

The two-screen experience: Examining the interplay between multitasking and involvement on user perceptions of television programs

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ABSTRACT

Jacqueline Y. Borrett: The two-screen experience: Examining the interplay between multitasking and involvement on user perceptions of television programs
(Under the direction of Sri Kalyanaraman.)

Two-screen experiences invite viewers to follow along with television programs on their tablets or computers and they are used as a means of keeping viewers engaged with television. A 2x2 laboratory experiment was designed to test the effect of multitasking (concurrent and sequential) and program involvement (high and low) on a variety of outcomes, including attitudes, memory, social well-being, and creativity. Participants were 128 undergraduate journalism students from a large southeastern university. They were shown either a high involvement video or a low involvement video and asked to answer questions about the video either while it was playing or immediately after it had finished. Results indicate that memory for the program was higher during sequential multitasking conditions and high involvement conditions. Multitasking was not related to perceptions of social well-being. Additionally, attitudes were more positive during high involvement conditions. Findings also show that multitasking had a positive effect on creativity.

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CHAPTER 1: INTRODUCTION

Multitasking is not a new phenomenon and it has been a subject of interest in academia for several decades (e.g., Guttentag, 1989; Schumacher et al., 1997). However, recent interest in multitasking, particularly multitasking with media, has skyrocketed, likely due to the rapidly changing media landscape of the 21st century. We have unprecedented access to information and previously unheard of means of accessing that information. We not only carry the Internet in our pockets, but also our televisions, music libraries, and cameras. Rapid advances in technology give people the freedom to access, produce, and share new information from almost anywhere. As a result, people are increasingly attempting to juggle multiple tasks at a time (Foehr, 2006). For instance, 75% of smartphone and tablet users use a second device at least once a month while they watch television and nearly 50% do so at least once a day (Nielsen, 2013). Also, when people multitask with media, they do so most often while watching television (Foehr, 2006). A 2009 Nielsen report found that more than 30% of the time people were using the Internet, they were also watching TV, findings that span beyond younger generations (Nielsen, 2009).

Unfortunately for networks, multitasking while watching television often means that viewers aren't paying attention to the programming. Advertisers in particular are concerned because if viewers aren't paying attention to television programming that also means they're not seeing the advertisements that are shown. There is no indication that people will stop multitasking anytime soon, so television networks and advertisers had to come up with a solution. What once seemed like a nearly insurmountable problem for advertisers and TV

networks, getting people to pay attention to programming in spite of the smartphones and tablets, became an opportunity.

Recently, many networks have begun offering their own second screen content to viewers, attempting to engage those using multiple devices while watching television. This has been termed a “second screen experience” (Hare, 2012), where networks encourage users to follow along with a program on their smartphone, tablet, or computer, keeping viewers engaged with the program and offering advertisers a second platform with which to attract customers. Thus, rather than attempting to stop people from multitasking during their shows, networks decided get in on the game and offer second screen content of their own that complemented television programming. It is a solution designed to keep users happy while also getting networks and advertisers the exposure they want. The current study proposes to examine the effects of media multitasking and program involvement on television viewers’ memory of the program and attitude toward the program.

Anecdotal evidence suggests that early versions of two screen experiences left viewers distracted and more apt to miss important plotlines, according to the president of digital media at Fox, David Wertheimer (Hare, 2012). Subsequent versions of second screen apps put more consideration into what sort of content appears on the second screen and when it appears in the program. For instance, creators of AMC’s *The Walking Dead Story Sync* app carefully consider what points in the program the second screen content appears, with the goal of enhancing the viewing experience and “connecting some dots that people might not connect for themselves” (Hare, 2012, para. 30). Interestingly, some networks have noticed that two-screen experiences are particularly successful with live televised events, more so

than dramas (Hare, 2012). This suggests that the type of programming matters when investigating the effects of media multitasking scenarios, such as two screen experiences.

The aim of this paper is to investigate media multitasking and the role that involvement may play in television viewers' memory of and attitudes toward a program. First, a literature review will discuss the relevant research surrounding each concept. Next, hypotheses and research question will be proposed. Third, the method section will outline the method for addressing the hypotheses and research question. The paper will conclude with a discussion of the results as well as the theoretical and practical implications of this research.

CHAPTER 2: LITERATURE REVIEW

Media Multitasking

Media multitasking has been primarily defined in two ways: first, in terms of the number of media individuals are engaged with and second, in terms of the number of tasks they are engaged with. First, media multitasking has been conceptualized in terms of the number of media being used where individuals are said to be media multitasking when they are using or consuming more than one medium at a time (e.g., Mantyla, 2013; Rideout, Foehr, & Roberts, 2011; Shao & Shao, 2012; Shih, 2013; Zhang & Zhang, 2012). This conceptualization has been used largely in survey research (e.g., Foehr, 2006; Rideout et al., 2011) and in identifying chronic multitaskers (e.g., Ophir, Nass, & Wagner, 2009). For example, recent research concerning chronic media multitaskers asked participants to fill out a questionnaire indicating how often they used different pairings of media (Ophir et al., 2009), suggesting that their conceptualization of media multitasking was concerned with the number of media.

Second, multitasking has been referred to simply as engaging in more than one task at a time (e.g., Judd & Kennedy, 2011; Wang & Tchernev, 2012), also referred to as synchronous polyfocality (Meskill & Anthony, 2014). In the case of media multitasking, at least one task involves some form of media (e.g., Jeong & Fishbein, 2007) and often centers on task switching (e.g., Colom, Martinez-Molina, Shih, & Santacreu, 2010; Junco & Cotton, 2012) where the initial task must be returned to at a later time for an activity to be considered multitasking (Judd, 2014; Junco & Cotton, 2012). In other words, multitasking is not just

about switching from one task to another. To be considered multitasking, the individual must switch back to the first task. This differs from sequential task completion where the individual switches away from the first task and does not return to it (Judd, 2014).

The idea that multitasking is a function of task switching is useful in conceptualizing media multitasking. Salvucci, Taatgen and Borst (2009) present a multitasking continuum using their characterization of multitasking, which is centered on the amount of time spent on one task before switching to another. At one end of the continuum is sequential multitasking in which there is a greater span of time between tasks. This can also be thought of as task-switching, where an individual completes one task before moving on to another. At the other end of the spectrum is concurrent multitasking, where individuals are essentially working on two tasks at the same time. Concurrent multitasking is what many people, scholars included, think of when they talk about multitasking. However, according to Earl Miller, a neuroscientist at MIT, one important note about concurrent multitasking is that, rather than actually giving equal attention to two tasks, multitasking actually involves very rapid task switching (Hamilton, 2008). That is, only one activity dominates our attention at a time, even though we may quickly switch the primary focus of our attention. Therefore, rather than truly being concurrent, multitasking can be thought of as very rapid task switching (Ie, Haller, Langer, & Courvoisier, 2012). The current research is a comparison between what Salvucci et al. (2009) call concurrent multitasking and sequential multitasking.

There are several gaps in media multitasking literature that the current research seeks to address. First, in the area of media multitasking there is a dearth of research that uses multiple media. Typically, researchers ask participants to use a single medium to complete multiple tasks. For instance, many researchers have administered multiple tasks on a

computer (e.g., Adler & Benbunan-Fich, 2012; Alzahabi & Becker, 2013; Mantyla, 2013; Nagata, 2003), often using instant messaging as a secondary task (e.g., Wang et al., 2012). While this research is valuable to the understanding of the effects of media multitasking, it neglects to examine an ever-increasing tendency for technology users to operate multiple media devices at once (Rideout et al., 2011). Only a handful of media multitasking studies have used more than one type of media device in their designs (Brasel & Gips, 2011; Lin, Lee, & Robertson, 2011; Lin, Robertson, & Lee, 2009). This study contributes to existing literature by further considering the use of multiple types of media in a multitasking environment.

The second gap this research addresses is the assumption that multitasking must involve entirely unrelated tasks. This is not surprising given that several researchers have included task or goal independence in their definitions of multitasking (Colom et al., 2010; Sanbonmatsu, Strayer, Medeiros-Ward & Watson, 2013; Wang et al., 2012). Further, Benbunan-Fich, Adler, and Mavlanova, (2011) argue that the two key components of multitasking are task independence and performance concurrence. While performance concurrence is a key identifier of multitasking, this author argues that task independence is not a necessary component of multitasking. For example, in their conceptualization of tasks, the authors note that tasks are comprised of “all the components necessary for their performance” (Benbunan-Fich et al., 2011, p. 3). They argue that all of the components necessary for completing a presentation, for instance, such as researching information on Google and creating a presentation in PowerPoint, are all part of the same task. However, such a broad definition of a task is neither necessary nor conducive to multitasking research. Treating each of the previously mentioned components as a single task neglects to

acknowledge that, while they are topically related, each task is functionally different and may draw on different cognitive resources. Such a limitation ignores a common form of multitasking in which individuals may use multiple forms of media to complete a single, overriding task. This research addresses this gap by examining a multitasking situation in which the tasks are associated with one another.

Multitasking Research

When considering who the most frequent media multitaskers are, many believe that the millennial generation far outpaces other generations. A study conducted by the Kaiser Family Foundation found that adolescents report when they use media nearly 30% of that time is spent multitasking (Rideout et al., 2010). However, while millennials, also known as the “Net Generation,” tend to report multitasking with media more than older generations (Carrier, Cheever, Rosen, Benitez, & Chang, 2009), they may not multitask as much as common rhetoric implies (Judd & Kennedy, 2011). Age is one possible indicator of media multitasking, though there are other factors that may influence an individual’s propensity to multitask. For instance, individuals who are higher in sensation seeking and impulsivity also tend to multitask more (Sanbonmatsu et al., 2013).

In terms of what drives people to multitask, one study found that people multitask to fulfill cognitive needs, such as information seeking (Wang & Tchernev, 2012). Interestingly, cognitive needs are not fulfilled by multitasking, though emotional needs, such as relaxation and enjoyment, are fulfilled despite not being sought (Wang & Tchernev, 2012). That is, from a uses and gratifications perspective, even though users only seek cognitive gratifications from multitasking, they actually only derive emotional gratifications. While this seems to suggest that there may be emotional benefits to multitasking, other research

shows that individuals who multitask more often also report having a decreased sense of well-being (Pea et al., 2012).

Looking at how people use multiple media is also important when considering multitasking. For instance, when looking at how people allocate their attention when multitasking with a computer and television, Brasel and Gips (2011) found that users switched between the two an average of four times each minute. The study also found that many users were not aware of their switching behavior (Brasel & Gips, 2011), suggesting that multitasking and its effects may be largely unnoticed by users. Other researchers looked at how people switch between different content on a single device, namely a personal computer. The researchers were able to predict when an individual would switch content based on skin conductance and arousal (Yeykelis, Cummings, & Reeves, 2014).

Research has also looked at the effect that multitasking has on task performance. In this case, the evidence is clear. Research finds that people take more time to complete tasks when multitasking (Bowman, Levine, Waite, & Gendron, 2010), though the magnitude of the effect may depend on type of media that a person is multitasking with (Nagata, 2003). Additionally, studies have associated multitasking with decreased academic performance (Ellis, Daniels, & Jauregui, 2010; Junco & Cotton, 2012). It's important to note that interpreting the effects of media multitasking depends on the metric that is used to measure success (Adler & Benbunan-Fich, 2012). For instance, Adler and Benbunan-Fich (2010) found that multitasking is negatively related to task accuracy. However, they found an inverted-U pattern when looking at productivity. Individuals who were moderate multitaskers, who switched tasks an average number of times compared to the entire sample, were the most productive and those who were high or low multitaskers, who switched tasks

the most and least often, respectively, were the least productive (Adler & Benbunan-Fich, 2010). Thus, when discussing the impact that multitasking has on task performance it's important to be clear about the metric being used to measure success.

Research has also looked at the effects of long-term, or chronic, multitasking. Ophir et al., (2009) developed a measure to identify individuals who multitask very frequently and can be considered chronic multitaskers. Their research suggests that, compared to people who multitask less, individuals who are chronic media multitaskers are less able to filter out irrelevant distractions (Ophir et al., 2009) because they suffer from a "breadth bias" (Lin, 2009). However, other research shows that, while chronic media multitaskers may be worse at filtering out irrelevant information, they may be better able to integrate multisensory information, such as audio and visual information (Lui & Wong, 2012). Additionally, it has been found that chronic multitasking may be a form of practice and help to improve an individual's ability to switch between tasks (Alzahabi & Becker, 2013). Thus, long-term effects of media multitasking unclear, indicating that further research is necessary.

A handful of studies have examined multitasking with television, which is relevant to the current study. When told that they could ignore a video playing in the background, participants performed better on a reading test than those who were told that they should also pay attention to the video (Lin et al., 2011). This is consistent with previously research suggesting that multitasking is detrimental to task performance. Additionally, television as a multitasking medium deserves more attention from scholars because, while it is often used as a secondary medium in multitasking studies, television is the medium that people use most often when multitasking (Foehr, 2006). That is, when people multitask, they are consistently

doing so with television. The current research aims to look at the effect that multitasking with television has on viewers perceptions of television programming.

Involvement

As many scholars have noted, the concept of involvement has been difficult to define (e.g., Johnson & Eagly, 1989; Moorman, Neijens, & Smit, 2007; Perse, 1990; Rothschild & Ray, 1974; Muehling, Laczniak, & Andrews, 1993). Krugman (1966) defined involvement as “the number of ‘connections,’ conscious bridging experiences or personal references per minute, that the subject makes between the content of the persuasive stimulus and the content of his own life” (p. 584). Krugman’s initial conceptualization of involvement prompted subsequent scholars to expand his definition beyond simply a count of personal references. Petty and Cacioppo (1979b, 1981, 1986, 1990) conceptualized involvement as related to personal relevance, or the degree to which a message interests the receiver. Expanding the definition further, others have argued that involvement is focused on the amount of effort receivers are willing to put into processing a message (Moorman et al., 2007; Yoon, Bolls, & Muehling, 1999). Zaichkowsky (1986) identified three dimensions of involvement, all of which were related to relevance. The first is the relevance of the message and is indicated by the degree to which the message personally affects the receiver. Second, the relationship between the individual and the product focuses on whether a product being advertised matches the needs of the individual. Finally, involvement with a decision is signaled by the degree to which the individual is motivated to make a careful decision. The current research is focused on the first dimension of relevance: the degree to which the message is relevant to the receiver.

In addition to general relevance, there are two distinctions that scholars have made with regard to involvement. First is the distinction between enduring involvement and situational involvement. Enduring involvement is considered an ongoing or long-term interest in a subject while situational involvement is a function of context (Huang, 2006). As an example, enduring involvement can be considered an individual's ongoing interest in politics, while his or her situational involvement is considered the individual's interest in a specific political race, such as a presidential race versus a congressional race (Faber, Tims, & Schmitt, 1993). The second distinction is between cognitive and affective involvement, as discussed by Park and Young (1986). Cognitive involvement is based on the "relevance of the message contents or issue" and is driven by utilitarian motives (Park & Young, 1986, p. 12). On the other hand, affective involvement is "based on self-concept management" (Park & Young, 1986, p. 12). It is further argued that affective involvement may be driven by a viewer's identification with the characters in a message (Park & McClung, 1986). These different conceptualizations are useful for understanding the full extent of the research on involvement, some of which will be discussed below.

In addition to the various conceptual definitions of involvement, researchers have used a variety of methods and operationalizations to study involvement. First, and most common, are manipulations of participants' motivations for attending to a stimulus, which is often done by telling participants the content of a message will personally affect them (Petty & Cacioppo, 1981). For instance, participants may be shown a message containing specific information about an educational policy and told that the policy will be implemented at their university (high involvement) or another university (low involvement) (Petty & Cacioppo, 1979b). A similar manipulation involves telling participants, who are often undergraduate

students, that a policy will be implemented before they graduate, thus impacting them directly and creating a high involvement situation, or after they graduate, in a low involvement condition (Petty & Cacioppo 1979a). In order to manipulate cognitive versus affective involvement, participants in Park and Young's 1986 study were shown a shampoo commercial and directed to either pay attention to performance characteristics of the product (cognitive) or brand image characteristics (affective). In a similar study, participants were shown segments of a television program and told to either evaluate the main character's situation, in the cognitive involvement condition, or imagine themselves in the position of the main character, in the affective involvement condition (Park & McClung, 1986).

Understanding from the previous discussion on manipulations of motivations to attend to a message, it is reasonable to think that varying certain characteristics of a message, such as the geographic relevance of a stimulus, will make the message more or less involving to the viewer. For instance, exposing participants to a local newscast from the city they live in is likely to be more involving than exposing them to a newscast from a city where they have never lived. Using this logic, researchers have manipulated involvement by varying the type of political race that participants were presented with (Rothschild & Ray, 1974). Presidential races, which are targeted to national audience, were seen as more involving than Congressional races and Assembly races, both of which are targeted to a more localized audience.

Second, pretesting can be used as a method for manipulating involvement. Often this is accomplished in one of two ways. One option is to use self-report measures, in which a pretest group is shown the stimuli and asked to fill-out involvement measures. Norris and Colman (1993) used pretesting to ensure that the three videos they used for their main study,

music, action-drama, and nature, significantly differed in involvement. A second option that researchers have used in pretesting is response latency. In this sort of testing, longer response times are indicative of greater involvement (e.g., Lord & Burnkrant, 1988, 1993). Similarly, signal detection tests may be used, where a greater number of detection errors indicate greater involvement (e.g., Bryant & Comisky, 1978). Pretesting helps researchers to determine beforehand the degree of involvement they can expect from a stimulus, allowing them to more confidently manipulate involvement in a main study.

Involvement Research

Though the effects of involvement are nuanced, it is understood that increased involvement “enhances the importance of message-based cognitions” (Petty & Cacioppo, 1979b, p. 1924). That is, when individuals are highly involved in a message, they devote more cognitive resources to processing that message. Research on involvement has taken place largely in the discipline of advertising, where there are conflicting findings on the effects of involvement. While it remains true that involvement is positively related to the amount of cognitive resources allocated to a message, the effect on advertising is unclear. First, several researchers have found that high program involvement was negatively related to commercial involvement (Park & McClung, 1986). This is corroborated by research that suggests that memory for an ad decreases as program involvement increases (Bryant & Comisky, 1978; Lord & Burnkrant, 1988; Norris & Colman, 1993;

In contrast, other findings suggest that as program involvement increases, advertisement recall also increases (Moorman et al., 2012; Rothschild & Ray, 1974). These conflicting findings may be caused by a spillover effect, where involvement in the program

spills over and is transferred to subsequent advertisements (Moorman et al., 2007). Celsi and Olson (1988) noted that as involvement increases, participants “increasingly focus their comprehension processes on interpreting the product-related information in the advertisements” (p. 219). Program involvement is also positively related to attitude toward an advertisement (Watt, Coulter, Wiegel, Kowta, & Yansong, 1998), even in spite of lower ad recall (Norris & Colman, 1993).

One possible explanation for conflicting findings is that the relationship between program involvement and memory for advertisements may not be linear. Rather than a linear relationship, Tavassoli, Shultz, and Fitzsimons (1995) propose an inverted-U relationship. That is, as involvement increases from low to moderate, ad memory increases. However, as involvement increases from moderate to high, ad memory decreases. This suggests, in terms of ad memory, too much involvement in the program has negative effects. It is also indicative of the importance of cognitive resources. While the authors do not discuss this relationship explicitly, it is possible that the reason ad memory decreases when involvement is high is because the viewer has put so much cognitive effort into the program that there are no leftover resources to put toward the advertisement.

CHAPTER 3: HYPOTHESES AND RESEARCH QUESTIONS

Memory

As mentioned previously, research shows that multitasking may have a negative effect on memory, which has often manifested in real-world consequences such as poor academic performance (e.g., Junco & Cotton, 2012). As previously discussed, the metric used to measure the success of task performance is important to consider when discussing the effects of multitasking (Adler & Benunan-Fich, 2012). The current research will focus on accuracy as a measure of task performance, which will be measured in terms of the information that viewers are able to remember about the program they view. Research on the effect of multitasking on task accuracy and memory show that individuals who are asked to attend to more than one task at a time have lower accuracy scores than those who only attend to a single task (e.g., Adler & Benunan-Fich, 2012; Lin et al., 2011). This suggests that those in the concurrent multitasking condition will have lower accuracy scores than those in the sequential multitasking conditions.

H1a: Memory scores will be lower for individuals in the concurrent conditions than those in the sequential conditions.

In regard to the effect of involvement, individuals are likely to remember more about the program they are more involved with. As previously discussed, the relationship between involvement in a program and recall of advertisements is unclear. However, with respect to

the impact of program involvement on program recall, it is likely that higher involvement in related to increased recall. This may occur for one of two reasons. First, some research indicates that high program involvement leads to high ad recall. This supports the idea that involvement is related to increased memory, which manifests itself as recall of adjacent programing, such as commercials. Second, if high program involvement leads to lower ad recall, it is possible that this is because the viewers are so involved with the program that they do not have the cognitive resources to attend to the advertisement. This also supports the idea that program involvement is likely related to increased program recall, though not necessarily higher recall for adjacent programing. The following hypothesis is proposed:

H1b: Memory scores will be higher for individuals in the high involvement conditions than those in the low involvement conditions.

Finally, because more cognitive resources are used under conditions of both high involvement (e.g., Petty & Cacioppo, 1979b) and multitasking (e.g., Lin et al., 2011), users who are both highly involved and asked to multitask will suffer in regard to what they remember about the program. The following interaction hypothesis is proposed:

H1c: Memory will be highest for individuals in the high involvement/consecutive condition and lowest for individuals in the low involvement/concurrent condition.

Attitude Toward the Video

Attitude toward the program may be comprised of many different facets, including enjoyment, satisfaction, or annoyance. Research in this area has found that users report greater levels of annoyance when they are interrupted during a primary task. Specifically, Bailey, Konstan, and Carlis (2001) compared users who had been interrupted during a primary task to users who had been given a second task only after they had completed the primary task. They found that the first group showed greater levels of annoyance than the second group, regardless of the type of primary task that was interrupted. These results can easily be translated to the current research. One can consider the first experimental group, those that were interrupted during a primary task, to be engaging in something akin to concurrent multitasking. The second group, those that were given a second task after they had completed the first task, can be considered to be sequentially multitasking. Thus, the results can easily be translated to the multitasking continuum and the current research. It is likely, based on the research of Bailey et al. (2001), that users who concurrently multitask will have less favorable attitudes than those who perform the tasks consecutively.

H2a: Attitude toward the program will be more positive in sequential rather than concurrent conditions.

In the current research, the relationship between involvement and the availability of cognitive resources is important because of the possible interaction effect of involvement and media multitasking. As previously discussed, increased involvement in a message is associated with more cognitive resources being devoted to processing that message. In the

context of television, this suggests that the more involved a viewer is in a program, the less cognitive resources they will have to allocate to other activities. Additionally, multitasking draws on more cognitive resources than consecutive task completion. When given the choice of when to switch tasks, users who were interrupted during a time of high workload were more likely to defer the interruption task, compared to those who were interrupted during times of low workload (Salvucci & Bongunovich, 2010). In relation to the multitasking continuum, when participants experienced high cognitive load they were more likely to wait longer periods of time between task switching, putting them at the sequential end of the continuum. When participants experienced low cognitive load they were more likely to wait shorter amounts of time between task switching, which puts them more toward the concurrent end of the continuum. That research shows that individuals will do what they can to avoid cognitive overload, which suggests that if individuals are asked to multitask when they are viewing a highly involving program, their attitude toward the program may decrease. The following hypotheses are proposed:

H2b: Concurrent multitasking will evoke more positive attitudes toward the program when involvement is high and less positive attitudes when involvement is low.

H2c: Consecutive multitasking will evoke more positive attitudes when involvement is low and less positive attitudes when involvement is high.

Social Well-Being

Research shows that multitasking is related to feelings of social well-being. Pea et al. (2012) found that, among 8- to 12-year-old girls, those who multitasked most often reported feeling less socially successful, less normal, and getting less sleep. These findings were exacerbated when the multitasking did not include social activities (Pea et al., 2012).

Researchers have also found that the association between media multitasking and decreased feelings of social well-being cannot be explained by an overall increase in media use (Becker, Alzahabi, & Hopwood, 2013). Consistent with the research conducted by Becker et al. (2013) and Pea et al. (2012), the following hypothesis is proposed:

H3a: Perceptions of social well-being will be higher for individuals in sequential rather than concurrent multitasking conditions.

Additionally, research suggests that the negative relationship between media multitasking and social well-being may be due to a lack of attentional control (Becker, Alzahabi, & Hopwood, 2013). Multitasking under conditions of high involvement is likely to exacerbate the effects on social well-being because individuals' resources will be more taxed than if they were multitasking under conditions of low involvement.

H3b: Individuals who are in the high involvement/concurrent condition will have lower perceptions of social well-being than those in high involvement/sequential and both low involvement conditions.

Creativity

A handful of studies suggest that there may be a relationship between creativity and multitasking. One study found that individuals displayed increased creative abilities when they had were given specific task goals and control over their task switching (Madjar & Shalley, 2008), suggesting that there may be a relationship between multitasking and creativity. In a recent survey, Duff, Yoon, Wang, and Anghelcev (2014) found that creativity was a predictor of media multitasking. In their research they also cite previous studies that suggest high creative abilities are associated with decreased ability to filter out distractions (Carson, Peterson, & Higgins, 2003). As previously discussed, Ophir, Nass, and Wagner's 2009 study found that heavy media multitaskers were less able to filter out irrelevant distractions. When considered in conjunction with the study from Carson et al. (2003), the evidence suggests that there may be a connection between media multitasking. However, the directional and causal relationship between the two is unclear, therefore, a research question is posed:

RQ: Is there a relationship between media multitasking and creativity?

CHAPTER 4: METHOD

Overview

A 2 x 2 design was used for this study, which tested the effects of multitasking (concurrent/sequential) and involvement (high/low) on television viewers' memory of and attitude toward the program as well as their feelings of social well-being. Laboratory sessions were conducted with approximately ten participants in each session and sessions were randomly assigned to conditions. Participants were asked to watch a short video that was either highly involving or not and complete a questionnaire about the video either while the video was playing or just after the end of the video. This study was designed to simulate a two-screen experience, which many television programs are now offering.

Participants

Participants ($N = 128$) were undergraduate students from journalism classes at a large southeastern university. There were five freshman, 22 sophomores, 72 juniors, and 29 who identified as senior or above and a majority of participants identified themselves as females (78%). Ages ranged from 18 to 26 with a mean age of 20.7. Laboratory sessions were run in groups containing approximately ten participants. Participants were assigned to one of four conditions. Distribution of participants was approximately equal across all conditions. Sessions ran approximately 30 to 45 minutes, though participants signed up to participate in one-hour time blocks.

Stimulus Materials

The high involvement condition presented participants with a basketball highlights video from their home university, UNC Chapel Hill. In contrast, the low involvement condition presented participants with a highlights video from another university, the Iowa Hawkeyes from the University of Iowa. Both videos were found on YouTube, approximately nine minutes long, and contained highlights from the 2011-2012 men's basketball season. An informal pretest was conducted to ensure that the UNC highlights video was more involving than the University of Iowa highlights video. Additionally, to ensure that there was no contamination between involvement conditions, neither team appeared in the other team's video. In other words, the UNC highlights video did not show Iowa's basketball team and vice versa.

Five questions were associated with each video to act as the multitasking manipulation. In the concurrent conditions, participants were told to answer the questions during the video while in sequential conditions they answered the questions after the video had finished playing. Questions were the same across conditions with the exception of changing the team referenced in the question to match the video being shown. That is, in conditions where participants were shown the UNC basketball highlights the questions asked about UNC basketball. In the other conditions, questions asked about Iowa basketball. The questions were opinion based and had no correct or incorrect answers. Additionally, the questions were crafted to be broad so that they would not prime participants to attend to particular information that may have influenced their responses on subsequent memory questions.

Procedure

When participants entered the lab they were asked to read and sign a consent form if they agreed to participate in the study. The experimenter gave brief instructions and answered any questions that participants had. She informed participants that the study was concerned with how people view and react to different types of television programs and that the current session was focusing on sports programs. Participants had previously been instructed to bring their laptops to complete the study. All laptops had screen sizes between approximately 13 and 15 inches, with none that were abnormally large or small. Additionally, participants were not allowed to complete the study on tablets. Any participants who had brought only a tablet or who had forgotten their laptop were given a spare laptop that the experimenter kept on hand. Once all participant questions had been answered, the experimenter instructed participants to use their computers to navigate to the questionnaire in a fresh web browser. Each condition had its own separate questionnaire, so the experimenter double-checked each participant's screen to ensure that each person was on the correct questionnaire and that all other browser windows and applications were closed. Participants were also told to mute their computers to prevent any unexpected notifications from disrupting the experiment. Throughout the study, the experimenter periodically checked to make sure that participants were focusing entirely on the study and not engaging in other activities.

Next, the experimenter played the video. Depending on the condition they were in, participants either completed the first questionnaire as the video was playing or immediately after the video had finished. Once participants finished the watching the video and

completing the first questionnaire they were given a second questionnaire asking them about their experience of watching the video.

In the concurrent multitasking conditions participants completed the first questionnaire as the video was playing. The questionnaire was digital, allowing it to be timed to the video. As soon as the video began participants started the first questionnaire so that the questions were in sync with the video. A new question automatically appeared approximately every 108 seconds, replicating real-world two-screen experiences. Participants were instructed to answer the questions as they appeared on the screen. Once the questionnaire advanced to the next page participants were not be able to navigate backward to review their answers. However, items in the first questionnaire were opinion based and had no correct answers, so participants should not have felt the need to review or correct their answers.

In the sequential multitasking conditions participants completed the first questionnaire immediately after the video finished playing. The questions were essentially the same as the questions administered in the concurrent conditions, though some were reworded to fit the context (e.g., “Do you think *Iowa*’s team exhibits good sportsmanship?” versus “Do you think *Carolina*’s team exhibits good sportsmanship?”). As in the concurrent multitasking conditions, the questionnaire in the consecutive conditions did not allow participants to navigate backward. However, there was no time constraint and participants were free to complete the first questionnaire as quickly as they liked.

When participants finished watching the video and had completed the questions associated with the video, the questionnaire was administered. It asked participants what they remembered from the video, their attitudes toward the video, their feelings of social well-being, several personality questions, and questions regarding demographic information. Also

included was a creative task designed to determine if multitasking had any effect on participants' creativity. Finally, manipulation checks were included to ensure both the involvement and multitasking manipulations were successful. Once participants finished the questionnaire they were debriefed and dismissed.

Measures

To ensure that both manipulations were successful, two manipulation checks were included. The involvement manipulation check was measured using Zaichkowsky's (1994) revised personal involvement scale, which was adapted to suit this study. Ten questions assessed participants' involvement with the video. Participants were asked to rate the degree to which they felt the video was: important, interesting, relevant, exciting, meaningful to them, appealing, fascinating, valuable, involving, and needed. Several items will be reversed to avoid response bias. Item responses ranged from (1) Strongly Disagree to (7) Strongly Agree. Two items were reverse coded and all nine were included in the final scale, which achieved good reliability ($\alpha = .92$). The second manipulation check was comprised of three items assessing participants' perceptions of their own multitasking during the study. The items were: "I was multitasking during the video", "I was engaged in multiple activities during the video", and "I was working on several things at once during the video." The scale achieved good reliability ($\alpha = .87$). Additionally, a measure of workload was included as an extra check for multitasking. The TLXS scale has been used in previous multitasking research (Tran, Carrillo, & Subrahmanyam, 2013) and was adapted for this study. It was changed to a 1 – 7 response option scale to match the rest of the questionnaire. One item was dropped from the scale and the scale achieved moderate reliability ($\alpha = .69$).

Several facets were used to measure participant's attitude toward the video. Of interest in this study were general attitude toward the video, enjoyment of the video, and intent to watch the video again. First, general attitude toward the video was measured using an adapted scale from Sundar and Kalyanaraman (2004). Nine items asked participants about the degree to which they felt the video was: useful, positive, good, favorable, attractive, pleasant, likeable, high quality, and sophisticated. Response options range from (1) Strongly Disagree to (7) Strongly Agree and all nine items were included in the final scale ($\alpha = .92$). Second, enjoyment of the video was measured using items adapted from Oliver and Bartsch (2010). Participants were asked to rate their agreement with the following items: It was fun for me to watch this video; I enjoyed watching this video; and The video was entertaining. Good reliability was achieved with $\alpha = .98$. Finally, intent to watch the video again was measured using a single item developed for this study: If given the opportunity, I would watch this video again. As with the general attitude scale, enjoyment and intent to watch the video again were rated on a 1 to 7 Likert-type scale ranging from (1) Strongly Disagree to (7) Strongly Agree.

Following the attitude measures, the creativity measure was administered. Creativity was measured with the Unusual Uses Test, which has been used in prior research (Khan, Friedman, Severson, & Feldman, 2005; Fitzsimons, Chartrand, & Fitzsimons, 2008). Participants were asked to list as many unusual uses for a tin can as they could. They were given three minutes to complete the task. Examples were also included to help participants distinguish between usual, unusual, and impossible uses. Scores were calculated by counting the number of unusual uses that participants had listed with higher scores indicating greater creativity.

Next, memory was measured using recognition and recall questions. First, a free recall question asked participants to list everything they could remember from the video. It was made clear that they should only list things they remember specifically from the video and not things they may have already known about the basketball team. Next, participants were presented with five recognition questions and five cued recall questions. Individual's scores represent the degree to which they were able to remember things about the video. A higher score indicates greater memory for the video.

Following the memory questions, several personality scales were included as control measures. For instance, some research suggests a relationship between sensation seeking and multitasking (Foehr, 2006; Jeong & Fishbein, 2007; Sanbonmatsu et al., 2013) while the literature on need for cognition (e.g., Cacioppo & Petty, 1982; Cacioppo, Petty, & Morris, 1983; Cacioppo, Petty, Feinstein, & Jarvis, 1996) suggests that it may have an influence and should be controlled. Sensation seeking was measured using four items adapted from Jeong and Fishbein (2007). Items responses ranged from (1) Strongly Disagree to (7) Strongly Agree. Participants were asked to rate their agreement with the following statements: I would like to explore strange places; I like to do frightening things; I like new and exciting experiences even if I have to break the rules; and I prefer friends who are exciting and unpredictable. All four items were included and the scale achieved acceptable reliability ($\alpha = .79$). Need for cognition was measured using the 18-item short form version of the scale, which was revised by Cacioppo, Petty, and Kao (1984). Participants were asked to rate their responses on a scale ranging from (1) Strongly Disagree to (7) Strongly Agree. Again, all 18 items were included, with nine items reverse-coded, and the scale achieved good reliability ($\alpha = .86$).

The next set of questions asked participants about their feelings of social well-being. Items were adapted from Pea et al.'s (2009) social well-being scale. Seven items were used to assess participant's feelings of social success and normalcy. Participants were asked to rate their agreement with the following items: I feel like I have a lot of friends; I feel accepted by people my age; Compared to people my age, I feel normal; I often feel like I'm not normal compared to people my age (reverse coded); and I often feel rejected by other people my age (reverse coded). Two additional items were developed for this study: I feel like I fit in with people my age and When I'm with people my age I feel like I belong. Response options ranged from (1) Strongly Disagree to (7) Strongly Agree. The scale was reliable ($\alpha = .92$) and all items were included.

In addition to the scaled measure, participants were also asked to write a brief essay about their friendships. Participants were provided with a word bank containing 15 words that reflected good feelings of social well-being. They were given five minutes and instructed to use as many terms from the word bank as possible in their essays. Scores were computed by counting the total number of word bank words participants used and dividing that number by the total number of words in their essay. Repeated word bank words were counted separately. The final percentage was used as a measure of social well-being with a high percentage indicating better feelings of social well-being.

A final scaled measure was used to determine participants' interest in college basketball. Nine items asked participants about the frequency with which they followed news about various college basketball conferences and watched men's college basketball. All nine items were included and the scale was reliable ($\alpha = .93$). Separate items also asked

participants who their favorite basketball team was and how familiar they were with the video they had watched.

The last set of questions asked participants about basic demographic information and media use habits. Media use was measured using the first half of Ophir et al.'s (2009) media multitasking index. Participants were asked to indicate the total number of hours each day that they used 12 various types of media applications. Scores were computed by adding up their total hours of media use. Finally, participants were asked to report their age, gender, year in school, and major.

CHAPTER 5: RESULTS

Manipulation Checks

A two-way analysis of variance (ANOVA) indicated that both the involvement and multitasking manipulations were successful. Participants in the high involvement conditions were significantly more involved with the video than those in the low involvement conditions, $F(1, 124) = 61.63, p < .001, \eta_p^2 = .33$, with respective means of 5.67 ($SD = .11$) and 4.36 ($SD = .12$). Participants in the concurrent conditions ($M = 2.1, SD = .16$) perceived themselves to be multitasking more than those in the sequential conditions ($M = 1.3, SD = .17$), $F(1, 124) = 11.57, p = .001, \eta_p^2 = .09$. It should be noted that, while the differences between groups was significant, the overall means were low, indicating that, while the multitasking manipulation was successful, neither group perceived a high degree of multitasking. Interestingly, in regard to the workload measure, results revealed that those in the high involvement condition ($M = 1.4, SD = .08$) scored slightly lower on the workload measure than those in the low involvement ($M = 1.66, SD = .08$) conditions $F(1, 125) = 5.71, p < .05, \eta_p^2 = .04$. This indicates that those in the low involvement condition perceived the task to be more demanding than those in the high involvement conditions. As with the multitasking manipulation check, it should be noted that the difference between the means is small and that both groups scored low on this scale.

Control Variables

Four control variables were measured for this study: need for cognition, sensation seeking, media use, and interest in basketball. All four variables achieved good reliability

(see previous discussion of measures) and were uncorrelated with each other, allowing them to be used in analyses of covariance. Further analyses revealed that the only control variable that had a significant effect on any of the dependent variables was interest in basketball.

Memory for video content

Three hypotheses predicted main effects of both involvement and multitasking as well as an interaction effect between the two. Hypothesis 1a stated: memory will be lower for individuals in the concurrent conditions than those in the sequential conditions. An analysis of covariance (ANCOVA) controlled for the effect of basketball interest and revealed that there was a significant ($F(1, 125) = 5.73, p < .05, \eta_p^2 = .05$) main effect of multitasking on video memory, such that those in the concurrent conditions scored lower than those in the sequential conditions ($M = .45, SD = .02$ and $M = .50, SD = .02$, respectively). Thus, H1a was supported. Additionally, H1b was supported. There was a significant main effect of involvement on memory, $F(1, 125) = 82.73, p < .001, \eta_p^2 = .41$, with those in the high involvement conditions scoring higher than those in the low involvement conditions ($M = .58, SD = .02$ and $M = .37, SD = .02$, respectively). Interestingly, there was not a significant interaction effect between multitasking and involvement on memory, $F(1, 125) = .816, p = .39, \eta_p^2 = .01$. However, means were in the predicted direction with the highest scores recorded for those in the sequential/high involvement condition ($M = .62, SD = .02$), followed by concurrent/high involvement ($M = .54, SD = .02$), sequential/low involvement ($M = .39, SD = .03$), and concurrent/low involvement ($M = .35, SD = .02$).

Attitude toward the video

As with memory, analysis of covariance was performed to test H2a-c. Attitudes were measured using three scales to assess participants' general attitude toward the video, their enjoyment of the video, and their intent to watch the video again. Hypothesis 2a stated that attitudes would be more positive in sequential rather than concurrent conditions. However, after controlling for interest in basketball, there was not a significant main effect of multitasking on any of the three measures.

Next, H2b hypothesized a main effect for involvement on attitudes. Here, there was a significant effect of involvement on all three measures. Attitude scores were for those in high involvement conditions ($M = 5.72$, $SD = .16$) than low involvement conditions ($M = 4.82$, $SD = .11$), $F(1, 125) = 31.62$, $p < .001$, $\eta_p^2 = .21$. Those in high involvement conditions enjoyed the video more ($M = 6.25$, $SD = .14$) than those in low involvement conditions ($M = 4.61$, $SD = .14$), $F(1, 125) = 67.09$, $p < .001$, $\eta_p^2 = .36$. Finally, participants in high involvement conditions were more likely to report intent to watch the video again if given the opportunity ($M = 5.12$, $SD = .2$) than those in low involvement conditions ($M = 2.3$, $SD = .21$), $F(1, 125) = 97.67$, $p < .001$, $\eta_p^2 = .45$. Hypothesis 2c predicted an interaction effect between involvement and multitasking but the ANCOVA revealed that the effect was not significant for any of the three attitude measures. The means for the general attitude measure were not in the predicted direction, with the highest mean occurring in the concurrent/high involvement condition ($M = 5.91$, $SD = .16$), followed by sequential/high involvement ($M = 5.52$, $SD = .15$), sequential/low involvement ($M = 4.88$, $SD = .18$), and concurrent/low involvement ($M = 4.75$, $SD = .15$), $F(1, 125) = 2.54$, $p = .11$, $\eta_p^2 = .02$. Similarly, enjoyment means were not in the predicted direction beginning with the highest score in the

concurrent/high involvement condition ($M = 6.37$, $SD = .19$), followed by sequential/high involvement ($M = 6.19$, $SD = .19$), sequential/low involvement ($M = 4.74$, $SD = .22$), and concurrent/low involvement ($M = 4.48$, $SD = .18$), $F(1, 125) = 1.55$, $p = .22$, $\eta_p^2 = .01$.

Finally, means for intent to watch the video again also were not in the predicted direction, though they did follow the pattern of the other attitude measures with the highest mean in the concurrent/high involvement condition ($M = 5.41$, $SD = .28$), followed by sequential/high involvement ($M = 4.84$, $SD = .28$), sequential/low involvement ($M = 2.33$, $SD = .32$), and concurrent/low involvement ($M = 2.26$, $SD = .26$), $F(1, 125) = 1.3$, $p = .26$, $\eta_p^2 = .01$.

Social Well-Being

The final hypotheses addressed the effects of multitasking and involvement on feelings of social well-being. H3a stated that perceptions of social well-being would be higher during sequential conditions compared to concurrent conditions. This hypothesis was not supported for the scaled measure ($F(1, 125) = .18$, $p = .68$, $\eta_p^2 = .001$), though the means were in the predicted direction with those in the sequential conditions scoring higher ($M = 5.33$, $SD = .15$) than those in concurrent conditions ($M = 5.24$, $SD = .14$). The essay scores produced the same result, with no significant main effect for multitasking ($F(1, 125) = 1.79$, $p = .18$, $\eta_p^2 = .02$) but with means in the predicted direction, where those in the sequential conditions had higher scores ($M = .11$, $SD = .01$) than those in the concurrent conditions ($M = .10$, $SD = .01$). Additionally, H3b predicted an interaction effect between multitasking and involvement. This hypothesis was also not supported in terms of the scaled measure ($F(1, 125) = 5.13$, $p = .04$, $\eta_p^2 = .04$), though the means were in the predicted direction with those

in the sequential/high involvement condition scoring the highest means ($M = 5.43$, $SD = .2$), followed by concurrent/low involvement ($M = 5.28$, $SD = .19$), sequential/low involvement ($M = 5.22$, $SD = .22$), and concurrent/high involvement ($M = 5.20$, $SD = .2$). Similarly, there was not significant effect for the essay scores ($F(1, 125) = .97$, $p = .33$, $\eta_p^2 = .01$), though the means followed the same pattern predicted by the hypothesis, with those in the sequential/high involvement condition scoring highest ($M = .12$, $SD = .01$), followed by sequential low involvement ($M = .109$, $SD = .01$), concurrent/low involvement ($M = .106$, $SD = .01$), and concurrent/high involvement ($M = .099$, $SD = .01$).

Creativity

A research question was included to examine the possible effect of multitasking on creativity. An ANCOVA revealed that there was a significant relationship between multitasking and creativity. Participants in concurrent conditions ($M = 7.44$, $SD = .35$) generated significantly more unusual uses for a tin can than those in the sequential conditions ($M = 6.43$, $SD = .38$), $F(1, 125) = 4.52$, $p < .05$, $\eta_p^2 = .04$. There was not a main effect for involvement, $F(1, 125) = .001$, $p = .98$, $\eta_p^2 < .000$. Additionally, there was not an interaction effect between multitasking and involvement on creativity, $F(1, 125) = 1.13$, $p = .29$, $\eta_p^2 = .01$.

CHAPTER 6: DISCUSSION

Two-screen experiences have been examined primarily in industry and have been largely neglected by the academic community. This study sought to shed light on two-screen experiences from a theoretical perspective and to make contributions to both practical and theoretical knowledge of media multitasking. Results showed support for several hypotheses including main effects for both multitasking and involvement on a variety of outcomes. Interestingly, no interaction effects were observed. The results indicated that memory for the video was significantly related to both multitasking and involvement. Individuals who were more involved with the video remembered more than those who were less involved with the video. Additionally, individuals who were multitasking during the video remembered less than those who were not. This finding is in line with anecdotal industry evidence that suggests early iterations of second screen apps caused people to miss certain plot points of a program. Neither of these findings is surprising given that people are more likely to remember a program that they enjoyed and if they are attending only to the program and not additional stimuli.

The results of this study also found evidence that indicates involvement, but not multitasking, influences attitudes. Involved individuals gave the videos higher ratings in terms of attitude, enjoyment, and intent to watch again. The lack of significance with regard to multitasking is interesting. Whereas previous research suggests that attitudes would be lower during multitasking situations, this study found that multitasking did not significantly influence attitudes in either direction. This has potential implications for practitioners

because the goal of second screen apps is to keep viewers engaged and happy. While multitasking did not have a negative impact on attitudes, it also did not have a positive effect. This raises the question of whether it is worthwhile for networks to develop second screen apps. Due to the lack of a relationship between multitasking and attitudes, practitioners should carefully evaluate whether the benefits of second screen apps outweigh the costs of development.

Previous research has found a connection between chronic multitasking and decreased feelings of social well-being. Rather than look at long-term multitasking, the current study focused on situational multitasking and its potential effect of social well-being. The lack of a relationship between multitasking and social well-being in this study does not necessarily contradict previous research. In fact, it suggests the negative impact of multitasking on social well-being that has been found in previous studies occurs over time. Multitasking itself is not inherently detrimental to feelings of social-well being. Frequent multitasking over long periods of time may have a negative effect of social well-being, rather than single instances of multitasking. This is an important finding because it may temper much of the anti-multitasking rhetoric that exists today.

Multitasking's positive effect on creativity may also temper critics of multitasking. Little prior research has addressed this issue as very few studies have looked at the potential positive impact of media multitasking. However, the current research supports the idea that multitasking may be associated with increased creative abilities. It's possible that individuals who multitask see an increase in creativity because multitasking itself requires creativity. Individuals who frequently multitask have been found to have less cognitive control than those who don't multitask as often (Ophir et al., 2009). Their lack of cognitive control may

be indicative of their ability to make mental connections between disparate ideas, something that is also characteristic of creative individuals (Duff et al., 2014).

Theoretical Implications

In addition to practical implications, this study also makes theoretical contributions. First, it contributes to the multitasking literature by examining multitasking with related tasks. Up to this point, people have operated under the assumption that multitasking involves multiple unrelated tasks. This research expands our understanding of multitasking by examining it using related tasks, which has been ignored by previous research. By considering multitasking in this way, the current study opens a new direction for researchers to study multitasking. Further, this study contributes to the multitasking literature by adding to knowledge about multitasking on multiple devices. Previous multitasking research has focused on the tasks involved rather than the means with which people are multitasking, which may be just as important as the tasks themselves. The current study adds to the knowledge of multitasking with multiple devices, which has been understudied.

Finally, the results of this study advance our understanding of the impacts of multitasking. In particular, it provides further insight into the effect of multitasking on social well-being. The findings from this study suggest that the negative impact of multitasking on social well-being is a long-term effect not necessarily caused by single instances of multitasking. By contributing this knowledge, future research can begin to examine why and how multitasking affects social well-being. Additionally, this study examined multitasking's impact on attitudes, in addition to memory. Multitasking research has been largely focused on cognition and task performance with little attention paid to attitudes. This study helps to advance our understanding of multitasking's effect on outcomes other than cognition.

Limitations and Future Research

This study is the first step that opens up many avenues for future research. As such, there are limitations that should be considered when interpreting the results. First, only one type of programming was tested. Basketball videos were chosen because implementing the high and low involvement manipulation was relatively easy compared to other television genres, such as drama. However, television networks that have actually implemented two-screen experiences note that the apps are more successful with certain types of programming than others. It is possible that the effects of multitasking would be different for other types of programming.

Second, while the manipulation check indicated that the multitasking manipulation was successful, both groups had low means on the multitasking measure. Though there was a significant difference between groups, it's possible that the multitasking manipulation was not strong enough to elicit any significant differences in attitudes. There are several reasons why the manipulation may not have been strong enough to produce significant differences between groups. First, the number of questions asked during the video may not have been enough to elicit a strong effect. Second, the type of questions asked may have been benign enough that they weren't particularly taxing on participants' cognitive resources. Third, their motivations to attending to both stimuli could have resulted in a lower overall interest in attending to the video and the questionnaire. However, despite these possibilities and the low overall means resulting from the multitasking manipulation, there were still differences between groups. This lends strength to the results that were significant because they occurred even under the effects of a weak manipulation.

Next, there are may be many reasons why people multitask. As previously discussed, there are different motivations that may lead people to multitask, such as fulfilling cognitive or emotional needs (Wang & Tchernev, 2012). It is possible that different motivations, such as emotional or cognitive, may lead to different outcomes. In fact, motivations for multitasking in a laboratory setting may be very different from motivations for multitasking in a home or personal setting. This study did not measure or manipulate different multitasking motivations and thus may not have captured the full picture of media multitasking. Though it has been studied previously (Wang & Tchernev, 2012), future research could examine why people multitask with related tasks, such as second screen apps. Additionally, this research did not examine the effect of two-screen experiences on things like attitudes toward or memory of advertisements. Additionally, it did not ask participants about their attitudes toward second screen apps. Practitioners are likely interested in the effectiveness of two-screen experiences to encourage viewers to remember the advertisements they see.

Finally, this study opens up an avenue for the discussion of involvement. As previously discussed, the concept of involvement is difficult to define given that there are many different forms of involvement and many things that may lead an individual to be more or less involved with something. In the case of this study, it may be difficult to determine precisely why individuals were more involved with the UNC video than the Iowa video. For instance, it could be because the UNC video was more cognitively relevant because it was geographically closer and related to their college environment. On the other had, individuals may have had more positive attitudes toward the UNC basketball team, leading them to be more involved with the video. As with multitasking, while the involvement manipulation was

successful, it may be difficult to determine exactly why participants were more involved with one video rather than the other. The concept of involvement should be a focus of future inquiries and research should begin to parse out the differences between involvement and enjoyment.

There are several directions for future research that are opened up by this study. First, as mentioned previously, research should look into the effects of different types of programming. It's possible that the effects of sports programming may be different than comedy, sitcom, or drama programming. Similarly, future research could examine different concepts that may have an effect on viewers' attitudes toward second screen apps. For instance, perhaps social aspects of programming make second screen apps more successful. This would be consistent with evidence from industry, which suggests that things like reality programming work better with second screen apps than dramas. It is possible that this is because reality television often encourages viewers to socialize about what they see on television. Research could look into the impact of social aspects of television and how they work with multitasking.

Other research could look into different components of second screen apps. The current research offered a very basic approximation of a second screen app. Future research could add more features to make the stimulus more similar to actual second screen apps. Additionally, scholars would do well to examine different types of multitasking. For instance, asking people to answer questions about a program may have different effects than asking them to write Tweets or perform a more social task. There are a myriad of ways that people multitask and research should begin to examine the differences between different forms of multitasking.

Finally, future research could examine the effect of different levels of multitasking. This study took a dichotomous approach to multitasking and only manipulated whether people were multitasking or not. In the future, researchers could look at the effects of different degrees multitasking and whether there is a difference in outcomes between people who are multitasking at a low level compared to those who are multitasking at a higher, more difficult, level. A critical component of such research would be to explicitly define what constitutes a single task. Previous research has defined tasks as the overarching goal that may be made up of several components (Benbunan-Fich et al., 2011). However, this study argues that each of the components should be considered separate tasks. Future research should carefully consider what defines and separates different tasks.

Conclusion

The current research makes practical and theoretical contributions. It offers information that may be useful to practitioners because it uncovers viewer reactions to multitasking while watching television. Additionally, it contributes to the multitasking literature by posing questions about the effect of multitasking with related tasks and its effect of multiple outcomes, such as attitude, memory, and social well-being. Despite of its limitations, this study also offers several avenues for future research, providing scholars with a basis from which to study multitasking with related tasks.

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