An integrated approach to untangling mediated connectedness with online and mobile media

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ABSTRACT

With the growth and convergence of mobile and social computing technology, mobile media are accorded new social meaning manifested in different aspects of our everyday life. This paper employs multiple theoretical frameworks—including the theory of the niche, the framework of media repertoires, and the communication infrastructure model—to examine individual-technology relationship as manifested through media repertoires and media connectedness. It argues that individuals tend to construct a set of media options and build connectedness with media technologies by engaging in a wide scope of activities through these media. In turn, this media repertoire and media connectedness may facilitate the performance of social and cultural practices in the public space. To investigate this conceptualization empirically, this study conducted a secondary analysis of data collected by the Pew Research Center in the United States. The results showed that multidimensional use of mobile apps was predicted by multidimensional Internet use, along with the scope of regular apps used and monetary investment by users. Additionally, multidimensional Internet use and the use of media repertoires consisting of mobile media and social media for socio-cultural activities facilitate public socio-cultural engagement. These results bring to light a new way of understanding how humans appropriate multiple types of technologies for activities in everyday life.

1. Introduction

The merger of mobile phones and the Internet facilitates the operation of the new social operating system, or what Rainie and Wellman (2012) call "networked individualism", in which individuals are able to connect with easily accessible social networks. Instead of merely being used as a tool for dyadic and interpersonal communication, mobile phones are now used by people as a palm-size positioning device, and as what can be described as a mass self-interactive system. A growing trend of using mobile media for diverse transactional purposes has been discerned. For example, Pew's data (Zickuhr, 2012) showed that as of February 2012, 41% of American adults in the United States (up from 23% in 2011) use mobile phones to get directions, recommendations, or other information related to their present location, and 10% (up from 4% in 2011) use a geosocial service such as Foursquare or Gowalla to check into a certain location or share their location with friends. Moreover, another report (Smith, 2011) indicated that 29% of mobile phone users use phones to access social networking websites and 6% access Twitter via their mobiles.

What these various figures suggest is that humans have developed a new set of strategic uses of mobile media to fulfill existing and emergent needs, ranging from practicing impression management, obtaining information necessary for day-to-day decision-making, and building and maintaining social competencies (e.g., connections and relationships) (Lai & Katz, 2012). In other words, individuals rely on mobile media to create and perform social routines. In addition, being used widely, mobile media occupy an increasingly important and even special position in networked individuals' media environments. Co-existing with many other media options, mobile media are able to maintain their usability and popularity for people across different contexts. Accordingly, mobile media and human users can be seen to have a symbiotic relationship with each other.

Systemic perspectives are deemed appropriate to account for the relationship between humans and technology. Theories representative of such perspectives include media system dependency theory (Ball-Rokeach, 1998), the communication infrastructure model (Ball-Rokeach, Kim, & Matei, 2001), the theory of channel complementarity (Dutta-Bergman 2004), and the personal communication system (Boase, 2008). For example, the communication infrastructure model suggests that the communicative actions of individuals and networks of individuals are embedded in the meso-level structures (such as community organizations and local

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news media) as well as the macro-level structures (such as mass media at national or international levels) (Ball-Rokeach et al., 2001). The notion of media repertoires has also been proposed to account for the set of media options that are routinely used by individuals to fulfill diverse needs and interests (e.g., Dutta-Bergman, 2004; Feaster, 2009; Yuan, 2011).

Following an ecological perspective, Dimmick and his colleagues developed and applied the theory of the niche to understand the competition and complementarity among different interpersonal media, such as mobile phones, instant messaging, text messaging, and email (Dimmick, 2003; Dimmick, Kline, & Stafford, 2000; Dimmick, Ramirez., & Feaster, 2007). According to the theory of the niche, each medium occupies a niche in the multidimensional resource space in the environment, from which it obtains resources necessary for survival and growth, such as consumer time and consumer spending (Dimmick, 2003).

Separately, these theories illuminate a partial picture of individual-technology relationships. But to enhance the understanding of how a variety of media technologies have been embedded into the fabric of individuals' daily life, it is necessary to integrate several theories to conceptualize different parts of adoption and adaptations. In light of this, this study draws on the theory of the niche, the framework of media repertoires, and the communication infrastructure model to investigate the social context in which individuals adopt new technology (i.e. advanced mobile application services) and adapt multiple technologies as part of their communication infrastructure. Specifically, this study investigates how individuals construct a set of media options and build media connectedness with online and mobile media, which in turn affects their performance of social and cultural practices. Analyses of data gathered by the Pew Research Center are used to identify and test these proposed patterns.

1.1. The niche of media, media connectedness, and media repertoires

Building on the well-established tradition of uses and gratifications, Dimmick's theory applies the concept of niche to explain the situation in which each communication medium occupies a niche in the niche space by fighting for users' attention and consumption in terms of money and usage (Dimmick, Chen, & Li, 2004; Dimmick et al., 2000). Essentially, each medium needs to be differentiated from one another in terms of the resources provisioned or the space/time opportunities afforded (Albarran & Dimmick, 1993; Dimmick et al., 2000). For example, television can provide different types of content, such as entertainment and news, and radio can allow access to news while users are in vehicles (Dimmick et al., 2004).

In fact, Dimmick, Feaster, and Hoplamazian (2011a), Dimmick, Feaster, and Ramirez (2011b) found that mobile media and traditional media serve users differently; mobile media occupy a transit niche, serving personal informational and news needs for users when they are on the move, or in ways that are not accessible through traditional media (Dimmick, Feaster, & Hoplamazian, 2011a; Dimmick, Feaster, & Ramirez, 2011b). Dimmick et al. argued that while multiple communication media—ranging from face-to-face communication, online media and traditional media—have adequately served to satisfy humans' informational needs, mobile media occupy the interstices in one's daily activities with access to information anywhere and anytime. For example, one may use a mobile device to check recent news while waiting in line at the coffee shop. To some extent, because of such unique characteristics associated with temporal and spatial flexibility, mobile media are able to co-exist with traditional media in the competitive media environment (Dimmick et al., 2011a; Dimmick et al., 2011b). With the development of applications (apps), it becomes salient to examine whether and how mobile apps have occupied

a niche within users' media environment. Yet in addition to seeing mobile apps as competing or co-existing with other media options based on gratification opportunities, it is possible that mobile apps are used because of users' motivations and social context. In this regard, the framework of media repertoires and the communication infrastructure model can offer insights.

Similar to the theory of the niche, the repertoires research is based on the assumption of active audience (Heeter & Greenberg, 1985; Reagan, 1996). But unlike the theory of the niche, the framework of media repertoires does not carry the economic lens of considering the competition and co-existence between different media technologies. According to the repertoires framework, users are active in choosing not only which multiple information and media sources to use but also the number of sources used to satisfy their interest in a certain topic (Reagan, 1996). In the meantime, social context is an important assumption of the communication infrastructure model, which considers the ecological relationship between individuals and the technology, as embedded in multilevel communication infrastructure in which communicative resources and opportunities exist (Ball-Rokeach, 1998, 2001; Matei & Ball-Rokeach, 2003). According to the communication infrastructure model, the degree to which individuals incorporate the Internet in fulfilling various needs of everyday lives can determine whether individuals are able to take advantage of resources and opportunities in the communication environment for social and cultural activities (Loges & Jung, 2001). Specifically, multidimensional Internet use has been conceptualized as a way to capture the scope and centrality of individual users' connections with the Internet (Jung, Qiu, & Kim, 2001; Loges & Jung, 2001). In other words, if people report a diversity of activities made possible through the Internet, it indicates a high level of connectedness with the Internet.

Reflecting this conceptualization of social context in relation to media use, it is expected that mobile apps may be seen as occupying a niche in a user's communication environment when mobile apps are used to fulfill different functions and needs. Additionally, the framework of media repertoires argues that users tend to use a number of options regularly within a medium, such as a fixed set of television channels (Heeter & Greenberg, 1985). In light of this, the first hypothesis is developed to examine the positive relationship between regular use of a set of mobile apps and multidimensional use of mobile apps.

H1. The scope of regular mobile apps used is positively associated with multidimensional use of mobile apps.

The theory of the niche argues that monetary investment by users is one of the requirements in sustaining a medium within the media environment (Dimmick, 2003). Interestingly, research applying the framework of media repertoires conceptualizes such monetary investment as a structural opportunity to access media. For instance, the number of television channel repertoires was found to be related to cable television subscription because it allows for more channels to access (Ferguson, 1992; Ferguson & Perse, 1993; Heeter, 1985; Yuan & Webster, 2006). By the same token, subscribing to mobile apps represents an opportunity to access more apps on the mobile device. It is thus hypothesized that if users have paid for using mobile apps, they are more likely to use mobile apps for different functions of their daily practices.

H2. Paying for use of mobile apps is positively associated with multidimensional use of mobile apps.

Individual experience developed through using technologies may also influence the construction of media repertoires (Feaster, 2009; Ferguson & Perse, 2000). Following the communication infrastructure model, multidimensional use of technology can be considered as a way for individuals to tap into the opportunities