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LEARNING FROM CRIME DRAMAS: THE ROLE OF PRESENCE AND
TRANSPORTATION IN ATTITUDE CHANGE

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Bachelors of Science in Journalism and Mass Communication

Kent State University

August, 2005

Submitted in partial fulfillment of requirements for the degree

MASTERS OF APPLIED COMMUNICATION THEORY AND METHODOLOGY

at the

CLEVELAND STATE UNIVERISTY

May, 2008

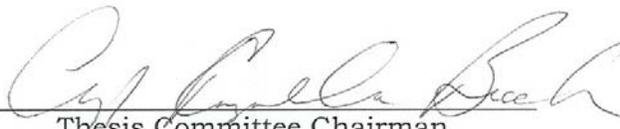
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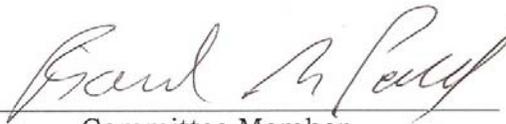
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ACKNOWLEDGEMENTS

Dr. Cheryl Bracken, my advisor, has helped me in numerous ways. It was working with Dr. Bracken that influenced what I wanted my thesis to be, and what kind of scholar I hope to become. She has spent many, many hours giving me great feedback, encouraging my interests, and imparting her knowledge. I was very lucky to find an adviser whose research is brilliant and interesting, and is also a really fun person. Really. Thank you, Dr. Bracken.

I would also like to thank my committee members, Drs. Richard Perloff and Paul Skalski for their invaluable help throughout this process. Dr. Perloff's encouragement and questioning forced me to think about my conceptualizations and results in new ways. Many thanks go to Dr. Skalski, whose knowledge, feedback and help with data were of great help to my thesis. Drs. Perloff and Skalski's contributions to this project, and to my knowledge gained while at CSU, were great.

Dr. Gary Pettey's advice to not scrap the whole project after five participants, as well as his statistical guidance and encouragement, are much appreciated. I would like to thank all the professors at Cleveland State that have taken the time to work with me, in classes and on research; I am lucky to have attended a program with such bright and accessible faculty.

Many thanks are due to my classmates as well. I have been so fortunate to be surrounded by such smart, funny people, without whom, I would never have enjoyed nor gotten so much out of my time here. I would like to thank Trupti Guha and Mycal Brown for their assistance with data collection. I am especially thankful to my classmates

plugging away at their theses this final semester with me. Trupti Guha, Terri Johnson, Carolyn Kane, and Bettina Lunk and have truly been great resources and friends.

My family has been a great source of support throughout. I'd like to thank my sister, Kelsey, for stepping up to proofread, and for putting up with me in general. I am grateful to my parents for instilling in me the importance of education and a strong work ethic. Many thanks goes to my grandparents: Gram, Tex, Grandma, and Grandpa, as well as the rest of my family, whose unwavering support has made it possible for me to tackle anything I choose. Lastly, I would like to thank Jeff for championing my accomplishments and always making me laugh.

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ABSTRACT

As the authors of the Transportation-Imagery Model (Green & Brock, 2000; 2002) often state, much attention has been paid to the effects of persuasive communications, frequently at the cost of studying the effects that narratives have on individuals' real-world beliefs. This study is primarily interested in examining the role that transportation and presence – along with a host of related variables – play in individuals adopting story-consistent beliefs based on entertainment narratives. A secondary goal of the study is to explore the similarities and differences between transportation (Green & Brock, 2000) and presence (Lombard & Ditton, 1997; Wirth et al. 2007; Biocca 2002, Witmer & Singer, 1998).

A review of previous literature documents that individuals learn from fiction – the realm of entertainment-education is just one example. If people can change their attitudes and behavior based on pro-social messages, examining whether, and under what conditions, this can occur with antisocial, or unjustly stereotypical content should be further explored. This experimental research is interested in what variables affect attitudes toward the mentally ill, based on their typical violent and criminal representations in a crime drama.

Participants were randomly assigned to either the control condition, in which they viewed a crime drama with no reference to mental illness, or to the experimental condition, in which they viewed a crime drama that centers around a man who's

schizophrenia serves as the reason he is a violent murderer. Participants viewed one of these episodes, and then responded to a questionnaire. Measures included counter-arguing with the narrative, transportation into the narrative (Green & Brock, 2000), three dimension of presence: spatial, engagement (mental immersion), and social realism (Lombard & Ditton, 2000), perceived realism (Green, 2004), familiarity/personal experience with the mentally ill, and attitudes toward the mentally ill. A second time point measure of attitudes toward the mentally ill was administered 2-3 weeks after the initial viewing and questionnaire, in an attempt to further understand the longevity of narrative-based attitude change.

Results demonstrate many similarities between transportation and presence, particularly the engagement (mental immersion) dimension of presence and transportation ($r=.599, p<.010$). Perceived realism was also related to transportation and engagement, such that the more real content was deemed, participants experienced greater transportation and presence. No main effect was found for the experimental manipulation, nor was transportation and presence then tied to attitude change. However, attitudes at the second time of measure were significantly more favorable toward the mentally ill than at the first time of measure. Theoretical implications are discussed.

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CHAPTER I
INTRODUCTION AND RATIONALE

Crime dramas are a genre of television show that has seemingly only increased in popularity in recent years. Individuals are drawn to crime dramas for a number of reasons. Shows like *CSI* top the ratings, and the original *Law & Order* has completed its eighteenth season: the mainstays of the genre are still attracting large and often desirable young audiences. If one of those shows does not satisfy one's want for crime and drama, there are two more shows each within the *CSI* and *Law & Order* franchises available for viewing, along with a host of other shows *Shark*, *Cold Case*, *Criminal Minds*, *NCIS*, *Numbers*, *Shark*, *Women's Murder Club*, *Without a Trace* – and those are just on network programming.

Despite this popularity, we do not know the nature of the influence this type of fictional content has on real-world beliefs. The influence of variables associated with the viewer, as well as those associated with the form and content of the narrative programming may be great. Three broad reasons for studying the conditions under which fiction can have an influence over individuals has been put forth by Green, Garst, and Brock (2004). First, understanding the potential use of fiction to intentionally persuade could be beneficial for a host of entertainment-education goals. Secondly, individuals

may be persuaded by false informational content when they should not be. Lastly, there is much to be gained from learning how individuals approach imagination and reality, reality and truth. This study is interested in the last two of these three reasons.

Statement of Problem

Fictional television programming has the potential to change attitudes and beliefs about the real world, and the experience that viewers have of watching such content is an essential part of how attitude change may occur. It has been demonstrated that individuals learn about the real world from fictional content and apply it to their real-world beliefs (Green & Brock, 2000; Slater, Rouner, & Long, 2006; Appel & Richter, 2007; Busselle & Bilandzic, 2006). This study attempts to demonstrate that attitudes can be changed based on viewing crime dramas in a way that reinforces negative stereotypes about the mentally ill.

In addition to general questions about attitude change based on television crime narratives, understanding the role that transportation (Green & Brock, 2000; 2002; Green, Garst & Brock, 2004) and presence (Lombard & Ditton, 1997; Biocca, 2002; Wirth et al., 2007) play in attitude change is of paramount importance to this study. Will those who feel more transported into the story world show greater attitude change, as the researchers behind the transportation-imagery model would predict? Can the overlaps in the theoretical constructs between transportation, and several dimension of presence, including spatial presence, engagement (mental immersion), and social realism, be demonstrated through the data? Will presence influence attitude change as it has been demonstrated to do with persuasive messages (Skalski & Tamborini, 2007; Kim & Biocca, 1997)?

This research is also concerned with the mediating role that perceived realism and personal familiarity with mental illness will play. It is theorized that the more familiar one is with mental illness in their personal lives, the more the negative portrayal of the mentally ill in the crime drama will seem less real or plausible. This decrease in perceived realism that those with more familiarity or experience with mental illness will sense may lead to a less immersive experience, and a lack of adopting story-consistent beliefs may become apparent. Lastly, will attitude change based on the narrative persist over time? What variables will affect the longevity of learned beliefs from crime dramas?

Rationale

Numerous content analyses have documented the ways in which the mentally ill are misrepresented, most notably as dangerous, unpredictable, and violent (Signorelli, 1989, Wahl & Roth, 1982; Diefenbach, 1997). In fact, the mentally ill are the *single most* violent and victimized group on television (Gerbner, 1998). This study is primarily concerned with mental illness as psychiatric disorders or diseases that impair an individuals' thought, mood, or behavior. A problem exists if these negative portrayals have effects on real world beliefs. The literature surrounding transportation and narrative (Green & Brock, 2000, Prentice, Gerrig & Bailis, 1997; Dal Cin, Zanna, & Fong, 2004) suggests it is likely that individuals learn something from the entertainment narratives they surround themselves with. Studies examining the use of narrative in entertainment-education have demonstrated that individuals may change attitudes and behavior based on narratives when pro-social messages are present (Slater & Rouner 2002; Whittier, Kennedy, St. Lawrence, Seely, & Beck, 2005). It is logical to attempt to gauge the unintentional negative attitudes that entertainment narratives may perpetuate as well.

In addition to attitude change based on narratives, linking the concepts of transportation and presence is an essential part of this research, which will hopefully add much to the literature in this field. Some researchers have linked the two concepts theoretically (Bracken, 2005), while others have made distinctions between the two (Busselle & Bilandzic, 2006). The feelings of being absorbed, transported, and immersed are similar in each, and it will be very interesting to see how the two measures of what may be the same experience compare. This study is proposing that transportation and feelings of presence should be very similar, and that increased feelings of both will lead to greater attitude change. There has been some discussion within the presence community to adopt the term telepresence, a phrase frequently used to also describe the feeling of “being there” in a mediated environment, in order to place emphasis on the role that the media or technology plays in the process. This study has chosen to use the term presence as a way to minimize confusion and changes in terms between sources.

Perceived reality has been demonstrated to increase both transportation (Green, 2004; Busselle & Bilandzic, 2007) and presence (Witmer & Singer, 1998, Balakrishnan, Nikolic, & Zikic, 2007). The relationship between perceived reality and personal familiarity or experience is expected to be such that those with increased familiarity with mental illness will exhibit decreased feelings of perceived reality. Clearly defining and measuring familiarity or personal experience with a topic in media content, as well as perceived realism, is necessary in order to examine the role this variable plays in the processing of such content and resulting attitude change.

The following review of the literature will explore past research and theory related to all the key variables in this study. Understanding the similarities between the

transportation-imagery model and presence, and the role that they play in the cognitive processing of narratives and resulting attitude change is of paramount importance to this study. First, the theoretical development and support for the transportation-imagery model will be discussed. Following the discussion of variables that are of interest to researchers of narratives, presence and persuasion will be a review of literature on the processing of fictional texts. A discussion on attitude change over time as a result of exposure to a narrative, entertainment-education and stigmatizing portrayals of mental illness on television completes the second chapter.

CHAPTER II

LITERATURE REVIEW

Theoretical Perspectives

Transportation-Imagery Model.

The transportation-imagery model (TIM) posits that the extent to which individuals become absorbed into a story or transported into a narrative world, they may show effects of the story on their real-world beliefs (Green & Brock, 2000). Green and Brock (2000) define narrative as “a story that raises unanswered questions, presents unresolved conflicts, or depicts [a] not yet completed activity; characters encounter and then resolve a crisis or crises. A story line, with a beginning, middle and an end, is identifiable” (p.701). It is argued that these characteristics of narratives make them more likely to produce greater transportation. Other researchers have defined narratives to fit their research goals, such as Rowe Stitt and Nabi (2005) who define narratives as “messages with a plot, sub-plot, and character development” (p.11).

In the realm of health-based narratives, a combination of definitions of narratives has been used, such as stories that contain episodes that feature goals, plans, acts or

outcomes. These narratives should ideally be powerful and compelling, and typically provide easily understood case histories (Kopfman, Smith, Ah Yun, & Hodges, 1998).

Green and Brock (2000) argue that persuasion scholars have exerted too much effort on the study of advocacy messages at the cost of neglecting narratives. Narratives command far more attention than advertisements and rhetoric in our everyday lives, and as their example of *Uncle Tom's Cabin* demonstrates, these narratives have tremendous potential to influence attitudes and change beliefs. Brock, Strange and Green (2002) propose that narrative impact has been largely taken for granted. Neither the consumers nor producers of public narratives appear to be interested in the underlying processes that result in attitude change. Although censorship of narratives that are deemed dangerous has been present throughout time, psychologists have largely left the potential impact of stories unstudied (Brock et al., 2002), although literature in the area is growing. There are inherent differences between fictional narratives, which are usually written for entertainment (Bryant & Miron, 2002), and rhetoric that is meant to persuade an audience about a product, service, issue, or candidate. Although, it should still be noted that advertisers frequently employ narrative structure in campaigns (Green & Brock, 2000), as do health campaigns (Kopfman et al., 1998) and news outlets (Brock et al., 2002). In fact, one study has shown that the employment of narrative devices in television news stories increased comprehension and retention (Machill, Kohler, & Waldhauser, 2007).

Green and Brock postulate this attitude change may occur through what they term “transportation” (Green & Brock, 2000; 2002). Transportation is dependent upon both characteristics of the narrative itself and characteristics of the individual who is experiencing the narrative. Transportation consists of three parts, all measured in the

transportation-imagery scale: attention, feelings, and imagery (Green & Brock, 2000; Green, Brock, & Kaufman, 2004). Measures of transportation and enjoyment of media are often highly correlated, which is due in part to transportation being thought of as a desired state by many individuals (Green et al., 2004). The construct of transportation is based in part on Nell's (1988) concept of "being lost in a story," as well as the traveler metaphor, wherein a traveler goes to a different place (that of a mediated reality) and returns a changed person, offered by Gerrig (1993). Both Gerrig (1993) and Nell (1988) use terms such as "transportation," "absorption," and "entrancement" in their descriptions of what readers allow themselves to feel while experiencing narratives.

Transportation refers to how absorbed or transported into a story a person may become, and the extent to which their real world beliefs change as a result of the story. Individuals may lose access to some real-world facts while experiencing the narrative and adopt beliefs that the narrative encourages instead (Green & Brock, 2000). Green and Brock (2000) treat transportation as a convergent process, "where all mental systems and capacities become focused on events occurring in the narrative" (p.702). These authors argue that transportation is a distinct mental process, different from the dual-processing models, such as the Heuristic-Systematic Model (HSM) (Eagly & Chaiken, 1993) and the Elaboration Likelihood Model (ELM) (Petty & Cacioppo, 1981; 1986). While the amount of attention and critical thinking about the message is a key factor in determining how individuals process content in these models, Green and Brock (2000) posit that the immersion of individuals into a text produces a different processing mechanism. While the dual process models are well suited for rhetoric and advertisements, transportation is more likely to occur in response to narratives, for a number of specified and supported

reasons. Possibly, transported individuals become both cognitively and emotionally involved with the story (Green, 2004). While much of the older theorizing on narrative and transportation are done with readers of texts (Nell, 1988, Gerrig, 1993, Green & Brock, 2000), the authors behind the transportation-imagery model state that transportation can occur across mediums and when narratives are presented as fact or fiction (Green & Brock, 2000). More recent research has emerged that uses the concepts of narrative, transportation and attitude change utilizing film (Busselle & Bilandzic, 2007; Dal Cin et al., 2004), television dramas (Slater et al., 2006), video public service announcements (Tal-Or, Boninger, Poran, & Gleicher, 2004), and mixed text and video public service announcements (Rowe Stitt & Nabi, 2005). Story and narrative have been found to increase enjoyment and immersion in video games as well (Schneider, Lang, Shin & Bradley, 2004; Lee, Jin, Park, & Kang, 2004).

The original study that accompanied Green and Brocks' (2000) seminal piece about the Transportation-Imagery Model examined transportation effects on participants who read a vivid, gruesome narrative about a psychiatric patient murdering a young girl at a shopping mall. Regardless of whether the newspaper article was presented as fact or fiction, participants who reported higher rates of transportation also reported that violence was more likely to occur in real life, and that psychiatric patients' freedoms should be restricted. Highly transported participants also expressed greater story-consistent beliefs about the world being unfair. All three of these attitude measures were based on implicit issues in the story itself. The other three studies presented in this piece found similar results: higher levels of transportation correlating with increased agreement with story-consistent beliefs (Green & Brock, 2000).

Prior to the transportation-imagery model, others studied and theorized about narrative processing. Many researchers agree that a key part of understanding the processing of narratives is the tendency for audiences to suspend disbelief when learning new things. Gilbert (1991) draws on the work of Spinoza to support his thesis that the comprehension and acceptance of ideas are not two different acts – comprehension includes acceptance of what is comprehended. Gilbert concludes that “People are very credulous creatures who find it very easy to believe and very difficult to doubt” (p.117). Further studies found that when readers of true and untrue statements, which were labeled as such, were distracted or under a demanding time constraint, they believed more of the untrue statements than did a control group (Gilbert, Tatarodi, & Malone, 1993).

Presence.

The importance of immersion is notable both in the transportation imagery model and presence. Dimensions of presence are often divided in two – one of which being the physical, a sense of being in or near the medium, and the other being the social, or the dimension that reflects a sense of being close to another person or social entity (Bracken & Lombard, 2004). Here, we will use the following definition of presence,

Presence (a shortened version of the term telepresence) is a psychological state or subjective perception in which even though part or all of an individual's current experience is generated by and/or filtered through human-made technology, part or all of the individual's perception fails to accurately acknowledge the role of the technology in the experience. (International Society for Presence Research, 2000, ¶ 2).

When the distinction between social and spatial presence is not made, presence is often operationalized as a physical sense of being there, and more broadly, “the perceptual illusion of non-mediation” (Lombard & Ditton, 1997). Spatial presence is

characterized by the feeling of being located in a mediated environment (Wirth et al., 2007). Mental models are at the heart of how individuals experience spatial presence, as people in a mediated environment use previously held information and the information provided to develop a spatial model of their surroundings (Wirth et al., 2007). Presence can be felt in any medium, from virtual reality to books. Others have more narrowly defined the concept as “actually being in the same room” (Towell & Towell, 1997, p. 591).

Several of Lombard and Ditton’s (1997) dimensions of presence are related to a physical sense of being there, most clearly under the description of presence as spatial presence or transportation; the feeling that “You are there.” Similarly, Wirth et al. (2007) define spatial presence as, “A binary experience, during which perceived self-location and, in most cases, perceived action possibilities are connected to a mediated environment instead of reality” (p.497). However, Lee (2004) gives a typology that defines physical presence as an experience that does not hinge on immersion in the environment, but rather is dependent upon technology users not noticing the “para-authentic nature of mediated objects (or environments)” (p. 45). It is important to note that both media form and user variables are the two main contributing factors to presence. Lombard and Ditton (1997) provide some form variables, such as the number and consistency of sensory outputs, and a variety of visual display characteristics, such as image quality, image size and viewing distance, motion and color, dimensionality, and camera techniques. They also cite stimuli beyond the traditional visual auditory, such as interactivity, social realism, use of media conventions, and the nature of the task or activity.

A number of user variables also come into play, although there is less consensus on how user variables tend to affect presence. Willingness to suspend disbelief among individuals, as well as knowledge of and experience with the medium, may influence the sense of presence generated (Lombard & Ditton, 1997). User enjoyment or interest in the content at hand may also influence presence, as may personal familiarity or experience with the content or modality. Similar to Busselle and Bilandzic's (2006) work that shows an increased willingness or tendency to be transported led to increased feelings of transportation, Sas and O'Hare (2003) found that individuals more willing to be transported to the virtual world experienced a greater sense of presence. In a study of presence in virtual environments, Sas and O'Hare (2003) identified other user characteristics that led to increased feelings of presence, such as greater absorption tendencies, creative imagination, empathy and a proclivity to enjoy fantasy content.

As with many studies that involve presence, there are certain dimensions of the construct that are of more interest than others to the current research. Of Lombard and Ditton's (1997) six original dimensions of presence, this study is interested in three. The first dimension is spatial presence, and here, we are concerned with the concept of "you are there" (Lombard & Ditton, 1997). This concept of transporting users to remote places, via virtual reality, video games, television and other mediated forms, often labeled spatial presence, is the most common or most well-known conceptualization of presence. Biocca (2002) and Kim and Biocca (1997) discuss presence as departure and arrival from a specific place. Being there, he maintains, occurs in moments when "we are pushed through the medium to sensations that approach direct experience" (p. 102).

While transportation is concerned with a sense of physical movement into a mediated environment and mental models of the space one is occupying occurs (Wirth et al., 2007), immersion as a dimension of presence includes the psychological components of being involved, absorbed, engaged and engrossed (Lombard & Ditton, 1997). Immersion is often studied in the context of how involved all of an individuals' senses may be.

The last of these is perceived realism, which consists of two different types of realism: social realism and perceptual realism. Social realism is similar to Potter's (1998) magic window, and is characteristic of how plausible and true to life a media portrayal may be (Lombard & Ditton, 1997). The second component, perceptual realism, deals with characters or settings that may be implausible, but appear in the mediated context as if they really do exist. Others have made distinctions between narrative and external realism (Busselle & Bilandzic, 2006); perceived reality in relation to typicality vs. atypicality of content (Shapiro & Chock, 2003). Media environments high in realism are more conducive to feelings of presence.

Similarities between presence and transportation

Admittedly, transportation is similar to a number of psychological constructs. One concept that Green (2004) cites is flow, a state that can be reached when an individual loses awareness of one's self as a social actor, becomes absorbed in a goal-oriented activity, and the balance between skill of the user and difficulty of the task makes the activity enjoyable (Csikszentmihalyi, 1988, Sherry, 2004). Absorption (Tellegen, 1982 cited in Green, 2004) is another related construct (Green, 2004). The similarities between transportation and presence, or telepresence (Lombard & Ditton, 1997; Wirth et al., 2007;

Minsky, 1980) are best exemplified through the similar variables that are used to produce increased or feelings of both constructs. Perceived realism, enjoyment, and modality are variables that research in both fields has examined, and often found very similar findings for their effects on transportation and presence.

Indeed, presence as transportation is one dimension of Lombard and Ditton's (1997) six dimensions of presence. However, transportation is only one of many dimensions of presence, and notably, while transportation shares similarities with spatial presence, the feeling of being there," it does not tap dimensions of social presence, the feeling of "we are together," or self presence (Bracken, 2005). Bracken (2005) states that both concepts focus on "the perceptual process by which media users are willing to ignore and transcend the technology they are using to access the content," (p.127). There is a distinct trend in the presence literature to focus on form variables; research in the transportation tradition often focuses on variables related to specific content. Research in both fields has begun to look at user-side variables as well.

A discussion about transportation and presence would be incomplete without presenting the complexities of the "book problem" (Biocca, 2002). Biocca (2002) chronicles the beginning of presence as being derived from explaining and designing advanced media to increase feelings of immersion and decrease reminders of the real environment. He states that a similar goal of narrative experiences is to immerse the mind of the interactor into the narrative world, and the achievement of this psychological process can be termed presence. Schubert and Crusius (2002) argue that the common assumption in presence research, that the better technical immersion that is available (e.g. better quality, real time, field of view), the more presence will be felt, is faulty in

explaining the “book problem.” These authors claim that presence is not a direct function of immersion; rather that immersion is dependent upon the source of a stimuli with which users create a mental model. It is the mental model that individuals create – which, theoretically could be based on cues in virtual reality, television or books – that determines whether or not presence is felt (Schubert & Crusius, 2002).

Schubert and Crusius (2002) posit that presence has been studied in different contexts under different names. These include the “diegetic effect” in film (Burch, 1979; Tan, 1996) and “transportation” in narrative (Gerrig, 1993; Green & Brock, 2000). An important thesis put forth by Schubert and Crusius (2002) is that by differentiating between the construction of a spatial mental model and the attention devoted to this construction, some differences can be seen between modalities. Virtual reality, for instance, has a high potential for both construction of mental models, and therefore spatial presence, and for involvement (or attention), while literature has a high potential for involvement, but a weaker potential than both films and virtual reality for spatial presence (Schubert & Crusius, 2002).

Much of the presence literature has studied form, rather than content variables (such as narrative) that bring about feelings of presence. However, Lee et al. (2004) examined the effect of exposure to a narrative about a video game before playing on presence and enjoyment. In one experiment, viewing a 5-minute narrative about the protagonist of a video game increased presence, enjoyment and their evaluation of the game. In a second experiment, participants read either a narrative about the game or technological information about the game. The same results were found for the text

narrative as the video narrative, with less presence and enjoyment reported by those who read the non-narrative, technical information.

Others have studied presence and persuasion. Kim and Biocca (1997) found that the feeling of being there (or arrival) seemed to simulate a real-world experience and generate attitude confidence. They found that participants exposed to a 15-minute infomercial were more confident in brand preference and buying intention when they had a feeling of “being there” in the environment. Thus, Kim and Biocca (1997) conclude that persuasion via mediated messages can be improved by evoking a sense of presence. In a study of 3-D advertising viewed on a computer screen, Li, Daugherty, and Biocca (2001) found that increased feelings of presence resulted in significantly greater product knowledge and brand attitudes in individuals who had watched 3-D advertising as compared to the 2-D advertising, which brought about less presence. Skalski and Tamborini (2007) found that social presence increased positive attitudes toward both attractive and unattractive social actors, and increased the motivation to process message content. It is interesting to note that most, if not all, studies of presence and persuasion have looked at intentionally persuasive mediated content. Looking at attitude change due in part to feelings of presence while being exposed to entertainment narratives should serve as an interesting comparison.

Variables similar in transportation and presence

Vividness.

The vividness of a narrative is expected to increase transportation (Green & Brock, 2000). Of the 15 transportation scale items, the last four are “While reading the narrative, I had a vivid image of _____,” where the blank is filled with characters in

the narrative. Others have condensed these into one item that generalizes the vividness of all the characters presented (Busselle & Bilandzic, 2006). While Green and Brock operationalize vividness as visual imagery, other conceptualizations in the presence literature have offered more complex definitions.

Steuer (1995) defines vividness as “the representational richness of a mediated environment as defined by its formal features, that is, the way in which an environment presents information to the senses” (p.11). Vividness is dependent upon breadth, or the ability of a medium to present information across the senses, and upon sensory depth, which can be understood as being of better quality (e.g. HDTV vs. Standard Definition TV). Support has been shown for individuals reporting greater social presence after viewing more “vivid” content on television as opposed to reading a print version of the same content (Skalski & Tamborini, 2005).

Modality.

According to Steuer’s (1995) standards regarding vividness, narratives that appear on-screen would lead to greater presence, or immersion, than text narratives. Green (2004) maintains that the modality that induces a greater sense of transportation is up for debate, although she speaks to the advantages that books have of “allowing more imaginative investment from the individual as well as being self-paced (p.252),” which should increase transportation. However, Gerrig and Prentice (1996) argue that the formal properties of film allow it to more easily command viewers’ attention, which increases immersion.

In a study that employed a long text narrative condition, a short text narrative condition, and a video condition of the same narrative, no differences in transportation

were found across modalities, although persuasion did differ (Rowe Stitt & Nabi, 2005). Dal et al. (2004) tested four narratives, including two of the texts used by Green and Brock, (2000) “Murder at the Mall,” a story of the gruesome killing of a child by a psychiatric patient, and “Two Were Left,” a survival story about an Inuit boy and his dog that triumphs friendship. They also used professionally shortened versions of two films, *A Time to Kill*, which is the story of an African-American man on trial for killing two white men who sexually assaulted and beat his daughter, and *Norma Rae*, a story about a woman who ultimately is fired for her commitment to unionize the Southern textile plant she works in. Similar to Rowe Stitt and Nabi’s (2005) study of text and video narratives about the dangers of driving drunk, Dal Cin et al. (2004) found that while the highest transportation was reported for *A Time to Kill*, the lowest transportation was reported for the other video, *Norma Rae*. Both text narratives brought about more transportation than *Norma Rae*. These findings led the author to conclude that in addition to individual differences, the structures and perhaps quality of the narratives themselves played a larger role in transportation than did the modality upon which they were conveyed. In this case, when vividness is defined by visual imagery, more vivid narratives may have increased transportation.

Although Chaiken and Eagly’s (1976) study of comprehension and persuasion used non-narrative, intentionally persuasive communication (legal arguments), their findings regarding the influence of modality are interesting. They manipulated texts such that participants in some conditions read or watched difficult to understand arguments, while others read or watched easy to understand arguments. Results showed that difficult messages were more easily comprehended and more persuasive in text format, while easy

messages were most persuasive when videotaped, then listened to on audiotape, and finally as a written text. Comprehension was the same across all three modalities for easy to understand messages. Chaiken and Eagly's (1976) original model proposed that better comprehension would lead to more persuasion, and that persuasion would be diminished by distractions.

Identification, Personal relevance, familiarity and prior experience.

One component of narratives is the important role of the protagonist. Character credibility and likeability are essential to producing attachments to said characters (Green & Brock, 2000). This attachment is critical to transportation and belief change based on the narrative. Green and Brock (2000) state, "Readers may not only enter a narrative world, they may also become highly involved with the people they find there" (p. 702). Indeed, others have discussed the role that identification with characters in a narrative plays on both transportation and the success of a narrative itself. Cohen (2001) claims that identifying with characters is the central mechanism of media effects, that if individuals don't identify with anyone committing violence in the media, that portrayal of violence will have no effect. Cohen (2001) says that identification occurs when an individual imagines him or herself as a character and becomes less aware of him, or herself. Identification "is marked by internalizing a point of view rather than a process of projecting one's own identity onto someone or something else" (p.252). It is this definition that Busselle and Bilandzic (2006) use in their study of identification, transportation and perceived realism. These authors draw connections between identification with characters and transportation, identification with perceived realism of the story, and identification and enjoyment. Their results showed significant and sizeable

correlations between identification and affinity, identification and transportation, and identification and enjoyment of the narrative. Busselle and Bilandzic (2006) state that identifying with characters lets audiences experience condensed emotional experiences that only the fictional world can offer.

In one of the few discussions on the similarities and differences between transportation and presence, Busselle and Bilandzic (2006) point to identification as a state or ability that differentiates transportation from concepts such as flow and presence. They posit that adopting the point of view offered by a story is distinctive of processing of narratives (Busselle & Bilandzic, 2006; Cohen, 2001). The authors state, “Being able to relate to a character’s interpretations of the world and its events, understanding emotions that are implied by the story and adopting causality that is implied by the story, is what separates experiential engagement into narrative from other immersive experiences” (p. 5).

A number of variables related to personal familiarity have been examined in relation to narratives and attitude change. Wheeler, Green, and Brock (1999) repeated studies performed by Prentice et al. (1997) that looked at the relationship between personal relevance and attitude change. In both studies individuals read stories that discussed 15 real-world topics, half of which presented recognizably false ideas, such as “Sunlight is good for your skin,” and “Most forms of mental illness are contagious.” Participants were told either that the story about undergraduates included 15 true or false statements took place at either their own school, thus making it more personally relevant, or another university far away. Prentice et al. (1997) found support for their hypothesis that the closer the narrative is to one’s own real-world experience (same school

condition), the more motivated one is to critically evaluate the information and reject ideas that are obviously false in the real world. However, Wheeler et al. (1999) found that individuals scrutinized the story most relevant to them more so than the away-school setting, but students were equally likely to reject false assertions across conditions.

Some researchers have demonstrated through experiments matching consistent point of view verbs (e.g. come/go versus bring/take) that both adults and children construct models of narratives with the protagonist's point of view or perspective (Black, Turner, & Bower, 1979; Rall & Harris, 2000).

Some have studied the related construct of involvement, which includes the concepts of identification and empathy in the study of feelings toward fictional characters (Raney & Bryant, 2002; Konijn & Hoorn, 2005). In the area of crime programming, Raney and Bryant (2002) also distinguish between the often-studied emotional responses to content and characters and the less-studied cognitive inputs (such as "perceptions about the propriety or legality of action, attitudes toward justice and punishment" (p.405). Cognitive judgments about issues presented then may be independent of identification or empathy with characters. This distinction is useful to the current study, which is concerned less with feelings about individual characters, and more about judgments about issues in the narrative. While Raney and Bryant (2002) study feelings and judgments about fictional characters in crime dramas and their impact on enjoyment, conceptualizing involvement is also necessary in the study of attitude change based on the characters and plot developments in crime dramas.

Experience/Familiarity Rationale

Identification, familiarity, and involvement are all important variables to experiencing a narrative. Green (2004) uses the term “familiarity” to describe a particular background of a reader that may affect the reader’s ability to identify with the story. She states that in addition to character traits that individuals may be more familiar with, “Individuals who have prior familiarity with story themes may be more motivated to immerse themselves in the story due to intrinsic interest or may have an easier time imagining story events” (p. 250). Green’s (2004) study found support that familiarity and closeness to two differing groups present in the narrative – either having a gay friend or family member or being knowledgeable about the fraternity system – served to increase transportation. In general, the results showed that the presence of familiar issues or topics increased transportation (Green, 2004).

Of particular interest to this study is that previous knowledge or similarity produced higher transportation although homosexuality and fraternities were not presented as entirely positive in the narrative. This is interesting in light of the current study that proposes increased familiarity with mental illness will lead to low perceived realism, and that in turn will lead to lower transportation. Both personal familiarity and experience refer to an individuals’ real-life background of exposure and involvement with other individuals who experience a mental illness.

Perceived realism and counter-arguing

Certainly, characters that represent some characteristics of oneself, or one’s experience in the real world are easier to identify with (Busselle & Bilandzic, 2006). The transportation-imagery model is based on the notion that individuals process narratives

differently from other communications because they suspend disbelief and become immersed in the story presented (Green & Brock, 2002). Indeed, narrative persuasion is often not discounted, even when individuals knowingly read fiction. This may occur because of the mix of truth and imagination that makes up many entertainment narratives. Green and Brock (2002) state that, “Individuals seem to approach fiction with a plausibility criterion in mind – if the information seems reasonable, it appears to have an impact equal to information labeled as fact” (p.329).

Green (2004) found support for the hypothesis that perceived realism mediates the relationship between transportation and attitude change, although she notes that the order of transportation leading to perceived realism was not tested, and it could, in fact, have occurred in a reverse order.

Likewise, Busselle and Bilandzic (2006) note that realism in narrative does not necessarily relate to an actual comparison to the real world, but is concerned with the plausibility and consistency of the story. Perceived realism of the narrative also enables smooth processing. To make this distinction clear, Busselle and Bilandzic (2007) differentiate between *external realism*, or the extent to which fictional content is consistent with the actual world, and *narrative realism*, which deals with the logic and consistency of motivations and events within the fictional narrative. They propose that violations of coherence and explanation prompt negative evaluations of both types of perceived realism in fictional narratives. When narratives lack adequate levels of these two concepts, viewers perceive the narrative as less credible and less enjoyable (Busselle & Bilandzic, 2007).

Perceived realism has been put forth as a variable that encourages or increases presence (Witmer & Singer, 1998, Balakrishnan et al., 2007) as well as a moderator of a number of other variables including attitudes and behaviors (Potter, 1988). Realism can be defined or operationalized as related to the content of the medium, as well as something that is tied to the modality itself. For instance, the term “social realism” has been used by Lombard and Ditton (1997), they posit:

“ . . . It is not storylines, characters, and acting that must be perceived as realistic, but the behavior of the computer or other medium itself: when the computer provides plausible responses to user inputs and does not act erratically or break down (“crash”), it is more likely to be perceived not as a medium but as a social entity.” (p.12)

Others have focused on perceived reality as a characteristic of the media user. Potter (1998) gives the conceptual definition of perceived realism dealing with a “magic window.” He states that the “Magic window is concerned with the degree to which a viewer believes television content is an unaltered, accurate representation.” Researchers have also examined what story elements influence perceived reality. Shapiro and Chock (2003) found that typicality was strongly tied to perceived reality, meaning that the more typical content was, the more real it seemed. Also of interest, Shapiro and Chock (2003) postulate that individuals often lack the motivation or skills to thoughtfully make decisions about the reality of content. They say that this is particularly true of stimuli wherein the pace of the story is controlled, such as in television, the medium in which most studies concerned with perceived realism have been conducted. Witmer and Singer (1998) developed scale items that tap four dimensions of realism, one of which is termed “scene realism.” This definition combines Potter’s (1988) content-oriented conceptualization and Lombard and Ditton’s (1997) modality-centered conceptualization.

Witmer and Singer (1998) claim that in virtual environments, presence should increase as scene realism increases when scene realism is governed by “scene content, texture, resolution, light sources, field of view (FOV), dimensionality, etc. (p. 230).”

Learning from fiction

Those studying the processing of narratives, drama and fiction from a psychological perspective have been interested in the potential effects of content for many years. Some work has been done on individual characteristics related to persuasion by fiction, such as Busselle and Bilandzic’s (2007) findings on the tendency or proclivity of individuals to let themselves feel transported. Slater and Rouner (2002) argue that considering the motivations, purposes and goals of the message recipient is necessary to assess the processing of different types of messages.

Perhaps one of the only studies to explicitly examine how television content could affect viewer support for controversial political or policy positions is Slater, et al.’s (2006) study looking at effects of viewing television shows dealing with the death penalty and gay marriage. In the study, the authors suggest three possible mechanisms of narrative persuasion. First, variables describing the degree of immersion may mediate persuasive effects. The second mechanism may be via cognitive elaboration, so that thoughts affirming or differing with the position or feeling of the protagonist may increase or decrease persuasion. Thirdly, issues of priming of underlying values associated with the topic at hand and the narrative may play a large role (Slater et al., 2006).

Slater et al.’s (2006) study found changed or diminished beliefs for viewers who watched the pro-death penalty message, but no attitude change was apparent after

viewing the pro-gay marriage television content (Slater et al., 2006). Researchers measured ideology as a continuous variable, and even though parts of the sample were exposed to messages with which they most likely did not agree, very little counter-arguing took place, leading the researchers to conclude that the narrative structure of the content did indeed prevent counter-arguing or counterfactual thinking from taking place (Slater et al., 2006).

Other experimental research has concluded that audiences compartmentalize, or keep new information learned from fictional accounts separate from other, already existing beliefs about the subject (Gerrig & Prentice, 1991). Still others have noted the role of a prior story-bank, or a mental stockpile of thematically related stories (Mazzocco, Green, & Brock, 2007). Mazzocco et al. (2007) tested numerous proposals about whether a prior story-bank would reduce attention, increase attention or induce selective attention. They found support that prior story-bank exposure facilitated processing of new narrative stories. Marsh, Meade and Redoger (2003) drew upon Potts and Peterson's (1985) work that distinguishes text processing of literature as either integration or compartmentalization. They found support for a hybrid of these processes. Participants read stories that contained either real-world facts or misinformation. On a test of general knowledge that incorporated ideas presented in the stories, those who had read stories with correct facts scored better immediately following reading and at a second point in time. However, contrary to some of the research documenting misattribution of sources, subjects remained proficient in identifying what facts were present in the narratives and which were not (Marsh et al., 2003).

Recent research that utilized the ELM as a theoretical guide involved testing attitude change based on transcripts of a speech. In a study using non-narrative speech as the message given to participants, labeling the communication as fact instead of fiction appeared to enhance critical processing, or scrutiny devoted to the text. Despite differing levels of scrutiny, there were no differences found for the persuasiveness of the fact-labeled or fiction labeled speech (Green, Garst, Brock & Chung, 2006). This finding may further support Green and Brock's (2002) position that enhanced critical processing of narratives is not a true indicator of attitude change.

One study found that an individual's processing of texts differently was based upon knowledge of the genre before reading it (Zwaan, 1994). Notably, individuals spent more time reading a text that they believed to be fiction as compared to what they believed to be a news article (Zwaan, 1994). This study certainly supports the notion that individual differences and preconceptions about communications influence the way that people perceive and process them.

Counter-arguing and processing (transportation)

Violations of perceived realism and contradictions of strongly held beliefs may be some of the most important indicators of counter-arguing that occurs while experiencing narratives. Since Green & Brock (2002) make a point of describing transportation as something different than what is found in the dual-process models, many studies have been designed to test differences and similarities and in these two processes.

Appel and Richter (2007) state that the very nature of transportation into narratives reduces the likelihood of counter-arguing, and may lead to persistent persuasive effects completely independent of critical elaboration – something the ELM

would argue less likely, given that ideas that are critically elaborated upon and accepted via the central route lead to longer-lasting persuasion. Their research showed a shift in beliefs so that audiences' belief certainty about real-world truths disputed in a narrative account decreased over time (Appel & Richer, 2007).

Indeed, in Green & Brock's (2000) study, participants' responses to the need for cognition scale were insignificant to transportation or persuasion via the message. A few studies have used dual-processing models to explore whether statistical-based or narrative-based messages have a more persuasive effect on viewers. Studies and meta-analyses often result in contradictory findings of what type of message is more persuasive (see Allen & Preiss, 1997; Kopfman et al., 1998), but this may be due to inconsistent definitions of what constitutes a narrative message and what does not in the health communication realm.

Tal-Or et al. (2004) also looked at the role of counterfactual thinking by showing videos that either explicitly stated a counter-factual (an opposing argument that may reduce the influence of the message) or did not. Their experiments built on Green and Brock's work that supports the persuasiveness of narratives, as they found that all groups who watched the narrative were persuaded, but the narrative that included a self-oriented counterfactual was found to be more persuasive. Therefore it was proposed that counterfactual thinking may serve as a mechanism of narrative persuasion only when it is the trigger for a "particularly potent emotional punch" (p. 223). Research discussing entertainment-education also demonstrates that immersion or absorption into a narrative text may inhibit counter-arguing with the message.

Attitude change over time

Unlike Appel and Richter (2007), Priester, Wegener, Pett, and Fabrigar (1999) found that the sleeper effect, or a persuasive influence that increases, rather than decreases over time, emerged only when the original message was initially elaborated upon. The sleeper effect is generally tested with attitude measures at multiple points in time. Participants are exposed to a message and then given a discounting cue about the message, such as low source credibility (Kumkale & Albarracin, 2004). The sleeper effect was originally thought of as a process by which individuals remember the message clearly, this especially occurs when elaboration about the message occurs (Priester et al., 1999) but failure to remember or associate the source of the message also occurs (Hovland & Weiss, 1951; Kumkale & Albarracin, 2004). Appel and Richter's study supports the second part of this thesis. They found support for the source (in their case, a clearly explained and fictional, narrative text) being forgotten over time, yet attitudes remained strong over time after reading a narrative, which was not critically elaborated upon similar to persuasive communications utilized in other studies of the sleeper effect.

Lee & Leets (2002) found that the effects of messages deemed high-narrative that contained implicit messages about racism decayed over time, while the effects of messages deemed low-narrative that contained explicit messages endured over time, and, for some groups, increased slightly. This study demonstrates an interesting pattern in the longevity of persuasion from narratives, although it was not a test of the sleeper effect per se, as no discounting cues were given to participants after reading these biased and racist stories.

Ditton (1997) studied the inability to recall the source of information, as well as the recognition that the viewing of a message resulted in attitude change or beliefs. The study involved participants viewing short clips of scenes of movies, and involved multiple time measures of the effects of the film clips. Participants showed the effects of watching the clips, each of which depicted a separate fictional account, both immediately after viewing and two weeks later, although attitudes did not become stronger, indicating a sleeper effect was not present. Ditton's study tested a model of memory processing with three distinct dimensions that explain mistakenly attributing fictional content to real world experience. These dimensions include encoding issues, storage issues and retrieval issues. Retrieval issues, dealing with identifying the source of previously learned information seemed to be the faulty process; Individuals remembered fictional knowledge as real world knowledge, regardless of their correctness (Ditton, 1997).

Misidentifying people and characters within a mediated situation is not an uncommon phenomenon. Gibbons, Vogl, and Grimes (2003) found that participants misidentified people in the news such that bystanders, victims, *and* alleged criminals were identified as the criminals portrayed in newscasts.

Entertainment-Education

Although not all research in the domain of entertainment-education, or edutainment, is focused on the cognitive processes or contributing variables, health campaigns that employ the use of public narratives has been successful for many years. Researchers of narratives and attitude change have credited Bandura's social cognitive theory (1977; 1986) as the theoretical groundings of entertainment education (Green, 2006; Slater & Rouner, 2002). Slater & Rouner (2002) claim that the role of social

cognitive theory is undoubted, but more research and theory should be developed in regard to more than modeling behaviors that are presented. Entertainment education, Slater and Rouner (2002) argue, “Clearly has substantial effects on attitudes and behavior.” This effect is most likely more complex than simple modeling behaviors.

Slater and Rouner (2002) look at the processing of entertainment education in light of the ELM (Petty & Cacioppo, 1986). They propose extending the ELM to use identification with characters and engagement in the story line to predict successful persuasion. They also maintain that central and peripheral processes are indiscernable in a narrative contexts, due the increased role that absorption plays. The authors also suggest that for entertainment-education to succeed in changing the attitudes and beliefs of a target audience, the narrative structure of the message must stand on its own. That is, the message that is trying to be conveyed can be apparent, but it must be less salient than the story itself. Slater and Rouner (2002) take the position of others (Tal-Or et al., Slater, Rouner & Long, 2006) that immersion or absorption into a narrative precludes counter-arguing.

In 2003, the television show *ER* incorporated a storyline about gay men diagnosed with syphilis, in cooperation with the Centers for Disease Control. This was done to promote awareness about preventions and screening following syphilis outbreaks among homosexual men in several large urban areas in the United States (Whittier, et al., 2005). Responses to an online questionnaire showed that among gay men who had seen the *ER* storyline, intention to get tested for syphilis and encourage others to do the same was higher than those who had not. At the beginning of the entertainment-education phenomenon was the incorporation of social initiatives in Mexican telenovelas (Berrueta,

1986 in Singhal & Rogers, 1989; Slater & Rouner, 2002). Adult literacy rates and visits to family planning clinics increased dramatically after favorite television shows depicted the advantages of doing so.

Overseas, public health initiatives have spearheaded complete television series, complete with short epilogues that reemphasize the program's message, as seen in the Indian *Hum Log* series (Singhal & Rogers, 1989). Slater and Rouner (2002) point to messages promoted in American television based on both collaborations with government or non-profit entities and television shows, as well as those based on the convictions of writers and producers. Slater and Rouner's (2002) examples of messages about racism and bigotry, *Roots* and *All in the Family*, seem to blur the lines between entertainment-education and the potential for attitude change after exposure to specific media content.

Unintended or undesirable attitude change based on exposure to narratives has been studied by other researchers. Some have tested stories created as recruitment tools for white supremacist groups. Lee and Leets (2002) tested the effect of low-narrative vs. high-narrative content with explicit vs. implicit attitudes being conveyed. Similar to much of the research on narrative impact, researchers found that high-narrative, implicit messages were more persuasive than low-narrative, explicit messages. Results also showed that individuals predisposed to disagree with messages showed evidence of more counter-arguing, and thus were processing the messages centrally, rather than peripherally (Lee & Leets, 2002).

Despite the benefits that entertainment-education has had, the same processes of applying learned attitudes from entertainment narratives to real-world beliefs can occur with misinformation and stereotypes as well. Although cultivation theory's focus is not

on cognitive processing of media, researchers in that tradition have demonstrated a pattern in attitudes that differ among heavy and light viewers of television – especially among attitudes toward violence and crime (for review, see Gerbner, Gross, Morgan, Signorielli, & Shanahan, 2002; Shanahan & Morgan, 1999).

Mental illness in the media – effects and content

One study examined the stigma attached to mental illness by exposing participants to a feature-length film about a woman’s struggle with schizophrenia. After viewing the film, participants viewed a selected educational trailer told from either a patient’s or doctor’s perspective (Ritterfield & Jin, 2006). This study took an entertainment-education approach to test methods of combatting stigma about mental illness via a movie, and concluded that less stigmatization and significant knowledge gain only occurred when participants watched the movie and an educational trailer. Exposure to the movie alone actually increased negative attitudes toward mental illness (Ritterfield & Jin, 2006).

Interestingly, participants’ knowledge gain did not contribute to more positive feelings toward the mentally ill. Before watching the movie, which contained a character with schizophrenia not acting violent or dangerous in any way, 99% of the sample agreed that “schizophrenia results in aggressive and often violent behavior,” while only 31% agreed directly after the treatment, and 33% agreed at a follow-up time.

The Robert Wood Johnson Foundation (1992) has found that Americans list the media as their number one source for news and information about mental illness.

This may be problematic because content analyses of media portrayals of mental illness have overwhelmingly found that the mentally ill are presented in a number of negative

ways, most noticeably disproportionately violent (Coverdale, Nairn, & Claase, 2002; Fruth & Padderud, 1985; Wahl & Roth, 1982). Between two and three percent of major characters are depicted as mentally ill in America, (Diefenbach, 1997; Wahl & Roth, 1982) and about one-third of all prime-time entertainment programming deals with mental illness in some form. Signorielli (1989) provided even more numbers on just how dangerous the mentally ill appear to be. Almost one in 10 “normal” characters are killers, and only 4.3% are killed, but slightly more than one in five mentally ill characters are killers, and a similar percentage are killed themselves. The prevalence of the mentally ill on television led Wahl and Roth (1982) to comment that crime and love are perhaps the only topics that receive more attention than mental illness.

Gerbner (1998) labels television drama “the wholesale distributor of the stigma of mental illness” (p.39). The mentally ill are the *single most violent and victimized group on television*.

Negative portrayals of the mentally ill most often deal with the themes of dangerousness and violence. Of all depictions of the mentally ill on television, around two-thirds have been shown to commit an act of violence against someone (Rose, 1997; Philo, 1996). While most characters on television are given some sort of social identity – a job, a set of friends, a family life, the mentally ill are generally not given such a natural placement in the world. Wahl and Roth (1982) found 75% of mentally ill characters had no visible family connections, and 50% were presented as having no occupation.

In both news and dramatic prime-time programming, mentally ill characters were even found to be filmed in a distinct way – alone and close-up – more so than “normal”

characters were (Wahl & Roth, 1982). It can be argued that small differences like these serve to further draw distinctions between “us” and “them.”

Some attempts have been made to measure the short-term, content-specific effects of these negative depictions. There has been a slight, although significant increase in perceptions of the mentally ill as dangerous from 1950 to 1996¹ (Phelan & Link, 1998). This finding is surprising in light of decreases in of other prejudices (African-Americans, homosexuals) over this same time period.

Few studies have attempted to gauge the media’s role in the perpetuation of these stereotypes. Thornton and Wahl (1996) tested the effects of reading a newspaper article in which a mental patient is sensationalistically portrayed as a murderer. They too found participants in the experimental group had more negative opinions of the mentally ill than the control group. However, the reading of a prophylactic article did result in significantly more tolerant views of the mentally ill than reading only the inflammatory newspaper article.

Hypotheses and Research Question

In light of the previous literature review, hypotheses and a research question regarding the role of content, perceived realism of content, familiarity with mental illness, transportation and presence are proposed.

Given the documented similarities in form and user variables that are associated with increasing presence, the following is proposed:

H1: Levels of transportation will correlate with presence, so that those who experience high transportation will also experience high feelings of presence.

The next set of hypotheses are proposed in an attempt to examine both the moderating effect of personal familiarity on counter-arguing and perceived realism, which in turn, mediate the level of presence and transportation predicted. Personal familiarity is hypothesized to result in diminished perceived realism because of the gross exaggeration of the mentally ill as violent found in the stimulus. Individuals who are exposed to people with a mental illness in real life most likely have a more realistic view of the mentally ill as relatively non-violent. This study posits that perceived realism encourages transportation, which leads to story-consistent attitude change, as opposed to the Green (2004) study that found no support for perceived realism as mediating the relationship between transportation and belief change. Counter-arguing is a hypothesized effect of low perceived realism.

H2A: Those who have high levels of personal, real-world familiarity or experience with mental illness will show more evidence of counter-arguing than those who do not.

H2B: Those who show low or non-existent levels of personal, real-world familiarity or experience with mental illness will show no or very little evidence of counter-arguing.

H3A: Those who show more evidence of counter-arguing will experience less perceived social realism.

H3B: Those who show no evidence of counter-arguing will experience more perceived social realism than those who do counter-argue.

H4A: Those who show less perceived realism will experience less transportation and presence than those who experience higher perceived realism.

H4B: Those who show more perceived realism will experience more transportation and presence than those who experience lower perceived realism.

At the core of this research is understanding how the experience of watching television crime dramas affects attitude change. Watching crime dramas may affect a variety of real-world attitudes, but here, the focus is on how perceptions of the mentally ill as violent are changed by exposure. The transportation literature predicts that to the degree that individuals may become immersed or transported into a story, they will emerge from the experience with changed beliefs about the real world.

H5: Those who watch the experimental stimulus will adapt story-consistent attitudes about sufferers of mental illness.

H6: Increased feelings of transportation will lead to increased story-consistent attitude change.

H7: Increased feelings of presence will lead to increased story-consistent attitude change.

Understanding the relationship of presence, transportation and attitude change over time is still in the beginning stages of study. Mixed results have been found for attitude change over time and the “sleeper-effect.” This study is not a true test of the sleeper effect, since a discounting cue is not given after exposure to the message. However, just as the sleeper effect is concerned with memory of a reliable source of information (Kumkale & Albarracin, 2004), the current study is interested in how people may learn from fictional content, a seemingly unreliable source for some information. So:

RQ1: Will attitude change based on story-consistent beliefs hold, diminish, or increase over time?

CHAPTER III

PROCEDURES AND METHODOLOGY

Design and Procedure

This between-subjects experiment consisted of two cells, the first being the experimental condition and the second being the control condition. Two different times of attitude measures were included in the study design. All subjects individually viewed a complete hour-long crime drama, without commercials or interruptions. Half of the participants viewed the experimental stimulus ($N=35$), which portrays a schizophrenic man as a murderer and the other half viewed the control stimulus ($N=34$).

After viewing one episode, participants responded to a questionnaire that measured transportation, three dimensions of presence – spatial, engagement (mental immersion), and social realism – personal familiarity with the mentally ill, and attitudes toward mental illness and violence in general. All scales used a 7-point likert –type scale, with anchors clearly marked. Two to three weeks after viewing, participants returned to respond to the same attitude measures on the mentally ill. The first questionnaire took participants approximately 10-15 minutes to complete, and the second questionnaire took participants about 5 minutes to complete. Individual administration was used, as is the

case with most research measuring presence. As such, distraction from other participants was not an issue.

Participants

Undergraduate students enrolled in a research communication courses were recruited for this study. All students were awarded extra credit or class credit for their participation. Participants signed an informed consent form prior to the beginning of the experiment, and were notified of their rights as participants in academic research at Cleveland State University. The sample was 58% female ($N=40$) and 42% male ($N=29$). The majority of respondents identified as Caucasian/white, (71%), 17.4% were African American/black, and 12.6% were other nationalities. The age of participants ranged from 18 to 39 ($M = 22.5$, $SD = 4.32$, $Mdn= 21$).

Stimuli

The experimental condition of interest was an episode of *Law & Order SVU*, titled “Blinded.” It features a serial rapist whose crimes are blamed on his schizophrenia. Detectives, the prosecuting attorney, and the police department’s psychologist all discuss how the disease influenced the crimes committed. Nothing explicitly untrue about schizophrenia is stated, although the character with schizophrenia is portrayed as a violent rapist and murderer, whose illness compels him to rape and murder young women. This episode was chosen because the criminal’s psychiatric diagnosis is made clear on several occasions, and there is little sympathy exhibited for him. The episode’s portrayal of a man with schizophrenia as a violent criminal is consistent with content analyses that document the tendency for television shows to portray the mentally ill in negative, dangerous, and violent ways.

The control stimulus was another episode of *Law & Order SVU*, titled “Snitch.” The content in no way broaches the topic of mental illness, or abstractly related concepts such as addiction issues or the developmentally disabled. It too features a female murder victim. It is clear that mental illness is not the motivation for the crime. Both episodes were viewed in their entirety (42 - 44 minutes), and had a TV-14 rating. These narratives are shown in their entirety to give a sense of continuity and to give participants enough time to become immersed in the narrative as Busselle and Bilandzic (2006) suggest.

Independent variables

One independent variable in this study was the content viewed – either an episode with a violent and dangerous mentally ill criminal, or an episode with a violent and dangerous criminal who exhibits no signs of mental illness. Familiarity or experience with mental illness was also an independent variable, with proposed effects on variables critical to transportation, presence and attitude change.

Manipulation check

A manipulation check was also included in the questionnaire to ensure that the stimuli were perceived in the way it was intended to be comprehended. All participants recorded their agreement with two statements, which were: “The episode I just watched dealt with the issue of mental illness” and “The character portrayed as committing murder in this episode displayed signs of mental illness.” The anchors on the 1-7 point scale used in these items were anchored with “Strongly disagree” and “Strongly agree.” This check is necessary in order to establish the necessary conditions for a number of hypotheses, most notably H5. Significant differences were found between the conditions

on their responses to these two items, such that those in the experimental condition agree with these statements more than those in the control condition.

An Independent Samples t-test revealed that the participants in the experimental condition agreed with the first manipulation check item, which asked about the issue of mental illness being present in the episode, ($M = 6.22$) more so than the control group ($M = 2.32$, $SD = .25$), as predicted t ($df = 67$, $p < .001$, $\eta^2 = .625$). This same pattern of intended results was found with the second manipulation check item as well, which asked about the mental illness of the character committing murder in the episode, where the experimental group ($M = 6.00$) differed from the control group ($M = 3.02$; t ($df = 67$, $p < .001$, $\eta^2 = .658$).

Table 1

Manipulation check means

Variable	Mean	SD
1. Manip. check – Exp. (Issue of mental illness)	6.22**	1.238
1. Manip. check – Control (Issue of mental illness)	2.32**	1.787
2. Manip. check – Exp. (Character with m.i.)	6.00**	1.847
2. Manip. check – control (Character with m.i.)	3.02**	1.882

Note. ($df = 67$, $**p < .001$, $\eta^2 = .658$, $N = 69$)

Dependent variables

The proposed model posits that *more* familiarity (with mental illness) leads to *less* perceived realism. Increased counter-arguing is predicted to cause *less* transportation and feelings of presence. At the same step, increased perceived realism is posited to cause *more* transportation and feelings of presence. Transportation and presence serve both as variables with mediators (i.e. counter-arguing, perceived realism) and as a moderating

variable of attitude change. It is proposed that higher transportation and presence will lead to higher agreement with story-consistent attitudes; such that the mentally ill are dangerous, violent and undesirable to be around. So, *greater* transportation and presence will lead to *greater* story-consistent attitudes about the mentally ill. Attitudes toward the mentally ill and the prevalence of violence are the last step, and therefore are true dependent variables.

Measures

Recall.

In addition to measures of all the variables of interest, participants were administered a 10-item memory recall at the beginning of the questionnaire. This was done to ensure that participants paid attention to the content and comprehended what it meant. This style of memory testing was developed by Shapiro (1996). Due to the confusing nature of one recall measure in each condition, 9 items were used to gauge participants' recall of each stimulus. Only one participant's data was not used as a result of failing to answer at least 6 of the 9 recall items correctly, resulting in a total *N* of 69.

Transportation.

The transportation-imagery model scale (Green & Brock, 2000) was used to measure transportation. Wording of items was modified from those about a narrative text to better ask about the narrative video stimuli. Instead of questions 12-17 asking about the "vivid imagery" of specific characters, one item was created, "I had vivid imagery of the characters while watching this show," to create 12 items total. Examples of transportation items include, "I found my mind wandering while watching the television

program,” (reverse-coded) and “I could picture myself in some of the scenes depicted on screen.” The transportation scale reached a Cronbach’s Alpha of .819.

In this study, Green and Brock’s (2000) transportation scale did not factor quite as cleanly as it did in the original study. A confirmatory Factor Analysis revealed a two-factor solution. Table B1 in Appendix B displays results of this analysis. The third factor specified by Green and Brock is the Imagery factor, here, item 12. As noted previously, this study condensed the four-item measure into one item, simply testing the overall perceived imagery of all the characters.

Two of the three cognitive items (per Green & Brock, 2000) factored together along with: item 2, “While I was watching the episode, activity going on in the room around me was on my mind,” (reverse-coded), item 6, “I wanted to learn how the show ended,” and item 9, “I found my mind wandering while watching the television program. The third cognitive item had near equal loadings on both factors, making the item an insignificant contribution to either factor according the levels set Hair et al. (2006).

The second factor includes two of the three designated affective items (7 and 11). The other items that loaded on the second factor were: 8, “I found myself thinking of ways the show could have turned out differently;” 10, “The events in the narrative are relevant to my everyday life;” 11, “The events in the narrative changed my life;” and item 12, which measured perceived vivid imagery. Item 5 was another cross-loading item, and as such could not be designated to one factor over another significantly. Despite the cross-loading of two items, they were retained in the measure for future analyses for three major reasons. First, the scale as a whole attained good reliability (Cronbach’s Alpha = .819). Secondly, the decision to retain items was based on keeping the scale as close to

the original, with the exception for making wording changes to reflect a video narrative, in order to hypothesize about the relationship between transportation and other theoretical concepts. Lastly, the total variance explained was 49%, an encouraging finding.

With the exception of item 8 loading on Factor 2 instead of Factor 1, and the two cross-loading items, Factor 1 basically represented cognitive items, while Factor 2 represented affective items. Factor 1 contained items 2, 4, 6, and 9, all of which seem to be encapsulating how much attention or cognitive effort a viewer is using while engaging in the story. An interesting part of Factor 2 was its inclusion of items 10 and 11, which really get at one being a changed person as a result of viewing the narrative. On face value, it would make sense that these items would be grouped together with affective or emotional items, such that the more a narrative left a person with a positive affect, it would also leave them more changed.

Presence.

The measures used to gauge the spatial presence, mental engagement (immersion), and the social realism dimensions of presence come from the Temple Presence Inventory, published by Lombard and Ditton (2000). Most of the presence items are measures on the same 7-point scale transportation is measured on, although some measures of spatial presence are measured on 7-point semantic differential with differing anchors.

Examples of spatial presence items include, “How often did you want to try to touch something you saw/heard?” measured on a “Never” to “Always” scale, and “How much did it seem as if the objects and people you saw/heard had come to the place you were,” measured on a “Not at all” to “Very much” 7 point scale. The spatial presence

dimension contained eight items, all of which were revealed to represent one factor in a confirmatory factor analysis. Factor analysis results are displayed in Table B3 in Appendix B. All items had a factor loading of over .400, the lowest of which was for the item, Window, at .488. The total variance explained by the items was 53.83%. The Cronbach's Alpha of this item was .809.

Engagement, or mental immersion, is the second presence dimension of interest. Examples of these items include, "How involving was the media experience," and "To what extent did you feel mentally immersed in the experience?" The Cronbach's Alpha of this 5-item scale was .801. Factor analysis findings are shown in Table B4 in Appendix A. The engagement dimension of presence also produced a one-factor solution, explaining 51.656% of the variance. Like spatial presence, all items had a factor loading of over .400.

The third dimension of interest is social realism. This scale divides realism into two different types, just as Lombard and Ditton (1997) make the distinction between the two concepts. Social realism is concerned with whether or not occurrences in the text could (or would) happen in real life. Examples of social realism items include, "The events I saw/heard *would* occur in the real world," and "The events I saw/heard *could* occur in the real world." This study will use all three items from the social realism scale. The Cronbach's Alpha for this measure was .819.

The social realism dimension of presence was also factor analyzed; results are in Table B5 in Appendix B. This three-item scale explained 75.270% of the total variance with a one-factor solution. All of the factor loadings were above a .800, indicating a great fit. This scale attained a Cronbach's Alpha of .831.

Personal familiarity.

Familiarity or experience with a group of people is a somewhat broad construct, but in this study these measures were used to gauge to what degree participants were involved with a person or people who suffer from a mental illness in their real life. In Green's (2004) study on the role of personal familiarity with the fraternity system and/or homosexuals, there were not enough participants who reported personally being gay or in a fraternity or sorority, and so other, more generalized measures were employed.

Familiarity was thus operationalized as those who had close friends or family members who were homosexual or those who reported higher knowledge about the Greek system in universities. It may be unlikely that a sizeable number of participants have been diagnosed with a mental illness, and willingness to disclose a diagnosis may be limited. As a result, the study measured personal familiarity or experience with mental illness as exposure and closeness to other individuals who suffer a mental illness.

There are three measures of familiarity or personal experience with mental illness, all of which are measured on a 1-7 point likert scale, with 1 meaning, "Strongly disagree," and 7 meaning, "Strongly agree." These measures are, "I am in regular contact with someone who suffers from either a minor or severe mental illness," "My job requires that I work with or around people diagnosed with mental illness," and "A person, or people who are close to me have dealt with a mental illness." After scaling these items together, the second mental illness familiarity item about working with those who suffer a mental illness was dropped in order to improve scale reliability. The second measure also had a much lower mean than the other two items. The reliability coefficient of this scale met Hair et al.'s (2006) cutoff of .70 for a Cronbach's Alpha, or .60 for exploratory

research. The Cronbach's Alpha reported was .799. All scale reliabilities can be found in Appendix B.

Measures of personal familiarity with victimization of a violent crime are included as well. Measured on the same 7-point scale, an example of these measures is, "Violent crime has touched someone close to me." These measures were not used for analysis.

Counter-arguing.

This measure included one open-ended question, "Please spend a few minutes writing down the thoughts that crossed your mind and how you were feeling when you were watching the video. Don't worry about spelling, grammar, or punctuation." Responses to this open-ended question were counted and recorded for each participant. Counter-arguing included a range of comments, all of which expressed some dimension of unbelievability. Examples include disbelief in a character's mental condition, bad acting, or general disbelief in the storyline. There were 11 cases of counter-arguing across both cells, and 7 of those occurred with participants who viewed the experimental condition.

Perceived realism.

In addition to the presence measures that cover social realism, additional measures of the perceived realism of the narrative were utilized. Green (2004) modified Elliott, Rudd and Good's (1994) scale of perceived realism to better measure perceived realism of narratives. The 8-item scale has also been employed in the use of studying video narratives as well (Busselle & Bilandzic, 2006). These eight items are also measured on 1-7 point scale, with 1 meaning, "Strongly disagree," and 7 meaning,

“Strongly agree.” Examples of items include, “People in this narrative are like people you or I might actually know,” and “Events that have actually happened or could happen are discussed in this narrative.”

Despite attaining an acceptable reliability coefficient (Cronbach’s Alpha = .757), Green’s (2004) perceived realism scale did not result in a clean Factor Analysis. Green (2004) does not provide information as to how the items are supposed to factor. Results are found in Table B2 in Appendix B. Three of the eight items had loadings of above .400 on more than one factor, a problem according to Hair et al. (2006). All three cross-loading items had sizeable loadings on Factor 3, with two of them also having sizeable loadings on the first factor and the remaining item loading on both Factors 2 and 3. This may be due the difficulty concerning summarizing the components of the third factor.

Judging by the items that contribute to Factor 3, this factor may be the dimension that expresses the most concern about whether these things happen in the real world. Factor 2 seems to be the most content specific; that is, some realistic content could not show difficult decisions being made or people with good and bad sides, as items Choices and GoodBad infer. The first Factor seems to contain the most straightforward items about the realism of the characters, dialogue and settings in the narrative. Overall, 65.571% of the total variance was explained.

Attitudes toward the mentally ill.

There were 20 attitude measures included in the questionnaire. Ten of these items measure attitudes about violence. Attitudes about violence in general were included to ease the transition into answering questions about mental illness. Responses to these items are not expected to differ, as there is a violent crime moving the plot along in both

the experimental and control stimuli. Among the violence questions are the Mean World Index (Gerbner, Gross, Morgan & Signorielli, 1980). Examples of these items include “I often take measures to ensure my own safety,” and “In dealing with others, you can’t be too careful.”

Another 10 items gauge attitudes toward mental illness, some of which are modified items from the Community Attitudes Toward the Mentally Ill scale (CAMI) developed by Taylor and Dear (1983). Of Taylor and Dear’s (1983) five dimensions, items from benevolence and social restrictiveness were modified for the current research. These attitude measures were developed to gauge community members’ attitudes toward the mentally ill. Participants were given the following definition of mental illness, which they were instructed to keep in mind when answering the attitude measures:

“Any of various psychiatric disorders or diseases, usually characterized by *impairment of thought, mood, or behavior*, including *diseases of the mind* and *personality* and certain diseases of the *brain*. Please keep in mind that mental illness may be severe to moderate in nature. For the purpose of this study, ***please do not consider*** those with *addiction* issues or *developmental disorders* that limit one’s intellectual ability as the mentally ill.”

Examples of these measures include, “The mentally ill commit far more crimes than those who do not suffer a mental illness,” and “It is best to avoid anyone who has mental problems.” Other items were developed just for this study. Examples of these measures include: “Those who have been diagnosed with a mental illness should be forced, through whatever means necessary, to undergo treatment and medication prescribed by their doctor,” and “I would feel comfortable with my children having contact with a person with a mental illness.” Two items were dropped from analysis due

to concerns about their wording, and to increase the reliability of the scale. This 8-item measure achieved a Cronbach's Alpha of .746.

A factor analysis of this scale was also completed. A two-factor solution was created, with the first factor explaining 32.79% of the variance, and the second factor explaining 19.17% percent of the variance. Examining the items that make up each factor, it seems that Factor 1 encompasses items that have to do with the mentally ill being seen as socially undesirable, while Factor 2 contains items that express the ideas that the mentally ill are violent, and that their rights should be suppressed for the greater good. The full results of this analysis are in Table 6 in the Results section.

Pilot test

A pilot test was completed several months prior to the start of data collection. The pilot test looked at transportation and story-consistent attitudes after viewing one of two *Law & Order SVU* episodes featuring a mental illness storyline. It did not look at perceived realism or presence and employed group administration. Findings from the pilot test influenced the current design and construction of measures in many ways. First, due to a lack of significant main effects of attitude change based on the experimental condition, different stimuli were chosen for the current study. The new episode features a schizophrenic murderer, who receives less sympathy than the bipolar female character used in the first experimental stimulus. The crime is also depicted as more intentional than the crimes in the previous episode.

One of the only significant findings was that those who reported high levels of victimization reported significantly lower levels of transportation than those who in the medium-victimized or low-victimized groups. It is theorized that low perceived realism

of the episode served to diminish transportation and attitude change among this group, and so the addition of perceived realism was added to the current research.

CHAPTER IV

RESULTS

Hypothesis Testing

Hypothesis 1.

A Pearson's r zero-order correlation was used to test the first hypothesis, that comparing levels of transportation will correlate with presence, so that those who experience high transportation will also experience high feelings of presence.

Transportation was measured with Green and Brock's (2000) transportation-imagery scale. Three dimensions of presence were measured with the Temple Presence Inventory scales: spatial presence, engagement (mental immersion) and social realism (Lombard & Ditton, 2000).

The relationships between transportation and each of the three presence dimensions were all significantly, and highly, correlated. Transportation and spatial presence shared an $r = .447$, transportation and engagement had a $r = .599$, and transportation and the social realism dimension of presence had a $r = .410$ ($p < .001$, r (df) = 67). The engagement dimension of presence also shared significant correlations with

the other two dimensions of presence. Hypothesis 1 was supported. Results are displayed in Table 2

Table 2

Pearson Correlation Between Transportation and Three Dimensions of Presence

	1. Transport	2. Spatial	3. Engagement	5. Soc. Realism
1. Transportation	--	.447**	.599**	.410**
2. Spatial Presence		--	.817**	.209
3. Engagement			--	.306*
4. Social Realism				--

Note. ** $p < .001$, * $p < .01$. $N = 69$ for each correlation.

Hypotheses 2-4.

Hypotheses 2 through 4 posited a time-order relationship predicting that first personal familiarity, then counter-arguing, and lastly perceived realism, will affect transportation and presence among participants. These analyses included only those participants who viewed the experimental condition, because these predicted outcomes are inherently tied to familiarity and attitudes toward the metnally ill.

Utilizing Structural Equation Modeling was the first proposed analysis. However, due to the small N of those who counter-argued, a series of regressions were used in its place. Only 7 cases of counter-arguing were present in the experimental condition, which makes finding a significant path with that variable highly unlikely. Since a larger number of participants were expected to counter-argue, and statistical analysis in utilizing a variable with only 7 instances poses many threats, this analysis was dropped. A

discussion about the frequency and role of counter-arguing in narrative follows in the next section. Because this variable was dropped, hypothesis 2, which predicted that increased familiarity and personal experience with the mentally ill will lead to increased counter-arguing, and hypothesis 3, which postulated that those who show more evidence of counter-arguing will experience less perceived realism, can not be supported.

After removing counter-arguing from the equation, Linear Multiple Regressions were run in which the first block entered was personal familiarity with mental illness. These measures asked participants if they are close to, or spend much time with a person or people who suffer a mental illness. Familiarity was treated as a precursor to perceived realism, and as such, responses to Green's (2004) perceived realism in narrative scale were entered in the second block.

Three regressions were run, the first with transportation as the predicted variable, one with spatial presence as the predicted variable and the last with engagement (mental immersion) presence as the predicted variable. The third dimension of presence explored in this study, perceived social realism, was left out of analysis due to its confounding nature with the other perceived realism measure. It was proposed that increased personal familiarity with the mentally ill will lead to decreased perceived realism because television narratives' portrayal of the mentally ill are more violent and dangerous than the mentally ill are in individuals' real-world interactions with them. Therefore, those who spend a good deal of time with the mentally ill and are comfortable with the (most likely) non-violent mentally ill people in their lives would be more likely to perceive the portrayal of a man driven to rape and murder by his schizophrenia as unrealistic.

A regression analysis revealed that the model significantly predicted transportation, $F(1, 66) = 15.518, p < .001$. R^2 for the model was .320, and adjusted R^2 was .299. Table 3 displays unstandardized regression coefficients, (B), intercept, and standardized regression coefficients (β) for each variable. Step 1 approached significance in the opposite direction than predicted; increased familiarity or personal experience with those with mental illness may be tied to an increase in transportation felt. The significant finding of this regression supports hypotheses 4A and B, such that the extent to which one perceived the content as more real, they also experienced a greater sensation of transportation. Perceived realism accounted for 32.0% of the variance explained in the model, and enjoyed a Beta weight of .524. It is important to note that perceived realism and transportation, both devised by the same author, share correlation of $r = .547, p < .001$.

Table 3

Multiple Regression Analysis for personal familiarity with mental illness and perceived realism on transportation (N = 69)

Variable	B	SE B	β	R^2	Adj. R^2
Step 1					
Familiarity	.106	.055	.229+	.052	.038
Step 2					
Perceived realism	.515	.101	.524**	.320	.029

Note. R^2 Change = .268 $F(1, 66) = 15.518, p < .001$ for Step 2 ** $p < .001$, + $p = .059$.

A separate multiple regression analysis run for spatial presence obtained different results, although perceived realism was still a significant predictor and familiarity was

not. Multiple regression analysis revealed that the second step of the model significantly predicted spatial presence, $F(1, 66) = 2.593, p < .01$. R^2 for the model was .073, and adjusted R^2 was .045. Table 4 displays results. Here, personal familiarity with mental illness does not approach significance as a predictor of spatial presence, as it did with transportation. Perceived realism is a significant predictor of spatial presence, although it only explains 7.3% of the variance. Perceived realism measured with Green's (2004) scale also correlates with spatial presence, $r = .254, p < .05$.

Table 4

Multiple Regression Analysis for personal familiarity with mental illness and perceived realism on spatial presence (N = 69)

Variable	B	SE B	β	R^2	Adj. R^2
Step 1					
Familiarity	-.051	.121	-.052	.003	-.012
Step 2					
Perceived realism	.565	.253	.268*	.073	.045

Note. R^2 Change = .070, $F(1, 66) = 2.593, p < .01$ for Step 2, $p = .674$ for Step 1.

The last multiple regression analyzed in an attempt to test hypothesis 4 tested the effect of familiarity with mental illness followed by perceived realism on engagement, or mental immersion, a dimension of Lombard & Ditton's (2000) Temple Presence Inventory. Regression analysis revealed that the second step of the model significantly predicted transportation, $F(1, 66) = 5.929, p < .01$. R^2 for the model was .152, and adjusted R^2 was .127. Results are displayed in Table 5. Once again, familiarity was not a

significant predictor. Perceived realism was found to explain 15.2% of the variance in engagement; so higher perceived realism led to higher engagement in the narrative.

Overall, perceived realism was found to be a significant predictor of transportation, spatial presence and engagement (mental immersion), supporting the fourth hypothesis, which states that increased perceived realism will lead to increased transportation and presence. As Tables 3 – 5 demonstrate, perceived realism predicted transportation the best, with a $\beta = .524$, then engagement, $\beta = .394$, and then spatial presence, $\beta = .268$. Personal familiarity, a part of hypothesis 3, was not found to be a predictor of these variables.

Table 5

Multiple Regression Analysis for personal familiarity with mental illness and perceived realism on engagement (mental immersion) dimension of presence (N =69)

Variable	B	SE	β	R^2	Adj. R^2
Step 1					
Familiarity	-.035	.137	-.031	.001	-.014
Step 2					
Perceived realism	.942	.274	.394	.152	.127

Note. R^2 Change = .151, $F(1, 66) = 5.929$, $p < .01$ for Step 2, $p = .801$ for Step 1.

Hypothesis 5.

In order to test hypothesis 5, that those who watch the experimental stimulus will adapt story-consistent attitudes about people with a mental illness, an Independent

Samples t-test was utilized. Attitudes toward the mentally ill were gauged with an 8-item scale that addressed how dangerous and socially undesirable individuals perceived the mentally ill to be. First, a factor analysis was completed on this newly created set of items, which reached a Cronbach's Alpha of .746.

An exploratory factor analysis of the eight variables that created the mental illness attitudes scale – burden, nxdoor, childmi(R), forced, deny (R), threat, tolerant(R), and farmore – revealed a two-factor solution. A list of all scale items and means can be found in Appendix B. Results of this factor analysis are displayed in Table 6 It appears that Factor 1 describes attitudes about the social undesirability of the mentally ill. Items such as Nxdoor, “I would not want to live next door to someone who suffers a mental illness,” and Burden, “The mentally ill are a burden on society,” express a distinct disdain for the mentally ill, but are not expressly tied to a want to punish the mentally ill for perceived violent characteristics. The two variables with the highest loadings on Factor 2 do just that. The item Forced, “Those who have been diagnosed with a mental illness should be forced, through whatever means necessary, to undergo treatment and medication prescribed by their doctor,” and Deny, (reverse-coded), “The mentally ill should not be denied their individual rights,” express a more restrictive attitude toward the mentally ill. It appears that the attitudes toward the mentally ill scale taps two dimensions of unfavorable views about people who have a mental illness.

Table 6

Factor Analysis Results for the Mental Illness Attitudes Scale

	Factor 1	Factor 2	Communalities
Tolernt (R)	.460	.412	.382
Childmi (R)	.716	.290	.597
Burden	.802	-.128	.660
Nxtdoor	.786	.181	.651
Threat	.691	.280	.555
Forced	-.105	.844	.724
Farmore	.306	.366	.227
Deny (R)	.233	.553	.360
Eigen Value	2.623	1.534	
Percent of Total Variance	32.786%	19.171%	51.957%
Percent of Common Variance	63.1%	36.9%	100%

Note. KMO = .731, Bartlett's Test of Sphericity, Approx. Chi Square = 119.895.

Hypothesis 5 was the basic prediction that despite differences in realism judgments, personal familiarity/experience with mental illness, and varying levels of transportation and presence, those who viewed the experimental condition would adapt story-consistent beliefs, therefore expressing more negative attitudes toward the mentally ill. No significance was found between the experimental group ($M=3.75$, $SD=1.07$) and the control group: $M=3.4869$, $SD=.95$, $t(1.111)$, $p=.416$. Mental illness attitude scale items were all analyzed via separate Independent Sample t-tests, and there were no significant differences on any of the eight items. Means of individual items and

significance levels are displayed in Appendix C. Results can be found in Table 7

Hypothesis 5 was not supported.

Table 7

T-test results for the effect of experimental vs. control condition on attitudes toward the mentally ill

Condition	<i>M</i>	<i>SD</i>	<i>N</i>	<i>t</i>	<i>p</i>	<i>eta</i> ²
Experimental	3.76	1.069	35	1.11	.271	.018
Control	3.49	.9457	34		.271	

Note. ** $p < .001$, * $p < .01$.

Hypothesis 6.

A one-way ANOVA was used to analyze hypothesis 6, which states that increased feelings of transportation will lead to increased story-consistent attitude change. Analyses were conducted on data from participants that had seen the experimental episode. A median split was used to divide participants into either a highly transported group ($N = 17$) or a lowly transported group ($N = 13$), as Green and Brock (2000) also did when analyzing attitude change.

There were no significant differences in attitudes toward the mentally ill based on the participants being highly or lowly transported while viewing the stimuli that depicted a violent, dangerous mentally ill criminal. Means were nearly identical across the highly transported ($M = 3.7404$, $SD = 1.29$) and the lowly transported ($M = 3.88$, $SD = .832$, $F(1, 28) = .134$, $p = .717$, $\eta^2 = .005$). Table 8 displays these results. Hypothesis 6 was not supported.

Table 8

ANOVA of high vs. low transportation's effect on attitudes toward the mentally ill

	<i>M</i>	<i>SD</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>	<i>eta</i> ²
Low Transportation	3.74	1.29	31.271	29	1.112	.134	.717	.005
High Transportation	3.88	.832						

Note. ** $p < .001$, * $p < .01$.

Hypothesis 7.

Hypothesis 7, that those who feel a greater sense of presence will adapt more story-consistent attitude beliefs was also tested via one-way ANOVA tests. Because hypotheses 6 and 7 predicted that transportation and presence would have the same effect on attitudes, a median split on three dimensions of presence was utilized. Here, those who felt a greater sense of spatial presence ($N = 11$) were compared to those who experienced a lower sense of spatial presence ($N = 17$). It is important to note that overall means for the spatial presence scale were low across conditions, with a $M = 2.548$ overall. A significant difference between higher ($M = 3.98$, $SD = 1.03$) and lower spatial presence ($M = 3.90$, $SD = 1.15$, $F(1, 28) = .040$, $p = .843$, $\eta^2 = .005$) felt on story-consistent attitude change was not found. These results are in Table 9.

Table 9

ANOVA of high vs. low spatial presence's effect on attitudes toward the mentally ill

	<i>M</i>	<i>SD</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>	<i>eta</i> ²
Low Transportation	3.90	1.03	30.703	27	1.179	.040	.843	.005
High Transportation	3.98	1.06						

Note. ** $p < .001$, * $p < .01$.

The same analysis was used to test the role that the engagement (mental immersion) dimension of presence would have on story-consistent attitudes towards the mentally ill. There were non-significant findings for this dimension of presence as well, with those who were highly engaged ($M = 3.65, SD = .92, N = 17$) not significantly differing from their lesser-engaged counterparts ($M = 3.83, SD = 1.16, N = 16, F(1, 28) = .248, p = .622, \eta^2 = .008$). Table 10 shows these results.

The last dimension of presence tested was social realism. Responses to the social realism scale were first categorized as high or low, as a median split was used for all of this set of analyses. Table 11 displays these results. Once again those who experienced a greater sense of social realism presence ($M = 3.66, SD = 1.19, N = 12$) did not agree with story-consistent beliefs about the mentally ill more so than those who experienced a lesser amount of social realism presence ($M = 3.81, SD = 1.19, N = 20, F(1, 28) = .122, p = .730, \eta^2 = .004$).

Overall, hypothesis 7 was not supported. Not one of the three dimensions of presence tested had a significant, or an approaching significant, effect on story-consistent attitudes, measured with a scale of items about attitudes toward the mentally ill.

Table 10

ANOVA of high vs. low engagement's effect on attitudes toward the mentally ill

	<i>M</i>	<i>SD</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>	<i>eta</i> ²
Low Transportation	3.83	1.16	34.279	32	1.09	.248	.622	.008
High Transportation	3.65	.920						

Note. ** $p < .001$, * $p < .01$.

Table 11

ANOVA of high vs. low social realism (presence)'s effect on attitudes toward the mentally ill

	<i>M</i>	<i>SD</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>	<i>eta</i> ²
Low Transportation	3.81	1.19	38.335	31	1.273	.122	.730	.004
High Transportation	3.66	1.08						

Note. ** $p < .001$, * $p < .01$.

Research Question 1.

Research Question 1 asks whether story-consistent beliefs will hold, diminish or increase over time, and as such, will be tested via a repeated measures t-test. Participants responded to the same set of attitude items about the mentally ill a second time, between 2 and 3 weeks after first viewing the episode and filling out the original questionnaire.

The repeated measures t-test yielded significant results ($p < .01$) for differences in responses to the attitudes toward mental illness scale, such that for those in the experimental condition, the first measures of attitudes ($M = 3.78$, $SD = 1.03$, $N = 22$) were higher, or more negative, than the second measure of attitudes ($M = 3.29$, $SD = .972$, $N = 22$). In response to the research question, story-consistent attitudes diminished over time. However, it is important to note that a main effect from the presence of the storyline was not found.

It is interesting to note that means in the control condition did not differ significantly between times of measure; $M = 3.38$, $SD = .941$, $N = 20$ at the first attitude measure, and $M = 3.28$, $SD = .944$, $N = 20$, $p = .632$. Table 12. displays these results.

Table 12

T-test results for difference in attitudes toward the mentally ill across time measures.

	<i>M</i>	<i>SD</i>	<i>N</i>	<i>t</i>	<i>p</i>
Time 1	3.78*	1.03	22	2.862	.009
Time2	3.29*	.972	22		

Note. ** $p < .001$, * $p < .050$.

Additional Analyses

Multiple auxiliary analyses were performed in order to further understand the complex relationships between perceived realism, counter-arguing, transportation and presence. Since there were multiple hypotheses related to these concepts that were not supported, or could not fully be tested, additional analysis was needed to parse out the role of perceived realism and counter-arguing. Contrary to Green's (2004) postulate that transportation precedes perceived realism, this study found that perceived realism is also a significant predictor of transportation and presence. This study wanted to explore these constructs in Green's (2004) proposed order as well. These first three additional analyses attempt to explore that relationship, as well as perceived realism and two dimensions of presence.

Gender and age analyses were added in order to rule out other third variables that may explain some of the variance in other hypothesis testing. Lastly, since no main effect was found for attitudes toward the mentally ill, the questions about what does influence individuals' attitudes toward the mentally ill remained. Here, we test the role that personal familiarity or experience with the mentally ill plays in attitudes toward the mentally ill.

Perceived realism and transportation, presence.

Multiple Regression analysis demonstrated that perceived realism could, in fact, predict transportation, while familiarity could not (Hypothesis 4). The study also attempted to examine if the relationship could work in the other direction, such that transportation would mediate perceived realism, as suggested by Green (2004).

A one-way ANOVA demonstrated just that: those who were highly transported also significantly reported perceiving the content as more real. Highly transported individuals reported ($M = 5.32, SD = .769, N = 24$) on perceived realism; comparatively, low transported participants had ($M = 4.42, SD = 1.26, N = 11, F(1, 35) = 6.77, p < .050, \eta^2 = .170$). However, those who reported higher spatial presence ($M = 4.966, SD = .714, N = 11$) did not report different perceived realism than those who were lowly transported ($M = 4.84, SD = 1.22, N = 17, F(1, 35) = .097, p = .758, \eta^2 = .004$). Results of these three ANOVAs are displayed in Table 13

A third one-way ANOVA was used to test if those who were more highly engaged (mental immersion presence) also differed in their perceived realism. They did: the highly engaged group perceived the content as more real ($M = 5.46, SD = .907, N = 17$), than the less engaged ($M = 4.62, SD = 1.04, N = 16, F(1, 35) = 6.238, p < .050, \eta^2 = .168$). Overall, transportation and engagement (mental immersion presence) were significant indicators of increased perceived realism, while no significance was displayed for spatial presence's influence.

Table 13

ANOVA of high and low transportation, spatial presence, and engagement (mental immersion)'s influence on perceived realism.

	<i>M</i>	<i>SD</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>	<i>eta</i> ²
Low Transportation	4.42*	1.26	35.674	34	.897	6.770	.014*	.170
High Transportation	5.32*	.469						
Low Spatial Presence	4.84	1.23	29.292	27	1.122	.097	.758	.004
High Spatial Presence	4.96	.714						
Low Engagement	4.62*	1.04	35.220	32	.946	6.238	.035*	.133
High Engagement	5.378	.86						

Note. ** $p < .001$, * $p < .05$.

Sex and age differences.

Other additional analyses were run to test whether there were significant differences among demographic groups. Responses differed by sex on only one variable: perceived realism. Females were more likely to perceive the experimental stimuli as more real ($M = 5.37$, $SD = 1.03$, $N = 20$) than their male counterparts ($M = 4.59$, $SD = .864$, $N = 15$; $F(1, 34) = 5.601$, $p < .050$, $\eta^2 = .145$).

While perceived realism was the only variable that differed by sex, attitudes toward the mentally ill was the only variable that differed by age among the participants in the experimental condition. Using a median split, the first measure of attitudes differed such that older participants expressed more negative attitudes toward the mentally ill ($M = 4.12$, $SD = 3.53$, $N = 19$) than younger ones ($M = 3.33$, $SD = 2.96$, $N = 16$; $F(1, 34) =$

5.347, $p=.027$, $\eta^2=.139$. A difference at the second time measure was not significant, but in the same direction.

Counter-arguing and transportation.

The third area of additional analysis examines the relationship directly between counter-arguing and transportation. Although too few cases of counter-arguing were present to test hypotheses related exclusively to the experimental condition ($N = 7$), an $N = 11$ was found across conditions for evidence of some counter-arguing. An ANOVA was utilized to test the relationship between counter-arguing and transportation. Despite concerns of small sample size, a significant difference in levels of transportation was found between those who counter-argued ($M = 3.59$, $SD = .619$, $N = 11$) and those who did not ($M = 4.39$, $SD = .951$, $N = 58$; $F(1, 68) = 7.183$, $p<.010$, $\eta^2 = .097$). So, those who did not counter-argue experienced greater transportation. Results are in Table 14.

Table 14

ANOVA of counter-arguing's relationship with transportation

Counter-Arguing:	<i>M</i>	<i>SD</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>	<i>eta</i> ²
Present	3.59*	.619	61.259	68	.826	7.183	.009	.097
Not Present	4.39*	.951						

Note. ** $p<.001$, * $p<.050$.

Familiarity/experience with the mentally ill and transportation.

Lastly, because personal familiarity with the mentally ill was not found to be a significant predictor of transportation and presence, analyses were completed in order to assess whether personal familiarity with mental illness had a direct effect on attitudes toward the mentally ill. A one-way ANOVA demonstrated that those who had increased

familiarity with the mentally ill ($M = 3.23$, $SD = .986$, $N = 31$) had more positive attitudes toward the mentally ill than those who had no to low personal familiarity or experience with the mentally ill ($M = 3.99$, $SD = .993$, $N = 30$; $F(1, 60) = 9.085$, $p < .010$, $\eta^2 = .133$). Results are displayed in Table 15

Table 15

ANOVA of personal familiarity/experience with the mentally ill's effect on attitudes toward the mentally ill.

	<i>M</i>	<i>SD</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>	<i>eta</i> ²
High Familiarity	3.23*	.986	66.713	60	8.902	9.085	.004	.133
Low Familiarity	3.99*	.993						

Note. ** $p < .001$, * $p < .050$.

Table 16

Summary of hypothesis and research question testing

Hypothesis 1	Transportation will correlate with three dimensions of presence	SUPPORTED
Hypothesis 2	Personal familiarity with the mentally ill will lead to increased counter-arguing	NOT SUPPORTED
Hypothesis 3	Increased counter-arguing will lead to decreased perceived realism	NOT SUPPORTED
Hypothesis 4	Low perceived realism will lead to lower transportation and presence	SUPPORTED
Hypothesis 5	Viewing the experimental stimulus will leave participants with more negative attitudes toward the mentally ill	NOT SUPPORTED
Hypothesis 6	Increased transportation will lead to greater story-consistent attitude change	NOT SUPPORTED
Hypothesis 7	Increased presence will lead to greater story-consistent attitude change	NOT SUPPORTED
Research Question 1	Will story-consistent beliefs hold, diminish, or increase over time	ANSWERED, DIMINISHED

Table 17

Summary of additional analyses

1. Those who more highly transported also perceived the content as being more real.
 2. Those who experienced greater spatial presence did not differ on perceived realism.
 3. Those who were more highly engaged (mental immersion presence) also perceived the content as being more real.
 4. Females exposed to the experimental condition reported greater perceived realism than males.
 5. Older participants reported more negative attitudes toward the mentally ill.
 6. Those who counter-argued experienced less transportation than those who did not.
-
7. Those with higher familiarity/personal experience with the mentally ill expressed more positive attitudes toward the mentally ill.
-

CHAPTER V

DISCUSSION

General Discussion

Hypothesis 1.

As predicted in the first hypothesis, transportation correlates highly with the three dimensions of presence that were measured. Of the three dimensions used from Lombard & Ditton's (2000) Temple Presence Inventory, the engagement (mental immersion) dimension shared the highest correlation with transportation. Examining the individual items that compose these measures yields a pool of items that appear very similar. Green and Brock (2000) identify a three-factor solution of the transportation-imagery scale: cognitive aspects, emotional-affective aspects, and visual imagery. At face value, the cognitive aspects factor shares the most similarity with the engagement dimension of presence identified by Lombard & Ditton (2000). The transportation scales' "I was mentally involved in the narrative while reading it," mirrors Lombard & Ditton's "To what extent did you feel mentally involved in the experience." As Bracken (2005) posits, transportation and presence seem to be tapping into a similar process. Others have discussed the similarities between these two theoretical models; however, this may be the first study that has data to support these ideas about such similarities. Further discussion

of the theoretical implications regarding transportation and presence can be found later in this text.

Hypothesis 2-4, counter-arguing, perceived reality, personal familiarity.

The lack of counter-arguing that emerged presented difficulties in testing the original predictions regarding personal familiarity or experience with mental illness, counter-arguing and perceived realism's effect on transportation and presence in hypotheses 2 through 4. A lack of counter-arguing may have occurred for several reasons. First, participants were asked to write down their thoughts while viewing the episode immediately after viewing, and they may have declined to express negative reactions for any number of reasons. Also, enjoyment of the episode may have overridden individuals' needs to doubt the realism, or participants may have wanted to seem agreeable.

The lack of counter-arguing may be due to the distinct processing that occurs when individuals view narrative entertainment content as opposed to persuasive communications. Zhang, Hmielowski, and Busselle (2007) also reported small percentages of participants showing evidence of counter-arguing in response to video narratives. It is easy to imagine that participants would have been more dismissive of details or characters if the content were an advertisement or a political speech. Despite low occurrences of counter-arguing, additional analyses were employed in order to examine how counter-arguing functions within processing of narratives. Results showed that those who did not counter-argue experienced greater transportation. These results could be indicative of the processing of narratives that Green and Brock (2000) articulate as something very different than the dual-process models. The likelihood of counter-

arguing likely decreases as participants becomes more transported. The authors distinctly differentiate the transportation-imagery model from the dual process models (ELM, Petty & Cacioppo, 1986; HSM, Chaiken & Eagly, 1976) – the former may inherently create a greater resistance to counter-arguing. Others have posited that counter-arguing should be almost eliminated when transportation occurs because critical scrutiny of a message is at odds with the suspension of disbelief that occurs when one is fully engaged (Slater, et al., 2006). This offers further rationale for the low counts of counter-arguing found.

If a transported individual is being transported to or lost in a story, and loses some access to one's real-world facts, they may not be expected to critique or elaborate upon story facts. This suspension of disbelief may be a necessary pre-condition of transportation, as others have explored (Busselle & Bilandzic, 2006). Realism may also be an outcome of transportation, as Green (2004) proposed. ANOVAs run as additional analyses support this model as well.

The current study's placement of perceived realism as a predictor of transportation is in reverse order than Green's (2004) model that posited that transportation would mediate perceived realism, which would then influence story-consistent attitude change. Although, Green notes,

“Of course, the reverse is also possible; it could be easier to become transported into a narrative that seems plausible. The relationship may also be bi-directional such that a story may have to meet some minimum level of psychological plausibility for readers to become transported into it, but once individuals are transported, the story may come to seem even more realistic (p. 252).”

Busselle and Bilandzic (2006) postulated that perceived realism would predict transportation into narrative films. Both Green (2004) and Busselle and Bilandzic (2006) reported that their hypotheses were supported by showing significant correlations

between the two variables. Green (2004) also found that realism was not a mediator of transportation effects on story-consistent attitudes.

It would seem that the direction of the relationship between transportation and perceived realism is one that is difficult to identify. The high correlation between these two variables serves to further confound the direction of the relationship. Previous research may have relied too heavily on correlation analyses to answer questions that are directional in nature. Certainly, this study found the two to be highly correlated, in addition to the discovery that both variables have the capacity to significantly predict the other. Given the current findings, it is unclear if one always precedes the other, and the idea that the relationship between perceived realism and transportation may be bi-directional is deserving of future research.

In the attempt to incorporate the concept of personal familiarity or experience from hypotheses 2 and 3 into hypothesis 4, it was found that familiarity did not influence transportation into the narrative. In retrospect, this relationship appears to be too convoluted to have a direct effect. Contrary to prediction, there was a near significant effect that those with higher familiarity with the mentally ill experienced a greater sense of transportation, ($p = .059$), although the same effect was not found for the two dimensions of presence also analyzed. These results mirror Green's (2004) findings that those with increased familiarity with homosexual friends and family members experienced greater transportation into a story about a gay man returning to his old fraternity's alumni event. Those with increased familiarity with the fraternity and sorority system in universities also experienced greater transportation. In the Green (2004) study,

the portrayals of a gay man and a fraternity were not designed so that they were contrary to real life gay men and fraternities.

This near-significant finding could be an indicator of a few different processes. The mere presentation of a group of people, or an issue that individuals deal with on a regular basis, may be more important than the accuracy of social realism of that presentation. If a person lives with a mentally ill family member who is not violent, perhaps the presence of an illness that one is familiar with creates a large enough common ground from which to be transported from.

Hypothesis 5 and Research Question 1 – Main effect and second attitude measure.

Hypothesis 5, the basic test of that those who viewed the experimental stimulus would express more negative attitudes toward the mentally ill than those who viewed the control stimulus, was not supported. This may be due to both methodological and theoretical or conceptual issues.

First, in future research, a pre-test of attitudes toward the mentally ill may be beneficial. While others have noted that the stigma of the mentally ill persists in Americans, despite the lessening of other traditional prejudices (Phelan & Link, 1998), there is likely great variability among individual attitudes. Neither the manipulation nor transportation or presence influenced attitudes toward mental illness. However, as the last additional analysis shows, personal familiarity with the mentally ill did. Those who had more experience and proximity to the mentally ill perceived them as less dangerous and socially undesirable than those who do not. This finding is reversed from previous findings that suggest narratives influenced attitudes toward drunk driving, while personal familiarity played no role in the change of attitudes between times of measure (Rowe Stitt

& Nabi, 2005). A preliminary assessment of attitudes toward the mentally ill would have been necessary to capture genuine attitude change as opposed to adoption of story-consistent beliefs.

It is also possible that results could vary across different topics presented in an entertainment, narrative impact. For instance, Slater et al. (2006) found story-consistent attitude change based on crime dramas espousing support for the death penalty, but not for gay marriage rights. The nature of social issues may increase individual differences in both attitudes and susceptibility to persuasion.

The manipulation may not have worked due both to the frequency that mental illness is used as a plot device in prime-time dramas (Signorielli, 1989), and the degree to which there is some moral ambiguity presented regarding blaming the mentally ill for violent acts committed. While recent content analyses of mental illness in the media are lacking, there is certainly no indication that portrayals of the mentally ill have drastically changed in recent years. Crime dramas continue to attract large audiences and weave mental illness into storylines.

The specific episode of *Law & Order SVU* that was used in the current study may have displayed too much sympathy for the man with schizophrenia that was guilty of raping and murdering multiple young women. The ending shows the man paying the price for his crimes, but also beginning to feel remorse for his actions due to the treatment he is receiving for his schizophrenia. *Law & Order SVU* may have presented a character too complex to be simply labeled mentally ill and violent.

Further confounding the non-significant findings for a main effect of the manipulation are the results concerning the second measure of attitudes toward the

mentally ill. Although no differences in attitudes were found between the experimental and control conditions at the first time of measure, there was a significant difference between the first and second attitude measures of participants in the experimental condition. These differences in attitude measures were consistent with what could logically be expected: immediately after viewing the experimental stimuli, participants expressed significantly more negative attitudes toward the mentally ill when compared to how they evaluated the dangerousness and undesirability of the mentally ill 2 to 3 weeks later. There was no such diminishing of negative attitudes toward the mentally ill among those in the control group.

In fact, attitudes toward the mentally ill at both time points among control participants ($M = 3.38$ at the first measure, $M = 3.28$ at the second) were quite similar to the attitudes of the experimental group at the second measure of attitudes ($M = 3.29$). Participants who viewed the experimental stimuli expressed more negative attitudes ($M = 3.78$) at the first time point measure, where higher scores indicate more negative attitudes. Although conclusions about these findings cannot begin to be close to conclusive, given the lack of effect of manipulation, these analyses provide numbers that follow a promising trend. The mean score for those in the experimental condition immediately after viewing the content seem to be inflated in contrast to the other scores. If there was more statistical support, one may conclude that effects of the content were not powerful and long lasting – after viewing, participants expressed more negative attitudes toward the mentally ill, but the effects quickly diminished after the episode was put out of their minds. This finding is a unique contribution to the research fields examining memory source retrieval systems. It remains unclear as to what other factors

could have played a role in lessening negative attitudes toward the mentally ill during the few week period between measures of attitudes.

Hypotheses 6 & 7.

Levels of transportation across conditions were similar or slightly higher when compared to previous studies that measured transportation (Green, 2004; Zhang et al., 2007). Despite satisfactory levels of transportation, high levels of transportation did not indicate increased story-consistent beliefs, as hypothesis 6 posited, nor did presence serve to increase these beliefs. Research exploring presence as a mediator of attitude change within the area of persuasion (not necessarily narrative) has also shown it to have positive relationships with brand knowledge and buying intention (Kim & Biocca, 1997; Li et al., 2001). This study did not replicate these findings. However, these results become difficult to interpret since a main effect for the manipulation was not found. Had hypothesis 5 been supported, and hypotheses 6 and 7 not supported, this could have been an interesting finding that would not have fit within the somewhat scarce literature on the topic of transportation and presence mediating attitudes. However, since hypothesis 5 was not supported, it is unclear if hypotheses 6 and 7 not being supported as well is an artifact of a lack of manipulation effect.

Additional analyses.

The finding of females perceiving the experimental condition as more real than males, yet that difference in perceived realism not creating a difference in attitudes about the mentally ill is interesting. While the finding was significant, the power of this relationship was only moderate. Differences in perceived realism are not typically found across the sexes (Green, 2004), although in many studies differences may not have been

reported or examined. This increase in perceived realism does not create a group that is significantly more inclined to differ on transportation, presence or attitudes.

A median split on age of participants revealed that the older half of participants, across conditions, had more negative views toward the mentally ill. Age was not a significant predictor of outcome on any other variable. This may be attributed to a number of things, one of which may be that these individuals have been exposed to content that stereotypically portrays the mentally ill as violent and unstable over a longer period of time. Differences of where individuals are in their life cycles may influence their attitudes toward a perceivably violent groups as well – perhaps young parents would be more cautious of a group of people who are stigmatized as violent than a young college student who grew up with constant advertisements for prescription drugs. Both gender and age present issues that require additional research before conclusions can be made.

Theoretical contributions – transportation and presence

Utilizing data to explore the similarities between transportation and presence is a unique contribution to both areas of study. Central to both concepts is the idea of “being there,” (Lombard & Ditton, 1997) being “lost in a story” (Green & Brock, 2000), or exchanging access to one’s real world surroundings for immersion in a mediated environment. There may be some differences between the two concepts, as some variables have been tested in only one arena (i.e. content vs. form). However, other variables, such as persuasion and perceived realism, function in similar ways in both frameworks. This study further demonstrates how the two function together: perceived

realism was found to increase both transportation and (engagement, mental immersion) presence, while personal familiarity was found to not influence either of them.

Given that transportation and the three dimensions of presence involved acted in corresponding ways, it is important to note that the two share a very common conceptual background. However, more research on distinguishing differences between the two concepts is needed. Transportation appeared to function much in the same way that the engagement (mental immersion) dimension of presence did. These two variables also shared a higher correlation than the other two dimensions of presence. Further research exploring what aspects of spatial presence differ from transportation could prove very insightful. Future research examining how social presence would fit into transportation and identification would advance both fields as well.

Further testing and refinement of transportation, presence and perceived realism scales would also help to differentiate different concepts. The Temple Presence Inventory separates 7 dimensions of presence, and differentiating between a feeling of being transported to a different place and the social realism of the environment was beneficial in terms of analyzing different variables across these different concepts. Testing Green's (2004) perceived realism scale in directional relationships with transportation posed greater difficulty because of how highly the two were correlated.

Lastly, cleaner conceptualizations of transportation and, perhaps to a lesser extent, presence are needed. There are theoretical ambiguities in both lines of research that make some ideas and findings hard to test and interpret. The transportation-imagery model is clearly an important framework: tying the feelings of being lost in a story to attitude change is an important addition to the field. Green and Brock (2000) are quick to

differentiate the processing of narrative content to that of the dual-process models (e.g. ELM; HSM. In addition to the three dimensions of transportation that the transportation-imagery model measures (cognitive, emotional, and imagery), items 10 and 11 appear to be measuring how a person is changed by the experience, a distinct concept in itself.). However, the transportation literature offers no clear model on the specifics of the psychological processing of narratives. More work to clarify this “convergent process” of narrative (Green & Brock, 2000) would be helpful in the future.

The lack of counter-arguing demonstrated in this study adds to the line of research suggesting that there is something distinct about the processing of narratives. More research cleanly defining what that is, and how it relates to concepts such as attention, emotional responses, imagery, perceived realism, and prior familiarity or experience with the topic, is needed.

Research regarding presence and attitude change shares one, and still unanswered question – What specifically about being lost in a story, or a feeling of “being there,” with a story or mediated environment changes attitudes? Overall, there is much future research that should be explored regarding transportation and presence. This study was able to offer data that supports conceptual similarities between the two.

Limitations

As mentioned in the discussion of hypothesis 5, replicating similar studies with the use of a pre-test questionnaire on attitude items may be very helpful. This study was only able to examine story-consistent attitudes, as compared to genuine attitude change about the mentally ill based on pre- and post-test measures. This may have been the largest limitation of the current study. If a pre-test were administered, separations of

those with high and low familiarity with the mentally ill could have been made, and balanced across cells.

Another limitation of this study was the content used. A viewer may have perceived that others in the episode felt some degree of sympathy for the killer, even if they were revolted by his actions. Mental illness in general may not have been the most ideal social issue to tap into due to its frequent, and varied, presentation in crime dramas. More complete research could examine a variety of issues that may be influenced by entertainment narratives.

Methodologically, the small number of participants that counter-argued limited what analyses could be done with the data. Counter-arguing may better be conceptualized as a part of having low perceived realism, rather than being a separate process. Since the current study supports Slater et al.'s (2006) and Tal-Or et al.'s (2004) conclusions that narrative content inherently dissuades individuals from counter-arguing, perhaps re-conceptualization of this message in research examining narrative content may be helpful. Future studies could examine counter-arguing responses to more purposefully chosen inflammatory content.

The current study is also limited in regard to the student sample used. Especially given the attitude differences about the mentally ill among younger and older participants, more consideration to the sample and population being studied should be considered in the future.

Future Research

In addition to future research further conceptualizing transportation and presence, results of this study demonstrate the need for future research in several areas.

First, further exploration of both presence and transportation should be investigated. It would be interesting to utilize measures of both of these concepts in a variety of different mediums – print, video games, online, and in virtual environments. Examining different types of content in the future is key as well. Looking at presence, transportation, and perceived realism in regards to very realistic content, like documentaries, and contrasting it with fantasy-type fiction may help illuminate the role that specific content plays in both processes.

In addition to examining different types of narrative content, and perhaps quality of content, it would be interesting to re-examine some of the form variables that those in the presence field have examined at greater length than those working under the transportation framework. Would presence and transportation react in the same way in regards to form variables, such as high-definition screen image quality? Future research in both presence and transportation frameworks would be well served to further explore similarities found between the two concepts on a variety of form and content based variables.

Secondly, more research on the effect that transportation or presence has on attitude change is needed. While it is incredibly useful and interesting to know what makes individuals feel more transported to a different place, discovering how individuals apply what they learned from this place to which they were transported to their unmediated lives may help researchers in many fields, perhaps most notably entertainment-education.

Perceived realism of content seems inherently tied to both theoretical constructs, as well as gender, and further research isolating a directional path between these variables

would be excellent. Based on the lack of counter-arguing found in this study, as well as other researchers' claims that narratives inherently dissuade counter-arguing, more work with this measure could add very much to the field. Future studies examining counter-arguing and narratives may want to over-sample participants in order to attain a high number of counter-arguers. Analyses looking at counter-arguing and perceived realism and attitude measures at later times may also provide some interesting results.

Thirdly, the current research also raises questions about the nature of attitude change over time based on media messages. If attitudes are changed for only a brief time, what types of attitudes can never be changed? What types of attitudes are the most easily swayed by entertainment narratives? How much of how we view the world is based on the most recent television shows we have seen? These are questions that related research could work toward answering. Although the current study was not able to replicate other research that found significant effects for attitudes about social issues based on their presentation in a fictional narrative, it would be premature to rule out the probability of this process occurring at some times, on some issues, and for some people. Exploring when this happens and when it does not deserves future research.

Conclusion

Although a main effect for the manipulation in the current experiment did not work, many implications can be derived from this study. Although the theoretical frameworks of transportation and presence seemingly share many similarities, both in conceptualizations and measurements, to date, this study has been the first to demonstrate these similarities with data. Transportation and the engagement (mental immersion) dimension of presence (Lombard & Ditton 2000) shared a very high correlation, and it

was these two scales that were tied to perceived realism – not spatial presence. This finding is among the first to begin to parse out where the similarities and differences lie between the two constructs.

Findings and non-findings alike regarding the roles of counter-arguing in response to narratives, personal familiarity/experience with an issue presented in a narrative, and perceived realism provide reason for future related research. This study found that familiarity with mental illness was not a predictor of realism judgments regarding their stereotypical portrayals in a crime drama, a finding that suggests entertainment narratives may inhibit counter-arguing. Variables that affect perceived realism are then related to the transportation and presence felt.

This study also found interesting, although inconclusive, insight into the nature of attitude change based on a media experience over time. Significant findings on attitudes toward the mentally ill were not found between the experimental and control conditions at the first time of measurement. However, those in the experimental condition expressed significantly more negative attitudes toward the mentally ill at the first time of attitude measure than the second time of measurement, 2-3 weeks later. Overall, the current research produced a number of findings regarding presence, transportation and attitude change.

Endnotes

¹Researchers compared answers to an open-ended question regarding respondents' understanding of the term "mental illness" from two nationally representative surveys, one conducted in 1950 and one in 1996. Among respondents who mention violence in their description of a mentally ill person, the percentage who use "dangerous to self or others" phrasing to indicate this belief increased substantially, from 4.2% in 1950 to 44.0% in 1996.

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APPENDIX

APPENDIX A
QUESTIONNAIRE

Please circle T for True or F for False for the following 10 statements about the television episode you just viewed.

1. Tree leaves found in the rental car and on the victim's body led the police back to Saul Picard.

T F

2. Saul mentioned "Harken to the arc" to Sabrina after he took her from the book store.

T F

3. Saul's escape was sparked by a message written on a passing truck.

T F

4. The doctor said the Det. Stabler's eyesight could return in a few months or years.

T F

5. The feds want to extradite Saul Picard to Louisiana because they want to save him from New York's ability to put him to death.

T F

6. Francine is Saul Picard's sister who was raped when he was 17.

T F

7. The police psychiatrist says that Saul Picard is schizophrenic, not a pedophile.

T F

8. Once Saul Picard's medication kicks in, he wants to "go home to die."

T F

9. Dets. Benson and Stabler believe that the district attorney is treating Saul Picard too harshly.

T F

10. As Saul Picard begins to mentally get better, he begins to feel a lot of remorse for what he did.

T F

Please note – participants in the experimental condition answered the above 10 recall items – those in the control condition responded to the 10 below.

Please circle T for True or F for False for the following 10 statements about the television episode you just viewed.

1. The volunteers that found Nikkiel’s body were discussing movies at the time of discovering her body.
T F
2. The medical examiner, Dr. Warner found splinters in the dead woman’s wounds.
T F
3. The detectives acknowledge that a 14-year-old can be married with the proper paperwork in the state of New York.
T F
4. Chukwei Bothame, the dead woman’s husband, makes beautiful iron sculptures.
T F
5. Chukwei is on the website “Lie or Die,” and all of his personal information is available as well.
T F
6. D King, the man whose trial Chukwei was to testify at, claimed he was at the cemetery not trying to intimidate Chukwei, but to pay his respects to his mother.
T F
7. The detectives discuss polygamy with Chukwei’s other wives, Alwaani and Sarah, after they have reached the hotel that they must stay at.
T F
8. D King is on trial for killing a young man who stole drugs from him.
T F
9. Sarah killed Nikki after a fight because she was jealous of how their husband loved her.
T F
10. Chukwei and his family’s lives are threatened by D King in court, and Chukwei tells Detective Benson that he is afraid.
T F

11. The episode I just watched dealt with the issue of mental illness.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

12. The character(s) portrayed as committing murder in this episode displayed signs of mental illness

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

Section 2

For the following items, please indicate how much you agree or disagree with the following statements, where 1 means you do not agree at all, and 7 means you agree very much. Please refer to the show that you just watched while answering these items.

1. While I was viewing the show, I could easily picture the events in it taking place.

Not at all 1 2 3 4 5 6 7 Very much

2. While I was watching the episode, activity going on in the room around me was on my mind.

Not at all 1 2 3 4 5 6 7 Very much

3. I could picture myself in some of the scenes depicted on screen.

Not at all 1 2 3 4 5 6 7 Very much

4. I was mentally involved with the video while watching it.

Not at all 1 2 3 4 5 6 7 Very much

5. After viewing the show, it was easy to put it out of my mind.

Not at all 1 2 3 4 5 6 7 Very much

6. I wanted to learn how the show ended.

Not at all 1 2 3 4 5 6 7 Very much

7. The show affected me emotionally.

Not at all 1 2 3 4 5 6 7 Very much

8. I found myself thinking of ways the show could have turned out differently.
 Not at all 1 2 3 4 5 6 7 Very much
9. I found my mind wandering while watching the television program.
 Not at all 1 2 3 4 5 6 7 Very much
10. The events in the program are relevant to my everyday life.
 Not at all 1 2 3 4 5 6 7 Very much
11. The events in the narrative changed my life.
 Not at all 1 2 3 4 5 6 7 Very much
12. I had a vivid imagery of the characters while I was watching this show.
 Not at all 1 2 3 4 5 6 7 Very much
13. The dialogue in the episode is realistic and believable.
 Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree
14. The setting for the narrative just doesn't seem real.
 Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree
15. People in this show are like people you or I might actually know.
 Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree
16. The way people actually live their everyday lives is not accurately portrayed in this story.
 Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree
17. Events that have actually happened or could happen are discussed in this narrative.
 Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree
18. This episode shows that people have both good and bad sides.
 Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

19. I have a hard time believing people in this narrative are real because the basic situation is so far-fetched.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

20. This narrative deals with the very difficult choices people in real life have to make.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

Please continue with the media experience you just had in mind.

21. How much did it seem as if the objects and people you saw/heard had come to the place you were?

Not at all 1 2 3 4 5 6 7 Very much

22. How much did it seem as if you could reach out and touch the objects or people you saw/heard?

Not at all 1 2 3 4 5 6 7 Very much

23. How often when an object seemed to be headed toward you did you want to move to get out of its way?

Never 1 2 3 4 5 6 7 Always

24. To what extent did you experience a sense of 'being there' inside the environment you saw/heard?

Not at all 1 2 3 4 5 6 7 Very much

25. To what extent did it seem that sounds came from specific, different locations?

Not at all 1 2 3 4 5 6 7 Very much

26. How often did you want to or try to touch something you saw/heard?

Never 1 2 3 4 5 6 7 Always

27. Did the experience seem more like looking at the events/people on a movie screen or more like looking at the events/people through a window?

Like a movie screen 1 2 3 4 5 6 7 Like a window

28. To what extent did you feel mentally immersed in the experience?

Not at all 1 2 3 4 5 6 7 Very much
29. How involving was the media experience?

Not at all 1 2 3 4 5 6 7 Very much

30. How completely were your senses engaged?

Not at all 1 2 3 4 5 6 7 Very much

31. To what extent did you experience a sensation of reality?

Not at all 1 2 3 4 5 6 7 Very much

32. How relaxing or exciting was the experience?

Very relaxing 1 2 3 4 5 6 7 Very exciting

33. How engaging was the story?

Not at all 1 2 3 4 5 6 7 Very much

34. The way in which the events I saw/heard occurred is a lot like the way they occur in the real world.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

35. The events I saw/heard *could* occur in the real world.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

36. It is likely that the events I saw/heard *would* occur

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

Section 3

The following items are about your own attitudes and beliefs about various issues. Please circle one of the numbers provided under each statement, where 1 means you strongly disagree, and 7 means you strongly agree.

Some of the questions ask your opinions about mental illness. While mental illness can be both broadly and narrowly defined, please use the following definition of mental illness for the purpose of this study:

Mental illness: “Any of various psychiatric disorders or diseases, usually characterized by *impairment of thought, mood, or behavior*, including *diseases of the mind* and *personality* and certain diseases of the *brain*. Please keep in mind that mental illness may be severe to moderate in nature. For the purpose of this study, ***please do not consider*** those with *addiction* issues or *developmental disorders* that limit one’s intellectual ability as the mentally ill.”

1. I prefer to live in suburban or rural areas because the crime is lower there than in urban areas.
Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree
2. The mentally ill are a burden on society.
Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree
3. The mentally ill should not be denied their individual rights.
Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree
4. Those who have been diagnosed with a mental illness should be forced, through whatever means necessary, to undergo treatment and medication prescribed by their doctor.
Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree
5. The legal system adequately deals with mentally ill criminals.
Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree
6. In dealing with others, you can’t be too careful.
Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree
7. The mentally ill commit far more violent crimes than those who do not suffer a mental illness.
Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree
8. Violent criminals are often easy to pick out in a crowd.
Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree
9. The mentally ill pose a great threat to those around them as well a strangers.
Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

10. Rehabilitation programs for people who are convicted of violent offenses are a waste of time and energy.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

11. I often take measures to ensure my personal safety.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

12. I would not want to live next door to someone who suffers a severe mental illness.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

13. Violent crimes can happen to anyone.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

14. Most people are just looking out for themselves.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

15. "Do unto others before they do unto you" is a good motto to have.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

16. When the mentally ill are correctly treated for their disease, they are less likely to commit violent crimes.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

17. Violent offenders often use mental illness as an excuse in hopes of getting off easier.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

18. Practically all violent crimes have been increasing for years.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

19. We need to adopt a far more tolerant attitude toward the mentally ill in our society.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

20. I would feel comfortable with my children having contact with a person with a mental illness.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

21. Violent criminals don't deserve second chances.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

Section 4

Please answer the next set of questions about yourself, where 1 means you strongly disagree with the statement and 7 means you strongly agree.

1. I am in regular contact with someone who suffers from either a minor or severe mental illness.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

2. My job requires that I work with or around people diagnosed with mental illness.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

3. A person, or people who are close to me have dealt with a mental illness.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

4. Violent crime has touched someone close to me.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

5. I am in regular contact with someone who has been victimized by violent crime.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

Section 5

This last set of items is about your television viewing habits, and also includes a few demographic questions.

1. How often do you watch crime or law-oriented programs (for example, any *Law & Order*, any *CSI*, *Without A Trace*, *Shark*, *Boston Legal*)?

Not at all 1 2 3 4 5 6 7 Very often

2. When you watch crime or law related programming, how much attention do you generally pay to the television show?

None at all 1 2 3 4 5 6 7 Very much

3. What is your favorite type of **dramatic** TV show? Please circle one.

- a. Medical Drama (ex. *E.R.*)
- b. Primetime soap (ex. *Desperate Housewives*)
- c. Crime/Legal Drama (ex. *CSI*)
- d. Science Fiction/Fantasy (ex. *Lost*)
- e. Other Drama

4. What is your age, in years?

5. Are you male or female? Please circle one.

Male Female

6. What is your racial/ethnic background?

- a. White/Caucasian
- b. Black/African-American
- c. Asian/Asian-American
- d. Hispanic/Hispanic-American
- e. American Indian/Native American
- f. Mixed
- g. Other

7. Before today, had you ever seen the episode that you just watched?

Yes No Not sure

THANK YOU!!!!!!! You are done!

APPENDIX B
FACTOR ANALYSIS TABLES

Table B1

Factor Analysis Results of the Transportation Scale (Green & Brock, 2000)

	Factor 1	Factor 2	Communalities
Trans 9 (R)	.812	-.068	.664
Trans 4	.793	.222	.678
Trans 2 (R)	.732	.104	.547
Trans 6	.714	.137	.528
Trans 1	.549	.210	.345
Trans 11	-.070	.813	.665
Trans 7	.265	.648	.490
Trans 10	.019	.643	.414
Trans 8	.133	.576	.349
Trans 12	.146	.536	.308
Trans 5 (R)	.418	.539	.465
Trans 3	.456	.480	.438
Eigen Value	3.132	2.760	
Percent of Total Variance	26.101%	23.000%	49.101% (Total)
Percent of Common Variance	53.15%	46.84%	100% (Total)

Note. KMO = .781, Bartlett's Test of Sphericity, Approx. Chi Square = 245.172, $p < .001$. df = 66

Transportation scale items (1-7 likert-type scale, 1 = *Not at all*, 7 = *Very much*):

Trans 1: While I was viewing the show, I could easily picture the events in it taking place.

Trans 2: While I was watching the episode, activity going on in the room around me was on my mind.

Trans 3: I could easily picture myself in some of the scenes depicted on screen.

Trans 4: I was mentally involved with the video while watching it

Trans 5: After viewing the show, it was easy to put it out of my mind.

Trans 6: I wanted to learn how the show ended.

Trans 7: The show affected me emotionally.

Trans 8: I found myself thinking of ways the show could have turned out differently.

Trans 9: I found my mind wandering while watching the television program.

Trans 10: The events in the program are relevant to my everyday life.

Trans 11: The events in the narrative changed my life.

Trans 12: I had a vivid imagery of the characters while I was watching this show.

Table B2

Factor Analysis Narrative Perceived Realism Scale (Green, 2004)

	Factor 1	Factor 2	Factor 3	Communalities
Dialog	.886	.190	-.129	.838
Setting (R)	.747	.256	.258	.691
FarFetch (R)	.533	.298	.416	.546
GoodBad	.172	.844	-.013	.741
Choices	.183	.581	.131	.389
Likeppl	.064	.558	.498	.563
Actually	.027	.193	.826	.721
Portray (R)	.547	-.292	.611	.757
Eigen Value	1.994	1.674	1.578	
Percent of Total Variance	24.930%	20.921%	19.720%	65.571%(Total)
Percent of Common Variance	38.01%	31.90%	30.07%	100%(Total)

Note. KMO = .691, Bartlett's Test of Sphericity, Approx. Chi Square = 127.434, $p < .001$. df = 28

Green's (2004) Perceived Realism Scale (7-point likert-scale, where 1 = *Strongly Disagree* and 7 = *Strongly Agree*)

Dialog: The dialogue in this episode is realistic and believable.

Setting (R): The setting for this narrative just doesn't seem real.

FarFetch (R): I have a hard time believing people in this narrative because the basic situation is so far-fetched.

GoodBad: This episode shows that people have both good and bad sides.

Choices: This narrative deals with the very difficult choices people in real life have to make.

Likeppl: People in this show are like people you or I might know.

Actually: Events that have actually happened or could happen are discussed in this narrative.

Portray (R): The way people actually live their everyday lives is not accurately portrayed in this story.

Table B3

Factor Analysis of Spatial presence dimension (Lombard & Ditton, 2000)

	Factor 1	Communalities
Object	.885	.782
Touchsmg	.882	.788
Touch	.739	.546
Bethere	.718	.516
Place	.674	.455
Sndlocal	.673	.453
Window	.488	.238
Eigen Value	3.768	
Percent of Total Variance	53.828%	

Note. KMO = .805, Bartlett's Test of Sphericity, Approx. Chi Square = 225.801, $p < .001$. df = 21

Spatial presence items (Lombard & Ditton, 2000) 7-point likert-type scale, semantic differentials

Object: How often when an object seemed to be heading toward you did you want to move to get out of its way?

Touchsmg: How often did you want to or try to touch something you saw or heard?

Touch: How much did it seem as if you could reach out and touch the objects or people you saw/heard?

Bethere: To what extent did you experience a sense of being there inside the environment you saw/heard?

Place: How much did it seem as if the people you saw/heard had come to the place you were?

Sndlocal: To what extent did it seem that sounds came from specific, different locations?

Window: Did the experience seem more like looking at the events/people on a movie screen or like looking at the events/people through a window?

Table B4

Factor Analysis of Engagement (mental immersion) presence dimension (Lombard & Ditton, 2000)

	Factor 1	Communalities
Senseeng	.844	.712
Involving	.841	.707
Sensreal	.783	.612
Engstory	.735	.541
Mentalim	.541	.293
Exciting	.484	.234
Eigen Value	3.099	
Percent of Total Variance	51.656%	

Note. KMO = .827, Bartlett's Test of Sphericity, Approx. Chi Square = 129.912, $p < .001$. df = 15

Engagement (mental immersion) presence scale 1-7 point likert-type scale (1 = *Not at all*, 7 = *Very much*)

Senseeng: How completely were your senses engaged?

Involving: How involving was the media experience?

Sensreal: To what extent did you experience a sensation of reality?

Engstory: How engaging was the story?

Mentalim: To what extent did you feel mentally immersed in the experience?

Exciting: How relaxing or exciting was the experience?

Table B5

Factor Analysis of social realism presence dimension (Lombard & Ditton, 2000)

	Factor 1	Communalities
Ocrworld	.891	.709
Couldocr	.869	.756
Wouldocr	.842	.793
Eigen Value	2.258	
Percent of Total Variance	75.270%	

Note. KMO = .715, Bartlett's Test of Sphericity, Approx. Chi Square = 79.123, $p < .001$. df = 3

Social Realism dimension of presence, 1-7 point likert-type scale (1 = *Strongly disagree*, 7 = *Strongly agree*)

Ocrworld: The way in which the events I saw/heard occurred is a lot like the way they occur in the real world

Couldocr: The events I saw/heard *could* occur in the real world

Wouldocr: The events I saw/heard *would* occur in the real world

APPENDIX C

MEANS

Table C1

Means for individual mental illness attitude items (at the first time of measure) in the Experimental condition, grouped by high vs. low transportation. Attitudes were measured a 1-7 point likert-type scale

Variable	Low Transportation		High Transportation	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
1. Deny (R) – The mentally ill should not be denied their individual rights	1.94	1.65	2.94	2.13
2. Childmi (R) – I would feel comfortable with my children having contact with a person with a mental illness.	4.87	1.89	4.65	1.90
3. Tolerant (R) – We need to adopt far more tolerant attitudes toward the mentally ill in our society.	3.06	1.44	3.94	1.59
4. Burden – The mentally ill are a burden on society.	3.37	1.62	2.88	1.93
5. Forced – Those who have been diagnosed with a mental illness should be forced, through whatever means necessary, to undergo treatment and medication prescribed by their doctor.	4.31	2.33	5.47	1.58
6. Farmore – The mentally ill commit far more violent crimes than those who do not suffer a mental illness.	2.75	1.69	2.94	1.43
7. Threat – The mentally ill pose a great threat to those around them as well as strangers.	3.25	1.57	3.88	1.65
8. Nxtdoor – I would not want to live next door to someone who suffers a severe mental illness.	5.06	1.69	4.35	2.02

*Note. ** $p < .001$. * $p < .050$*

Table C2

*Means for individual **mental illness attitude** items (at the **first** time of measure) in the **Control** condition, grouped by high vs. low transportation. Attitudes were measured a 1-7 point likert-type scale*

Variable	Low Transportation		High Transportation	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
1. Deny (R) – The mentally ill should not be denied their individual rights	2.29	1.05	2.50	2.03
2. Childmi (R) – I would feel comfortable with my children having contact with a person with a mental illness.	4.76	1.34	4.19	1.72
3. Tolernt (R) – We need to adopt far more tolerant attitudes toward the mentally ill in our society.	3.65	1.32	3.06	1.44
4. Burden – The mentally ill are a burden on society.	3.00	1.66	3.012	1.25
5. Forced – Those who have been diagnosed with a mental illness should be forced, through whatever means necessary, to undergo treatment and medication prescribed by their doctor.	4.29	1.64	4.25	1.94
6. Farmore – The mentally ill commit far more violent crimes than those who do not suffer a mental illness.	2.94	1.34	2.73	1.79
7. Threat – The mentally ill pose a great threat to those around them as well as strangers.	3.23	1.25	3.81	1.79
8. Nxtdoor – I would not want to live next door to someone who suffers a severe mental illness.	4.65	1.80	3.87	1.82

Note. ** $p < .001$. * $p < .050$

Table C3

Means for individual mental illness attitude items (at the second time of measure) in the Experimental condition, grouped by high vs. low transportation. Attitudes were measured a 1-7 point likert-type scale

Variable	Low Transportation		High Transportation	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
1. Deny (R) – The mentally ill should not be denied their individual rights	2.445	1.91	2.18	1.07
2. Childmi (R) – I would feel comfortable with my children having contact with a person with a mental illness.	4.36	2.20	3.81	1.16
3. Tolernt (R) – We need to adopt far more tolerant attitudes toward the mentally ill in our society.	2.54	1.21	2.64	.92
4. Burden – The mentally ill are a burden on society.	3.45	1.86	2.18	1.40
5. Forced – Those who have been diagnosed with a mental illness should be forced, through whatever means necessary, to undergo treatment and medication prescribed by their doctor.	4.54	2.02	4.81	1.47
6. Farmore – The mentally ill commit far more violent crimes than those who do not suffer a mental illness.	3.18	1.32	3.54	.82
7. Threat – The mentally ill pose a great threat to those around them as well as strangers.	2.81	1.16	2.90	1.22
8. Nxtdoor – I would not want to live next door to someone who suffers a severe mental illness.	3.90	1.51	3.36	1.36

Note. ** $p < .001$. * $p < .050$.

Table C4

Means for individual mental illness attitude items (at the second time of measure) in the Control condition, grouped by high vs. low transportation. Attitudes were measured a 1-7 point likert-type scale

Variable	Low Transportation		High Transportation	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
1. Deny (R) – The mentally ill should not be denied their individual rights	3.44	1.94	2.20	1.47
2. Childmi (R) – I would feel comfortable with my children having contact with a person with a mental illness.	4.66	1.80	3.80	1.31
3. Tolernt (R) – We need to adopt far more tolerant attitudes toward the mentally ill in our society.	3.88	1.76	3.00	1.24
4. Burden – The mentally ill are a burden on society.	2.00	1.32	2.60	1.17
5. Forced – Those who have been diagnosed with a mental illness should be forced, through whatever means necessary, to undergo treatment and medication prescribed by their doctor.	4.00	1.11	3.40	1.57
6. Farmore – The mentally ill commit far more violent crimes than those who do not suffer a mental illness.	3.44	1.94	3.10	1.52
7. Threat – The mentally ill pose a great threat to those around them as well as strangers.	2.88	1.36	3.30	1.56
8. Nxtdoor – I would not want to live next door to someone who suffers a severe mental illness.	3.66	1.58	4.20	1.75

Note. ** $p < .001$. * $p < .050$

Table C5

Means for individual Perceived Realism Scale items (Green, 2004) in the Experimental condition, grouped by high vs. low transportation. Attitudes were measured a 1-7 point likert-type scale

Variable	Low Transportation		High Transportation	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
1. Dialog – The dialogue in this episode is realistic and believable.	4.56	1.82	5.71	1.61
2. Setting (R) – The setting for this narrative just doesn't seem real.	5.37	1.40	6.00	1.06
3. Like ppl – People in this show are just like people I might actually know.	3.12*	1.78	4.47*	1.90
4. Portray (R) – The way people actually live their everyday lives is not accurately portrayed in this study.	4.56	1.89	4.76	1.75
5. Actually – Events that have actually happened or could happen are discussed in this narrative.	4.75*	1.39	5.65*	1.17
6. Goodbad – This episode shows that people have both good and bad sides.	5.12	2.09	5.59	1.27
7. Farfetch (R) – I have a hard time believing people in this narrative are real because the basic situation is so far-fetched.	4.44	1.54	5.06	1.43
8. Choices – This narrative deals with very difficult choices people in real life have to make.	5.00	1.89	5.71	1.21

Note. ** $p < .001$. * $p < .050$

Table C6

*Means for individual **Perceived Realism** Scale items (Green, 2004) in the **Control** condition, grouped by high vs. low transportation. Attitudes were measured a 1-7 point likert-type scale*

Variable	Low Transportation		High Transportation	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
1. Dialog – The dialogue in this episode is realistic and believable.	4.88	1.45	5.38	1.41
2. Setting (R) – The setting for this narrative just doesn't seem real.	5.29*	1.31	6.18*	1.05
3. Like ppl – People in this show are just like people I might actually know.	2.58*	1.66	4.44*	1.86
4. Portray (R) – The way people actually live their everyday lives is not accurately portrayed in this study.	4.12*	1.83	5.75*	1.83
5. Actually – Events that have actually happened or could happen are discussed in this narrative.	5.00*	1.50	6.12*	1.08
6. Goodbad – This episode shows that people have both good and bad sides.	5.35	1.06	5.94	1.12
7. Farfetch (R) – I have a hard time believing people in this narrative are real because the basic situation is so far-fetched.	4.59*	1.73	5.88*	1.02
8. Choices – This narrative deals with very difficult choices people in real life have to make.	4.41	1.83	5.13	1.82

*Note. ** $p < .001$. * $p < .050$*

Table C7

*Means for individual **Spatial presence** items (Lombard & Ditton, 2000) in the **Experimental** condition, grouped by high vs. low transportation. Attitudes were measured a 1-7 point scales, and one semantic differential*

Variable	Low Transportation		High Transportation	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
1. Place – How much did it seem as if objects and people you saw/heard had come to the place you were?	2.37	1.26	3.41	1.90
2. Touch – How much did it seem as if you could reach out and touch the objects or people you saw/heard?	1.68	1.08	2.41	1.42
3. Object – How often when an object seemed to heading toward you did you want to move you get out of its way?	1.25	1.00	1.59	.94
4. Bethere – To what extent did you experience a sense of ‘being there’ inside the environment you saw/heard?	2.38*	1.36	3.65*	1.90
5. Sndlocal – To what extent did it seem that sounds came from specific, different locations?	2.50	1.96	3.23	1.48
6. Touchsmg – How often did you want or try to touch something you saw/heard?	1.19	.75	1.59	1.12
7. Window – Did the experience seem more like looking at the events/people on a movie screen or more like looking at the events/people through a window.	2.38	2.03	2.41	2.09

Note. ** $p < .001$. * $p < .050$

Table C8

*Means for individual **Spatial presence** items (Lombard & Ditton, 2000) in the **Control** condition, grouped by high vs. low transportation. Attitudes were measured a 1-7 point scales, and one semantic differential*

Variable	Low Transportation		High Transportation	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
1. Place – How much did it seem as if objects and people you saw/heard had come to the place you were?	2.47	1.37	3.69	1.62
2. Touch – How much did it seem as if you could reach out and touch the objects or people you saw/heard?	2.24	1.39	3.19	1.94
3. Object – How often when an object seemed to heading toward you did you want to move you get out of its way?	1.35	.79	2.13	1.96
4. Bethere – To what extent did you experience a sense of ‘being there’ inside the environment you saw/heard?	2.12	1.27	3.56	2.06
5. Sndlocal – To what extent did it seem that sounds came from specific, different locations?	2.70	1.49	3.50	1.93
6. Touchsmg – How often did you want or try to touch something you saw/heard?	1.35	.60	1.87	1.7
7. Window – Did the experience seem more like looking at the events/people on a movie screen or more like looking at the events/people through a window.	2.41	1.80	3.06	2.17

Note. ** $p < .001$. * $p < .050$

Table C9

*Means for individual **Engagement** (mental immersion) presence items (Lombard & Ditton, 2000) in the **Experimental** condition, grouped by high vs. low transportation. Attitudes were measured a 1-7 point scales, and one semantic differential.*

Variable	Low Transportation		High Transportation	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
1. Mentalim – To what extent did you feel mentally immersed in the experience?	3.88*	1.50	4.94*	1.24
2. Involving – How involving was the experience?	4.12*	1.26	5.00*	1.27
3. Senseeng – How completely were your senses engaged?	3.56*	1.36	5.47*	1.17
4. Sensreal – To what extent did you experience a sensation of reality?	3.00*	1.51	4.76*	1.71
5. Exciting – How relaxing or exciting was the experience?	3.25	1.69	3.88	1.41
6. How engaging was the story?	4.88*	1.36	6.11*	1.05

Note. ** $p < .001$. * $p < .050$

Table C10

*Means for individual **Engagement** (mental immersion) presence items (Lombard & Ditton, 2000) in the **Control** condition, grouped by high vs. low transportation. Attitudes were measured a 1-7 point scales, and one semantic differential.*

Variable	Low Transportation		High Transportation	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
1. Mentalim – To what extent did you feel mentally immersed in the experience?	3.29*	1.53	5.00*	1.78
2. Involving – How involving was the experience?	3.88*	1.49	4.87*	1.41
3. Senseeng – How completely were your senses engaged?	4.06	1.64	4.94	1.12
4. Sensreal – To what extent did you experience a sensation of reality?	3.23**	.97	4.81**	1.28
5. Exciting – How relaxing or exciting was the experience?	4.17*	1.07	5.25*	1.57
6. How engaging was the story?	5.12**	.99	6.44**	.72

Note. ** $p < .001$. * $p < .050$

Table C11

*Means for individual **Social realism** presence items (Lombard & Ditton, 2000) in the **Experimental** condition, grouped by high vs. low transportation. Attitudes were measured a 1-7 point scales, and one semantic differential.*

Variable	Low Transportation		High Transportation	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
1. Ocrworld – The way in which the events I saw/heard occurred is a lot like the way they occur in the real world.	4.63	1.67	4.82	1.63
2. Couldocr – The events I saw/heard <i>could</i> occur in the real world.	5.75	1.00	5.94	1.51
3. Wouldocr – The events I saw/heard <i>would</i> occur in the real world.	3.50	1.21	4.29	1.44

Note. ** $p < .050$. * $p < .001$

Table C12

*Means for individual **Social realism** presence items (Lombard & Ditton, 2000) in the **Control** condition, grouped by high vs. low transportation. Attitudes were measured a 1-7 point scales, and one semantic differential.*

Variable	Low Transportation		High Transportation	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
1. Ocrworld – The way in which the events I saw/heard occurred is a lot like the way they occur in the real world.	3.94*	1.52	5.18*	1.72
2. Couldocr – The events I saw/heard <i>could</i> occur in the real world.	5.12*	1.65	6.31*	.79
3. Wouldocr – The events I saw/heard <i>would</i> occur in the real world.	2.76*	1.39	4.56*	1.63

Note. ** $p < .050$. * $p < .001$