

**‘10,000 SONGS IN YOUR POCKET’**  
*The iPod® as a Transportable Environment*

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**Abstract**

The rapid advancement of digital technology has caused a definite and steady miniaturization and dematerialization of objects, shorter design cycle times due to faster communications, and modified processes leading to technologically informed forms in the realm of product design. This has led to the birth of a host of portable products such as personal stereos (the Walkman, Discman, iPod, etc.), cellular telephones, personal digital assistants, etc. These objects, which have become indispensable in certain social groups, are capable of creating transportable environments and movable experiences regardless of where they are used.

One such device that has captured the public imagination is the iPod, the MP3 player from Apple Computer. The success of the iPod is owed partly to the growing popularity of a new format called MP3, a digital audio file that can be easily transported over the Internet. Advertised with the tag line “10,000 Songs in Your Pocket,” this small gadget allows people to carry their entire music collections on their person. This project attempts to understand the various dimensions of the transportable environment created by the iPod and of lived phenomena, such as portable listening, using critical theories and empirical methods.

**Introduction: Object as Environment**

Transportable environments are typically understood as portable structures that can be relocated with relative ease, erected and dismantled quickly, constructed from non-traditional materials or those that may be deployed as short-term shelters. However, this merely represents the physical dimensions of environments created by architectural enclosures. Environments may also be conceived as mental rather than corporeal, imagined rather than built, ethereal rather than corporeal, and perceived rather than prototyped. Also, such environments need not always be buildings; they may be portable gadgets. Thrown into handbags, slipped into pockets, or simply hand-held, devices such as mobile telephones, MP3 players, and personal digital assistants allow us to create transportable environments that we can travel with. They contain fragments of other spaces—places we are temporarily away from. The object of this essay is to study one such product, Apple Computer’s iPod, which through personalized music gives us the ability to transport our cherished environments with us, no matter where we might be. The environment created by the iPod is an assemblage of body, technology, and space. It is auditory and it contains treasured sounds; it is virtual and contains communities; it is ethereal and contains sensations.

Scholars in cultural studies have played a major role in decoding the processes by which people make sense of their private presence in the social world. One may acquire a better comprehension of the relationships between the individual and society, music and technology, as well as the body and space by referencing theories from this field of study. And, when accompanied by observations of lived experiences with objects, they can provide a means by which to decipher our environment. As a part of the primary research for this article, iPod users were observed and interviewed with the principal aim of finding out how these objects become a part of their daily routine and how they influence their relationship to the environment. Member websites that function as forums for the discussion and exchange of “iPodding” information were accessed along with weblogs where daily minutiae of iPod related activities are recorded.

## **Mobile Miniatures**

“It is now a commonplace observation (to the point of weary cliché) that the explosive combination of tiny, inexpensive electronic devices, increasingly ubiquitous digital networking, and the world’s rapidly growing stock of digital information is dramatically changing our daily lives” (Mitchell, 2002, p. 50).

Following this forthright statement in his essay “E-bodies, E-Buildings, E-Cities,” Bill Mitchell asks what this condition suggests for design in the twenty-first century. Since the arrival of digital technology in the early 1980s, this question has been raised numerous times by countless scholars and there have been several rejoinders. There have been calls for the end of design as well as for the birth of a new design, requests for a more socially informed design, references to a second modernity, and so on. Common observations, however, are of a definite and steady miniaturization and dematerialization (also referred to as immaterialization or demassification) of objects and shorter design cycles due to quicker communications. Digital circuitry has replaced electromechanical machinery, integrated chips and printed circuit boards have triumphed over motors and pulleys, and moving electrons have deposed moving components. The result has been an explosion in the number of small, digital gadgets like laptop computers, personal digital assistants, mobile telephones, MP3 players, and video games. These products that have made us more mobile, more connected, and freer from cumbersome wires plugged into walls have become almost indispensable in the daily functioning of work as well as leisure activities in urban life today.

## **Digital Music Cultures**

In the case of music, the advent of digital technologies triggered the shift from analog to digital signal and had a significant impact on patterns of production and distribution. However, consumption of popular music changed with the stellar rise of a new file format. Called MP3 (which clumsily expands to Motion Picture Export Group-1 Audio Layer 3), these audio files are much smaller in size, making them immensely portable. The quick proliferation of these files was aided by a growing number of high-speed internet or broadband connections in households, dormitory rooms, computer laboratories at universities, and at business locations, as well as cheaper and better computing equipment. “From the time that computer makers began including CD drives in personal computers (augmented later with good quality audio speakers) the music listening habits of many white-collar workers, students and others who use personal computers on a daily basis have undergone significant change” (Jones, 2000, p. 218). The MP3 file is as versatile as it is portable, because it can be “ripped” from and “burnt” onto a compact disc, it can be saved on any device that has a hard drive, it can be easily transported over the Internet, and it can be swapped between people who have never met. And, it is invisible. It is ephemeral not corporeal, it can but need not be attached to a physical medium such as a CD, it cannot be seen or touched but it can be heard. Being binary in its construction it never degrades, and it has eroded the difference between original and copy, making the term high fidelity meaningless. Though mobile externally, internally it is absolutely static and unchanging. Bruno Latour’s concept of the “immutable mobile” (1986) as something that can effortlessly traverse space without being transformed in the process works as an appropriate metaphor (with the appropriate software though, MP3s can be modified). This inherent immutability of the MP3 file that allows it to be reproduced numerous times without loss of sound quality has also allowed music to easily navigate across various locations (computers, MP3 players, compact discs, the Internet).

## **The MP3 Player**

Considering the popularity and success of portable music players like the Walkman and Discman, the debut of a mobile MP3 player was imminent. The first portable MP3 player to be released in the United States was the Rio, from Diamond Multimedia, in 1998. Since then, many more have showed up on the market, and the iPod was first announced at a news conference in Cupertino, California on October 23<sup>rd</sup>, 2001. In the short time since its introduction, the iPod has become one of Apple’s most popular products,

with over 750,000 units sold in its first fiscal quarter of 2004. A crucial product in the emerging landscape of digital music, the iPod has become fetishized rather quickly. Described as a cult object in *The New York Times*, sold at the rate of two every minute, winner of several design awards, this cool new product reflects the styles, attitudes, and new patterns of behavior of several user groups. Through this process, it has become a cultural commodity that has changed how music is shared, transported, distributed, stored, and consumed.

Figure 1. The iPod® (Courtesy of Apple Computer)

### **Indexing Personal Stereo Use**

Portable music players have been the subject of numerous studies, resulting in many articles and two books, one titled *Doing Cultural Studies: The Story of the Sony Walkman*, by Paul du Gay, Stuart Hall, Linda Janes, Hugh Mackay and Keith Negus (1997); and the other, *Sounding Out the City: Personal Stereos and the Management of Everyday Life*, by Michael Bull (2000). The study performed by du Gay et al., applies a model they refer to as the circuit of culture that includes five processes: production, consumption, regulation, representation, and identity. These five, which roughly form the chapters of the book, can be employed in performing similar analyses on other cultural artifacts as well. Michael Bull, on the other hand, investigates the nature and role of the mobile auditory experience, technology, and personal stereos in the management of everyday life. Bull offers a typology as a means of cataloging the reasons why personal stereos are used, some of which are direct responses to the environment. These gadgets offer a means by which undesirable and loud city sounds can be replaced by a personal soundscape. They also allow people to withdraw into themselves from the discomfort, hostility, and insecurity caused by the omnipresent urban multitude via the activity of privatized listening. Sometimes personal stereos (and especially, in this case, the music played on them) provide an aesthetic experience that enhances the outside environment. On the other hand, Bull's studies have shown that people may have little interest in the environment, and therefore rely on their Walkmans to make the journey more engaging through music-inspired sensations and memories. In an environment that can be annoying or meddlesome, the headphones act as shields from unwanted human contact. Many other nuanced uses for the Walkman are discussed by Bull, most of which can be understood as strategies of dealing with the self and the environment. The multiple uses of MP3 players such as the iPod can be explained using Bull's typology, but they offer added advantages not previously experienced by fans of portable music.

Either too bulky or awkwardly shaped, the Walkman and the Discman do not fit easily into pockets, and they have to be carried around in the hand or in a bag. They also require media (cassette tapes and CDs), which hold the music. MP3 players are smaller and do not need external media, as they store music files on their internal hard drives. This has added tremendously to their transportability and overall convenience, an aspect that is promoted through iPod advertising. The Apple Computer website regularly features commercials in the form of Quicktime videos of the products and/or services, one of which presents Hamilton Morris, a student who situates the iPod within his daily activities.

It's kind of a pain to carry around a whole lot of CDs, so I try and stick all of them inside one case, but that never works cause then it puts too much pressure on the little door and [it] always gets cracked and split[s] open. You have these heavy textbooks that are banging against them all day and CDs spill out and make it scratch by all the crumbs in your bag... I love my iPod. A hundred CDs in something that's, you know... that big [gestures and laughs]. So much music... it makes me feel powerful. Hamilton Morris, I'm a student. (<http://www.apple.com>)

Through Hamilton, Apple has created the identity of one of the typical users of an MP3 player: a student always on the move with plenty to carry around, interested in keeping a lot of music at hand, not very organized, etc. The identity of the product itself is shaped through the monologue which offers a comparative analysis of old media and new, referring to the hassles of one and the convenience of the other, the clumsy nuisance of one and the easy transportability of the other, the fragility of one and the power of the other. This creates a differentiation for the product within its milieu. Interestingly, the iPod is never shown in this clip; the emphasis is entirely on the experience it provides in the context of everyday life as demonstrated in references to CDs, the CD case, textbooks, and, of course, the crumbs in the bag.

### **The iPod as Environment**

The transportable environment created by the iPod may be understood as a site where body, technology, and space come together to construct an adjusted meaning of the private. As you walk the city, iPod in hand and signature white earbuds plugged in, this private bubble travels with you like a shadow, everpresent and close by. In his essay "To Each Their Own Bubble," Michael Bull refers to the personal space created by personal stereo users as "non-spatialized conceptual space," and the process of generation of this space as a form of "colonization" (2002, p. 284). He further notes that this space is more ephemeral than geographical by necessity, largely because of the difficulty of substantiating and negotiating personal space in today's urban environments.

Some of the concepts developed by philosophers Gilles Deleuze and Felix Guattari may also be successfully applied as models in understanding iPod environments. For example, the environment created by the iPod may be seen as a Deleuzian assemblage. In conversation with Claire Parnet, Deleuze describes assemblages as entities that have four components or dimensions. Assemblages are "states of things" that are suitable to the individual, they are "little statements" that represent style, they "implicate territory," and also "implicate deterritorialization" (Deleuze, 1977). Though these discussions of assemblages between Deleuze and Parnet occur within the context of the concept of desire, the four components may be employed as metaphors in understanding the territory set up by the iPod environment. A transportable iPod environment is a state of being donned by the user in creating a suitable protective atmosphere. It also makes a statement to the public realm about the privatized state of mind of the iPodder. Environments, whether real or virtual, claim territory by their very existence. In this case, a boundary is set up when the headphones are slipped on, and is maintained as long as they stay on. However, this is a fragile, permeable boundary that can be shattered or breached by external forces and interruptions. As the margins of this territory are porous and because the territory is constantly on the move, deterritorialization is easily achieved. The iPod environment, as an assemblage, also contains music. The music that fills it provides a form of utopia. "By circling people, by enveloping them—and inherent in the acoustical phenomenon—and turning them as listeners into participants," music adds dimension to the assemblage (Adorno, 1976, p. 46). Therefore, one may describe the transportable environment of the iPod as an assemblage with multiple dimensions, real and virtual, enveloping but permeable, territorialized but moving, and entirely soaked in sound.

### **Mobile Privatization**

If the consumption of music is understood as a leisure activity connected to the private domain of the domestic, the iPod mobilizes it and takes it out into the street. To have music close at hand at any given time in any given space in a day is a crucial need for many, as is testified by the proliferation of iPod accessories on the market such as waterproof carrying cases, arm bands, the iTrip (which is a transmission device that allows the iPod to be heard over a radio station), chargers for the car, small speakers for the office, etc. Recently, Apple along with BMW has introduced a special integrated adapter for the iPod that allows it to be connected to the existing audio systems in some BMW vehicles. Through these add-on

devices, the gadget enlarges its environment and extends its reach into spaces previously inaccessible. In his discussion of technology and society, Raymond Williams talks about the “two apparently paradoxical yet deeply connected tendencies of modern urban industrial living: on the one hand, mobility, on the other hand the more apparently self-sufficient family home.” He refers to this simultaneously “mobile and home-centred way of living” as a form of mobile privatization, and to him these represent “contradictory pressures of this phase of industrial capitalist society,” need some form of resolution (Williams, 1975, p. 26) that. In the 1920s, people who lived in these self-sufficient family homes needed improved communications with the outside, and that was provided through private transportation and new consumer technologies such as radio and television. However, one of the limitations of these media was their centralized transmission and individual reception. Though television and radio offer several channels and stations for specific audiences using the concept of narrowcasting rather than broadcasting, they are not customizable. Media corporations rather than people control the programming, and therefore the environments they create cannot be tailored to the specific needs of individuals. Not based on the model of transmission for public use, MP3 technology has solved this problem to a certain extent by giving users control of the type and amount of music that they may load on the players, its organization into personalized playlists, its categorization, etc. iPods function as a means of managing one’s place in the location where one might find oneself. Often used while waiting or during travel between environments, they also serve to rearrange users’ experience of time.

The iPod affords the possibility of creating special “soundtracks” to accompany routine activities such as riding or driving. The studied creation of playlists that allow one-to-one correspondences between music and activity in terms of genre (for mood generation) as well as length of time (to match the duration of a run, for example) is a signifying practice that makes sense of the technology, the object, as well as the activity. The following excerpt from an interview I conducted with an iPod user makes it clear that it is remarkably easy to create special lists of songs with varied time durations for specific activities.

K: This [the iPod] is something that pretty much accompanies me anytime that I am not engaged with other people, when I am not, you know, sitting and talking, or, you know, in a place where, where I have to pay attention to whatever, you know the traffic or... but actually most of the time I’ve got it on my bike or you know when I am back and forth between here and there. And the way that I’ve got the playlists arranged, its, you know, like, six or seven songs, segments which is basically the distance that takes me to get from here to there. So I’ve got these, you know, these short little tracks, that I can listen to while I am riding, or whatever and it’s all set up like soundtrack wise, you know...

Q: Hmm, so do you have special playlists depending upon...

K: ... what I’m doing? Yeah... absolutely. I’ve got sound tracks to everything I do. I think everybody does, though, you know.

Q: Can you talk more about that?

K: Sure. Absolutely.

Q: Or you can give me an example, or something...

K: Sure, I’ll make examples. There’s certain music I’ll listen to when I’m doing certain activities, and I think that’s probably pretty common... I’ve got, you know, collections on there which are strictly hip-hop, that you know, I’ll listen to in certain moods, certain activities... and I’ve got, you know, old like classic rock stuff, that I’ll listen to when I’m doing other things, you know when I’m like at the gym or whatever, you know, it’s just certain things that sort of fit the bill... (Interview 2)

Such technological individuation of musical experience in relation to everyday activities firmly locates objects into people’s lives. The processes of searching, finding, and downloading individual music files

are entirely private and decentralized, and require no social intercourse. Though not all music acquisition occurs through this channel and record stores are still in business, it is significant to note that the only communally visible activity that an iPodder may engage in might be that of listening. This reveals a remarkable reversal in private and public activities.

### **iPod Communities**

Virtual environments such as electronic forums and weblogs may be understood as locations where several private environments can interact. As contact in the public domain erodes, it grows with incredible speed in a virtual one, adding a second order envelope to the existing transportable environment. The boundaries between the private and public are therefore permeable and elastic; they stretch and they overlap, defying definition and categorization in the creation of hybrid spaces. iPodLounge is such a space. It promotes the individual narrative within the context of a mutually agreeable social structure. [www.iPodLounge.com](http://www.iPodLounge.com) was born within a month after the iPod was released in 2001. Conceived by Dennis Lloyd, Dennis Martin, and Jason Meade, this is a website “dedicated to the iPod enthusiast.” iPodLounge is not a commercial site sponsored or supported by Apple Computer, but a communal space with news, reviews, forums for discussions, technical advice, etc. “for all things iPod.” This website may be seen as an alternative and more developed form of the iPod’s transportable environment. It therefore becomes a meta-environment, which readjusts meanings of private and public. As a meta-environment in the public cyber domain, it is accessible to all (but known only to the initiated), and through a forum called “Your iPod Stories,” it encourages exchange of private narratives of use.

The privatization of most activities connected to music consumption might explain the mutual identification experienced by some iPod users in public spaces (called Pod spotting) and the appearance of Internet communities such as iPodLounge and iPodding as a need to reconnect with society. The transportable environment then, at least partially, becomes a means to publicize rather than privatize, an instrument to engage rather than disengage.

### **Individual and Society**

As an object designed primarily for personal, mobile use, the iPod can be critiqued in terms of the relationship between the individual and society. Raymond Williams limits this liaison to a simple model

of the individual’s conformity or nonconformity, and of the society’s attitude to either of these courses. We have a number of names for conformity, which enable us to approve it as ‘responsible’ and ‘law-abiding,’ or to condemn it as ‘timidly conventional’ or ‘servile.’ We also have a number of names for non-conformity and some of these, such as ‘independence’ and ‘the free spirit’ are approving, while others, such as ‘lawlessness’ and ‘eccentricity’ are damning (Higgins, 2001).

Users of mobile stereos and other gadgets such as mobile phones that express private behaviors in public space are often labeled as self-engrossed, rude, and lawless. On the London Underground, Walkman users have been given contemptuous looks as if to say “SCUMBAG! LOW-LIFE! LOSER!” (emphasis in original), they have been fined, and treated as a menace to society (du Gay, 1997, p. 144). The individuals in these cases have been perceived as disruptive and destructive to the social order. On the other hand, iPod users have taken offense to people who interrupt their listening. Using it as a device to insulate themselves from preying salespeople, iPodders saunter through shopping malls cocooned in the safety of their auditory environments, and are not pleased to have to stop their players. The following exchanges at the iPodLounge website demonstrate how this environment may be disturbed.

People who have always used Walkmen might already be keen to this, but I've realized that annoying salespeople are much more reluctant to bother you if you have your earbuds in your ears. Over the holidays my iPod enabled me to have a relatively hassle-free and private shopping experience wherever I went. I guess people who aren't as annoyed by non-stop "Can I help you find something?" as I am might not find this tip helpful, but for those who leave a store once a salesperson pounces (annoyed with yourself for not having shopped online), give it a try.

Once at Brookstone a lady asked me if I needed help, and I thought she was talking to my grandma who was behind me. I didn't look or answer and then she yelled at me, "Excuse me sir. Do you want any help?" It was all very funny.

Wow this has never happened to me. I would be annoyed if they told me to take them off.

Interrupting good music (<http://www.iPodLounge.com/>).

The individual in this case may be perceived as being menaced (or amused) by society. However, the practice of individual listening in social circumstances has become so prevalent that it may be easily classified as public behavior, making it problematic to clearly and distinctly separate the individual from society.

### **Permeable Boundaries (Public-Private)**

Many aspects of mobile behavior are heavily technologized, and this has made it easier to create private domains to withdraw into while being on display in the public realm. The ubiquity of mobile technology can be witnessed in any urban streetscape, which is full of people walking while talking on cell phones, jogging while listening to music on their MP3 players, or sitting at cafes while working on their laptops. Since the industrial revolution, many scholars and critics have studied the effects of capitalism, modernity, and technology on urban environments and individuals. Georg Simmel emphasizes the struggle between the private and the public in his description of the urban experience; it is a world of strangers where contact is awkward and boundaries are required. "Since contemporary urban culture, with its commercial, professional and social intercourse, forces us to be physically close to an enormous number of people, sensitive and nervous people would sink into despair if the objectification of social relationships did not bring with it an inner boundary and reserve" (Simmel, 1997). Such boundaries signify private environments that ease urban angst, and the presence of gadgets, which can occupy time, space, and attention, solidify individual positions within these spheres. Richard Sennett (1974) has observed the erosion of public life, and the need for privatization of experience from a chaotic urban environment.

Though the act of private listening in the public domain may be a means of dealing with the discomfort and alienation experienced by individuals in modern society, there is reason to believe that the chasm between these realms is not quite as deep everywhere. In the case of iPod use, there is a marked sense of communal association and public connection on occasions where one encounters another iPod user.

Here in NY I see folks with pods daily. Usually the white earbuds are a dead giveaway, and if I have mine in as well, the fellow 'podder and I usually lock eyes for a moment (which in NY is a lot!).

I saw a dude on the bus here in Philly yesterday with the white buds in his ears... I just kinda gave him 'the nod' and a smile (<http://www.iPodLounge.com/>).

Though this link establishes contact with another individual rather than the public, it does unwrap the user's environment for a brief moment. As is demonstrated in this exchange on the Forum, a shared privacy is sensed in such situations of mutual identification, where two environments accidentally meet.

### **Conclusion**

Digital music cultures have created new products, new practices, and new means of dealing with urban spaces. The iPod, one of Apple Computer's most popular products today, has inserted itself into people's lives and has given them new strategies for dealing with the public domain. The iPod's environment is an assemblage that allows and supports various behaviors. It mediates between the individual and the society, it negotiates the meaning of the private in public spaces, and it has led to the evolution of virtual communities. As an object that embodies the concept of mobile privatization, it represents the present and future of transportable music consumption.

### **References**

- Adorno T. (1976). *Introduction to the sociology of music*. New York: Continuum Press.
- Adorno, T. (1991). *The culture industry: Selected essays on mass culture*. London: Routledge.
- Alderman, J. (2001). *Sonic boom: Napster, MP3, and the new pioneers of music*. Cambridge: Perseus.
- Appadurai, A. (1986). Introduction: commodities and the politics of value. In A. Appadurai (Ed.), *The social life of things: Commodities in social perspective*. (pp. 3-63). Cambridge: Cambridge University Press.
- Arthur, C. (2003, June 3). 'Mr. iMac wins design prize for banishing beige boxes,' *The Independent*, 7. Retrieved February 1, 2004, from Lexis-Nexis database.
- Breen, C. (2002). *Secrets of the iPod*. Berkeley: Peachpit Press.
- Brow, J. and Duguid, P. (1993). Rethinking the Border in Design: An Exploration of Central and Peripheral Relations in Practice. In S. Yelavich, (Ed.), *The Edge of the Millennium: An International Critique of Architecture, Urban Planning, Product and Communication Design*. (pp. 174-189). New York: Whitney Library of Design.
- Bull, M. (2004). 'To each their own bubble': Mobile spaces of sound in the city. In A. Couldry and A. McCarthy (Eds.), *Mediaspace: Place, scale and culture in a media age*. (pp. 275-293). London: Routledge.
- Bull, M. (2000). *Sounding Out The City: Personal Stereos and the Management of Everyday Life*. Oxford: Berg.
- Chambers, I. (1982). Some critical tracks. *Popular Music*, 2: 19-36.
- Cooper, G. (2002). The mutable mobile: Social theory in the wireless world. In Brown, B., N. Green, and R. Harper (Eds.), *Wireless World*. London: Springer-Verlag.
- Deleuze, G. (1977). *Dialogues/Gilles Deleuze, Claire Parnet*. Paris: Flammarion.
- DeNora, T. (2000). *Music in everyday life*. Cambridge: Cambridge University Press.
- du Gay, P., Hall, S., Janes, L., Mackay, H., and Negus, K. (1997). *Doing cultural studies: The story of the Sony Walkman*. London: Sage Publications.

- Haug, W. (1986). *Critique of commodity aesthetics: Appearance, sexuality and advertising in capitalist society*. Cambridge: Polity Press.
- Heskett, J. (2002). *Toothpicks and logos: Design in everyday life*. Oxford: Oxford University Press.
- Higgins, J. (2001). *The Raymond Williams reader*. Oxford: Blackwell.
- Highmore, B. (2002). *Everyday life and cultural theory: An introduction*. London: Routledge.
- Jones, S. (2000). Music and the internet. *Popular Music*, 19/2: 217- 230.
- Kunkel, P. (1999). *AppleDesign: The work of the Apple industrial design group*. New York: Graphis.
- Latour, B. (1986). Visualization and cognition: Thinking with eyes and hands. *Knowledge and Society* 6: 1- 40.
- Lefebvre, H. (1999). *Everyday life in the modern world*. New Brunswick: Transaction.
- Mitchell, W. (2002). E- Bodies, E- Building, E- Cities. In N. Leach (Ed.), *Designing for a digital world*. (pp. 50-56). West Sussex: Wiley-Academy.
- Sennett, R. (1974) *The fall of public man*. New York: Norton.
- Simmel, G. (1997). The metropolis and mental life. In D. Frisby and M. Featherstone (Eds.), *Simmel on culture: Selected writings*. (pp. 174-186). London: Thousand Oaks.
- Williams, R. (1975). *Television: Technology and cultural form*. New York: Schocken Books.

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