we see bulky, heavy furniture-like audio and television devices that he connects, plugs and unplugs. The devices continue taking part in the scene for a while, then a portable radio appears and later even a portable television which the character takes out of a bag full of film and tape stripes. Before taking the television out of the bag, he grabs a sandwich from inside the bag (12:45 min) and starts eating it. Then, he puts the sandwich in his pocket and takes the television out of the bag (13:20 min), places it on the floor, lays down and finishes his sandwich. Then, takes the television and starts rolling on the floor while holding it, in a sort of dance, staring at the screen and its images, tangling himself in a mass of film and tape until he puts the television back into the leather bag (14: 25 min).

A portable wireless TV of the late 70s was, according to the Museum of Technology, a treasured device that costed in weight more than Silver. In the Museum of Technology website, Tim Vanns from Watford commented in 2010 that the Sinclair Microvision TV1B (see *Figure 2*):

... certainly came into its own when I went camping. If you held it about the same distance away from your eyes as you would if reading a book, the picture was superb. It was powered by AA batteries that gave you about 12 hours of viewing. (Tim Vanns)

From the shape and design of the device but also from Vanns' comments we could infer that the device was used as if it were a book, as a media to engage with on an individual basis. This is baffling, specially if we consider camping to be a group activity in which people gather around a fireplace and cook together. Still it makes sense that someone would prefer to look at a moving picture when inside a dark tent, because

reading would be difficult due to the bad lighting condition that torches offer. Assuming that this is the specific case in which this person used the TV1B device, we could extrapolate that a new trend emerged towards the 80s. People started to engaged with PEDs in an individualised rather than collective manner.



Figure 2: Sinclair Microvision TV Model TV1B, 1978, 4 x 6 x 1.5 inch. Image credit (<http://freakism.tumblr.com/>)

A different way of bringing AV content outdoors aside from the miniaturisation of devices, can be found in drive-in cinemas (1930s onwards) and more recently, as Richard Coyne mentions in *The Tuning of Place* (2010), in urban screens dedicated to “showing Sky or CNN broadcasts” in the middle of contemporary urban environments (Coyne 2010, 219). Although Coyne refers to these screens in relation to how they borrowed the use of frames and the externalisation of sound from cinematic practices, it seems relevant to discuss their potential to engage people. If compared with drive-in cinemas, urban LED screens do hardly ever function as places for gathering and social interaction. Drive-in cinemas only run at night and have specific film programmes –normally B films– which serves as an pretext for people to gather and engage with others (i.e. friends, family, partners) (Reid 2008). On the contrary, outdoor urban screens run their programmes uninterruptedly while people move around and mostly ignore them. Urban screens only become useful as a gathering places when international events such as World Cups and Olympics are broadcasted live. Often, these screens occupy a place in which people are not interested in exercising their public lives. The reason behind might be that although the content is constantly changing with the latest news, it is not dynamic, it always shows the news and cannot be tuned to suit the AV interests or need of people in the surrounding area. If people were able to use the screen for a specific purpose, even if only temporarily, and the screens were potentially used to showcase the content or online applications that people can select via smartphones (i.e youtube, iplayer), then they could become relevant and play a meaningful social role.

Back in 1980, artists Kit Galloway and Sherrie Rabinowitz proposed a different type of engagement with AV dis-

play technologies than that offered by personal computers and outdoor urban screen such as advertising screens (i.e. New York's Times Square). They were interested in getting passers-by to participate in the first outdoor telepresence project, a collective teleconference event in which people from two cities (L.A. and N.Y.) were connected via satellite. People could hear and see each other across the continent, thus interact with people thousands of miles away. *Hole in Space* was not meant for a particular group, it was open to all those who happened to be there. Some people came to the projection-streaming place alone, some with a group. Their purpose could be peeking or performing and interacting with people on the other side. Some wanted to communicate and see relatives that lived at the side of the country, and so placed themselves in from of the screen. Either as an observer or a participant, people made this telepresence project possible collectively. Individual conversations were broadcasted publicly and were readily available for anyone to participate in. The two places where the screens were installed became a site for social interaction, dialogue and exchange, a genuine public place.

The communication flew between the two coastal cities for a week. This taster probably left a large number of people waiting for the technology to be available to use at home and other convenient locations. For this technology to become available, a few decades had to pass. Only when personal computers became more common, in particular PEDs (e.g. laptops, digital tablets, smart phones), and Internet connections more reliable could telepresence really become widely available. From Galloway and Rabinowitz's *Hole in Space* up to the first decade of the 21st Century, telepresence has slowly ceased to be a collective activity and has become part of personalised technologies. The audiovisual blaster effect of *Hole in Space*, drive-in cinemas and movie theatres, furniture-type television and radio set, and the Ghetto Blaster, have become silent in the pockets of people, who engage with AV content through small PEDs screens and headphones.

From individual to participatory audiovisuals

Individual places moving towards collective

When individuals turn their backs to those present in their immediacy and engage with AV content through ever smaller individualised PEDs (e.g. smart-phones), the environments in which they are and move cease, to some extent, to be public. The person is physically present in public, but does not take part or seems not interested in engaging and sharing AV content with others. The content is experienced individually without the need for engaging with others. In this context, people become accustomed to be isolated, and to plug their earphones and concentrate on PED screens.

The transition from collective to individual audio and audiovisual experiences has been gradual: slowly devices have become smaller and their capabilities to play and record AV material greater. In the 80s, with the progressive declivity of the Ghetto Blaster in favour of the 1979 Sony Walkman, shared aural experiences were left aside and transformed into individual aural experiences. Paul du Gay in *Doing Cultural Studies: The Story of the Sony Walkman* discusses the impact

of the walkman on culture and people's personalised experiences of sound (du Gay 1997). With the walkman, the person walks free with the device strapped to a belt, or stuck in a pocket or handbag. Its headphones cancel external noises and sound cues, so the person is deafened towards others in the surroundings. A chosen alienation where the person prescind from the aural information of the surrounding environment and takes distance from others. Images from the Sony Walkman advertising campaign show people listening to walkmans in the company of others (du Gay 1997, 38) which seems strange because with headphones on and a cassette playing, no matter how low the volume, the content played by the device hinders the communication between people.

When asking for directions, we are more likely to address passers-by who walk without earphones or headphones, who are not looking at PED screens or conversing with their mobile phones, because these people seem to be out of reach. People using PEDs in public, tend to be in and move in a hybrid environment, where external sounds and surrounding people are not totally excluded, but fade into the background. In the *Tuning of Place*, Coyne elaborates on the idea that through ubiquitous computing and PEDs people are able to synchronise with different spatio-temporal realities (on-, off-line environments) simultaneously. These two coexisting realities blend in everyday life, because digital content and environments are readily available on PEDs at any time. AV content is accessible from online platforms and hard-drives, is produced by broadcasting companies and friends, peers, colleagues, family, experts, and is abundant and accessible asynchronously. People spend more time in-between physical and digital environments, combine them at their convenience and sometimes loose contact with those around them.



Figure 3: Family watching television, ca. 1958. Image credit to Evert F. Baumgardner, Internet Archive, public domain (Baumgardner 1958)

Based on Coyne's account of tuning and the idea that most people have PED, the place that people occupy is individually crafted and build around the digital content they create or access. These exclusive tuned experiences put aside the possibility of gathering physically around a device like it was possible with the early television set (see *Figure 3*). However the voluntary isolation that small PEDs draw forth, can be counter fought with initiatives such as Breakout!

Breakout! is a project commissioned by the exhibition *Toward the Sentient City* organised by Mark Shepard in 2011 (Shepard 2011). The project developed around the idea of bringing people together that would normally work in isolation because of cubicle-type office environments, freelancing, working on start-ups, or working from home or cafes. Taking into account the need for being connected to the internet as a prerequisite for working in the 21st Century, Breakout! enabled people to gather to work on their individual tasks in public with a reliable wireless internet connection. So people could interact and help each other. Breakout! started with a website which enabled the coordination of a group of people interested in meeting and working together in a concrete place in the city. Breakout! is a step forward to bringing people physically together and fostering dialogue and collective action in the public realm. In the introduction of the *Sentient City*, Mark Shepard poses the question:

if the meaning of urban public spaces is as much a product of their spatial and material arrangement as it is of the conditions of their use, what new types of activity can be enabled in these spaces, and toward what ends? (Shepard 2011, 14)

The question opens up the possibility of using technology in public environments to create new types of social interactions. If PEDs and ICT infrastructures enable digital communication in urban contexts and open the possibility of bringing working environments outdoors, it seems also possible to use the same technologies to enable creatively mediated AV encounters that are not work related. In *Wanderlust* Rebecca Solnit addresses the issue of bringing work into every aspect of everyday life, and the threat that PEDs pose to the activity of walking in public and outdoor environments. For Solnit, walking is a time to think, but PEDs open up the possibility of always being connected and able to access AV content, and in that way load with work the time that needed to move from one place to another (Solnit 2002, 10).

Although Solnit's approach might seem appropriate to desaturate everyday life from the hectic of ICT and the immediate responses PEDs secretly enforce on us, it might be difficult to disentangle personal from working time when most people walk around with and are hardwired to PEDs. A response against labour permeating every aspect of our lives, might be to use these technologies and devices to devise creative ways of engaging with AV content and media, and doing that collectively instead of in isolation. Either in digital or physical environments, the term public that referred to the sphere where dialogue and conversation and the embodiment of the public live were performed in Ancient Greece (Arendt 1998) can be brought back as a place for collective engagement and experiential exchange hub through PEDs

like portable projectors and speakers.

Audiovisual content embedded back into the group

When people and their PEDs are no longer distinguishable from one another, because the devices are so deeply rooted in the concept of the self that the device turns into an extension of the person and a means of the interactions with others, AV content is no longer fixed to places but can move around in the environment with the person. Then, AV content can be displayed anywhere, blowing up and expanding AV experiences to previously unimaginable places. Reduced size and battery autonomy grant the possibility of broadcasting AV content anywhere. Depending on the display size and the power of in-built sound systems, PEDs may become the focus of attention, the locus where people gather in public.

Coyne draws on Pfeifer and Bongard's *How the Body Shapes the Way We Think* when he uses the term "wearable" in connection with mobile phones, which according to Pfeifer and Bongard "are parasitic... Phones exploit their users by hitching a lift with them!" (Coyne 2010, 135). Drawing on this idea of *hitching a lift* we could go further and say that the relationship between PEDs and people has become so intimate that the distinction between the host and the guest has almost vanished as if we were cyborgs (Turkle 2011). The technology that displays AV content is not hidden away inside the projection room, living room, office or institution anymore. On the contrary, although some devices like wireless receptors and cameras may have become smaller (iPod Nano), invisible (RFID cards) or so small that they are imperceptible (nano implants), PEDs designed to display AV content (laptops, tablets, smart-phones, etc.) are fitted with generous and bright screens, even with projectors (e.g. Galaxy Beam II) and loudspeakers at the front.

Devices for displaying AV content such as the HTC One's BoomSound smart-phone are designed to offer better sharing experiences in public environments. The screen is bright and big enough for a small group of people to engage with and the in-built speakers at the front improve the AV experience by imitating the stereo systems that would normally be set up in DIY home cinemas, where the sound comes from the front –where the moving image is– to avoid the uncanny sensation of acousmatics (Chion 1994). People can share AV content better with bigger displays than with small screens. If we compare the screens of the first mobile phones with the current ones, we note that: when it comes to size, resolution and the data they are able to display, there is an abyss between the two. The technical advances that make possible the display of good quality AV material on PEDs could also be used for more creative purposes than those of mainstream holly- or wolly-wood online cinema or advertising campaigns.

According to the British Film Institute (BFI) *Opening our eyes* 2011 report on how people engage with cinema compared to other leisure activities such as sports or culture, one of the main points is that 23% of the films are viewed online or on mobile devices, and 11% of survey participants reported watching "a film on a mobile device at least" once a month (Alliance and MediaCT 2011). This *watching a film on a mobile device* refers to a wide range of devices which may include tablets, mobile phones, iPods and others, and maybe

even portable projectors. Although portable projectors are not yet fully embedded into smart-phones and tablets like for instance cameras, there is the potential that they may soon be, because they are becoming smaller and more affordable and can be engineered into PEDs and commercialised as an extra feature. With the spread of portable projectors embedded in PEDs, films may no longer be watched on screen, but beamed out into the environment: a wall, a door, a ceiling, a stone, a tree.

In 2005, Finland's company Upstream Engineering, prototyped an light-emitting diode (LED) projection system of match-box size that could potentially be incorporated into PEDs. Using a different technology, Texas Instruments (TI) have been developing nano digital light processing (DLP) technology and showed a mobile-phone prototype at the Consumer Electronics Show (CES) 2007 in Las Vegas (Jan 8-11) and 2007 CTIA Wireless convention in Orlando, Florida (Mar 27-29). Some of the first mobile-phones with portable projectors incorporated were shown at CES 2009, where Logic Wireless debuted with the Logic Bolt phone and Samsung with the MBP200 which incorporated DLP technology from TI. Previous to those were the Shenzhen Showork N70, Javes PMP-N70 and Epoq EGP-PP01 mobile phones with portable projectors. The specs for a later TI projection technology of the size of a pencil tip is DLP® LightCrafter Display 2010 TI can be found at <http://www.ti.com/tool/dlpdlcr2010evm>. In 2009, MicroVision applied for the PicoP® patent and the next generation PicoP® Gen2. MicroVision's pico projector uses MEMS control algorithm and the projection device is made of two components: Integrated Photonics Module (IPM) and Electronics Platform Module (EPM). For the projection technology to become even smaller research is also being undertaken to reduce the lens size, as for instance the FLGS3 Series lens developed by Alps Electric.

It is a race, and whoever develops the smallest, brightest, most cost effective solution will win the market share, at least for some months. Despite a number of manufacturers developing such devices, it looks as though Samsung is currently one of the few that is pushing these type of PEDs into the market. After the MBP200 and W9600 models, Samsung launched the Galaxy Beam in 2010 which has now been superseded by Galaxy Beam II launched in China in April 2014. UK mobile providers did not offer the Galaxy Beam, and it is still uncertain whether they will offer Galaxy Beam II. Its market is niche and mainly in Asian-Pacific regions. It is worth noting that in the near future, mobile phones with projector may become available at similar prices than other PEDs. In fact, probably most PEDs will have a projector of some sort. The projection capabilities of mobile phone thus far are not optimal: the resolution is low and the light swings between 15-20 lumens, which is not particularly high. When using PEDs with low luminescence and resolution and projecting onto nearby surfaces (close distance), image quality is fine. However, as expected, the batteries of mobile phones are drained fast when projections are carried out. This is an issue that manufacturers will have to pay special attention to if these devices are to take off in the market. These type of PEDs may soon be in people's pockets, and their projections

may serve as point for gathering, interaction and exchange.

The playful social engagement these portable projectors offer has been considered by companies such as Disney where researchers have investigated their potential to enhance gaming. Disney is aware of the impact these PEDs may have on their activities. On their website, the company says: "market research predicts that as many as 39 million devices with embedded projectors will be on the market by 2014." (DisneyResearch) Thus, they have been researching how portable projectors and mobile phone technology can be used to design interactive games. PEDs with projection capabilities offer the possibility of engaging with games and animations while projecting the content in the environment, and Disney Research Lab is exploring their potential through projects such as MotionBeam (2011), SidebySide (2011) and HideOut (2013). They are foreseeing the spread of PEDs with portable projectors and investigating how people could use them to augment their environments to play together.

When people use handheld projectors, they externalise AV content contained in their PEDs and expand it into the surroundings, where others can also engage with it. The projection beam turns into an AV blaster that affects the person holding the PED, and those in the vicinity. For the person holding the projector, the PED is an extension of the self. The technology disappears in the action and gesture of projecting, in a similar way the pencil or keyboard disappears in the writer's hand when immersed in the writing process. Hence, handheld projectors become "ready at hand" (Heidegger 1973) when the person no longer thinks about how to use the intricate piece of electronic equipment but uses it as if it were a pencil with which to draw with light. The PED becomes an extension of the body. The projected visuals create a magic lantern event, where performance and communication take place between people. The projection is simultaneously an intimate and a collective activity: the experience of projecting is embedded in the person that projects, while the projection is embodied by all those around it. Although the projected content has no physical reference unlike in the old film reel, the person holding the PED is physically bound to the AV material through direct contact with the source of the beam. The person holding the device can direct the AV information and to some extent touch the textures of the environment, even if only visually, through the light beam.

Just like when going to the cinema, the audiovisual content contributes to develop social engagement. When people gather for a purpose such as experiencing audiovisual material their activity is collective and defined by their presence, their use of portable devices and their motion in space. In the cinema as well as in AV walks, people exchange their views of the AV content and what their experience of the content was. With expanded AV experiences such as AV walks as well as with cinema screenings, people participate and socialise in public environments, share opinions and concerns while walking, or over drink or food. Simply by communicating their emotional experience with each other, even if briefly or only through body language and gesture, the AV event provides a ground for social interaction. There are attempts to bring the audiovisual experience out of the built environment of the cinema theatre. Initiatives such as the drive-in-cinemas

or outdoor-summer-cinemas expand social interaction to an outdoor environment but also portable cinemas. Examples such as the *Portavilion* (2008) (Uffelen 2009, 128-9 (van Uffelen 2009)), the smallest cinema in the world composed of 6 seats, constructed by the Hopkins Architects and Expedition Engineers for the London Festival of Architecture 2008 are attempts to bring the indoor audiovisual experience outdoors. We could extrapolate that when engaging with audiovisual material such as video or film people need not to be alone isolated from others. Even in the smallest cinema in the world one can meet others, laugh at and be scared by the film with others, discuss a specific moment, express enjoyment or discontent through gestures, and ultimately communicate with others the individualised experience of the world of pictures and sounds and that of the world of the tangible.

Conclusions

An overall view of how size influences the way in which people engage with devices and others. While moving from the first audiovisual devices and their static and heavy nature to smaller, lighter devices people have adapted their social interaction and shaped the devices to fit these. Devices have shaped and changed the way in which people communicate and participate in their social and public life to the same extent as people utilise and design the devices to suit specific needs or purposes. From the radios to the television, from furniture-size to pocket-size devices, from the magic of audiovisual illusions to the commercial agendas of devices' manufacturers, all in all can be refocused to bring people together, to get people to share audiovisual content and to engage with it, and to be open to engage with novel or experimental approaches on how the technology can be used. By taking part in creative locative and audiovisual activities people will be able to see their everyday life anew. In the mean time we will wait for projection technology to become common among us.

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References

- Alliance, N., and MediaCT, I. 2011. Opening our eyes. Technical report, British Film Institute (BFI).
- Arendt, H. 1998. *The Human Condition*. Chicago ; London: University of Chicago Press, (published 1958) 2nd edition.
- Bachelard, G. 1994. *The Poetics of Space*. Boston: Beacon Press.
- Baumgardner, E. F. 1958. Tv in the 50s. Internet Archive, wayback machine, archived 27 December 2007.
- Bolter, J. D., and Grusin, R. 1999. *Remediation: Understanding New Media*. Cambridge, Mass. ; London: MIT Press, 1st MIT press pbk. ed edition.
- Chion, M. 1994. *Audio-vision: Sound on Screen*. Film and Culture. Columbia University Press.

- Coyne, R. 2010. *The Tuning of Place: Sociable Spaces and Pervasive Digital Media*. Cambridge, Massachusetts; London, England: MIT Press, 1st edition.
- DisneyResearch. Disney research - interactive mobile projectors. online.
- du Gay, P. 1997. *Doing Cultural Studies: The story of the Sony Walkman*. London: Sage Publication and Open University.
- Heidegger, M. 1973. *Being and time*. Oxford: Blackwell. <http://freakism.tumblr.com/>. The sinclair microvision tv1b.
- Kagel, M. 1962. Antithese.
- Negroponte, N. 1995. *Being Digital*. London: Hodder and Stoughton.
- Ottawa, M. G. 1987. Boom box - montreal.
- Punt, M. 2000. *Early Cinema and the Technological Imagin-ery*. Postdigital Press, 1st edition.
- Reid, R. T. 2008. The history of the drive-in movie theater: The continued attraction of viewing movies under the stars. *Smithsonian*.
- Shepard, M., ed. 2011. *Sentient City: ubiquitous computing, architecture, and the future of urban space*. MIT Press and Architectural League of New York, 1st edition.
- Simmel, G. 1997. *Simmel on Culture*. London: Sage.
- Solnit, R. 2002. *Wanderlust: A History of Walking*. London: Verso.
- Turkle, S. 2011. *Alone Together: Why We Expect More from Technology and Less from Each Other*. New York: Basic Books.
- van Uffelen, C. 2009. *Cinema Architecture*. Switzerland: Braun Publishing, 1st edition.
- Wenders, W. 1995. Die gebrüder skladanowsky. IMDB ID: tt0113151 IMDB Rating: 6.8 (294 votes).