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Explicating multitasking with computers: Gratifications and situations ☆

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ABSTRACT

This study tries to test the theory of uses and gratifications and the theory of situated action as explanations of multitasking in computer-mediated communication. Based on the data collected from an online survey ($N = 234$), we find that as hypothesized, different gratifications and situations are connected to different types of multitasking in different ways. In particular, multimedia and work-related multitasking are primarily driven by instrumental gratifications whereas affective gratifications contribute to multimedia and interaction type of multitasking. Situational factors have less powerful influence compared to gratifications. However, there are clear differences that discern types of computer multitasking along the situational dimension.

1. Introduction

Multitasking is the behavior by which people handle multiple tasks simultaneously in order to either cope with the complicated environment or optimize the time or process of finishing tasks (Burgess, 2001; Carlson & Sohn, 2001; Lee, 2002). Multitasking with media refers to engaging in one medium along with other media or non-media activities (Zhang, Jeong, & Fishbein, 2010). Data from various sources show that media multitasking has become the dominant media behavior, especially among the younger generation (Brown & Cantor, 2000; Roberts & Foehr, 2004; Roberts, Foehr, & Rideout, 2005; Roberts, Foehr, Rideout, & Brodie, 1999). Foehr (2006) found that 26% of youth's media time was spent on multitasking with multiple media. For adults, Papper, Holmes, and Popovich (2004) estimated that almost a quarter of media use (23.7%) was spent with more than one medium.

The increasing prevalence of the behavior has important implications. Theoretically, it challenges the conventional notion of media effects when media are no longer consumed alone. Traditional media effect studies often assume an isolated individual who uses one medium at a time. The effects are also assumed to be homogenous and monotonic for audiences who have similar personal traits. For instance, the arousing effect of sexual content in the media should be the same across different audiences if they share similar sensation seeking tendencies and other traits. This was found to be inaccurate when the arousing effect has to condition on whether the user is multitasking when consuming the sexual content (Jeong, Hwang, & Fishbein, 2010).

Practically, the widespread behavioral pattern raises the concern of many advertisers, educators, and employers. Advertisers start to ponder on how they can reach the people they intend to convince if the audiences are busy doing different tasks when using media. Educators become worried about the young learners' ability to concentrate on their learning when multitasking becomes their day-to-day routine (Ophira, Nass, & Wagner, 2009). Still employers have to accept the fact that because of the flattening of hierarchies and expansion of work roles, managing multiple tasks is becoming a basic characteristic of work life that influences work productivity (Gonzalez & Mark, 2004). Both the prevalence and the importance of the behavior urge researchers to thoroughly examine media multitasking, including both the description of such behavior and the explanation of it.

Survey evidence suggests that computer activities are by far the most multitasked, while the majority of computer usage could be considered media multitasking (Carrier, Cheever, Rosen, Benitez, & Chang, 2009; Foehr, 2006; McFarlane, 1998). Foehr (2006) found that young people are seldom to exclusively concentrate their attention on one activity when using a computer. Most activities during computer multitasking are media-based, including surfing websites, instant messaging (IMing), emailing, and so on. For example, researchers (Lenhart & Hitlin, 2005) note that: "(t)eens have long harnessed these small moments during IM conversations to enable them to accomplish other tasks while conversing. When teens go online, they will use IM as a 'conversational' centerpiece while conducting other business in the time gaps" (pp. 23).

Although the potential to combine tasks is infinite, people do not randomly pick two activities and carry them out simulta-

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neously (McFarlane, 1998). There are existing theories that seem to suggest different reasons why and how people engage in multitasking and this paper attempts to verify these theoretical predictions. Firstly, the uses and gratifications approach to media use assumes that audiences are aware of their social and psychological needs, and actively seek media outlets to fulfill them. Gratifications are considered as one important personal psychological factor that shapes media behaviors. The approach has been applied to studying digital media, such as MP3 players, satellite radio, mobile phones, the Internet, and computers (Albarran et al., 2006; Ferguson, Greer, & Reardon, 2007; Jeong et al., 2009; Leung & Wei, 2000; Papacharissi, 2002; Pornsakulvanich, Haridakis, & Rubin, 2008; Roy, 2009). Scholars found that computer-mediated communication gratifies users in information seeking, entertainment, convenience, passing time, and interpersonal utility (Flanagin & Metzger, 2001; Papacharissi & Rubin, 2000; Wei & Leung, 2001). It is thus expected that computer multitasking can be explained by users' needs.

A second theoretical approach to understanding media behaviors is to center around situations. As media devices grow in number and become more portable, situations in which media are used become more diverse (Ito & Okabe, 2006). For example, the migration of media into people's bedrooms has been identified as at least partially responsible for media multitasking (Jeong & Fishbein, 2007; Roberts & Foehr, 2004). The private location, free from disturbance and distraction, increases the opportunity to use more than one medium at a time (Jeong & Fishbein, 2007). In addition to physical locations, Goffman (1965) defined situations by interpersonal relationships and communication. Recently, technosocial situations, advocated by mobile phone scholars (Ito & Okabe, 2006), consider technology as another factor that defines situations. Therefore, situations in this study, defined through the physical, social and technological dimensions, are expected to be another set of predictors of computer multitasking behaviors.

This paper attempts to provide an empirical test of a theoretical model that considers both gratifications and situations to explicate one particular media multitasking behavior—multitasking with computers. Computer multitasking includes activities that are either Internet or non-Internet based such as completing an assignment using a Mircosoft package while IMing. A modeling effort is made to include users as well as the often neglected factor, situations. The user is examined through a traditional uses and gratifications approach by measuring the needs that motivate him/her to multitask with computers. In addition to gratifications, this paper proposes situational factors including spatial differentiation, interpersonal setting, and technological mediation as another set of predictors of computer multitasking. An online survey of 234 respondents was conducted to investigate the roles of gratifications and situations in affecting both the types and the amount of computer multitasking. The theoretical distinctions between gratifications and situations are discussed to inform research on other new media behaviors, such as mobile phone usage.

2. Multitasking with computers

Although computer multitasking can take many forms, people don't randomly pick two activities and do them simultaneously. Carrier and his colleagues (Carrier, Cheever, Rosen, Benitez, & Chang, 2009) found that people generally agreed on which task combinations are hard or easy. Mental capacities define and limit the types of tasks that can be multitasked. The concept of cognitive load suggests that multiple tasks compete for cognitive sources at different levels, from attention to long-term memory (Zhang et al., 2010). Different tasks lay different loads on users, due to different characteristics of the tasks. Certain task combinations are more frequently seen because the combined cognitive loads of these tasks are within the limitations of human performance. Because multitasking with computers is recognized as one of the most often observed multitasking behaviors, we first want to explore which types of activity pairings are conducted in the computer-mediated context.

RQ1. Which types of tasks are paired together in computer multitasking?

2.1. Explicating computer multitasking: Gratifications

Needs are considered as one important personal psychology that shapes new media behaviors. The uses and gratifications approach to media use assumes that audiences are aware of their social and psychological needs and actively seek the media to fulfill them (Palmgreen, 1984). Needs lead to both ritualized (passive) and instrumental (active) use of media (Metzger & Flanagin, 2002; Rubin, 1984, 1994). Media usages characterized as ritualized are habitual and frequent; those which are instrumental tend to be purposeful, selective and goal-oriented. Previous uses and gratifications studies identified various media gratifications, including surveillance, sociability, diversion, escape, arousal, instrumentality, reassurance, and companionship from studying various media (newspapers and magazines, see Licheterstein & Rosenfeld, 1984; television, see Palmgreen & Rayburn, 1979; Rubin, 1981, 1983; VCR, see Lin, 1993; Rubin & Bantz, 1987; cable TV, see LaRose & Atkin, 1988; and the telephone, see Dimmick, Sikand, & Patterson, 1994; O'Keefe & Sulanowski, 1995).

More recently, scholars have recognized the importance of applying uses and gratifications to new media and digital technologies (Newhagen & Rafaeli, 1996; Rubin & Bantz, 1987). Ruggiero (2000) argues that "as new technologies present people with more and more media choices, motivation and satisfaction become even more crucial components of audiences analysis" (pp. 14). Studies on the motivations of computer usage have emerged as an important part of this tradition (Joines, Scherer, & Scheufele, 2003; Ko, Cho, & Roberts, 2005; Stafford, Stafford, & Schkade, 2004). Papacharissi and Rubin (2000) identify the primary motives for computer usage as instrumental information seeking, entertainment, convenience, passing time, and interpersonal utility. Another study by Flanagin and Metzger (2001) reveals that compared to traditional means of mediated interpersonal and mass communication, computer-mediated communication better gratify users in information retrieval, learning, play, leisure, persuasion, social bonding, relationship maintenance, problem solving, status, and personal insight. Wei and Leung (2001) summarize four factors that represent essential motives that drive Internet use: fun seeking, socializing, diversion/escape, and surveillance/information gathering.

In computer-mediated context, the boundary between user activities is becoming blurred. Havick (2000) states that the computer-mediated context creates a distinctive communication environment that "gives individuals more control of the dissemination, storage and production of information and can operate as another dimension of communication within the new and traditional media mix" (pp. 121). In such a context, users' multitasking with computers may result from two or more different gratifications at the same time. Moreover, intentional and active multitasking indicates that there may be unique gratifications related to computer multitasking itself. Our second research question is thus to explore the types of gratifications users seek to fulfill when multitasking with computers. Our first hypothesis predicts that the different gratifications are connected to the specific types of multitasking pairings.