Mobile media dependency: Private consumption in public spaces

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Abstract

Rich Ling (2012) argued that mobile media provided a taken-for-granted link to their users in public spaces. Mobile media were social mediating devices that users used to connect with their social networks and access to information. Mobile media users developed strong attachments to their devices and felt anxiety when the users were without their devices. It was important to understand the dependency between mobile media users and their devices. This paper utilized Sandra Ball-Rokeach's (1976) Media Dependency Theory to understand why mobile media users developed dependencies on their devices in public spaces. Based on Ball-Rokeach and colleagues' (1984) typology of the individual mass media dependency relations, this paper further examined how mobile media users depended on their devices in public spaces and the implications for future studies. Results included that mobile media users depended on their devices to build their self-identities and group identities. They depended on their devices to navigate unfamiliar places, make decisions, and learn how to interact with others. They also used the devices to block unwanted interactions and coordinate with family members and friends. They depended on their mobile devices to read books, watched videos, and listened to music, as well as updated their social network in public spaces.

Mobile media dependency: Private consumption in public spaces

Mobile media use in public spaces can be seen in everyday life. Timo Kopomaa (2000), in his book titled, *The City in Your Pocket: Birth of the Mobile Information Society*, argued that the use of mobile media on streets could turn public spaces into the users' private spaces. He also noted that mobile media users naturally used their devices for private purposes and maintaining personal contacts in public spaces. Mobile media users use their personal devices in public spaces for connecting personal relationships and exchanging information, as well as for entertainment. They called and texted friends and family members to catch up between one place and another (Chen & Katz, 2009). While on the move, they used mobile media to seek location information based on their current location to find what to do (Zickuhr & Smith, 2011). With augmented reality mobile technologies, such as Layar (So, 2011) or Yelp (Parr, 2009), mobile media users could learn public location information in depth. John Pavlik and his colleagues called it "Situated Documentary," which embedded "a narrated multimedia documentary within the same physical environment as the events and sites that the documentary describes" (Hollerer, Feiner, & Pavlik, 1999, p. 79).

In public spaces, mobile media users read books and news, watched videos, listened to music, and played games on their devices (Chen, forthcoming a). In stores, mobile media users called their social networks for purchasing advice. They compared prices and read product reviews to help with purchasing decisions (Smith, 2012). Mobile media users also used their devices to find traffic or public transit information while on the move (Rainie & Fox, 2012). Mobile media users took photos, shot videos, wrote comments, ranked various things, and checked in to locations to create their personal

"situated documentaries." They tweeted and updated social networking sites to document what they were seeing and doing at the moment.

Rich Ling (2012) argued that many mobile media users took their devices for granted. Mobile media users could always be connected with their family members and friends on the move. Mobile media provided security and safety to their users. On the other hand, mobile media users also wanted their family and friends always to be available to their calls, texts, and updates, no matter where they were. Mobile media were so important to their users that Elliott and Urry (2010) commented that mobile media users were "walking blind, disconnected from just-in-time information on where and when you are in the social networks of time and space" (p. 61) if they did not have their devices with them. Mobile media users depended on their devices for daily things and created both positive and negative social consequences. Examples included mobile GPS devices that helped mobile media users find directions to places. However, the Apple Map App might lead an Australian to a deadly wrong direction (Gelineau, 2012). New York City Mayor Michael Bloomberg expressed concern that young children might risk hearing loss from loud earphones (Campanile, 2013), and Bull (2008) commented that mobile media users used mobile music players to block unwanted street noises and human interactions, whereas Smart Mobs used mobile media to play and to engage strangers to participate in public spaces (Rheingold, 2002).

Researchers (e.g., Putnam, 2000; Meyrowitz, 1986; 2005) argued that electrical and digital media, such as the television and the Internet, brought public information into private spaces (e.g., homes, bedrooms). For example, Bovill and Livingstone (2001) reported that European children frequently received outside information in their

bedrooms via mass media, and Hijazi-Omari and Ribak (2008) found that Palestinian

Israeli teenage girls used their mobile phones to communicate with their illicit boyfriends

at their homes.

On the other hand, mobile media researchers (e.g., Bull, 2008; Cooper, 2001)

claimed that mobile media users used their private mobile media in public spaces and

made the public spaces into their private own spaces. McQuire (2008) argued that the

media used in city public spaces have a long history. Modern urban public spaces have

always been articulated with various media, such as photography in the mid-19th century,

cinema in the 20th century, and digital media in this century. Mobile media users utilized

their mobile media in public spaces for almost every aspect of their social life.

This paper attempted to review prior mobile media studies to make sense of why

mobile media users utilized their private devices in public spaces. Ball-Rokeach and her

colleagues' (Ball-Rokeach, 1985; Ball-Rokeach & DeFleur, 1976; Ball-Rokeach,

Rokeach, & Grube, 1984; DeFleur & Ball-Rokeach, 1989) Media Dependency Theory

providecd a theoretical framework for this paper to examine phenomena of mobile

media's private consumption in public spaces.

Media Dependency Theory

Ball-Rokeach and DeFleur (1976) proposed a dependency model of mass media

effects to understand mass media impacts on their audiences. They argued that mass

media audiences depended on mass media to satisfy their daily information and

socialization needs. They defined "information" as "a general way to refer to the

production and distribution of all types of messages" (DeFleur & Ball-Rokeach, 1989, p.

303). They argued that distinctions asserting that "news" was information and "entertainment" was not were misleading. Mass media audiences utilized information both in news and entertainment forms to make sense of themselves and society, to interact with others, and to understand cultures, values, and norms (DeFleur & Ball-Rokeach, 1989). Unlike Blumer and Katz's (1974) Uses and Gratifications Approach to examine the relationship between the needs of audiences and the use of the mass media, the Media Dependency Theory examined the interrelationship among audiences, mass media, and society (Ball-Rokeach, 1985). The theory also argued that the more an audience depended on the mass media to fulfill her/his needs and reach her/his goals, the more the mass media were important to the audience and the more effects the mass media had on the audience (Ball-Rokeach & DeFleur, 1976). Ball-Rokeach and DeFleur (1976) argued that audiences developed dependency on mass media in several ways, such as: (1) depended on mass media to understand their social world; (2) depended on mass media to learn how to act meaningfully and effectively in the social world; and (3) depended on mass media to escape their daily problems and tensions in the social world. The Media Dependency Theory was utilized to understand how media audiences depended on the media to understand the event of September 11, 2001 (Lowrey, 2004), online communities in urban area (Matei & Ball-Rokeach, 2003), and mobile family communications among college students (Chen & Katz, 2009).

Ball-Rokeach (1985) argued that the media dependency model helped explain the when, why, and how audiences develop dependency on the mass media system. Audiences selected different mass media to fulfill their different needs and reach their different goals. Ball-Rokeach and colleagues developed a typology to understand the

relationship between audiences and their mass media (Ball-Rokeach, 1985; Ball-Rokeach et al., 1984; DeFleur & Ball-Rokeach, 1989). They argued that audiences depended on the media to achieve three goals: understanding, orientation, and play. Audiences had the desire to understand themselves and societies. They used that understanding in orienting their behaviors and interactions with others. Finally, play was another important goal for mass media use. Besides escaping realities and "killing time," people also played to learn social norms, rules, and values (DeFleur & Ball-Rokeach, 1989). Ball-Rokeach (1985) argued that those three dependency dimensions were equally important to media users' welfare. They were exhaustive but not mutually exclusive, because some media content might serve more than one type of dependency.

> Typology of Individual Media Dependency Relations (Ball-Rokeach, 1985, p. 496)
> 1. Understanding dependency
>   a. Social understanding
>   b. Self-understanding
> 2. Orientation dependency
>   a. Action orientation
>   b. Interaction orientation
> 3. Pay dependency
>   a. Solitary play
>   b. Social play

This paper focused on understanding why mobile media users used their mobile devices in public spaces. The media dependency model attempted to explain when, why, and how audiences developed dependency on the mass media system (Ball-Rokeach, 1985). In this paper, when and how mobile media users used their devices in public spaces was situated. The key point for this paper was to understand why mobile media users depended on their devices to get information and to reach their goals in public spaces.

Mobile media dependency in public spaces

Ball-Rokeach and colleagues (Ball-Rokeach, 1985; Ball-Rokeach et al., 1984;

DeFleur & Ball-Rokeach, 1989) defined six relations between media users and their mass

media systems: self-understanding, social understanding, action orientation, interaction

orientation, solitary play, and social play. By utilizing the typology, this study explained

why mobile media users depended on their devices in public spaces.

Understanding

DeFleur and Ball-Rokeach (1989) argued that people utilized media information

to interpret other people, culture, and events, as well as themselves. Mobile media

researchers and scholars found that mobile media users utilized their media to understand

themselves and their societies by using both mobile media content and the devices.

Self-understanding mobile media dependency in public spaces. Self-

understanding media dependency referred to "mass media relations that expand or

maintain individuals' capacities to interpret their own beliefs, behaviors, self-concepts, or

personalities" (DeFleur & Ball-Rokeach, 1989, p. 306). Mass media users utilized mass

media messages in "staying mentally and physically fit, learning to be assertive being[s],

learning to overcome personal crises and failures, learning to be better single parents,

and, more generally, learning to actualize oneself through work, hobbies, and personal

relations" (Ball-Rokeach et al., 1984, p. 8). Research on mobile media users who

depended on their devices for intentional and unintentional self-understandings included

mobile media being used as self-representation tools (Lindqvist, Cranshaw, Wiese, Hong,

& Zimmerman, 2011; Ling 2012), as documentary tools (Chesher, 2007), as self-

managing tools (Bull, 2008), as self-identity tools (Lemish & Cohen, 2005), as symbols

of emancipation for early teens (Ling, 2004), and as the "must" devices of family

communication for college students (Chen & Katz, 2009).

Mobile media became self-representation tools for some users in public spaces.

When mobile media users did not want to be associated with "boring places," schools, or

fast-food restaurants, they did not check in at those places that might mislead their self-

representations (Lindqvist et al., 2011). Cramer, Rost, and Holmquist (2011) found that

mobile media users shared events and location information for enhancing their self-

representation. Other mobile media studies reported that mobile media users used their

devices to indicate (Palen, Salzman, & Youngs, 2000) or enhance (Srivastava, 2005) their

social statuses.

Mobile media also were used to document what was going on at public places for

personal reflection. Kindberg, Spasojevic, Fleck, and Sellen (2005) studied the

motivations of camera phone use. They found that mobile camera phones were used to

document events and create personal reminders. They reported that some camera phone

images captured activities for socialize purposes; however, more of them were for self-

understanding. Participants reported using camera phone images to capture and carry

important images with them. A male participant took a photo of a sign in a subway

station to overcome his panic attacks. In addition, they found more males than females

used camera phones to record information for later reference. Their study reported people

took camera phone images to remind them of things to do and friends to communicate

with later. Those images were deleted when they had served their purpose.

Chesher (2007) reported similar findings. The study found that mobile media users documented U2 concert events by taking photos and shooting videos. Chen (forthcoming a) found college students used their iPads to take photos of class lectures and notes. People also used their iPads and camera phones to take photos in museums. An NPR story reported that attendees at the U.S. presidential inauguration documented the event using their smartphones (Chang, 2013).

> CHANG (the NPR reporter): The inauguration of 2013 is the smartphone inauguration. The website for the congressional committee in charge of the inauguration used GPS technology to direct ticketholders to their seats, and even the Secret Service was tweeting up a storm about street closures and parade routes. But it was hard to find anyone using any of that. Mostly, people were just using their phones as public diaries, like Evelyn Quinn.

> EVELYN QUINN: No, no regular cameras. No pen and paper. Just our phones. And we don't even think we're going to make phone calls. It's purely for documentation.

Mobile media users utilized their devices to manage their well-being in public space. Bull (2008) studied how iPod users utilized their mobile music devices to create "Mobile Bubbles" to make their city commutes more pleasurable by playing music they enjoyed. Chen (forthcoming a) found similar uses of tablets at subways stations and on airplanes. Tablet users watched pre-downloaded movies or listened to music on their playlists in public spaces to block unwanted city noises (Bull, 2008) or to avoid unwanted human interactions (Cooper, 2001). Moreover, smartphones using mobile apps with built-in GPS trackers could help their users tracked their moves in public spaces. Mobile media users utilized their apps to track their running time, to map their runs, and to coach their running (Godfrey, 2013).

Marshall McLuhan (1964) argued that media were the extension of man. Lemish and Cohen study (2005) found that Israeli mobile media served their users' multiple identities, including gender, adulthood, and nationality. Ling and Yttri (2002) proposed "hyper-coordination," suggesting that the mobile media were used for expressions, as well as self-representation and in-group communication. By sending personal text messages and chain letters to selected friends, mobile media users built their identities. Ling and Yttri (2006) explained how young teens utilized their mobile media, such as claiming their phone batteries were dead, to be independent from their parents' controls, whereas Chen and Katz (2009) found that college students depended on their mobile media to connect with their families while they were at school.

Social understanding mobile media dependency in public spaces. Social understanding media dependency developed "when individuals utilized media information resources to comprehend and interpret people, cultures, and events of the present, past, or future" (DeFleur & Ball-Rokeach, 1989, p. 306). Mobile media users used their devices to seek location information and to read books, magazines, and news. They updated their social network statuses and called or texted their social networks to comprehend their social life. Pavlik (2013) mentioned that Twitter users received the breaking news of the U.S. killing of Osama Bin Laden in 2011 before U.S. President Barack Obama officially announced it and twenty minutes before the news was featured on television news channels.

Mobile media research found that mobile media users used the devices to seek and retrieve public location information relating to their everyday lives, both in texts and visually. Mobile tour guides were used for travelers to find information. Pavlik and

Mclntosh (2005) described "Situated Documentary," which meant mobile media users used their devices to understand what was happening at the location. Such mobile media content, also called "content awareness," was often used by location-based service (LBS) via mobile media. More and more mobile media users depended on their LBS, such as Foursquare, Yelp, Gowalla, Twitter locations, and Facebook places to understand what was going on in public spaces. For example, Nokia City Lens provided location information for landmarks, restaurants, hotels, shops, and public transport stations to its users (Bonetti, 2012). On London streets, mobile media users depended on an augmented reality app to enjoy the Museum of London's *Streetmuseum* exhibitions to learn the history of the locations (Eccleston-Brown, 2010), and mobile media users utilized their devices to learn about artworks inside the Amsterdam Museum, the Museum of Modern Art in New York, and the Los Angeles County Museum of Art (Fidel, 2010). For travelers, Martin (2012) recommended several mobile travel apps for finding flights, entertainment, nightlife, and the best nearby places to eat. Mobile media users also received news in public places. They download news apps, weather apps, and traffic apps to understand current situations. A 2011 Pew Research report showed nearly half of Americans got their local news from mobile media. Mobile media users received news in real time (Purcell, Rainie, Rosenstiel, & Mitchell, 2011). Chen's study (forthcoming a) reported that mobile media users read news, books, and magazines in public spaces.

Moreover, studies also showed that mobile media users took their social networks with them everywhere they went. Mobile media users also continually depended on their devices to coordinate things with their networks in public spaces. Ling and Yttri (2002) proposed "micro-coordination," which meant that mobile media were used for everyday

life coordination, such as calling or texting others to stop in at the store on the way home. White and White's study (2007) found that tourists used mobile media devices to communicate with family members at home. Mobile media users also used mobile apps such as Banjo, Highlight, and Sonar to "see" people around them (*Bartz & Ehrlich,* 2012). Mobile media provided the "Perpetual Contact" link (Katz & Aakhus, 2002) to their users. Rakow and Navarro (1993) found that mobile phones provided a sense of security for working mothers with children at home, and Chen and Katz (2009) reported college students used their mobile phones to check in with their families. In Israel (Cohen, Lemish, & Schejter, 2007) and in Norway (Ling, 2012) mobile media usages were high near the locations of the terrorist attacks. Mobile media users were trying to call or text family members or the police to report what were happening at their locations.

Mobile media users also depended on their devices to create "Situated Documentary." Gordon (2007) studies three crisis situations—the Chinese severe acute respiratory syndrome (SARS) outbreak (2003), the Southeast Asia tsunami (December 2004), and the London bombings (July 2005)—and found that mobile media users utilized their devices to document what was happening. In the United States, mobile media users used Twitter to report disasters and mass emergency events (i.e., the Oklahoma grass fires and the Red River floods in 2009) (Vieweg, Hughes, Starbird, & Palen, 2010). The user-generated content was created in public spaces to help others understand their situations, as well as to help the mobile media users themselves. While traveling, mobile media users took photos and videos, annotated their media content, added their locations, and shared their experiences on their social networking sites (Bamford, Coulton, & Edwards, 2007). Airports were found to be the most frequently

used check-in places both on Facebook (Slutsky, 2011) and Foursquare (Foursquare, 2013), as well as the place most used for Instagrams (Instagram, 2013). Walt Disney Parks and Resorts teamed up with the popular mobile check-in application Gowalla to encourage tourists to check in at places in Disney Parks and Resorts to create personalized Disney experiences (Smith, 2010).

Mobile media users heavily depended on their devices to understand current situations in public spaces. Sometimes, mobile media created social concerns. In California, a judge ruled that using smartphone maps while driving was illegal (Peckham, 2013), and West Virginia was trying to ban use of Google Glass while driving, even before Google Glass was formally introduced to the public (Peckham, 2013).

Orientation

Ball-Rokeach, et al. (1984) argued that understanding mass media dependencies involved cognitive dimensions, whereas orientation mass media dependencies required taking action and/or interaction to reach audiences' goals. Mobile media users used their devices in public spaces for just-in-time information to make decisions on how to act and interact with others. In public spaces, such as student centers and libraries, Chen (forthcoming b) found most college students depended on their mobile media to text or call more when they were alone.

Action orientation mobile media dependency in public spaces. "Action orientation refers to a multitude of ways in which individuals establish dependency relations with the media in order to obtain guides to specific behaviors of their own" (DeFleur & Ball-Rokeach, 1989, p. 306). Examples included dependencies "on the media for information concerning goods and services, recreation, everyday coping behavior,

crisis behavior, and self-defense" (Ball-Rokeach et al., 1984, p. 9). Mobile media were

used to make decisions in public spaces. When mobile media users put on their iPods,

they create their private music "bubbles" in public spaces (Bull, 2008). They read books

and watched movies (Chen, forthcoming a) to create a personal space in the public space.

They sometimes used their phones to "pretend to talk" to avoiding unwanted

communication (Baron & Campbell, 2012; Cooper, 2001) or to provide physical safety

when they walked alone at night (Katz, 2006). When movie fans with mobile devices

visit film locations, they depended on the devices to map, to present, and to represent the

locations (Chen & Yeh, 2013).

        Moreover, mobile media were used to check weather, traffic, local news, points of

interest, and events, etc. Apple company trademarked the slogan, "There's an app for

that" (Gross, 2010). It implies that there's a mobile solution for all aspects of everyday

life. For example, mobile media users could download a "Zombies, Run!" fitness app on

their smartphones. The app combined music with a Zombie story. When the users were

running outside, the app's Zombies occasionally chased them. Mobile media users relied

on the app to help them reach their fitness goals (Hickey, 2012).

        Smith (2012) reported that more than 25 percent of American mobile media users

depended on their mobile media to compare prices and read reviews of consumer

products at the stores. News stations, such as CNN and BBC, created apps for users to

receive news, sports, traffic, weather, and entertainment in real time. Mobile media users

also used Google Map on mobile media to get directions (Gahran, 2011). Google Now

app helped mobile media users find nearby restaurants based on the users' past

preferences (O'Neill, 2013). Gas-price apps, such as GasBuddy, helped users find

cheaper gas (Pepitone, 2011). Job recruiters used Highlight, a location-based mobile app, to locate potential candidates during conferences (Silverman, 2013).

Interaction orientation mobile media dependency in public spaces. This required that "object of action be one or more persons" (DeFleur & Ball-Rokeach, 1989, p. 307). Ling and Yttri's "micro-coordination" concept (2002) provided the best explanation of the interaction orientation mobile media dependency in public spaces. Mobile media users utilized their devices to make last-minute appointments or rearrange meetings on the move (Palen, Salzman, & Youngs, 2000). Parents called their teens at schools to arrange pickups or drop-offs for activities (Ling 2004; 2012). Mobile media were used to facilitate responses to emergencies or check on social network statuses (Cohen et al., 2007; Katz, 2006; Ling, 2004). Lenhart and colleagues' study found that American teens felt safer when they had their mobile media with them all the time (Lenhart, Ling, Campbell, & Purcell, 2010). Mobile media users also used location-based friend finders to interact and meet new friends in public spaces (*Bartz & Ehrlich,* 2012).

In public spaces around the world, mobile media users called, texted, and updated their Facebook and Twitter statuses for fun things (Rheingold, 2002), natural hazard events (Vieweg et al., 2010), crisis situations (Gordon, 2007), and political engagements (Pavlik, 2013; Rheingold, 2002). Rheingold (2002) reported that teens in Japan and Finland exchanged text messages to inform their peers where their favorite celebrities were. He called uses of mobile media in public spaces to engage people "Smart Mobs."

Moreover, Hassanpour (2011) reported that mobile media were used to force more face-to-face communication and more physical presence in the streets, encouraging citizens to engage in political movements in Egypt's Tahrir Square. This was one of the

research studies of the Arab Spring. In developing countries, "beeps," "flashes," and "missed calls" were the ways mobile media users coordinated without paying for mobile phone communications. Those missed calls could mean "lunch is ready" or "please give me a call back" (Donner, 2007). Jensen (2007) reported Indian fishermen called potential buyers to compare prices to make decisions about where to sell their fish. As soon as the fishermen could afford to buy mobile phones, they used the devices for finding better markets.

Taylor and Harper (2002) purported that teens sent and received text messages in public spaces in a practice of "gift-giving" to their in-group friends. Harper (2010) observed that teens used mobile media to bring absent friends into the public space. Similar findings were found in a Taiwanese mobile teen study. Chen (2011) reported that Taiwanese teens shared their mobile devices and mobile media content with their social networks during class breaks. They shared their devices, as well as text messages, with friends who were physically present at the same location. Mobile media also was used to maintain intimacy (Rivière & Licoppe, 2005) or "hyper-coordination" (Ling and Yttri, 2002) in public spaces. Smith (2012) reported that 46 percent of mobile media users depended on their devices to ask friends about purchasing decisions at stores. Chen and Yeh (2013) found movie fans responded to their friends' requests to visit some special film locations and took photos for those friends who were not able to travel with them. Zickuhr (2012) reported 18 percent of American smartphone owners utilized geosocial services like Foursquare or Gowalla to "check in" to places or to share their locations with their friends. Mobile media users in public spaces made connections, interactions, and shared experiences with their friends in real time. They also reported that the purpose

of those "check-ins" was for safety and security (e.g., to let their parents know where

they were) or to make their friends jealous (Chen, forthcoming c). Maintaining intimate

relationships or getting just-in-time location information seemed to be important goals for

mobile media use in public spaces.

Play

Media users depended on their media content to escape reality (Radway, 1991)

and to interact with others (Jenkins, 1992; 2006). Ball-Rokeach, et al. (1984) argued that

many people depended on their media content for play. Because "play" had broader

connotations that included escape from reality and enjoyment of recreational activities,

they preferred the term "play" instead of "fantasy escape."

Solitary play mobile media dependency in public spaces. Solitary play media

dependency "refers to instances when aesthetics, enjoyments, stimulation, or relaxation

properties of the media content itself are the attraction" (DeFleur & Ball-Rokeach, 1989,

p. 307). Media users engaged in solitary play activities including those designed to

"obtain pleasure, aesthetic enjoyment, excitement, or relaxation directly from exposure to

a media message" (Ball-Rokeach et al., 1984, p. 10). When mobile media users listened

to mobile music in public spaces, it was solitary play. Lyons, Jain, and Holley (2007)

argued that some mobile media utilized their music devices to turn "unproductive" travel

time into economically valuable time. Those mobile music users depended on their

devices to "kill time." Bull (2005; 2008) argued that mobile music devices enabled their

users to feel empowered, in control, and self-sufficient in public spaces.

Chen (forthcoming a) studied how mobile media were used in public spaces in the

United States and Taiwan. She observed mobile media were used to read, to listen to

music, to play games, to watch movies, and to babysit in restaurants, on airplanes and

trains. In museums, iPads and camera phones were used to take photos of exhibits.

Manabe and Lydens (2007) noted that museums used mobile media for educational

purposes with audio and visual personal tours and live-feed broadcasting functions.

Yiannoutsou, Papadimitriou, Komis, and Avouris (2009) reported that two mobile

educational games designed for children to interact with museum exhibits seemed to

support learning.

Some mobile solitary games were learned and played in public spaces. One

example was the "Zombies, Run!" fitness app, designed to make running more exciting

(Hickey, 2012). Quick response (QR) codes helped mobile media users learn more about

many public locations. Examples included that QR codes at beaches and historic sites in

Rio de Janeiro guided tourists to explore the city (Haq, 2013) and QR codes at military

graves in Wales where mobile media users learned stories of the war heroes (Ryall,

2013).

Social play mobile media dependency in public spaces. "The dependency relation

is based upon the capacity of the media to provide content that stimulates play between

people" (DeFleur & Ball-Rokeach, 1989, p. 307). The social play referred to people

depending on media "to serve as facilitators of social intercourse. The primary focus is

upon affiliation-motivation, mutually pleasurable experiences between friends or family

members, wherein message content takes on secondary importance" (Ball-Rokeach et al.,

1984, p. 10).

Mobile media users utilized the devices to communicate, to connect, and to play

with their social networks. Taylor and Harper (2002; 2003) and Chen (2011) reported that

teens shared their mobile devices and mobile media content with their in-group friends in

public spaces. Lindqvist, et al. (2011) found that Foursquare players collected badges and

turned Foursquare into a "game-like" competition to play with friends within their social

networks. Chen's (in contract) study found that mobile media were strategically used in a

community tagging game, although the original game design was an offline Zombie

game and mobile media were not part of the game design. Mobile media users depended

on their devices and created special communication codes on Facebook and Twitter that

they shared with in-group people to play the game in the streets. Chen (forthcoming c)

also found that mobile media users shared their locations and experiences with their

family and friends in real time. They purposely shared or did not share their locations and

experiences with their friends. Sometimes they used check-ins, messages, and photos to

"show off," "flirt," and "share" their trip experiences with friends and family.

On the other hand, several mobile games were played in cities with strangers. de

Souza e Silva and Hjorth (2009) explained mobile games, such as location-based and

hybrid-reality mobile games, where mobile media users depended on their devices to play

in city spaces with strangers and their friends. O'Hara, Kindberg, Glancy, Baptista,

Sukumaran, Kahana, and Rowbotham (2007) designed a location-based mobile game for

people to play with friends at the London Zoo to enhance their zoo experiences. Facer,

Joiner, Stanton, Reid, Hull, and Kirk (2004) designed a mobile game for children to "play

to learn" and "learn to play" while understanding animal behaviors. Facer, et al. (2004)

found that mobile games supported children's learning, and O'Hara, et al. (2007)

reported that mobile camera phone users enjoyed their visits to the zoo. Players used their

mobile devices to develop strategies, to learn, and to make friends in city spaces. In sum,

mobile media users depended on their devices to play, to learn, to connect, to

communicate, and to escape in public spaces, either by themselves or with their social

networks.

Conclusion

Unlike traditional mass media dependency, mobile media dependencies were

developing because mobile media users utilized information from both mobile media

content and the device to reach their goals, such as communication, information, learning,

decision making, and networking, in public spaces. Developing from the Uses and

Gratification Theory, the Media Dependency Theory argued that if an individual became

dependent on mass media to fulfill his or her certain needs and goals, the mass media

would become more important to that individual. It also stated that the individual did not

depend on all media equally, and people might be more dependent on certain media for

information or sources in times of change or when there was an increase in uncertainty

(Ball-Rokeach, 1998; Ball-Rokeach & DeFleur, 1976). DeFleur and Ball-Rokeach (1976)

distinguished Media Dependency Theory from Uses and Gratification Theory as follows:

> Proponents of the uses and gratifications approach examine how audiences
> use the media to gratify similar information needs but do so by taking the
> audiences as the focal point of analysis, not the interrelationships between
> audiences, media and society (p. 8).

This paper used Ball-Rokeach's Media Dependency Theory (Ball-Rokeach, 1985;

Ball-Rokeach & DeFleur, 1976) to explain possible motivations for why mobile media

users take their mobile media for granted (Ling, 2012) in public spaces. Modified from

DeFleur and Ball-Rokeach's examples (1989), the types of the dependency relations that

mobile media users developed with their devices in public spaces were presented with

examples as followed.

Typology of Individual Mobile Media Dependency Relations

Understanding	Orientation	Play
Self-Understanding e.g., learning about oneself and growing as a person	Action Orientation e.g., deciding what to buy, how to dress, or how to stay slim	Solitary Play e.g., relaxing when alone or having something to do by oneself
mIdentity, mFashion, mFamily	mShopping, mHealth	reading books and news, listening to music, watching videos, playing games alone
Social Understanding e.g., knowing about and interpreting the world or community	Interaction Orientation e.g., getting hints on how to handle new or difficult situations	Social Play e.g., going to a movie or listening to music with family or friends
apps for locations (weather, news, traffic), Twitter news, Augmented reality learning	mBusiness, mTraveling, Smart Mob	LBS games

Modified from DeFleur & Ball-Rokeach, 1989, p. 306

This paper also mentioned John Pavlik's "Situated Documentary" (Hollerer et al.,

1999; Pavlik & Mclntosh, 2005) to explain how mobile media users seek location

information in public spaces. Pavlik's concept focused on information seeking and

retrieval of locations in public spaces. With smartphone functions, mobile media users

were excited to document their locations in public spaces. The "Situated Documentary"

was extended to Henry Jenkins' concept of "Participatory Culture," (Jenkins, 2006; 2009)

when mobile media users contributed to or produced documentaries about public

locations. Some of them distributed their documentaries on social media for others to

retrieve location information later.

Traditional mass media dependency developed because media audiences utilized media content to understand, to make decisions, and to play. Mobile media users developed dependency on both mobile devices and mobile media content to understand, to make decisions, and to play in public spaces. They also depended on their devices to produce mobile media content and to share that content with others to understand, to make decisions, and to play.

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