Media Multitasking and Narrative Engagement:
Multitasking as a Moderator of Transportation

THESIS

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Abstract

This study investigates the role of multitasking as a moderator of narrative engagement. A sample of 201 undergraduates was exposed to either a film-only condition or a film coupled with a task to be completed on a computer, and responded to items measuring transportation, perceived realism, trait empathy, transportability, and story-consistent beliefs. Media multitasking was found to be a direct moderator on transportation, and negatively impacted absorption. This research also replicates previous studies on the link between trait empathy/transportability on narrative absorption and perceived realism. Implications and potential avenues for future research are discussed.
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Publications


Fields of Study

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Chapter 1: Introduction

“A weakness of all human beings is trying to do too many things at once.” ~Henry Ford

From the sinking cost of computers to the proliferation of smartphones, more media are available to more people than ever before. This shift is particularly noticeable in the last two decades; the telephone became cordless, then cellular, and now is its own television and game system. Perhaps most importantly, the Internet has changed our environment from one of information scarcity to information overabundance, with as yet unknown implications for the way children in the future will learn and develop.

Efforts have been made to ascertain the extent to which people use multiple media. The Simultaneous Media Usage Survey, a market-driven survey collecting more than fifteen thousand responses twice yearly, found that most people multitask while watching television. This multitasking is a potentially significant factor in moderating the media effects one experiences in everyday life. Pilotta and Schultz, in their 2005 examination of the Simultaneous Media Usage Survey, argue that multitasking has a significant impact on the way media are experienced, and as such calls into question the way social scientists (and advertisers) have traditionally approached media effects research:
Given that each media in institutional research is treated in isolation, the concepts of exposure, frequency, duplication, and reach must be eschewed once and for all. As exposure presupposes exclusivity, frequency presupposes discrete sensory participation, duplication presupposes multimedia operate in succession, reach presupposes unduplicated audience, and accumulation presupposes by aggregated media forms. (p.26)

Yet the phenomenon of multiple media use and media multitasking has received precious little attention in research surrounding narrative engagement. The transportation model of narrative engagement, as first outlined in Green and Brock (2000), has become a popular explanatory tool in the last decade of communication research. When a person is “transported,” he or she becomes absorbed into a narrative, experiencing the narrative as if it were actually happening.

Transportation has been linked to attitude and belief change to beliefs consistent with those expressed in a narrative (see Green & Brock, 2000, Green & Brock, 2002, Green, 2004, and others), narrative enjoyment (e.g. Green, Brock, & Kaufman, 2004, Busselle&Bilandzic, 2006), and seeing a narrative as being more realistic (e.g. Green, 2004, Hall & Bracken, 2008). Bilandzic&Busselle (2008) have gone as far as to link transportation as the mechanism which drives the much-maligned theory of cultivation.

Yet this experimental research on transportation often fails to specify external factors that could diminish engagement. While previous experiments on narrative engagement were conducted in a laboratory with little distraction, today’s media consumer is potentially distracted by an increasing number of media and intrusive communication.
This thesis builds upon previous transportation literature by investigating the effects of multitasking on narrative engagement, and subsequently on perceived realism and story-consistent beliefs. Taking this first exploratory step to investigate the relationship between multitasking and transportation will hopefully provide a stepping-stone for other researchers looking into similar issues surrounding media effects research.
Chapter 2: Literature Review

Transportation, as Green and Brock [describe it in their seminal 2000 piece, is “a distinct mental process, an integrative melding of attention, imagery, and feelings.”]

People who are transported into a narrative “lose track of time, fail to observe events going on around them, and feel they are completely immersed in the world of the narrative.” (Green, 2004, p.247)

Transportation can also lead to the assumption of beliefs held or implied by a narrative; when a person becomes absorbed in a narrative, he or she becomes wrapped up in the story and is less likely to “argue” with a message than if that message were presented as an argument. Green and Brock (2000) hypothesized that narratives were intrinsically more persuasive than logical debate due to transportation’s ability to make a narrative feel like a personal experience:

Transportation may make narrative experience seem more like real experience. Direct experience can be a powerful means of forming attitudes [Fazio & Zanna, 1981], and to the extent that narratives enable mimicry of experience, they may have greater impact than non-narrative modes. (702)

Busselle and Bilandzic (2008) outline a model of narrative engagement where they redefine transportation as “experiencing flow while constructing mental models”
Furthermore, they assert that people will view a narrative as being true by default: “Information in the narrative is unintentionally accepted as true and must be ‘unaccepted’ effortfully” (p.265).

Dal Cin, Zanna, and Fong (2004) reinforced the idea that transportation allows messages to slip “under the radar” of normal cognition. In their study of cigarette smoking and television, they found more support for smoking-related actions when smokers appeared on television.

Appel and Richter (2007) claimed narrative can influence story-consistent beliefs, and that this influence over beliefs can increase over time. In their study participants were exposed to a narrative, after which they were asked questions about contemporary events touched upon by the narrative; the participants tended to view events as the story described them. Two weeks later, the researchers found that the participants still experienced some affect on their belief systems, though this effect was somewhat diminished.

Bilandzic and Busselle (2008) attempt to link transportation as the mechanism that drives cultivation, calling cultivation “a self-reinforcing interaction between persuasive and motivation effects of transportation.” Their study hypothesized that having highly absorptive experiences in one genre correlates with having highly enjoyable experiences with that genre. A person will then seek out that genre again because it was enjoyable, and with each exposure to the genre more genre-consistent beliefs are reinforced. Thus a person who frequently views crime dramas might believe that crime is more rampant than
it actually is, and that forensic computer scientists can perform impossible feats given a scrap of paper and a decent algorithm.

As demonstrated above, the current literature supports the idea that people who are more highly transported into a narrative will experience a shift towards beliefs consistent with those expressed in the narrative. Thus,

H1: Transportation into a narrative will be positively correlated with story-consistent beliefs.

**Transportation and perceived realism**

The literature is divided on how to best classify the issue of narrative realism. Fisher (1989) claimed audiences “grade” narratives on two criteria: narrative coherence, or whether a narrative is consistent with itself, and narrative fidelity, or whether the story is congruent with the viewer’s previous experience.

Shapiro and Fox (2002) discussed “narrative realism,” or how logical a scenario was for that “kind” of scenario. Even events that could not happen in the world as it is – for example, those involving space travel in “Star Trek – can still be evaluated based on congruent they are with that show’s version of the universe.

Bilandzic and Busselle (2007) outline three different forms of “unrealness” in narrative: fictionality, or the fact that a fictional narrative is fictional; external realism, or the extent to which the fictional world resembles our own; and narrative realism, or the
extent to which the story is internally consistent. Fictionality in and of itself did not have an impact on how a person processes a narrative; indeed, the authors noted that

Rather than being a problem for the audience, fictionality as an element of the mental model is functional for narrative experience in that it alerts the audience that the story world logic may not conform to the actual world and that extensions may be necessary. Extending the story world rules in deviation from the actual world is a normal activity in processing fiction, and, moreover, it leaves intact the other, unspecified rules of the real world. (p.21)

Violations of external or narrative realism – especially the latter – can lead the viewer to begin questioning the narrative in its entirety. The authors claim that “negative evaluations of realism are both prevalent and important because they interfere with engagement.” (p. 22) Often a specific instance within a narrative – something particularly unrealistic to that narrative world – will set off warning bells to the viewer, thus inhibiting the amount of transportation experienced.

Busselle and Bilandzic (2007, 2008) view “reflective realism,” or memory-based judgments of how realistic a narrative is, as an outcome variable of transportation; i.e., those who become more absorbed into the story will judge it to have been more realistic than they would otherwise. Hall and Bracken (2008) also found that increased levels of transportation resulted in higher levels of perceived realism.

Disrupted transportation and critical thinking were also associated with lower levels of perceived realism. Busselle, Ryabovolova, and Wilson (2004) had participants list the thoughts they had while watching a popular crime show; those who rated the
show negatively reported the show as having lower levels of perceived realism and experienced less transportation into the narrative.

Given the link between transportation and perceived realism in the literature, it follows that:

H2: Higher levels of reported transportation will be positively correlated with higher reported levels perceived realism.

Transportation and enjoyment

Transportation has been linked to the enjoyment of both written (Green, Brock, & Kaufman, 2004; Bilandzic&Busselle, 2006) and filmed (Hall & Bracken, 2008; Bilandzic&Busselle, 2011) narratives in the literature; whether viewing content or reading it, absorption influences how much people enjoy narrative.

Bilandzic and Busselle (2011) argue that enjoyment of narrative is a particularly relevant area of study, as it might alter long-term “media outcomes:”

…People are influenced most by the stories they like most. This is important for investigating effects in a naturalistic setting - when viewers make their own decisions about what to watch, and make these choices over long periods of time, as implied by cultivation research. (p.47)

Green et al. (2004) examine the possible reasons why people find narrative engagement enjoyable, despite the unpleasantness of many narratives. They theorized
that people become immersed in narrative in part because narrative immersion offers an opportunity to experience rare and thrilling experiences in a safe environment.

Green et al. (2004) also suggest that transportation is a desirable state because of the many potential benefits absorption into narrative offers the consumer. People might consume media to help manage moods, connect with characters, or expand their horizons without risk to personal identity. Also important was transportation’s ability to remove the consumer from stress: “Entering a narrative world may be a release from the stress of personal concerns, problems, and contexts that elicit social anxiety.” (p.317)

In keeping with this previous work, it follows that

**H3:** Higher levels of reported transportation will be positively correlated with enjoyment of a television show.

**Predictors of transportation: fantasy empathy**

Davis’ 1996 book, “Empathy: a Social Psychological Approach,” described empathy as a collection of separate – yet related – processes that determine how a person will react to a situation. He also outlined four forms of “trait empathy”, or a person’s general tendency to engage in various forms of empathy. Two of these forms – empathetic concern and personal distress – are emotional responses; empathetic concern involves a feeling of sympathy for others, whereas personal distress relates to the degree of distress a person feels when seeing someone else distressed.
The other two forms of empathy are cognitive responses. “Perspective taking” refers to a person’s propensity to assume the psychological perspective of another. Perhaps most relevant to mass media research, and central to this study, is fantasy empathy - the ability to put one’s self in the place of a fictional character using the imagination.

Since this book, several studies have used this concept to predict who will be most affected by narrative. Hoekstra, Harris, and Helmick (1999) utilized this concept of fantasy empathy when asking undergraduates to report their memories of scary movies they had seen as children in an effort to predict what genre of film they would prefer as adults. Those with high amounts of fantasy empathy tended to report being more scared by the movies they had seen - though those people also tended to prefer that genre of film as adults. Hoekstra et al. admitted some difficulty determining the exact contribution of fantasy empathy to the outcome given the number of potential moderating variables, such as gender. Harris, Hoekstra, Scott, Sanborn, Dodds, and Brandenburg (2000), in a continuation of this study, found a correlation between sleep disturbances after watching a scary movie and fantasy empathy in younger adults.

Calvert, Strouse, and Murray (2006) studied the relationship between narrative understanding and fantasy empathy in children, using fantasy empathy measures to predict to what extent the children would empathize with the main characters of the narratives and to what extent the children would comprehend said narratives. They found that the children with the highest fantasy empathy understood the narrative more than
those with lower fantasy empathy, even after controlling for such things as age and gender. This relationship may be the result of transportation; however, the authors note that the mechanism behind this relationship remains unclear.

Hall and Bracken (2008) address the relationship between fantasy empathy, enjoyment, and transportation directly. They theorized that cognitive empathy, such as fantasy empathy, “could have direct as well as indirect effects on media reception” (p.5) through its effects on affective empathy. Increased placement of oneself in the proverbial shoes of a fictional character increases the emotional response to a narrative.

Hall and Bracken found that fantasy empathy was highly correlated both with transportation and realism. The authors found no direct relationship between fantasy empathy and enjoyment, nor was there support for the idea that transportation mediated the relationship between fantasy empathy and enjoyment. It is expected that the current study will replicate these findings, and thus:

H4: Fantasy empathy will be positively correlated with transportation into a television show.

H5: Fantasy empathy will be positively correlated with reported enjoyment of a television show.
Transportability

A number of studies also point to the relationship between high amounts of empathy and a person’s base ability to be transported into a narrative (i.e., a person’s “transportability”) without mentioning fantasy empathy specifically.

Transportability is a person’s base propensity to be absorbed into a narrative, regardless of content (Dal Cin, Zanna, & Fong, 2004). In her work on transportation and identification, Tukachinsky (2007) described some personality characteristics that would lend themselves to both increased transportation and increased identification with fictional characters. Among these was a kind of fantasy empathy:

Given the fact that there is a correlation between the propensity for experiencing different types of dreaming and fantasizing (Levin & Young, 2002) it is possible that people with a fantasy-prone personality who have vivid night-dreaming style and often daydream, will also tend to experience the daydream-like state of transportation. (20)

Bilandzic and Busselle (2008, 2011) used transportability as a personality trait that predisposes a person to become absorbed into a narrative. In their studies on transportation and enjoyment, transportability predicted narrative involvement.

Transportability and trait fantasy empathy seem almost identical; both predict narrative involvement. Likewise, both have failed to link to enjoyment: just as Hall and Bracken (2008) found no direct link between fantasy empathy and enjoyment, Bilandzic and Busselle (2011) found no direct link between transportability and enjoyment. Thus the predictions concerning transportability are the same as those concerning fantasy empathy; transportability appears here to help with replication of previous transportation research.
H6: Transportability will be positively associated with transportation.

H7: Transportability will be positively associated with enjoyment of the show.
Multiple Media Use and Media Multitasking—Frequency and Measurement

“Media use appears to be far more complex than people think.”

- from the Middletown Media Studies

The issue of transportation into a narrative is complicated by the popularization of new technology and, with it, new ways of experiencing media. Never before have so many media been available in so many formats at so little expense. The last thirty years have seen the user-level computer tumble in cost.

This cheaper, more accessible technology allows for increasingly complex media use in a manner previously impossible given the available technology. This ever-increasing availability of technology seems designed to foster an increase in media multitasking; if the means are available and convenient, people are inclined to use them. Foehr (2006) notes that the placement of a computer near the television is a “strong” predictor of the simultaneous use of these two media. Collins (2008) did a study involving youths between the ages of 12 and 17; half of the teens reported using the Internet while watching television.

Thus it seems that portable technology leads to a general increase in media multitasking as it allows users a convenient outlet with which to gain information and perform socially related tasks without halting media consumption; for example, a person wanting to check in with a loved one can send a text while watching television rather than
make a telephone call, or check the weather on a personal device rather than by switching to the local news.

As the “cost of entry” falls in terms of computer and television prices, more people may own these devices and thus use them to media multitask. Jeong and Fishbein (2006) note that ownership of media is among the biggest predictors of media use; the authors also state that the bulk of young people frequently engage in the use of multiple media, with Jeong’s previous 2006 ICA paper claiming that 76 percent of all media use by youth involved multiple media use of some sort.

Yet these percentages might very well be inaccurate. Meng and McDonald (2009) note that multiple media use is frequently underreported; i.e., people are less likely to remember a radio or TV playing in the background when filling out questionnaires.

In 2004, Papper, Holmes, and Popovich set out for Muncie, Indiana – the site of the seminal sociological studies featured in the 1929 book “Middletown” – to get a look at how the quintessential American town used media. They elicited information about the citizens’ media use three ways – through the telephone survey, a diary study (where participants would keep track of their media usage for a day or a week), and through observation (where a researcher would shadow the participant throughout the day and take notes on his or her media use).

The researchers found that

Media use appears to be far more complex than people think. Telephone survey research on amount of media use was extremely unreliable in almost all cases, and telephone survey research on media multitasking was just as unreliable. While
there is clearly a value to survey research, it appears that people are simply not able to tell how much time they spend with most media or to what extent they use multiple media. While the data from the diary study is much closer to that produced by observation, it pales in depth and texture compared to observation. (p.43)

Observation, despite its many advantages, was not immune to issues pertaining to accuracy; in particular, the observers seemed particular prone to provoking the Hawthorne Effect. The authors themselves noted that the participants were most likely subject to social desirability concerns; for example, not one of the participants in the observation condition was observed viewing pornography. Yet it seemed the primary issue surrounding the report of media multitasking is lack of awareness: “People spend almost a quarter of their media day with two or more media, and much of that multiple use appears to go unnoticed by the people who do it.” (p.45)

Given the issues surrounding the measurement of multiple media use and the lack of very recent data on the subject, it seems almost impossible to provide accurate statistics on who is using what medium at what time. What researchers can generally agree upon, as noted earlier in this section, is that people in general (and younger people in particular) are using more types of media than in years previous and also in conjunction with other media.
Media Multitasking and the Television Viewing Experience

Studies of transportation, perceived realism, and media effects have traditionally taken place in a laboratory setting with little distraction to the participant. The participants were presented with a stimulus – often an excerpt from a novel, such as in Green & Brock (2000) - which was followed by a survey.

While informative in its own way, this method of experimentation might have little relation to the often noisy ways in which people experience media today. At the minimum, the researcher must consider the “foregrounding” and “backgrounding” that occur when people switch the focus of their attention between media and the potential this shifting of attention might have on narrative absorption. Papper et al. make note of this in the “Middletown Media Studies”:

People spend almost a quarter of their media day with two or more media, and much of that multiple use appears to go unnoticed by the people who do it. It is clear some people engage in more multitasking than others, and certain media are more prone toward being part of multitasking than others. Understanding primary and secondary usage appears critical to understanding truly what is taking place in a multitasked environment.

(p.45)

Yet the impact of media multitasking and multiple media use on the television viewing experience is unclear. Papper et al. note that television – often seen as a prime
vehicle for producing media effects – is not often the victim of divided attention when television viewing is the primary task:

…The multitasking of TV and computer and computer and other media are one-way streets. TV is not only the 800-pound primary gorilla, it’s also the 800-pound secondary gorilla, and so it’s commonly on when other media are in use. But, based on observation, when people are watching television (primary use), that’s what they’re doing. Overwhelmingly, they’re not reading, and they’re not on the computer. (p.17)

Meng and McDonald (2009) concur; in their secondary analysis of industry data collected in 2004, they found that “when people are watching TV, they will mainly focusing [sic] on TV, rather than using multiple media…multitasking only accounts for a tiny percent of time spent on TV viewing.” (p. 24)

Yet new technology – technology either not popularly available to the consumer or often used before the last few years - muddies the issue of television viewing and multitasking and calls into question how one measures the television experience at all. Programs traditionally viewed on television are now available for streaming through the computer, most cell phones, and the myriad number of tablets now available to the consumer. If a person watches a news clip embedded in a news website, is he reading the news, watching the news, or some amalgamation of both?

Transportation literature is lacking in studies concerning media multitasking or multiple media use. Zhang, Hiemolowski and Busselle (2007) asked participants to keep track of scene changes in a crime drama; those who completed this “distraction task” reported higher levels of transportation into the story and greater amounts of perceived
realism and enjoyment. The authors speculate that the divided attention and cognitive load resulting from the distraction task left little mental effort available for noticing inconsistencies in the narrative, and the distraction task actually resulted in greater attention being paid to content.

Other studies that ask participants to multitask during a film resulted in a decrease in transportation (e.g. Busselle et al. 2004). If transportation is defined as a flow state wherein one creates mental models (see Busselle & Bilandzic 2008), the interruption of the flow state would likely impede the creation of mental models and thus decrease transportation. Thus it follows that:

H8: Multitasking will be negatively associated with transportation, and as a result,
H9: Multitasking will be negatively associated with perceived realism, and
H10: Multitasking will be negatively associated with the adaptation of story-consistent beliefs.
Chapter 3: Methods and Measures

Participants were recruited from introductory communication courses at Ohio State and compensated with a token amount of extra credit for their time. As discussed above, younger people tend to multitask and use multiple media more than their elders; this makes them an appropriate and relevant sample for this study. 201 students participated in the three conditions relevant to this study.

The experiment was comprised of three conditions, each consisting of a questionnaire, followed by the stimulus, which was then followed by another questionnaire. In the first condition, participants watched a clip from the television drama “24” which was used in a previous study as a prime for considering terrorism and threats from ostensible foreigners to the safety of citizens of Los Angeles (see McCluskey, Hiemelowsky, & Lichtenfeld 2009). In the second and third conditions, participants watched this same clip from “24” while simultaneously performing a task which either focused on elaboration or self-assessment.

Measures

A number of measures proven valid in previous work were used in the creation of the questionnaire; these are outlined and explained below.
Empathy

Davis’ (1996) Interpersonal Reactivity Index was used to gauge various forms of empathy, including fantasy empathy, which was of particular interest to this study for reasons described above.

The Davis scale is comprised of 28 Likert-style items, which range from one (“doesn’t describe me well”) to five (“describes me very well”). These 28 items test four different types of empathy as outlined in Davis (1996); empathetic concern, which is a measure of sympathy for others; personal distress, which measures the stress felt by an observer of negative situation; perspective taking, which is a measure of how likely one is to view a situation as another sees it; and fantasy empathy, which was indicated in another study (McCluskey, Hiemolowski, and Lichtenfeld 2009) as being a predictive factor in the adaptation of story-consistent beliefs.

Fantasy empathy items on the Davis scale range from those which clearly implicate fictional involvement (e.g. “I really get involved with the feelings of a character in a novel”) to those which imply identification (e.g. “When I watch a good movie, I can very easily put myself in the place of a leading character.”).

An additive index for fantasy empathy was created using the seven fantasy empathy related items from the Davis Empathy Scale. Reliability for this scale was measured at Cronbach’s $\alpha$ of .727.
Transportability

A person’s base propensity for transportability was measured using an adaptation of the Dal Cin et al. (2004) transportability scale to make it applicable to television. This transportability scale has been used in other studies of transportation, perceived realism, and narrative impact (Bilandzic & Busselle, 2008, and Bilandzic & Busselle, 2011); it is included primarily for replication of these studies and to assist in future examination of the differences between trait empathy and transportability.

This transportability scale was comprised of 20 Likert-style items ranging in possible responses from “1” (strongly disagree) to “9” (strongly agree). The scale included such items as “I often find that watching television has an impact on the way I see things” and “I find it difficult to tune out activity around me.”

The 20-item transportability scale proved extremely reliable as an additive scale, with a Cronbach’s α of .893.

Media manipulations

The television clip was used in a previous study (McCluskey et al. 2009) and was previously indicated in a shift of beliefs concerning policy issues. Taken from the TV drama “24”, this terrorism-related clip is ten minutes long and depicts a potential terrorist attack. This clip was edited for continuity and involved a specific storyline.

This societal threat involves a large bomb that might be detonated by terrorists in Los Angeles, destroying the city and killing millions. During this clip, the show’s hero
uses violence against the suspected terrorist and also threatens to kill his family should he not disclose the bomb’s location. The clip ends before the viewer finds out if these threats are carried out or if the bomb itself detonated.

*High elaboration task*

The high-elaboration task involves the completion of a risk assessment scale adapted from Weber, Blaise and Betz (2002) to make it more applicable to the typical college-aged student (e.g., items related to the potential riskiness of stocks and other financial investments were removed) during the clip.

The participants were asked to rate the general riskiness of a behavior; that is, the participants were not asked to rate how risky the particular item was to them in particular. These risk items ranged in type from social risks (such as disagreeing with friends) to health risks (e.g., taking a medical drug with known and severe side effects).

Risk has been linked to the amount of suspense experienced while viewing a narrative. Zillman (1996) argued that a significant portion of suspense effects experienced in a narrative come from perceived risk to a protagonist; Koch, Fischer, Klimmt, Rizzo, and Vorderer (2007) linked risk to the experience of suspense in a video game. Priming participants to consider risk while watching the clip might increase the suspense they experience while watching the film.

This risk-judging task was also chosen because it relates to the content of the film without priming the participants to the subject matter (the use of military force)
mentioned later in the questionnaire. It also served as a lighter task that called upon personal opinion and experience to make an evaluation of the riskiness of a particular behavior (e.g. sky diving or excessive drinking).

Perhaps most importantly, the task was included to put the participants in an elaborative state of mind. Green (2004) attempted to create a condition of low transportation by asking participants to evaluate the story they were reading critically; ultimately this instruction was ineffective at reducing transportation, perhaps because participants absorbed in a story forget their instructions. But with this task, participants are constantly being asked to elaborate and exercise judgment; this exercising of judgment may interfere with transportation’s premise of narrative acceptance.

**Personal assessment task**

The personal assessment multitasking assignment involved the completion of a selection from the Kiersey Temperament Sorter, a popular adaptation of the Myers-Briggs Type Indicator. This selection was pre-tested to take approximately ten minutes, and asks questions about personal attributes such as introversion or extroversion. This abridged measurement was comprised of 40 items.

This measurement was chosen because it is reminiscent of the many personality assessments available online which are forwarded along through social networks. Participants in this condition considered questions related to themselves and their own personalities, which called directly upon personal evaluations and had little to do with the
outside world. In doing so, this measurement helps simulate some the experience of social networks.

It is also, in its own way, the opposite of transportation experience. Transportation literature makes frequent mention of the “loss of self” as part of the transportation experience (see Green & Brock, 2000, Green et al., 2004, among others).

Green, Brock, and Kaufmann (2006) go as far as to name “escape from the self” as a primary reason to seek out narrative engagement: “Entering a narrative world may be a release from the stress of personal concerns, problems, and contexts that elicit social anxiety” (p. 317). By asking the participants to consider their own personal qualities – their habits, their tendencies to approach things critically or empathetically – this condition denies the participants the escape from the self that is purportedly vital to transportation.

**Effort and enjoyment**

Participants who completed the media multitasking conditions were asked to rate how much effort they put into the task they had just completed, and were also asked to rate how much they had enjoyed the task itself.

**Emotional state**

The Positive and Negative Affect Scale (PANAS-X; Watson, Clark, & Tellegren, 1988) was used as a measurement of the participant’s emotional state at the end of the
clip. This scale asks participants to rate how they feel at that exact moment, and is comprised of 66 items ranging in possible response from “1” (not at all) to “7” (very much). The items test emotions relating to positive or negative affect as well as items concerning fear, anger, and joy.

*Transportation*

Transportation was measured using eleven items from Green and Brock’s (2000) transportation scale. The items used in this survey were modified to be appropriate for viewing television. Examples of these items include “While I was watching the clip, activity going on in the room around me was on my mind,” and “While I was watching, my body was in the room but my mind was in the world created by the show.” This scale proved reliable in the analysis, Cronbach’s α = .781

*Perceived realism*

Seven items used in Green et al. (2004) were used to measure perceived realism. While scales incorporating different theorized types of perceived realism have been used (see Bilandzic & Busselle’s, 2006, scale of perceived realism, which attempts to include both external and narrative realism), subsequent studies (e.g., Hall & Bracken, 2008) found that the items in the scale did not consistently represent two separate factors. Thus the older scale was used, both to keep item count down and to maintain consistency with
Green (2004). The seven items utilized to measure perceived realism were found to have good reliability (Cronbach’s $\alpha = .687$).

**Story-consistent beliefs**

Consistent with the manipulation’s focus on terrorism, participants completed five items from Pyszczynski, Abdollahi, Solomon, Greenburg, Cohen, and Weise (2006). These items asked the participants about their feelings concerning the use of military force, both the preemptive use of military force and the use of chemical weapons. One item asked the participants to consider trading liberty for national security. These items were presented in Likert-style with five possible responses ranging from “strongly disagree” to “strongly agree.” This five-item scale proved reliable (Cronbach’s $\alpha = .797$).

**Media use**

Participants were asked how frequently they view several prime-time television shows. This was included primarily to check for previous exposure to “24.”

**Political leanings**

Participants were to rate how they felt in general about social and economic issues, from very liberal to very conservative, on a Likert-style scale ranging from “1” (very liberal) to “7” (very conservative).
**Demographics**

Participants were asked to state their gender, age, and race.

**Enjoyment**

Participants were asked how much they enjoyed the clip on a Likert-style scale ranging from “1” (very little) to “7” (very much).

**Participants and procedure**

Upon arrival, subjects were randomly assigned to one of three conditions. In each condition, subjects used pens or pencils to fill in the first two sections of the questionnaire.

- **Condition One (control condition):** Subjects were shown a video approximately ten minutes in length, consisting of material edited from an episode of the fictional action-adventure television program “24.” The segment consists of a societal threat, as a terrorist refuses to say where he has placed a nuclear bomb in the Los Angeles area. The show’s hero, Jack Bauer, tries to get the man to divulge the information.

- **Condition Two:** Participants watched the same video as in Condition One, but also completed a survey on a computer during the film. This survey involved the participants gauging the riskiness of various behaviors (smoking, reckless driving, etc.)
• Condition Three: Participants saw the same video as in Condition One and completed a personal assessment task on a computer (described above) during the clip.

All subjects then completed the remaining sections of the questionnaire on paper. Once the subjects were finished with the questionnaire, they were debriefed via a form describing the purpose of the study.
Chapter 4: Results and Discussion

Results

201 students enrolled in undergraduate communication courses participated in the three conditions of the experiment relevant to this research. Of these, 107 (53.2%) were female, and 94 (46.8%) were male. The participants ranged in age from 18 to 39, with a median age of 19. 62.2 percent identified as Caucasian, nine percent as black, 26.4 percent as Asian, and two percent identified as mixed or “other” race. 63 participated in the video non-multitasking condition, 71 in the elaboration condition, and 67 in the personal assessment condition.

Median splits (high/low) of fantasy empathy, transportability and transportation were created for tests of mean differences. The first seven hypotheses examined relationships among the key variables across all conditions, not taking multitasking into account.

The first hypothesis predicted that transportation into a narrative would be positively correlated with story-consistent beliefs. In keeping with the manipulation’s focus on terrorism, story-consistent beliefs were measured using an additive scale of items related to the use of military force. T-tests showed a significant difference in the
mean scores between those who reported higher levels of transportation into the narrative and those who reported lower levels of transportation into the narrative (t = -2.376, p < .02). Those who were more highly transported into the narrative adopted more story-consistent beliefs, thus providing support for H1.

Correlations were used to test the next hypotheses. The second hypothesis, predicting that transportation would positively correlate with perceived realism, was supported (r(201) = .359, p < .0001). H3, predicting transportation would positively correlate with enjoyment of the television show, was supported (r(201) = .672, p < .0001). H4 was also supported, as fantasy empathy correlated with transportation into the narrative (r(201) = .151, p < .03). H5, which predicted that fantasy empathy would correlated with enjoyment of the television show, was marginally significant (r(201) = .121, p < .08). H6 predicted that transportability would correlate with transportation into the narrative and was supported (r(201) = .181, p < .01). H7, predicting that transportability would correlate with enjoyment of a television show, was not supported.

The next hypotheses predicted effects from multitasking. H8 and H9 held that multitasking would interfere with both transportation and perceived realism; that is, those in a multitasking condition would report lower levels of transportation and perceived realism than those in the control condition. Although fantasy empathy still correlated with perceived realism in the elaboration condition, (r = .346, p < .003), it no longer
correlated with transportation (.020, ns). Transportability was not significantly correlated with either transportation or perceived realism.

The self-assessment condition, however, showed different results: Fantasy empathy was significantly correlated with both perceived realism ($r = .300, p < .01$) and transportation ($r = .151, p < .03$). Transportability, however, was not significantly correlated with either transportation or perceived realism.

Additional influences on transportation and perceived realism were explored through analysis of covariance, first in the elaboration condition. In analysis examining effects on perceived realism, multitasking had a significant main effect ($f = 3.50, p < .07$), but fantasy empathy was not significant. Analysis of transportability and perceived realism revealed significant main effects for both multitasking ($F = 4.21, p < .05$) and transportability ($f = 7.60, p < .01$). As for transportation, fantasy empathy ($F = 4.57$, $p < .05$) had a significant main effect and the interaction of fantasy empathy with multitasking had a significant effect ($F = 4.49, p < .05$). Additionally, transportability had a significant main effect on transportation ($F = 5.607, p < .02$), but multitasking was not significant.

In the personal assessment condition examining effects on perceived realism, transportability had a significant main effect ($F = 5.61, p < .02$), but multitasking was not significant. No significant relationships were found with multitasking and fantasy empathy. As for effects on transportation, significant main effects were found for both multitasking ($F = 7.63, p < .01$) and fantasy-empathy ($F = 8.25, p < .01$). Finally, both
multitasking ($F= 9.12, p < .01$) and transportability ($F = 6.12, p < .02$) had significant main effects on transportation, and the interaction was marginally significant as well ($F = 2.94, p < .09$).

A closer look at the analyses suggested that multitasking appeared to have affected the transportation and perceived realism among those high in fantasy empathy and transportability. Thus, separate analyses were conducted examining those high and low in transportability and fantasy empathy. Among those high in fantasy empathy, those in the elaboration condition showed significantly lower levels than the control group for both transportation ($M = 1.77$ and $M = 1.47$, $t = 2.69$, $p < .01$) and perceived realism ($M = 1.71$ and $M = 1.44$, $t = 2.36$, $p < .05$). Similarly, those in the personal assessment showed significantly lower levels than the control group for both transportation ($M = 1.77$ and $M = 1.49$, $t = 2.60$, $p < .01$) and perceived realism ($M = 1.71$ and $M = 1.46$, $t = 2.25$, $p < .05$).

In the personal assessment condition, those lower in fantasy empathy still experienced interference in transportation from multitasking ($M = 1.45$ and $M = 1.32$, $t = 1.087$, $p < .05$), but there were no significant effects on perceived realism. In the elaboration condition, however, there were no significant effects on transportation or perceived realism from multitasking.

Among those reporting higher base transportability, the elaboration condition produced significant, negative effects on transportation ($M = 1.59$ and $M = 1.77$, $t = -1.46$, $p < .001$) and perceived realism ($M = 1.56$ and $M = 1.80$, $t = -2.03$, $p < .001$) over the
control group. There were no significant effects from multitasking on those reporting high transportability in the personal assessment condition on either perceived realism or transportation.

Those with lower levels of base transportability reported significant negative effects on perceived realism from multitasking in the elaboration (M = 1.28 and M = 1.54, t = -2.32, p < .01) condition over the control video, but not in the personal assessment condition. There were no significant effects from multitasking on transportation in either condition among those with lower base transportability.

In short, multitasking was found to be a moderating variable on both transportation and perceived realism among those reporting higher base propensity towards trait fantasy empathy. In contrast, few significant effects on transportation and perceived realism were noted from measures of base transportability. H8 and H9 were conditionally supported.

H10 predicted that multitasking would be negatively correlated with the adaptation of story-consistent beliefs. A regression analysis indicated that multitasking as an independent variable had no effect on the adaptation of story-consistent beliefs; H10 was not supported.
Discussion

This study contributes to communication theory by demonstrating the moderating effects of multitasking on narrative absorption and through its replication of previous transportation research. While previous studies established that higher levels of empathy and transportability led to higher levels of transportation, the findings here showed multitasking moderated this relationship. Interestingly, those most inclined to become absorbed in the narrative were most affected by having to divide attention between the television clip and the task. Similar results were found in both multitasking conditions.

Those who evaluated riskiness (the elaboration condition) found the film to be less realistic than those in the control condition. The personal assessment task, in contrast, had no significant effect on perceived realism. Multitasking by itself had no effect on enjoyment in either of the task conditions.

These findings are important for trying to understand real-world effects resulting from absorption into a video narrative. Most transportation studies (e.g. Green & Brock, 2000, Green et al. 2004, Bilandzic & Busselle, 2008 and 2011) examine characteristics like transportation and perceived realism by testing an attentive audience with few distractions. Yet studies of media usage (e.g. Jeong & Fishbein, 2006) demonstrate that many people, especially young adults, often use an electronic device while also watching video entertainment. This study had subjects use a computer while viewing a video, coming closer to matching a real-world experience. Findings show that multitasking had
significant effects on absorption into the narrative, particularly among those most likely to become absorbed.

Additionally, similar effects were found in two separate multitasking conditions, both of which are relevant to everyday media use. Elaboration, for example, is common as the Middletown Media Studies observed, people will work (and thus be in a higher state of elaboration) while consuming media. Likewise, media multitaskers utilizing social media will be making their own personal assessments and evaluations while taking on-site quizzes or sharing their lives with their friends.

This study is useful in that it replicates the findings and measures of other studies of narrative engagement. Our data supports previously hypothesized links between fantasy empathy, transportation, and perceived realism. Unlike other studies (Hoekstra et al., 1999, Harris et al., 2004), but like Hall and Bracken (2008), our data did not support a direct link between fantasy empathy and enjoyment of a television clip.

Our data also showed a link between transportation and the adaptation of story-consistent beliefs, though the median age of our sample may have had a negative impact on the adaptation of these beliefs due to the subjects’ overall lack of experience with terrorism-related scenarios. Green (2004) indicated a link between prior knowledge and increased transportation. The stimulus involved a terrorist attack in Los Angeles. Our sample had a median age of 19 years old. As the participants were on average quite young and living in an area far from the site of the September 11, 2001 terrorist attacks,
the issue of terrorism might not be as salient to them (and thus resulting in potentially less absorption) than an older sample.

Neither trait fantasy empathy nor transportability was found to have a direct link to enjoyment or the adoption of story-consistent beliefs. This points to transportation as key to the explication of narrative impact; while there are some people (particularly women) who are more inclined to be transported into a narrative, they will not be affected by this media unless transportation actually occurs.

However, Green et al. (2004) point to the quality of a narrative as being instrumental to the enjoyment of the narrative. If the clip itself was judged to be low quality by participants, either because it lacked in graphical quality (our stimulus was not created in HD), or because the transitions were too abrupt, that might account for some of the somewhat unexpected results concerning enjoyment.

This study also points to differences between two seemingly overlapping concepts: fantasy empathy and transportability. These two measures frequently differed in significance; for example, fantasy empathy was proven to produce an interaction effect with transportation in the elaboration condition, while transportability produced the interaction effect with transportation in the personal assessment condition.
Chapter 5: Limitations, Recommendations, and Conclusion

Limitations

Perhaps the biggest limitation to the generalizability of this study was the use of a largely homogenous convenience sample of college undergraduates. While young people are a frequent target of studies relating to multitasking and multiple media use, an older population might have produced different results. However, it should be noted that college-age adults represent an age group that is particularly likely to multitask, so it is fitting to study that population.

While this study includes multitasking conditions, representing a step towards ecological validity in media effects studies, it also suffers from many of the issues with ecological validity as outlined in the literature review. Our setting for this study was an auditorium-style lecture hall (as in the control condition) or a computer laboratory (as in the multitasking conditions). While it is true that students view media in these conditions, it is unlikely that this setting comprises a significant minority of a student’s media viewing time. Additionally, the subjects did not choose the video, nor did they select the task.
Likewise, our study used desktop computers for the multitasking condition, and not laptop computers, tablets, or cell phones. In this way we encountered the classic conflict between control and ecological validity – if we had really allowed students to complete the task and view media as they are wont to do, we would have had no way to control the conditions under which that happened.

Multitasking in itself had no effect on enjoyment in either of the task conditions. This could be explained by a certain lack of ecological validity in the study – while we attempted to simulate some instances of media multitasking, the participants were instructed to complete a particular task and view a particular clip rather than allowed to use media as they would at home. Uses and Gratifications theory (Blumer & Katz, 1974) holds that people use media to fulfill a particular goal such as socialization or entertainment. It follows that future research might find a significant relationship between multitasking and enjoyment if people are allowed to choose the media with which they multitask.

The clip itself was also a limiting factor and might have impacted measurement of enjoyment. Every study must balance the research they want to do against the time cost to the participant. Our clip was only ten minutes long, and left much to the extrapolation of the viewer. In essence, it was necessary for the viewer to discern what was happening in the narrative, with potentially no familiarity of “24” and the genre it represents. Scene cuts may have disrupted transportation as much as the multitasking conditions, and quality concerns may have impacted reported enjoyment.
“Unauthorized multitasking” was also a factor. In both the control and multitasking conditions, students were spotted using cellular phones to check text messages or using the available computers to check email or play games. While it is ironic that a study on media multitasking should run into these issues, it is possible that this occasional behavior may have had some impact on the results.

In many cases, our findings bordered on the edge of statistical significance. More participants would likely have helped to discern more clearly whether these were real effects or the product of chance.

Additional measures of enjoyment would have provided a much more robust platform for testing hypotheses based upon enjoyment; one item by itself was not extremely reliable. Another measure of perceived realism might also have been beneficial; while this study utilized the perceived realism items as used in Green (2004), using items from the Busselle & Bilandzic (2006) measures of narrative realism might have achieved more nuanced results.

Further, no measures were included that assessed previous experience with multitasking. Jeong (2006) found that three-fourths of all youth media multitask, and it is possible that previous experience with media multitasking may facilitate the development of coping mechanisms for dividing attention amongst media. Thus those who multitask may be more or less equipped to handle media multitasking depending on the situation.

It might also be that media multitasking is uncommon when people are actively engaged in a narrative (such as a movie) that might result in significant attitude change.
Meng and McDonald (2009) note that people who are watching television as their primary task are often not doing other things. Those who are shifting attention – texting while watching a movie, for example – might already be less engaged by the movie and thus not be as impacted by an interruption of the narrative as the current study would lead us to suspect.

Conclusions and recommendations for future research

This study indicates that multitasking has a moderating effect on transportation, and subsequently transportation effects, among those reporting higher levels of trait fantasy empathy. Increased transportation was associated with higher reported levels of perceived realism, enjoyment of the show, and adaptation of story consistent beliefs. Though the relationship between fantasy empathy, media multitasking, and transportation is complex and most likely highly variable depending on the circumstance and the intrusiveness of the interfering task on narrative absorption, this study contributes to the beginning of our understanding of this interaction.

Future research might wish to examine the role of gender on the effects on narrative absorption experienced as a result of multitasking. In our results, men were more affected than women by the elaboration and self-assessment multitasking conditions.

Future research will also be necessary to further ascertain the degree and prevalence of media multitasking. While the general consensus in the literature is that
media multitasking is relatively common, it is unknown exactly how common it is. Furthermore, it is unknown exactly how often people multitask while they are ostensibly experiencing narrative engagement; knowing this is important to understanding the impact of media multitasking on the viewing experience.

Regarding the television viewing experience, recent technological development necessitates more work in defining what exactly constitutes television viewing. The proliferation of smaller devices that can play television programs (such as the iPad), the availability of bandwidth with which to stream movies to personal computers, and the popularity of video-streaming services such as Netflix and Hulu have confused the issue of what constitutes a “television” is or should be. Likewise, the expansion of temporally short user-generated media such as that found on YouTube and the tendency of established shows to host short clips of content might make it necessary to further investigate the effect of program length on transportation.

Quality of the stimulus might also be important in discussing narrative enjoyment. While Green et al. (2004) note that the quality of a narrative can be key in facilitating absorption into a narrative, studies tend to not ask participants about this issue, focusing instead on questions concerning enjoyment of the film and study. Including measures of narrative quality as a control in future transportation research may very well prove key in explaining enjoyment.

Finally, additional studies would help replicate and expand upon these findings. This study focused on two conditions discussed in the transportation literature – high
elaboration and personal assessment – which occur with some frequency outside the laboratory. Many other measures in social science literature use high elaboration or personal assessment; it would be interesting to see if these measures could be used in multitasking research.

Future research could also take on the rather daunting task of increasing the ecological validity of transportation and media effects research. For example, filmgoers could be questioned about their own multitasking during the movie and tested for changes in transportation. Likewise, the laboratory setting could be modified to more closely simulate a natural viewing experience, or participants could use their own coursework as the media multitasking condition.
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