Television Consumption and Empathy: A Connection?

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Master of Arts

by

Lindsay S. Hahn

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Chapter I

Introduction

The power that lies in the human narrative is a potent one. When articulated effectively, fictional narratives have just as much of a chance at inciting awe, coaxing out tears, and forcing the hairs on the back of viewers’ necks to stand up in fear as do stories that are based on true events. That awe, those tears, and that spine-chilling shiver that accompany well-told tales are all physical indicators of an emotional and cognitive state—empathy (Davis, 1980; 1983; Snow, 2000).

Given the pervasiveness of mediated environments cultivated by cell phones, Internet, and television, people have a greater opportunity today to be engaged in various narratives than decades ago. Whether it is utilizing digital video recording (DVR) to collect an entire season of one’s favorite television show, a breaking news story pushed through to one’s mobile phone, or streaming video over the Internet, the increase in media’s accessibility has allowed people to essentially surround themselves with stories others tell. Although decades ago the aforementioned emotional and affective responses may have occurred only through narratives told by village elders and family members, in today’s technologically savvy culture, such narratives can be told every waking moment by the constant connections we hold with others, 24/7 news dissemination, and special effects productions from Hollywood. Because narratives can induce emotion and empathy, the increased connection to others and the stories they tell could indicate an increase in emotion- and empathy-inducing opportunities.

Empathy can be defined as a multidimensional construct that incorporates both the emotional similarity of feelings expressed by the self and others in addition to an observer’s cognitive inner-imitation of an observed experience (Davis, 1980; 1983; Decety & Jackson,
This differs from sympathy and mere compassion in that witnessing an action or emotion performed by another compels the human brain to register the information the same as if it were one’s self performing that action.

When a viewer’s brain registers information in this mimicking way, it is empathy occurring through the brain’s mirror neurons (Barry, 2009; Gallese, 2001). For instance, if an observer witnesses a frustrated, stranded motorist changing a tire along the highway, the observer’s brain registers the event the same as if he or she were the frustrated, stranded motorist. The observer’s frustration occurs through his or her brain’s mirror neurons, even if he or she has never felt similar type of frustration. Rightfully, then, empathy can be thought of as the impetus that drives most prosocial and altruistic behavior that humans exhibit toward others because when observers actually can feel the emotions they are witnessing, it drives them to come to the rescue of others (Batson et al., 1989; Batson, Turk, Shaw, & Klein, 1995).

According to Batson’s empathy altruism hypothesis, a lack of empathy could lead to a lack of altruism in society. Under this hypothesis, prosocial motivation prompted by empathy is directed toward the objective of increasing the welfare of a person in need. In addition, the hypothesis states that altruistic actions occur reliably from an individual so long as these actions are preceded by empathic concern for one another (Batson et al., 1989; Batson et al., 1995).

This is not to suggest that altruism cannot exist without empathy, rather, it suggested that empathy has been found to be a major precursor to altruistic actions toward others (Batson, 1991). So, in the case of the stranded motorist, if the observer decided to turn around and help the person change the tire, it is likely that empathy acted as a precursor to the altruistic action of helping.
Thus, empathy is one key to predicting altruism in society. Without it, not only may altruism toward others diminish, but the one link humans have that allows them to feel compassion for strangers may suffer. The diminishment of this link could, in turn, contribute to a disconnect in society where people cannot take the perspective of others in order to feel compassion for their fellow human beings. Empathy can be thought of as a major binding agent of any civilization (Kohut, 1959; Rogers, 1957; 1975) and a building block of sociality and morality (de Waal, 2008; Iacoboni, 2009; Tangney, Stuewig & Mashek, 2007). Furthermore, empathy can be regarded as everything that determines the quality of social relationships (Constantino, 2002). Without it and its altruistic and compassionate correlates, separate individuals lose their ability to be a part of one public, one society, and one world.

**Study Overview**

The purpose of this study was to uncover whether media consumption plays a role in determining viewers’ empathy. In addition to spending over five hours a day watching television (The Nielsen Company, 2010), the average American spends over four hours a day connected to the Internet (Phillips, 2010). The ubiquity of media in Americans’ lives has overtaken the time most people spend at their full-time jobs each day. The Pew Research Center (2010) found that those aged 18 to 29 (the Millennial generation) had some of the fastest growing Internet usage patterns with a 93% increase since 2000 in the amount of people who accessed the Internet daily. In addition, over half of the people in this age group use smartphones with Internet access (The Nielsen Company, 2011). This age group is one of the most digitally connected with a world full of empathy producing material at their fingertips by way of television remote, computer keyboard, and smartphone.
Because heavy media consumers are afforded more opportunities for emotional attachment to various characters and plotlines, it is less likely they will feel the same caliber of those emotions in similar subsequent events (Carnagey, Anderson, & Bushman, 2007). This is known as desensitization. Any relationship that may exist between media and empathy could be mediated by desensitization.

Desensitization researchers have found that prolonged exposure to emotion-inducing events can cause observers to be less emotionally and physiologically responsive to the pain, suffering, and emotions of others (Funk, Baldacci, Pasold, & Baumgardner, 2004). This can occur when witnessing both mediated and real-life events. For example, one study found that those who viewed “slasher” film clips had lower heart rates when shown additional violent movie clips than participants who initially viewed nonviolent clips (Linz, Donnerstein, & Adams, 1989). Another study found that those who watched a violent movie had a lower physiological response to a real-life violent scene than did participants who had previously viewed a nonviolent movie (Thomas, Horton, Lippincott, & Drabman, 1977).

When individuals are desensitized to violence, they have been found to exhibit reduced attention to violent events, and deem events as less dire (Carnagey et al., 2007). Perhaps more importantly, however, when presented with a situation where helping behavior is normally triggered, desensitized observers have been shown to hold fewer negative attitudes toward violence and believe the violence to be commonplace (Carnagey et al., 2007). Because it is a basic human function to feel morally obligated to help other humans in distress (Decety & Jackson, 2004; Gallese, 2001, Snow, 2000), desensitization, then, is linked to feeling less empathy for others (Barnett et al., 1997; Strasburger & Wilson, 2002). Some researchers have
even used empathy as an indicator of desensitization levels (Funk et al., 2004), suggesting that a bidirectional relationship may exist.

Mirror neurons are not limited to imitating feelings of real humans and their actions, though, like in the case of the stranded motorist. Rather, mirror neurons also can imitate fictional characters’ emotions when those characters are portrayed as believable (Snow, 2000). Thus, the opportunity for an observer to feel empathy exists not only when he or she is exposed to another human being, but also when the observer is exposed to well-written books, television shows, news stories, magazines, YouTube clips, movies, newspapers, and the list goes on.

Since their inception, media have continued to become increasingly sensationalistic and explicit over recent decades (Drabman & Thomas, 1974). That being said, believability is hardly an issue when focused on today’s high production values. Green and Brock (2002) have maintained that viewers believe fictional depictions to be real-life depictions by default in order to transport themselves into the story. Because it requires a number of mental processes to decipher if every element of a story one comes into contact with is real, they argue that our brains process everything as real, and, only if flagrant violations of logic are raised do viewers suspend their belief of the fictional portrayal. Thus, mediated stories are cognitively processed the same way in viewers’ brains as are real-life events (Green & Brock, 2002).

Witnessing real-life events in addition to the consumption of various media outlets could allow one’s mirror neurons to be constantly stimulated—and when mirror neurons become constantly stimulated they have been found to build up a resistance to empathic affect (Barry, 2009). Overworked mirror neurons are one factor, among several others, that have been found to indicate decreased empathy levels toward others. Perhaps occurring through desensitization, the more mirror neurons are stimulated, the less they have the ability to mimic future observations,
and, thus, the less the observer engages in empathy (Barry, 2009). Because mediated narratives are cognitively processed the same way real-life events are (Green & Brock, 2002), an individual’s mirror neurons could become overstimulated from heavy media consumption, thus indicating desensitization in the viewer. The resulting diminished empathy could then affect viewers’ abilities to exhibit empathy in the real world toward other human beings.

A resistance to empathic affect because of over-stimulation could be even more feasible given rising media use. The construct of heavy media consumption is key to Gerbner’s (1970, 1998) cultivation theory. Cultivation theory aims to examine how television’s consistent themes affect people. In the original idea of cultivation theory, Gerbner (1970) posited that heavy viewers will be more likely to perceive the real world as it is portrayed on television. Basing real-world perceptions on fictional portrayals may be dangerous because studies have shown crime, aggression, and likelihood of victimization are grossly overrepresented on television (Nabi & Riddle, 2008). Although Gerbner’s original cultivation theory focused only on television, recent cultivation research is branching out to apply cultivation constructs to specific television genres and other forms of media in order to account for peoples’ ritualistic use of all media (Morgan & Shanahan, 2010).

Given its overrepresentation, being constantly exposed to victimization and crime in media content has been found to desensitize viewers to violent acts, and therefore create a higher threshold for what is considered violent (Funk et al., 2004; Scharrer, 2008). In fact, heavy media users are much more likely to classify violent acts as commonplace in comparison to light media users (Scharrer, 2008). This is profound, given that witnessing more emotion-invoking acts can lead people to become desensitized to others’ suffering and emotions—which is quite the
opposite of empathy (Batson, 1991; Cline, Croft, & Courrier, 1973; Drabman & Thomas, 1974; Funk et al., 2004; Hough & Erwin, 1997; Thomas et al., 1977).

When applying this concept of potentially diminishing empathy to media consumption, it is possible that if an individual is a heavy media user, witnessing the plight of fictional characters regularly may lower his or her empathic affect for other human beings. Based on Gerbner’s (1970) cultivation analysis, the purpose of this study, then, was two-fold. First, it was to test the relationship between media consumption levels and empathy levels. The second purpose of this study was to examine the relationship between media consumption levels and empathy levels with desensitization as a mediating variable.

Chapter II

Review of Related Literature

Media Exposure

Exposure to television content. Although it has already been established that media use is increasing, it is important to mention that Americans spend just over 20% of each day in front of the television alone and this figure is not even taking into account television programming watched over the Internet or on smartphones (The Nielsen Company, 2010; 2012). Thus, an average user of television today watches just over five hours of television a day, whereas in 1998 some scholars dubbed anyone watching over four hours of television a day as a heavy user (Gerbner, 1998).

The impact of this increased exposure time has been researched extensively on everything from heavy television users being less likely to eat fruits and vegetables (Harrison & Liechty, 2012) to heavy television users being found to perceive that their peers will have more recreational ideas about relationships (Chock, 2011). What the current study was interested in,
though, is how viewing the conglomeration of stories presented on television may have impacted the emotionality of viewers, and, potentially, the empathy levels they are capable of feeling.

**Transportability.** One contributing factor to television’s influence on consumers is the viewers’ level of involvement (Rubin & Perse, 1987; Rubin, Perse, & Taylor, 1988; Shrum, 1995). When viewers are highly engaged with a plotline, they experience a loss of connection with the real world and are transported into the story world where they may live vicariously through the story’s characters (Green & Brock, 2002; Prentice, Gerrig, & Bailis, 1997).

Some researchers argued that in order for this transportation to occur, a willing suspension of disbelief must first occur in order for the viewer’s brain to accept the fictional narrative as true (see Vorderer, Klimmt, & Ritterfeld, 2006). However, Green and Brock (2002; see also Barry, 2009; & Gallese, 2001) have found that viewers accept fictional information as a default because disbelief takes extra effortful thinking. Because viewers do not anticipate being witness to unrealistic content, disbelief is thought to be constructed over a period of time, rather than something that remains ever-present and that needs suspending (Prentice & Gerrig, 1999). In order to account for this, viewers’ degrees of transportation were used as a descriptive in the current study.

**Impact of television exposure.** In order to identify vicariously with fictional characters, some degree of empathy must take place within the viewer so that an affinity can exist for the characters (Vorderer, Knobloch, & Schramm, 2001). Thus, if heavy viewers are identifying constantly with fictional characters through empathic affect, they are, according to Green and Brock (2002), subconsciously classifying these characters as real in order to easily submerge themselves in the plot. In accordance with the current study, then, fictional characters may have the ability to induce just as much empathy in viewers as do real-life people. This means that,
thanks to media, heavy viewers will be surrounded by more empathy-inducing events than light viewers.

Because heavy media users are essentially witness to more emotion-inducing acts through mediated narratives, they may be more likely to feel less concern for those affected by violence and crime because they are constantly surrounded by it (Scharrer, 2008). In fact, desensitization to the shock value of violence and aggression has been found to occur in heavy media users (Cline et al., 1973; Drabman & Thomas, 1974; Hough & Erwin, 1997; Thomas et al., 1977). When desensitization occurs in heavy media users, they begin to believe violence and aggression are normal. Furthermore, their feelings of personal responsibility to help real-life victims become inhibited (Carnagey et al., 2007), which could indicate a decrease in empathic feelings toward others (Funk, 2004).

Anderson and Bushman’s (2001) explanation of their General Aggression Model sheds some light on why this may be so. According to the model, repeated exposure to violence in the media reduces emotional responsiveness to real-life violence through a process of habituation. Essentially, viewers get used to seeing others suffer and being killed in the virtual reality and subsequently may respond with less emotion to the plight of others in the real world. This effect of violent media content on decreased empathy levels has not yet been established with television usage, as the current study seeks to uncover, but it has been well-documented with video games (Bartholow, Sestir, & Davis, 2005; Funk et al., 2004; Krahe & Moller, 2010; Wei, 2007). In addition, heavy viewers have been found to trust their significant others less and believe in a greater likelihood they will experience marital problems (Shrum, 1999). In accordance with the current study, these findings are important because viewer’s empathy levels, if affected, may not just be affected by violence and victimization. Rather, the viewing of gossip
and the demise of relationships in reality television and romance dramas may impact viewers’
empathy as well.

Although a direct correlation between television usage and empathy levels has not been
established in previous literature, a correlation between heavy media consumption and
desensitization has been successfully established (Cline et al., 1973; Thomas et al., 1977). These
studies specifically focused on violent content as it impacts viewers’ emotional reactivity, while
the current study looked at other genres to test for possible relationships as well.

Desensitization

As media producers must find new and unique ways to grab their audience’s attention,
programming consistently has become more sensational and graphic (Drabman & Thomas,
1974). Researchers suspect that this increase in attention-grabbing stimuli is not simply due to
better writers and technologically advanced special-effects; rather, it is due to a constant need to
overcome the audience’s desensitization to prior stimuli (Drabman & Thomas, 1974; Funk et al.,
2004). Compared to decades ago, scary plotlines are scarier, sad plotlines are fueled with even
more emotionally driven content, and gory plotlines are more intensely graphic than ever.
Audiences become accustomed to feeling emotions with characters, and without this constant
increase in the caliber of those emotions, they eventually would become less aroused by the
plotlines, and potentially lose interest in the entire narrative (Carnagey et al., 2007).

Defining desensitization. Desensitization to the media can be defined as the elimination
of emotional and cognitive response due to repeated exposure to emotion-invoking stimuli
(Cantor, 2000; Linz, Donnerstein, & Penrod, 1988; Mullin & Linz, 1995). It is characterized by
the observer experiencing reduced arousal and an emotional-numbing and acceptance of
emotionally-charged acts as mundane and commonplace (Cline et al., 1973; Funk et al., 2004;
Scharrer, 2008). Scharrer (2008) noted that heavy media users do not describe violent events as, “shocking, disturbing, or troubling” (p. 292), rather, they perceive violence as ordinary (Gerbner, 1970). Likewise, heavy users showed no spike in physiological responses when viewing violent content (Scharrer, 2008).

**Impact of desensitization.** Although it carries a negative connotation, desensitization is not always bad. Systematic desensitization has often been used in therapeutic sessions to help numb patients to stimuli they find aversive. In fact, work with systematic desensitization has been used to treat common phobias such as spiders (Bandura, Reese, & Adams, 1982) and blood (Elmore, Wildman, & Westfield, 1980), in addition to being used as a treatments for post-traumatic stress disorder (Pantalon & Motta, 1998), rape trauma (Frank, Anderson, Stewart, Dancu, & West, 1988), and nightmares (Schindler, 1980). Systematic desensitization has even been used to desensitize soldiers to violence before sending them into combat (Grossman & DeGaetano, 1999). Desensitization is helpful in these situations because it allows people to tune out stimuli and attend to other stimuli instead. While systematic desensitization may be helpful in the aforementioned outlets, television viewers’ desensitization to real-life emotional stimuli may cause problems when those viewers need to function in a compassionate society (Carnagey et al., 2007).

Being witness to mediated violence has been shown numerous times to lessen the amount of responsiveness to real-life violence, meaning that, when people see violence on television or in videogames, they have been found less likely to respond emotionally to real-life violence (see Carnagey et al., 2007; and Thomas et al., 1977). Desensitization research has suggested that, after repeated exposure to emotionally-driven mediated storylines a diminished or non-emotional response can occur when a similar act takes place in the real world (Bartholow, Bushman, &
Sestir, 2005). One study found that playing a violent videogame for just 20 minutes can cause people to become less physiologically aroused by real life violence (Carnagey et al., 2007). Another study found that those exposed to R-rated sexual violence against women showed a tendency to be less sympathetic to rape victims in a mock trial (Linz et al., 1988). In accordance with the current study, desensitization may play a key role in uncovering what effect the amount of television consumption has on viewers’ emotional responses to real life events—which will, in turn, affect their empathy levels toward other human beings.

Repeated exposure to dramatized plotlines and events, like in reality television, essentially causes observers to become desensitized to other people’s distress, suffering, and emotions (Cline et al., 1973; Drabman & Thomas, 1974; Funk et al., 2004; Hough & Erwin, 1997; Thomas et al., 1977). Both children and adults have been found to be less emotionally responsive to real life aggression after watching violent television (Thomas et al., 1977). In addition, Funk et al. (2004) found that children who viewed an aggressive film took longer to seek help to stop a fight in real-life. Heavy news viewers have also been found to hold desensitized views of news stories that relay information about real-life events (Scharrer, 2008).

Desensitization, thus, can lead a heavy media user to fail to respond to a violent cue that would normally initiate a morally evaluative response. In fact, viewers who watch entertainment stimuli that produce desensitization have been found much less likely to help a victim of a crime in real life (Carnagey et al., 2007). The reasoning for this is thought to be that people have been found most likely to help others or intervene in situations when they are highly aroused emotionally—something desensitized observers are not (Dovidio, Pilavin, Gaertner, Schroeder, & Clark, 1991).
Desensitization essentially interrupts the process in observers that takes place when helping behavior should occur. Several factors must be present for helping behavior to occur in response to violence, with the first being that the observer must categorize the incident as violent. Second, the observer must recognize the event as an emergency. Lastly, the observer must feel personally responsible to help. When an observer is numb to violence, desensitization interrupts this process by reducing the attention to violent events, and reducing how dire the observer deems the event. Perhaps most importantly, however, when presented with a situation where helping behavior should be triggered, desensitized observers have been shown to hold fewer negative attitudes toward violence while believing the violence to be commonplace (Carnagey et al., 2007). Therefore, desensitized viewers may be less likely to help or act altruistically toward others. In accordance with the current study, this is important because, according to Batson’s empathy-altruism hypothesis, it suggests this failure to help and act altruistically toward others is mediated by a lower level of empathy (Batson et al., 1989; Batson et al., 1995). Thus, evidence exists that heavy media consumption plays a role in determining not only responsiveness to real-life violence, but also to viewers’ empathy levels.

**Callousness.** In addition to violent content impacting viewers’ desensitization, non-violent observations can cause just as much of an impact. Callousness can be defined as an emotional numbing to non-violent content where the repeated sensation of an emotion causes a tolerance to be built up to that emotion in subsequent events (Essau, Sasagawa, & Frick, 2006), and, thus, callousness has been described in much of the same way that desensitization has been in literature. Furthermore, negative correlations have been drawn between both concepts—desensitization and callousness—and emotional reactivity (Kimonis et al., 2008). People with callous or unemotional traits have been found to exhibit a lack of empathy and caring for the
feelings and/or suffering of others (Essau et al., 2006). Much like desensitization, these people have also been found to exhibit an emotional-numbing toward others’ distress and fearfulness (Frick, Lilienfeld, Ellis, Loney, & Silverthorn, 1999; Pardini, Lochman, & Frick, 2003).

Thus, both desensitization and callousness research have suggested that continually observing emotionally-driven events will lead viewers to perceive those events as commonplace (Scharrer, 2008; Thomas et al., 1977) in addition to exhibiting an increased tolerance and numbing to that particular emotion (Essau et al., 2006; Funk et al., 2004). Further, a negative correlation has been established already between desensitization and empathy levels (Barnett et al., 1997; Scharrer, 2008; Strasburger & Wilson, 2002). Some scholars have argued that desensitization is a fairly short-lived phenomenon; however, Scharrer (2008) demonstrated that desensitization due to repeated exposure to violence can become inured in individuals. Because the current study is concerned with more than just violent content, desensitization was operationalized by participants’ attitudes toward violence (Funk, Elliott, Urman, Flores, & Mock, 1999) and their callousness toward others (Essau et al., 2006). Most desensitization research has focused on violent and graphic content producing an effect on viewers’ physiological and psychological responses; however, the current study incorporated other genres such as reality television, dramas, comedies, etc., in order to test for the potential influence of other emotion-conjuring genres on viewers’ real-life emotions.

**Impact on empathy.** The idea that fictional narratives have the ability to influence viewers’ emotions and perceptions of real-life events is profound. The connection from viewing a pixelated representation of a story on a screen to a potential impact on viewers’ real life perceptions and actions can be illustrated through Bandura’s (1977b) social learning theory. Observational learning under the social learning theory refers to the acquisition of cognitive
structures from observing others perform certain behaviors. One of social learning theory’s main
tenets is that overt and cognitive behavior can be explained through the central processing of
direct, vicarious, and symbolic sources of information—which is a key linkage to explaining
how mediated representations can influence both perceptions and behavior. According to this
theory, an observer may imitate an actor if he or she is attractive and not punished for his or her
behavior (Bandura, 1977b). The current study was not focused on overt imitation; however, it
was focused cognitive imitation.

Feeling what others feel, i.e. cognitive imitation, must occur in order for empathy to exist
(Davis, 1983; Snow, 2000). Therefore, mediated representations may impact viewers’ real lives
through observational learning’s cognitive structures. This would allow the television characters
that viewers witness to serve as actors that their brains imitate as if they were real people.

Bandura (1977a) mentioned that even transitory experiences can leave lasting effects by being
cognitively interpreted and retained in symbols for memory representation. Because Green and
Brock (2002) explained that mediated representations are cognitively processed the same as real-
life events, the idea of observational learning’s cognitive structures may provide a clue to
explaining how mediated desensitization has been found in numerous studies to affect viewers’
real-life perceptions and actions (see Batholow et al., 2005; Carnagey et al., 2007; Funk et al.,
2004; Thomas et al., 1977). If a relationship between media consumption and empathy levels
exists, this clue could be explained by observational learning because if mirror neurons are
constantly imitating others’ actions and emotions, both in media and real-life, they may be
quicker to build up resistance to empathic affect than they would be in a light viewer who does
not have the same cognitive structure built up.
Empathy

The term empathy was derived from a German word, einfühlung, which was used to describe the sensation an observer feels when projecting himself into artwork as if to feel its emotions. Thus, empathy’s origins were tied closely with the idea of inner imitation (Gallese, 2001). Modern day depictions of empathy mirror the notion of inner imitation; however, the word is often used to describe an observer’s inner imitation of people so that they are recognized, “not as bodies endowed with a mind, but as persons like us” (Gallese, 2001, p. 43).

Empathy has been studied for hundreds of years in various disciplines, including philosophy, theology, psychology, ethology, and neuroscience; however, there is a lack of consensus regarding the exact nature of the sensation (Preston & de Waal, 2002). Because virtually all human action is directed to or produced in response to others’ actions (Decety & Jackson, 2004), most disciplines do recognize that the feeling of empathy is tied closely to and positively correlated with altruistic motives (Snow, 2000) and prosocial helping behavior (Eisenberg & Miller, 1987; Funk et al., 2004). However, researchers do not agree on whether empathy is an observer directly matching his or her emotions to another’s affective state (Fesbach & Roe, 1968), a manifestation of sympathy (Hoffman, 1984), or whether people only empathize to reduce stress of another’s situation (Batson & Coke, 1981; see also Konrath, O’Brien, & Hsing, 2011).

Defining empathy. Settling on a definition for empathy is difficult, then, because it is defined differently throughout various disciplines’ literature. However, the major tenet that appears in most definitions is an observer’s inner-imitation and matching of feelings that someone or something else is experiencing (Borke, 1971; Decety & Jackson, 2004; Deutsch & Madle, 1975; Dodge, 2011; Snow, 2000; Stiff, Dillard, Somera, Kim, & Sleight, 1988). In
addition, the ability to detect the emotional state of another person is assumed as a precursor to empathy (Trevarthen, 1979). Lastly, many scholars have dubbed empathy as either an emotion or a cognition; however, other scholars have argued that empathy is multidimensional, and therefore it is both an emotion and a cognition (see Davis, 1983). Thus, empathy will be defined as a multidimensional construct that incorporates both the emotional similarity of feelings expressed by the self and others in addition to an observer’s cognitive inner-imitation of an observed experience (Davis, 1980; 1983; Decety & Jackson, 2004; Dodge, 2011; Snow, 2000).

Multidimensionality. That the construct of empathy is multidimensional is taken even further by Davis (1980; 1983) when he described four different types of empathy cognitions that can occur based off of observers’ differing emotions. The first, perspective taking, can be defined as putting one’s self in another’s shoes to imagine what life is like from the opposite perspective. The second, fantasy empathy, describes the empathy one feels as a social function and when immersed in fictional media and associating with fictional characters. It’s important to note that empathic affect is still very real here, even with mediated and potentially fictional characters. The third, empathic concern can be thought of as compassion when witnessing another’s misfortune (Davis, 1980; 1983). Lastly, the fourth type, personal distress, is the least altruistic (Hoekstra, Harris, & Helmick, 1999), as it is, essentially, the intrapersonal grief one feels toward another’s suffering. Personal distress is purely selfish, while the prior three types of empathy are selfless and prosocial (Davis, 1980; 1983). It is important to mention that one does not have to feel fantasy empathy for a fictional character; rather, so long as the character is portrayed as believable to the observer, the observer can experience any of the above empathy types toward fictional characters (Snow, 2000).
Mirror neurons. Although they all are different, there is a commonality among all four types of empathy mentioned above, which is inner-imitation of another’s perceived feelings. This inner-imitation occurs through the brain’s mirror neurons (Snow, 2000). Mirror neurons activate in an observer’s mind when he or she witnesses an emotion or action by another. Discovered accidently by the University of Parma, mirror neurons in a docile observer were found to mimic the brain waves in an active participant. Neurology researchers were taking a break from fMRI research when they left a macaque monkey and a human participant hooked up to brain wave detectors. When the human participant tried to crack open a pistachio nut for a snack, researchers noticed that the same brain activity was occurring in both the frustrated human and the monkey who was observing him. Thus, researchers concluded that the similar brain patterns indicated a physical representation of an inner-imitation of the feeling of frustration (Barry, 2009; Rifkin, 2010).

Although mirror neurons can become active without an individual being consciously aware that they are, differing degrees of empathy can bring about varying levels of awareness of the imitation of feelings. For instance, Davis (1983) equated empathic affect for one another with the degree to which an observer believes a victim’s ability to escape a situation. He called this the “ease of escape” (p. 168). Ease of escape is determined by assessing how difficult it would be for an individual to escape a situation causing distress. People with high empathy levels, and therefore high moral compulsions, were found to help a subject regardless of the ease of escape. Researchers maintained that this was because motives of those with high empathy were altruistic, and, therefore, the observer would have wanted to reduce the victim’s suffering regardless of his or her own personal welfare (Davis, 1983; Krebs, 1975).
A cerebral commonality link is thought to exist between perceiving pain in another and experiencing it within oneself (Jackson, Meltzoff, & Decety, 2004). Because of this, empathy essentially motivates people to help others the way fear appeals motivate people to help themselves (Shelton & Rogers, 1981). Those with low empathy levels, and therefore high selfish motives, were found to focus more on their own personal distress from seeing a subject in a stressful situation. Personal distress is associated with a selfish desire to lessen one’s own personal discomfort at seeing another in an undesirable situation rather than altruistically helping another human being (Davis, 1983; Hoekstra et al., 1999). Thus, observers with low empathy levels will help a subject only when the ease of escape is difficult and causing the observer personal distress at seeing another human being in a dreadful situation. When the ease of escape is easy, it may be causing the subject distress but since the low empathic observer assessed the situation as easily escapable, the observer will not feel personal distress toward the victim who could easily save herself, and will therefore not intervene (Davis, 1983).

Mirror neurons, in essence, allow the human brain to absorb culture without explicitly being taught it. These neurons are the reason happy people compel others to smile, anxious people make others nervous, and are even why yawning is contagious (Barry, 2009; Dimberg, Thunberg, & Elmehed, 2000; Wallbott, 1991). Although these motives can be socialized to some extent, empathic affect is ingrained in humans from infancy (Barry, 2009; Snow, 2000). For instance, if a parent sticks her tongue out at an infant, the infant will stick its tongue out, too (Barry, 2009). Newborns as young as 18 hours old have been shown to begin reproducing mouth and facial movements made by an adult they are facing and mirror the exact crying sounds made by other infants in distress. This form of empathic mimicry is thought to mark the beginning of social cognitive development in infants (Hoffman, 1984; Meltzoff & Moore, 1997).
Empathy’s importance. Empathic affect is so deep-rooted in humans that people will imitate other’s actions even when they know it is not the most efficient way to complete a task (Barry, 2009; Horner & Whiten, 2007). Even if an observer does not overtly reproduce an observed action, his brain’s mirror neurons try to communicate action to his body’s motor system as if he were performing what he is observing (Gallese, 2001). Snow (2000) maintained that a degree of morality is associated with empathy and taking another’s perspective because doing so tends to enhance the quality of one’s social skills (Davis, 1980; 1983) and can moderate smooth interactions with others (Chartrand & Bargh, 1999).

Essentially, feeling empathy for another comes down to an observer’s ability to read another’s emotions. Decety and Jackson (2004) maintained that this self-other awareness and mind reading is hardwired in the human brain and just awaits the development through social interactions. This type of affective communication has survival value, as well, because human survival depends on one’s ability to function effectively within a social context (Singer et al., 2004), whether it be to cooperate when hunting and gathering food or to further courtship which can lead to reproductive success (Plutchik, 1987). Because of these needs, some researchers believe that evolution has transformed the human brain into being able to decipher the motivations of others quickly in order to identify potential predators or harmful people (Brothers, 1989; Singer et al., 2004). This advancement has given human beings the natural ability to understand the emotions of others whether the observer actually witnessed a situation, perceived it from a photograph, read about it in a book, or simply imagined it (Decety & Jackson, 2004). Therefore, having the diminished ability to empathize could have societal-level implications because of humans’ potential decreased ability to identify all the aforementioned motives in others.
Empathy deals with the emotional matching and the vicarious experiencing of emotions (Miller & Eisenberg, 1988). Thus, it can be felt for almost any target including other species (Decety & Jackson, 2004) excluding non-living objects. Researchers noted that when a monkey and a child observed a human’s struggle to complete a goal-related behavior, such as a twisting off a tight soda cap, even if the goal was never reached in the behavior, the same brain neurons lit up in both observers (the monkey and the child) and the human. This suggested that the observers engaged in empathy for the struggle the human was encountering; so much so, that similar brain patterns were experienced within the observers’ motor-sensory systems as if they were working to overcome the struggle themselves. Researchers noticed, however, that if a similar goal-related behavior was performed by a mechanical device, the mirror neurons were not as omnipresent and neither a monkey nor a child observer could complete the same goal-related task, especially if it was failed by the mechanical device. This revealed that in order for observers to fully understand the link between a struggle and the intended goal, empathy must be experienced. In addition, the findings suggested that empathy cannot be felt for a mechanical device that is known to have no feelings of its own (Gallese, 2001). However, empathy can be felt for humans and animals that are represented on a mechanical device—for instance, on a television.

**Empathy & media.** One study found that when participants were exposed to R-rated sexual violence on film, they showed less empathy toward rape victims. In addition, the longer the participants were exposed to a sexually violent film, the less general empathy they felt (Linz et al., 1988), which suggests viewers’ mirror neurons may have become desensitized. This is thought to occur because of the fact that when an observer experiences empathic affect for another, the observer’s brain cannot tell the difference between what is real and what is observed
(Barry, 2009). So, when consuming media, viewers’ mirror neurons do not distinguish between mediated representations of events and real-life events.

This misattribution occurs in video games as well, as video gamers’ mirror neurons have been found to be significantly more active during dramatic play. So, although video gamers know on a conscious level that they are not holding a rifle shooting zombies or war criminals, on a subconscious level, their brains believe that they are. This is an example of how mirror neurons allow people to learn behavior through feeling it (Barry, 2009).

In fact, the United States Army created a free online video game, “America’s Army,” which plays off this “learn by feeling” concept. In the game, players must go through training before they are allowed into combat so they gain experience with advanced weaponry, medical emergencies, parachute deployment, etc. Once they have the necessary skills and knowledge of weaponry in the game, they proceed into battle to fight terrorists. Players’ scores and wins are then recorded in an Army database, and high-scoring players are sent e-mails persuading them to transform from a gamer to a real soldier. Although a gamer may believe on a conscious level that he or she has no real combat experience, the U.S. Army is relying on the players’ mirror neurons, which have essentially learned combat experience through feeling it in gameplay. Thus, these gamers’ mirror neurons are instilled with the skills of a soldier even if the gamer has never experienced war outside his or her parents’ basement. This subconscious misattribution of experience can occur in both mediated and real-life settings including both nonfiction and fiction (Barry, 2009).

**Empathy’s determinants.** Despite the fact that all humans can learn by feeling, the degree of empathy that they feel has been found to depend partially on their sex. Male/male interactions have been found to possess much less empathy than female/female interactions
Men’s brains also have the tendency to base the amount of empathy they feel for an individual on the degree of his or her moral social behavior (Singer et al., 2006). For instance, researchers found that when both men and women witnessed a bad outcome imposed on a good person, they exhibited brain activity which showed empathy for the person they were observing. However, when observers witnessed a bad outcome imposed on a bad person, men showed no significant empathic response, but women’s brain activity showed significant empathic affect toward the people presented as having bad moral character (Singer et al., 2006). Thus, social norms, gender, and sex role stereotypes also play a role in developing mature mirror neurons and empathic capabilities. According to gender role stereotypes, women are expected to be expressive, and therefore empathy is encouraged to blossom. Under this same stereotype, however, men are expected to be instrumental and hardly expressive at all, which can cause their empathic affect to be less-developed than it is in women (Hoffman, 1977). Because of this, sex was controlled for in the current study.

Although mirror neurons are present in infancy in both men and women, in order for empathic affect to be fully mature in an individual it must be reinforced through nurturing and habituation (Snow, 2000). For instance, development of one’s mirror neurons and empathic affect are thought to be enhanced by supportive parents. On the contrary, children raised in abusive households were found to exhibit low levels of empathy because, presumably, their social cognitive development was effectively stunted (Miller & Eisenberg, 1988). Researchers have found that once a person loses the capacity to experience and express an emotion—for instance, in Huntingdon’s disease patients—that emotion can no longer easily be detected or understood in others (Gallese, 2001). While diseases and less than perfect upbringings may contribute to low empathy levels, deficiencies in the ability to respond to others with empathy
have also been found to be a cause of social interaction dysfunctions (Gibbs, 1987). Thus, this bidirectional causation can cultivate poor social skills and rocky interactions with others (Chartrand & Bargh, 1999).

**Diminishing empathy.** Even for those who have fully mature mirror neurons, empathic affect is not guaranteed to remain at a high level. When human beings are exposed constantly to events that trigger empathic affect, they, “can and do build up a resistance to empathic neurophysiological responses” (Barry, 2009, p. 86). Thus, when people bear constant witness to events that trigger empathy, they respond with a lesser degree of empathy for each subsequent event. Diminished empathy may be the result of emotional and cognitive desensitization, then (Eron, 2001).

This can be applied to witnessing events in the media that trigger mirror neurons to be active, as well, and could cause viewers to respond with less empathy to others in the real world (Linz, et al, 1988; Krahe & Moller, 2010). If observers’ brains are constantly witnessing action that activates their mirror neurons, then their mirror neurons may, in essence, become overstimulated and respond with a lesser pronounced mimicry when activated later. If the more an individual’s mirror neurons are stimulated, the more resistance that is built up, then it would make sense for heavy media users to exhibit less empathy than someone whose mirror neurons have not been as stimulated.

**Cultivation Theory**

Cultivation analysis research arose from Gerbner’s (1970) Cultural Indicator Project research which looked at the mass media that sent messages to the public, content analyses of the messages being sent, and the effects of those messages on viewers. Gerbner (1970) dubbed the third step in this process cultivation analysis, which was concerned with the degree to which
viewers were cultivated into believing the real world existed as it was portrayed on television. He focused specifically on television because of the public’s ritualistic use of the medium (Gerbner, 1970).

**Theoretical underpinnings.** Instead of viewers selecting which television programs to view, Gerbner (1998) suggested that television usage is based on times of receiver availability because consumers’ viewing decisions are based more on the clock than their personal viewing preferences. Unlike some experimental research, with television, there is no “before exposure” condition because it enters viewers’ lives in infancy and plays a major role in socialization and forming predispositions (Gerbner, 1970). It is, then, a daily ritual shared by all genders, races, and socioeconomic standings (Gerbner, 1998).

Video Cassette Recording (VCR) device penetration was low in 1986, and heavy television viewers were found to have used VCRs to concentrate their viewing habits on the same types of programming they were already highly exposed to—thus furthering the ritualistic viewing. Lighter viewers, however, used VCRs to diversify their viewing (Dobrow, 1990). Therefore, although common perception may be that recent technological advances allow for more selective viewing habits, technologies such as YouTube, Hulu, and Digital Video Recording simply may add opportunity for time spent with all television programming. Viewers essentially will be watching the same types of programming they would be if they were in front of an actual television. Recording and playback devices only add to television program consumption time by viewers, and they do not necessarily take away from Gerbner’s original notion of ritualistic viewing (Morgan & Shanahan, 2010). Viewers’ ritualistic consumption of television programming is the main reason the current study was focused on television programming as the only narrative programming that may have played a role in shaping viewers’
empathy levels. Because empathy can be thought of as partly socialized, it makes sense to focus on one of the biggest socialization tools and storytellers in today’s culture—television (Gerbner, 1998).

Through the cultivation theory, Gerbner (1970) purported that those who engage in heavy television usage tend to shape their belief of reality based on what is portrayed in television programming. The more television one consumes, the stronger the belief that the real world is similar to the world depicted on television. Viewers who believe crime rates are similar to those depicted on television are said to subscribe to the mean world syndrome (Gerbner, 1970).

Although crime, aggression, and likelihood of victimization are grossly overrepresented on television (Nabi & Riddle, 2008), researchers have noted that television is a better predictor of fear of crime and crime prevalence perceptions than personal experience with crime (Einsiedel, Salomone, & Schneider, 1984; Van den Bulck, 2004). Furthermore, given a lack of personal experience with an issue, media’s effects will be even greater (Gunter, 1987).

**Television’s impact on empathy.** This effect can be so strong that heavy viewers will often support governmental policy changes that will protect their safety even if it means a loss of their basic civil liberties (Van den Bulck, 2004). Similar to the previously mentioned evidence that desensitization as a result of mediated representations can be transferred into real-world beliefs and emotions, cultivation research also has shown evidence of this transfer. For instance, amount of television viewing has not only been found to be a significant predictor of overestimations of crime in society, but it also was found highly correlated with a heightened intention to take preventative action against being victimized (Nabi & Sullivan, 2001). Heavy television users in this study were more likely to alter their behavior to stay safe—and this includes purchasing products marketed toward helping them do so. Thus, perceptions like the
belief in a mean world that viewers acquire based on television representations can translate into real-world perceptions and behaviors. This adds to the evidence that was previously given linking the mediated world with viewers’ real world.

Because both worlds seem to have equal influence on their lives (Green & Brock, 2002; Shrum, 2001); it may be that heavy viewers perceive reality as a compilation of both their real- and television-worlds. Given that television’s primary goal is, arguably, entertainment, the impact on viewers’ perceptions toward others is something worth further exploration. The current study sought to explain a small, yet very important, piece of this puzzle by uncovering how the mediated narratives, which can compel all the aforementioned actions, influence empathy toward others.

Appel (2008) noted that because good almost always triumphs over evil in these entertainment narratives, a belief in a just world can occur alongside the belief in a mean world. If a belief in a just world does occur, then perceptions of aggressive power and righteousness would be present more so in heavy viewers than light viewers (Appel, 2008). Violence is the key portrayer of social order in television (Gerbner, Gross, Signorielli, Morgan, & Jackson-Beeck, 1979), as showing who can get away with what in television violence is communicating a social hierarchy of power, vulnerability, and control (Morgan, 1983). So, although television may cultivate a belief in a righteous and just world, viewers’ empathy levels may still be affected by the constant witnessing of victimization and vulnerability.

*Television’s thematic influences.* The cultivation effect, then, is a result of a construction subprocess where viewers use information they have gathered about the television world to construct their ideas about the real world (Potter, 1991). Gerbner (1998) suggested that what cultivates audiences the most is viewing the same patterns in television over and over again. This
includes the contexts, social typologies, actions, and overall outcomes, such as good triumphing over evil, that make up the entirety of television (Appel, 2008; Gerbner, Gross, Morgan, & Signorielli, 1986).

These recurrent themes are consistent and often replicate the themes that have already proven to be profitable. Mainstream television, of which, 90% is owned by five major corporations, is designed to offend as few people as possible and appeal to the largest target audience (Gerbner, 1998). Viewership is associated with a cultural mainstream that attempts to assimilate groups who would otherwise diverge from it (Gerbner, Gross, Morgan, & Signorielli, 1980). Researchers do not suggest that television viewing alone contributes to changing world perceptions, rather, there are factors ranging from demographics, social, personal, and cultural contexts that can determine the degree of influence television programming is likely to have (Gerbner et al., 1986).

**Genre-specific influences.** Although a lot of cultivation research has focused on crime and victimization perceptions, research has branched out to touch on other perceptions as well. For instance, overall television viewing amount has been found to negatively correlate with idealistic marriage expectations, but amount of viewing within the romantic genre was found to positively correlate to idealistic marriage expectations (Segrin & Nabi, 2002). In addition, heavy viewers were found to trust their significant others less and believe in a greater likelihood they would experience marital problems (Shrum, 1999). Heavy viewers are also more likely to score higher on a sexism scale (Signorielli, 1990), which could indicate these viewers exhibit lower empathy for members of the opposite sex, because they are more likely to marginalize them.

In accordance with the current study, these nonviolent related findings are important because viewers’ empathy levels, if affected, may not just be affected by violence and
victimization. Rather, the emotions that accompany viewing divorces and the demise of relationships may cause viewers’ empathy levels to decrease as well. For example, research has shown that heavy soap opera viewers estimate higher frequencies of the numbers of real people who divorce, have affairs, have abortions, and bear illegitimate children compared to light viewers (Buerkel-Rothfuss & Mayes, 1981; Carveth & Alexander, 1985) and viewers of other genres (Potter & Chang, 1990). As was previously mentioned, repeated exposure to emotions can cause numbing to those emotions in subsequent encounters (Essau et al., 2006; Frick et al., 1999; Kimonis et al., 2008; Pardini et al., 2003). Being taken on an emotive rollercoaster from watching emotionally-driven television content may be entertaining for viewers; however, the implications that could arise due to a cultivated emotional callousness could result in viewers feeling less empathy for real people in similar situations. Because of this, the current study focused on measuring overall television consumption as opposed to simply violent content.

One of cultivation theory’s major criticisms lies in Gerbner’s claims of a general television viewing effect. Essentially, Gerbner’s claims maintained that the same effects arise from watching Law and Order as from Seinfeld and all other programming genres. Gerbner’s general television viewing effects research (Gerbner, 1970, 1998), however, is being countered with recent cultivation research in which researchers have examined genre-specific cultivation effects as well as cultivation effects that may arise from other media, like video games (Morgan & Shanahan, 2010). Gerbner would argue that genre-specific analyses like these are not to be categorized under the term cultivation, especially because viewers who watch certain genres do not watch them in isolation. Rather, in looking at publics who favor one genre, it would be next to impossible to isolate any effects that came only from that genre and not a combination of others (see Morgan & Shanahan, 2010). However, many researchers have noted that the
cultivation effect is actually strengthened when separating heavy viewers according to specific genres (Hawkins & Pingree, 1982; Morgan & Shanahan, 2010; Potter & Chang, 1990).

Applying television cognitions to real-life. As heavy media users become bombarded with messages from one or many genres, they must find quick ways to process the information being thrown at them. Mental heuristics are relied on in heavy media users’ brains to process the constant flow of information (Morgan & Shanahan, 2010). This processing strategy moderates the cultivation effect, as well, because, in heavy viewers who have become attuned at processing information quickly, heuristics tend to foster a greater cultivation effect (Shrum, 2001).

These mental shortcuts act as an automatic processor of information, thereby subconsciously furthering any cultivation that is created by heavy media consumption (Morgan & Shanahan, 2010). When viewers subconsciously use heuristics as a mental processing strategy, there is a lack of source discounting. For instance, in asking a heavy television user to estimate the amount of marriages that end in divorce, when attempting to answer, those who used heuristic processing to form the judgment their answer will be based on will not discount television and mediated examples as sources. Furthermore, once a schema has been created based on an exemplar, that schema will defend itself by potentially biasing every judgment thereafter. This means that before answering they will take into account how many marriages they know have failed personally, how many local divorces they have read about in the newspaper, how many they have heard reported about celebrities, and even how many fictional divorces they have witnessed in media (Shrum, 2001). Essentially, those making judgments will assign equal credence to mediated, real, and fictional exemplars.

The same phenomenon occurs with empathy, and who observers’ brains subconsciously feel empathy for (Decety & Jackson, 2004; Gallese, 2001). There is no source discounting within
viewers’ brains distinguishing a real-life stranger who has a flat tire along the highway from a mediated exemplar that is in the same situation. Given that empathic affect can be decreased when mirror neurons become overworked (Barry, 2009) and the viewer becomes desensitized to an emotion, this lack of source discounting means that mediated exemplars could be overworking heavy viewers’ mirror neurons. So much so, that if an observer has the opportunity to act altruistically in real-life, he or she could be lacking empathy—the precursor to altruism (Batson et al., 1989; Batson et al., 1995)—because of his or her experience with media. Therefore, the altruistic act may never have the chance to take place.

Hypotheses and Research Questions

This review of current literature has demonstrated that a link has been established between television exposure and desensitization (Cline et al., 1973; Thomas et al., 1977). Although these studies specifically focused on violent content as it impacts viewers’ emotional reactivity, the current study looked at overall television consumption. Therefore, the following hypothesis was suggested.

$H_1$: Heavy television viewers are more likely to be desensitized than light viewers.

Mediated representations are cognitively processed the same as real-life events (Green & Brock, 2002), which indicates that mediated desensitization can and does impact viewers’ real-life perceptions, actions, and emotions, as has been demonstrated by many studies (see Batholow et al., 2005; Carnagey et al., 2007; Funk et al., 2004; Thomas et al., 1977). Thus, in accordance with the link that has been established between desensitization and empathy (Barnett et al., 1997; Scharrer, 2008 Strasburger & Wilson, 2002) the following hypothesis was proposed.

$H_2$: Those who score high in desensitization will exhibit lower empathy levels than those who do not.
In combining the aforementioned, the current study sought to determine whether a direct link existed between television exposure and empathy levels, or whether that link was mediated by desensitization. In addition to testing for a relationship between overall television consumption and empathy, specific genres of television programming were explored as they related to empathy as well. Therefore, the following research questions were posited.

RQ1: Controlling for sex, is there a significant relationship between heavy television consumption and empathy levels?

RQ2: Controlling for sex, does desensitization mediate the relationship between heavy television consumption and empathy levels?

Chapter III

Methodology

Participants

Because the Millennial generation (those aged 18-29) are some of the heaviest users of all forms of media (Pew Internet, 2010), they have a greater chance of witnessing television programming not only from television, but also from their use of the internet and mobile devices (The Nielsen Company, 2012a). Even Netflix users who identify as using the service to watch television programming are steadily increasing (The Nielsen Company, 2012b). Because this age group is so digitally connected and surrounded with television programming, they were the focal point of this study.

The study utilized participants from a pool of undergraduates in introductory communication classes at a mid-sized Midwestern university. Participants received a small amount of course credit for participation, and an alternative assignment was available for those who wished not to participate. Although this was a convenience sample, the age group’s viewing
habits made them ideal participants for exploring television consumption’s potential effects. To ensure a low sampling error, at least 384 participants were needed according to Krejcie and Morgan’s (1970) representative sampling technique. Six-hundred participants were originally selected for participation. However, due to a nonresponse rate (N = 27) and participants filling out the questionnaire illogically (i.e., reporting that they watched more than 24 hours of television in a day), only 491 responses were usable for data analysis. Further, those who reported watching no television at all were filtered out, which resulted in 469 responses being used in the final data analysis.

The final sample consisted of 469 undergraduate students ranging in age from 18-51 (M = 19.75, SD = 3.22) with only 1.7% of the sample falling outside the age range for what is considered the Millennial generation. Females made up 56.7% of the entire sample. In addition, freshmen made up 49.3% of the sample, while 33.5% were sophomores, 12.4% were juniors, and 4.7% identified themselves as seniors. Finally, the majority of the sample identified themselves as Caucasian (79.1%), followed by African American (10.4%), Hispanic (1.9%), Asian (1.3%), and Native American (.2%). In addition, 7% identified as “Other.”

In order to determine whether participants were cognitively detached or involved in the content they were viewing, participants were asked to respond to a level of involvement measure. Measuring level of involvement was necessary because if television users were viewing high amounts of television but were cognitively removed from it, they may not experience the same impact on desensitization, callousness, and empathy that cognitively involved viewers might. On the five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree) participants reported being neither heavily involved, nor completely detached from television content (M = 3.06, SD = .57).
Procedures

**Pilot study.** The current study sought to uncover genre-specific effects that may have an impact on desensitization and empathy. Instead of asking participants their consumption of every imaginable television genre, a pilot study was conducted in order to narrow down the list of genres of which the actual study would ask participants to estimate their consumption. This consisted of a questionnaire asking students in two undergraduate classes to estimate their consumption of 12 different television genres, their favorite genre, and to estimate their overall television consumption. Two assistant professors administered a questionnaire to their undergraduate classes. A total of 22 responses were collected. Responses were kept anonymous, and participants were ensured their participation was completely voluntary.

Although consistency in measuring television use in scholarly literature does not yet exist, one procedure has been used successfully in prior research (Haridakis, 2006; Rubin, 1979; 1981; 1983; 1984; Rubin, Perse, & Powell, 1985) and, hence, was utilized for the pilot study. This measure asks participants to estimate how much television they watched the previous day, and then to estimate how much television they watch on a typical day. The two amounts are then averaged into an index, which has demonstrated good reliability ($\alpha = .71$) and face validity in the past (Rubin et al., 1985).

Although The Nielsen Company (2012c) identified five traditional television genres (drama, news, reality, situational comedy, and sports), the pilot study expanded the genre list in order to allow participants’ potential wide range of viewing habits to become apparent. Genres that were accounted for in the pilot study are: crime/police dramas, medical dramas, science fiction, relationship dramas, local news, national news, daytime talk shows, nighttime talk shows, game shows, reality, situational comedy, and sports. This list, a condensed version of
Riddle’s (2010) 20 predominant genres, was determined by combining the genres that had similar themes.

For each genre in the pilot study, participants were asked to estimate the hours they watched the previous day in addition to the hours they watch on a typical day. Participants also were asked to indicate their favorite television genre and estimate their overall television consumption using the same index-method as was used for specific genres. Thus, the questionnaire consisted of 27 open-ended items. Participants were instructed to include in their estimate any time spent watching television on a digital video recording (DVR) device, Internet streaming, Netflix programming, mobile streaming, and any other form of technology through which they viewed television programming.

Responses indicated seven genres whose means of viewing time were relatively the highest; crime dramas, science fiction, relationship dramas, news, reality, situational comedies, and sports. Thus, these seven genres were the ones explored in the subsequent study. Although daytime and nighttime talk shows appeared to have higher viewership than the science fiction genre, they were omitted from the current study because there were not any expected results of talk show viewing on desensitization, callousness, or empathy. In addition, it is important to mention that the questionnaire was administered on a Monday. Because the viewership questions ask respondents to estimate their television consumption the previous day and on a typical day, viewership often was noted as being higher the previous day because it was a Sunday. Thus, a disparity between the previous day’s habits and a typical day’s habits existed for some respondents, which contributed to low Cronbach’s alphas for some genres. The entire questionnaire can be viewed in Appendix A and the means, standard deviations, and Cronbach’s alphas of the responses can be viewed in Table 1.
Table 1

*Means, Standard Deviations, and Cronbach’s Alphas for TV Genres in Pilot Study*

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<th>Television use in hours</th>
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<td>M</td>
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<td>.87</td>
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**The current study.** In order to test the hypotheses and research questions, a non-experimental survey was distributed through Qualtrics, a secure online survey tool. Students were notified of the opportunity to participate in this study by their instructors and were then able to sign up for participation through a secure online research participation system.

After 600 participants signed up, they received an e-mail briefly explaining the nature of the study and were given the Qualtrics survey link with instructions on how to complete the
survey. The survey contained five scales and a few demographic questions. Scales appeared in the survey in the order they are described below.

At the end of the electronic survey, participants were forwarded to a different website where they could enter their personal information to receive class credit for their participation. Tracking of students who completed the survey remained separate from the survey data and participants’ identities on the Qualtrics survey remained anonymous throughout all steps of the study.

Measures

**Empathy levels scale.** Empathy was assessed using two subscales of the Interpersonal Reactivity Index (IRI) created by Davis (1980; 1983; see Appendix B). The overall IRI has been used widely and has demonstrated strong reliability ($\alpha = .83$). This scale was composed of four subscales which have all demonstrated good validity and reliability; however, the current study was only concerned with two dimensions of empathy, empathic concern, which measures the compassion one feels when witnessing another’s misfortune, and personal distress, which measures the intrapersonal grief one feels toward another’s suffering (Davis, 1983). Thus, empathic concern (males $\alpha = .72$; females, $\alpha = .70$), and personal distress (males, $\alpha = .78$; females, $\alpha = .78$) were the only two subscales administered. Differences between male and female Cronbach’s alphas were noted because females tend to be more predisposed to empathy than men (Davis, 1980). Construct, convergent, and discriminant validity have been demonstrated for the IRI as well (Davis, 1983). The current study found high reliability ($\alpha = .75$) for the empathy measure, as well (males $\alpha = .73$; females $\alpha = .72$)

The subscales mentioned here arose from Davis’ (1980; 1983) research which measured individual differences in empathy by defining the emotion in a multidimensional way. The two
subscales utilized in the current study, personal distress, and empathic concern, were designed to measure concern for others, and emotionality, respectively (Davis, 1983). In this multidimensional measure, Davis (1983) attempted to treat empathy not as a single construct of emotion or cognition like many scholars have, rather, as a set of constructs that clearly relate, yet are discernible from each other as well.

Items from these two subscales were scored by participants on a five-point Likert scale ranging from 1 (does not describe me at all) to 5 (describes me very well). The scale is made up of 14 questions that include items such as, “I often have tender, concerned feelings for people less fortunate than me” and “In emergency situations, I feel apprehensive and ill-at-ease.”

It is also important to note that Linz et al. (1988) found that when measuring viewers’ emotional reactions to films, emotional reactions are not short-lived, and thus do not require measurement immediately following exposure.

**Desensitization scales.** To determine whether desensitization acted as a mediating factor in television’s potential impact on empathy, participants completed two scales designed to measure sensitization. The first, a 15-item measure was designed to measure participants’ attitudes toward violence, and is aptly named the Attitudes toward Violence Scale (ATVS; see Appendix C). Developed by Funk et al. (1999), the ATVS has demonstrated strong reliability (α = .86) and predictive validity (Funk et al., 1999). This measure was designed to measure individuals’ sensitization toward violence in both a reactive tense, where an individual decides how to respond to a situation, and a cultural tense, where an individual’s core attitudes about the nature of violence become apparent. Thus, this scale is composed of both a reactive violence subscale (α = .77) and a cultural attitudes subscale (α = .75) which have both demonstrated good reliability and validity (Funk et al., 1999). This scale originally was designed to measure
adolescents’ attitudes toward violence; however, strong reliability ($\alpha = .81$) and validity have been demonstrated when it is used with undergraduates as well (Brady, 2007). The current study found high reliability for this measure, too ($\alpha = .80$). The measure is composed of items such as; “Parents should tell their children to use violence if necessary,” and “It’s okay to use violence to get what you want,” answered on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree).

In order to assess participants’ non-violent emotional sensitization, the callousness subscale of the Inventory of Callous-Unemotional Traits (ICU; see Appendix D) was administered. Developed by Essau et al. (2006), this subscale has demonstrated good reliability ($\alpha = .80$) and construct validity overall (Essau et al., 2006). Although this scale was originally constructed for adolescents, it has demonstrated strong reliability ($\alpha = .81$) and construct validity for the 18-20 age group as well (Kimonis et al., 2008). The original measure was scored on a four-point Likert scale; however, to reduce possible confusion in participants from repeated changing of scales, the current study adapted the measure to be scored on a five-point Likert scale. In doing so, high reliability still existed in the current study ($\alpha = .80$).

The resulting adapted scale administered in the current study was an 11-item measure which is scored on a Likert scale ranging from 1 (not at all true) to 5 (definitely true) and include things such as, “I do not care who I hurt to get what I want,” and “I do not let my feelings control me.”

Because the desensitization scale utilized by this study measured attitudes toward violence and the callousness scale measured emotional reactivity, the current study was focused on creating a composite variable of desensitization and callousness, called numbness, to test for overall habituation. Rather than just looking at one specific type of habituation then, this
composite variable allowed the current study to focus on an overall picture of participants’
unresponsiveness and numbness.

**Television use measure.** Using the data obtained in the pilot study, the current study
focused on seven specific television genres in addition to measuring overall television
consumption. This measure asks participants to estimate how much television they watched the
previous day, and then to estimate how much television they watch on a typical day according to
each genre and their overall habits (see Appendix E). This procedure has been used successfully
in prior research (Haridakis, 2006; Rubin, 1979; 1981; 1983; 1984; et al., 1985). The two
amounts are then averaged into an index, which has demonstrated good reliability (α = .71) and
face validity (Rubin et al., 1985). This measure demonstrated high reliability in the current study
for overall television consumption (α = .79), and for television consumption of crime dramas (α
= .74), science fiction (α = .80), relationship dramas (α = .80), news (α = .88), reality (α = .86),
situational comedies (α = .81), and sports (α = .93).

Because of the pilot study, the genres focused on in the current study were crime dramas,
science fiction, relationship dramas, reality, news, situational comedies, and sports. For each
genre in the current study, participants were asked to estimate the hours they watched the
previous day in addition to the hours they watch on a typical day. Because there were seven
genres accounted for in addition to the overall estimation, the television exposure scale in the
current study included 16 open ended items. Participants were instructed to include in their
estimate any time spent watching television on a digital video recording (DVR) device, Internet
streaming, Netflix programming, mobile streaming, and any other form of technology through
which they viewed television programming.
Adapted level of involvement scale. To help determine whether participants were cognitively involved in the content they were watching, their level of involvement in television programming was assessed using the Transportability Scale (TS) adapted to television use from Dal Cin, Zanna, & Fong (2004; see also Green & Brock, 2000). The TS can be found in Appendix F. Although viewers may be exposed to 12 hours of television a day, if they are not involved in the plotline, effects may vary compared to actively involved viewers. Strong predictive validity has been established for the TS (Bilandzic & Busselle, 2008).

This scale measured the degree of emotional involvement with programs and characters. The 20-item scale includes items such as, “I sometimes feel as if I am part of the TV show,” and “I find I can easily lose myself in the TV show.” The original version of the TS was created for reading; however, the current scale has been adapted to fit television consumption. Greenwood (2008) has demonstrated that this adapted version of the scale still has strong validity and reliability ($\alpha = .83$). This scale also was modified in the current study from an eight-point Likert scale to a five-point Likert scale to reduce possible confusion in participants from repeated changing of scales. The adapted version utilized by the current study still demonstrated high reliability ($\alpha = .88$). Items on this scale were scored by participants on Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree).

Demographic measures. Prior studies have noted differences between males and females for desensitization (Funk et al., 2004) and empathy (Hoffman, 1977; Singer et al., 2006) so sex was controlled for in the current study. Participants’ age, ethnicity, and year in college also were collected for descriptive purposes in accordance with prior cultivation studies (Gerbner et al., 1980; Rubin et al., 1988). Table 2 includes the means, standard deviations, and alphas for all the variables.
Table 2

Means, Standard Deviations, and Cronbach’s Alphas for all Variables

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<tr>
<th></th>
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Note. Empathy, desensitization, callousness, transportability, and numbness variables were scored on a 1-5 scale with higher numbers indicating more of that variable.

Chapter IV

Results

In order to test the hypotheses and research questions, the current study looked at participants’ total television use in hours, and their use, in hours, of seven different genres; crime dramas, science fiction, relationship dramas, news, situational comedies, and sports
programming. These data were analyzed to determine whether exposure could contribute to higher levels of callousness, desensitization, overall numbness, and empathy. Correlations among all variables can be found in Table 3.

In order to explore the effects of television exposure on desensitization and callousness, a composite variable was created by combining the two. Desensitization and callousness were correlated substantially ($r = .51, p < .01$), so in order to look at both desensitization to violence and to emotional reactance, an overall numbness variable was created to analyze the hypotheses and research questions. In addition, given prior research’s acknowledgement of sex differences in desensitization (Funk et al., 2004) and empathy (Hoffman, 1977; Singer et al., 2006), sex was controlled for. Hierarchical regression analyses were used to examine the hypotheses and research questions. This allowed results to indicate how each predictor contributed to numbness and empathy individually. The current study was testing a path analysis, and was therefore examining both a direct and indirect relationship. Previous studies have used hierarchical regressions for path analyses because this statistical procedure allows the direct and indirect influences to appear (see Bryman & Cramer, 2011; Haridakis & Rubin, 2003).

**Hypothesis 1**

$H_1$, which sought to determine whether heavy television use increased desensitization and callousness, was analyzed using a hierarchical regression analysis. As stated earlier, these two variables, desensitization and callousness, were combined to create a composite variable called numbness. This regression looked at overall television use, in accordance with Gerbner’s (1970) original idea of cultivation theory. Sex was entered as the first block of the regression and television use was entered in the second block. The first block accounted for 14.8% of the variance in numbness, $R^2 = .15, F(1, 465) = 80.91, p < .01$, with males number than females.
Table 3

*Correlations among Variables*

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*Note.* * Correlation is significant at the .05 level. ** Correlation is significant at the 0.01 level.
When television exposure was added in the second block, the variance explained in numbness increased only slightly, however still significantly, which suggests that this hypothesis was supported, $\Delta R^2 = .01$, $F_{inc}(1, 465) = 4.72$, $p < .05$. Significant predictors of numbness included both television, $\beta = .09$, partial $r = .10$, $t (467) = 2.17$, $p < .05$, and sex $\beta = -.30$, partial $r = -.30$, $t (467) = -6.41$, $p < .01$. This finding indicated that as television use increases, so does numbness. In addition, males still appeared numb than females.

In accordance with more recent cultivation theory work which has addressed genre-specific effects (see Morgan & Shanahan, 2010), a second hierarchical regression analysis was used to analyze the impact of separate genres on numbness. Sex was entered into the first block of the regression, and participants’ exposure to crime dramas, science fiction, relationship dramas, news, reality programming, situational comedies, and sports programming were entered into the second block. The first block accounted for 14% of the total variance on numbness, $R^2 = .14$, $F(1, 433) = 71.15$, $p < .01$. The addition of genre-specific television use in the second block resulted in an additional explanation of 6.2% of variance on numbness, $\Delta R^2 = .06$, $F_{inc}(1, 426) = 4.73$, $p < .01$. Main effects in the model included sex, with males being more numb than females, ($\beta = -.33$, partial $r = -.30$, $t (434) = -6.42$, $p < .01$), and two genres; crime dramas ($\beta = .18$, partial $r = .17$, $t (434) = 3.65$, $p < .01$), and situational comedies ($\beta = .14$, partial $r = .12$, $t (434) = 2.59$, $p < .01$), which acted as positive predictors of numbness. Similar to the first regression, sex explained the most unique variance on numbness, contributing to 8% of the explanatory power. Of the other main effects, crime dramas explained 2% of unique variance, and situational comedies explained 1% of the unique variance on numbness. The final regression and the semipartial correlations can be viewed in Table 4.
The first regression suggested that males and increased overall television exposure were positive predictors of numbness. In addition, the second regression suggested that males and increased exposure to crime dramas and situational comedies were positive predictors of numbness as well. Overall, then, these results suggest support for H₁. Although the amount of variance explained with the addition of television use is slight, small effects are in accordance with prior cultivation research, which has suggested that direct media effects tend to appear as small but significant (Gerbner, 1998; Gerbner et al., 1980). Additionally, specific genres appear to be a slightly better predictor of numbness than overall television viewing in terms of the amount of variance explained.

Table 4

*H₁: Summary of Hierarchical Regression Analysis for Specific TV Genres Predicting Numbness*

<table>
<thead>
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<td>.06</td>
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</table>

*Note.* R² = .14 (p < .01) for Step 1; ΔR² = .06 for Step 2 (p < .01). sr² = semi partial correlation squared. All coefficients are from the full model. Codes assigned to the sex variable were 1 = Male, 2 = Female.

* = p < .05, ** = p < .01.
Hypothesis 2

A hierarchical regression analysis was conducted to evaluate whether those scoring high in desensitization exhibited lower empathy levels. Again, the current study was interested in uncovering effects of desensitization to both violent and nonviolent content, so the measures for desensitization and callousness were combined into a composite variable, numbness. Sex was entered in the first block of the regression, and numbness was entered into the second block. The first block of the regression accounted for 11.4% of the variance on empathy, $R^2 = .11, F(1, 465) = 60.09, p < .01$. The addition of numbness in the second step of the regression accounted for an additional 8% of variance in empathy to be attributed to numbness, $\Delta R^2 = .08, F_{inc}(1, 464) = 43.28, p < .01$. Both variables in this regression, sex ($\beta = .22$, $partial \ r = .224$, $t \ (466) = 4.95, p < .01$), and numbness ($\beta = -.30$, $partial \ r = -.29$, $t \ (466) = -6.58, p < .01$), acted as main effects and explained 19% of variance in empathy. Being that the results of hypothesis one suggested that females were less numb than males, it makes sense that in here the results suggest that females are more empathic than males. Additionally, because numbness acted as a negative predictor of empathy, this finding suggested that as numbness increased, empathy decreased in both sexes.

Research Question 1

RQ1 sought to uncover whether, controlling for sex, a direct relationship existed between heavy television consumption and lower empathy levels. A hierarchical regression analysis was conducted to analyze overall television use as a predictor of empathy levels. Sex was entered into the first block of this regression and overall television use was entered into the second block. The first block explained 11.5% of the variance on empathy, $R^2 = .12, F(1, 466) = 60.47, p < .01$. The addition of television use in the second step, however, accounted for less than 1% of additional
variance in predicting variations in empathy, $\Delta R^2 < .01$, $F_{inc}(1, 465) = 0.28, p = 60$. Hence, this suggests that overall television use does not directly predict empathy.

A second hierarchical regression was conducted in order to determine if specific television genres impacted empathy levels. Sex was entered into the first block of this regression. The second block consisted of seven different television genres: crime drama, science fiction, relationship drama, news, reality, situational comedies, and sports. The first block explained 10.4% of the variance in empathy, $R^2 = .10$, $F(1, 432) = 49.92, p < .01$. The addition of genre-specific television use in the second block resulted in an insignificant explanation of variance in empathy, $\Delta R^2 = .01$, $F_{inc}(7, 425) = 0.82, p = .57$. The regression steps can be viewed in Table 5.

Table 5

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>SE B</th>
<th>$B_{sr^2}$</th>
<th>$sr^2$</th>
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<tr>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sex</td>
<td>.29</td>
<td>.05</td>
<td>.31**</td>
<td>.07</td>
</tr>
<tr>
<td>Step 2: Television exposure by genre</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Crime Drama</td>
<td>-.02</td>
<td>.01</td>
<td>-.08</td>
<td>.01</td>
</tr>
<tr>
<td>Science Fiction</td>
<td>-.01</td>
<td>.02</td>
<td>-.03</td>
<td>.00</td>
</tr>
<tr>
<td>Relationship Drama</td>
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<td>.01</td>
<td>.11</td>
<td>.01</td>
</tr>
<tr>
<td>News</td>
<td>.01</td>
<td>.02</td>
<td>.03</td>
<td>.00</td>
</tr>
<tr>
<td>Reality</td>
<td>.01</td>
<td>.01</td>
<td>.00</td>
<td>.00</td>
</tr>
<tr>
<td>Sitcom</td>
<td>-.00</td>
<td>.02</td>
<td>-.01</td>
<td>.00</td>
</tr>
<tr>
<td>Sports</td>
<td>.01</td>
<td>.01</td>
<td>.03</td>
<td>.00</td>
</tr>
</tbody>
</table>

Note. $R^2 = .10 (p < .01)$ for Step 1; $\Delta R^2 = .01$ for Step 2 ($p = .57$). $sr^2 = $ semi partial correlation squared. All coefficients are from the full model. Codes assigned to the sex variable were 1 = Male, 2 = Female.

* = $p < .05$, ** = $p < .01$. 
Research Question 2

Baron and Kenny (1986) have suggested that if a direct path between an independent variable and a dependent variable is lacking, then a mediator added to that path will not provide sufficient evidence for a relationship between the original two variables. Given the lack of significance in testing the direct path of television use predicting empathy from the previous research question, the mediated path here does not need to be tested for. For the sake of discussion, however, the results of the mediated path are reported in the following section.

RQ2 sought to uncover whether numbness mediated a relationship between heavy television consumption and empathy. To test this research question when focusing on overall television use, a hierarchical regression analysis was used. Sex was entered into the first block, overall television use was entered into the second block, and numbness was entered into the third. The overall model explained 19.3% of the variance in empathy $R^2 = .19$, $F(1, 463) = 44.51$, $p < .01$. In the first block, which accounted for sex, 11.4% of variance in empathy was explained, $R^2 = .11$, $F(1, 465) = 60.09$, $p < .01$. With the addition of television use in the second block, the increase in variance explained was less than 1%, $\Delta R^2 < .01$, $F_{inc}(1, 464) = 0.28$, $p = .60$. Although the second step was insignificant, the addition of numbness in the third step accounted for a significant increase in the explained variance where the entire path, with all variables included, was significant. Main effects of the regression included sex ($\beta = .23$, partial $r = .23$, $t(466) = 5.02$, $p < .01$) and numbness ($\beta = -.30$, partial $r = -.30$, $t(466) = -6.67$, $p < .01$). In accordance with both hypotheses, females exhibited more empathy than men and numbness acted as a negative predictor for empathy. The final regression model can be viewed in Table 6.

A second hierarchical regression was conducted in order to test this path by looking at specific television genres. Sex was entered into the first step. Then, television consumption of
crime dramas, science fiction, relationship dramas, news, reality shows, situational comedies, and sports was entered into the second block. Lastly, numbness was entered into the final block. The overall model explained 18.7% of the variance in empathy $R^2 = .19$, $F(1, 424) = 37.50$, $p < .01$. The first block explained 10.4% of variance in empathy, $R^2 = .10$, $F(1, 432) = 49.92$, $p < .01$. With the addition of genre-specific television use in the second block, the increase in variance explained was insignificant at 1.2%, $\Delta R^2 = .01$, $F_{inc}(7, 425) = 0.82$, $p = .57$. The addition of numbness in the third step, accounted for a significant increase in the explained variance where the entire last step, with all variables included, accounted for 18.7% of variance in empathy, $\Delta R^2 = .07$, $F_{inc}(1, 424) = 37.50$, $p < .01$. Main effects included sex ($\beta = .21$, partial $r = .189$, $t (433) = 3.96$, $p < .01$), and numbness ($\beta = -.30$, partial $r = -.30$, $t (433) = -6.12$, $p < .01$). These results suggested that females were more empathic than men and that numbness acted as a negative predictor of empathy. The final regression model can be viewed in Table 7.

Table 6

<table>
<thead>
<tr>
<th>Variable</th>
<th>$B$</th>
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<th>$B$</th>
<th>$sr^2$</th>
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<tr>
<td>Sex</td>
<td>.21</td>
<td>.04</td>
<td>.23**</td>
<td>.04</td>
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<tr>
<td>Step 2: Television exposure</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Overall TV exposure</td>
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<td>.01</td>
<td>.05</td>
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<tr>
<td>Step 3: Numbness</td>
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<td></td>
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<tr>
<td>Numbness</td>
<td>-.31</td>
<td>.05</td>
<td>-.30**</td>
<td>.08</td>
</tr>
</tbody>
</table>

Note. $R^2 = .11$ ($p < .01$) for Step 1; $\Delta R^2 < .01$ ($p = .60$) for Step 2; $\Delta R^2 = .08$ ($p < .01$) for Step 3. $sr^2$ = semi partial correlation squared. All coefficients are from the full model. Codes assigned to the sex variable were 1 = Male, 2 = Female. * = $p < .05$, ** = $p < .01$. 

$RQ_2$: Summary of Hierarchical Regression Analysis for Overall TV Use and Numbness Predicting Empathy
Table 7

*RQ2: Summary of Hierarchical Regression Analysis for Specific TV Genres and Numbness Predicting Empathy*

<table>
<thead>
<tr>
<th>Variable</th>
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<th>SE $B$</th>
<th>$\beta$</th>
<th>$sr^2$</th>
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<tr>
<td>Sex</td>
<td>.20</td>
<td>.05</td>
<td>.21**</td>
<td>.03</td>
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<tr>
<td><strong>Step 2: Television exposure by genre</strong></td>
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<tr>
<td>Crime Drama</td>
<td>-.01</td>
<td>.01</td>
<td>-.03</td>
<td>.00</td>
</tr>
<tr>
<td>Science Fiction</td>
<td>-.01</td>
<td>.02</td>
<td>-.02</td>
<td>.00</td>
</tr>
<tr>
<td>Relationship Drama</td>
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<td>News</td>
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<td>Reality</td>
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<td>Sitcom</td>
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<td>.00</td>
</tr>
<tr>
<td>Sports</td>
<td>.01</td>
<td>.01</td>
<td>.04</td>
<td>.00</td>
</tr>
<tr>
<td><strong>Step 3: Numbness</strong></td>
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<td></td>
</tr>
<tr>
<td>Numbness</td>
<td>-.31</td>
<td>.05</td>
<td>-.30**</td>
<td>.07</td>
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</tbody>
</table>

*Note:* $R^2 = .10$ ($p < .01$) for Step 1; $\Delta R^2 = .01$ ($p = .57$) for Step 2; $\Delta R^2 = .07$ ($p < .01$) for Step 3. $sr^2 = $ semi partial correlation squared. All coefficients are from the full model. Codes assigned to the sex variable were 1 = Male, 2 = Female.

* = $p < .05$, ** = $p < .01$

Chapter V

Discussion

The purpose of this study was to determine whether there was an empirical link between heavy television usage and empathy levels. This link was tested by adhering to Gerbner’s (1970; 1998) original cultivation theory hypothesis which focuses on viewers’ total television consumption, and by exploring popular television genres, which is in accordance with a more modern take on cultivation theory (see Morgan & Shanahan, 2010). Specifically, the present study sought to test whether a relationship between television use and empathy was direct or
mediated by callousness and desensitization. In this section, the study’s findings are summarized, implications are discussed, and limitations and directions for future research are acknowledged.

**Summary and Implications**

**Television use, desensitization, and callousness.** In accordance with prior research, the first hypothesis was supported, as results suggested that heavy television use predicted desensitization and callousness. This linkage was tested by combining desensitization and callousness as a numbness variable. Overall television use predicted numbness, which expands upon prior literature that has suggested violent content can lead to desensitization to future mediated and real-world violence (Cline et al., 1973; Thomas et al., 1977). In addition, crime drama and sitcom viewing predicted numbness. Lastly, findings from hypothesis one analyses suggested that males were more numb than females, which expands upon prior studies that noted males’ tendency to be more desensitized than females (Funk et al., 2004). Although television use acted only as a slight predictor of numbness, small effects are in accordance with prior cultivation research, which has suggested that media effects tend to appear as small but significant (Gerbner, 1998; Gerbner et al., 1980). This small but significant finding suggested that it is not just desensitization to violence that can be predicted by television use, nor is it just a callousness toward emotions. Rather, the current findings suggest that television use predicts an overall numbness to the shock value of emotion-inducing events.

Although callousness has been discussed in previous literature in a similar fashion as desensitization, few studies have focused on callousness as a media effect, like the current study’s results suggested that it is. Many studies have focused on how becoming numb to mediated violence can translate into real-world numbing as well (see Bartholow et al., 2005; Cantor, 2000; Thomas et al., 1977), however, literature has not sufficiently addressed numbness
to nonviolent mediated emotions or the implications of that numbing to real-world emotions. Findings in the current study have suggested that nonviolent emotional numbing can be affected by television consumption, and taken even further, the current findings suggest that this numbing can translate into impacting viewers’ empathy levels, as well. Hence, the current study’s results add to literature which previously has suggested that violent content alone can contribute to viewers’ emotional reactivity numbing.

The current study combined desensitization to violence and callousness to nonviolence into one variable—numbness. In doing so, results were able to reflect more than just an effect from nonviolent or violent content. Rather, this composite variable allowed television-content effects to become apparent on a more complete, comprehensive level, as opposed to reporting effects from one type of content. Many desensitization studies that focus on violent content have mentioned that both psychological and emotional habituation will subsequently ensue (see Rule & Ferguson, 1986). However, these studies have not provided empirical evidence that violent content can habituate nonviolent emotions and cognitions. The current study’s inclusion of callousness in the numbness composite variable, however, offers some empirical evidence to this previously held assumption.

Hypothesis one was supported not only with overall television viewing, but also with two television genres; crime dramas and sitcoms. In terms of explained variance, it appears that genre-specific television use is a slightly better predictor of numbness than overall television use, which provides support for a modern view of cultivation theory, as summarized by Morgan and Shanahan (2010). This difference is slight, but, again, media effects generally show up as statistically small effects (Gerbner, 1998; Gerbner et al., 1980).
The positive relationship between numbness and overall television use, crime drama, and sitcom programming consumption can be explained in accordance with prior research which suggests that constantly witnessing the plight of others (be it violent or nonviolent) can allow a resistance to be built up for future similar emotional experiences (Drabman & Thomas, 1974; Essau et al., 2006). Whereas overall television and crime drama consumption have been fairly often linked to desensitization (Funk et al., 2004; Scharrer, 2008), they have not been linked to an overall numbness like the current study supports. Numbness predicted by situational comedy viewing, in addition, has not been looked at in prior literature. Despite there being little evidence of these relationships in prior literature, there are a few reasons how these findings expand upon previous literature and why these relationships may exist.

First, although overall television and crime drama consumption previously have not been linked to numbness in general, consumption of either of the two has been linked to desensitization (Shrum, 1995; Thomas et al., 1977). The fact that the current study has linked them to overall numbness, then, is not surprising for two reasons. Primarily, it would make sense that overall television consumption would not only lead to desensitization to violent content but also to nonviolent content because not all television is comprised of violent themes or events. This could be because increased viewing time, no matter what the genre, allows viewers to witness more emotion-inducing actions. These actions could range from violent filled plotlines to emotional characterizations of drama or tragedy. Regardless of content, this finding suggested that increased viewership can result in numbness to the emotional and violent portrayals viewers are used to witnessing.

Additionally, although some television includes violence, like the crime drama genre, these storylines often include other emotions as well. A combination of viewing both violence
and emotional portrayals is probably the contributor to the overall numbness. As mentioned above, many desensitization studies that focus on violent content mention that emotional numbness occurs because of the violent content. However, these studies have not provided empirical evidence that violent content can habituate nonviolent emotions and cognitions. The current study’s significant findings with the inclusion of callousness in the numbness composite variable, however, support these previously unsubstantiated assumptions. Future studies should look deeper at crime drama and overall television consumption as they relate to numbness in order to identify the details of this relationship.

Second, the positive linkage between sitcom viewing and numbness could be explained by the events leading up to the often moral-inclusive endings that sitcoms can have. For instance, many sitcoms are based around character tensions that are resolved with a moral lesson. For instance, Chory-Assad (2004) found that people produce a high number of aggressive cognitions while watching sitcoms. Attacks on the personality of a sitcom character were the most cited cause of the participants’ aggressive cognitions. Consistently witnessing these character tensions could be the cause of the positive relationship between viewing and numbness. In addition, slapstick comedy, though less popular, still may exist in some shows that participants considered situational comedy. In fact, many sitcoms are based around characters’ misfortunes as a punch line, like in the case of Seinfeld (see Morreale, 2000). If any of these possibilities are the case, then sitcom viewing certainly could lead to numbness toward others.

**Desensitization, callousness, and empathy.** Support for the second hypothesis was found as results showed that numbness negatively predicted empathy levels. Numbness is a combination of both desensitization and callousness. This reaffirms the idea that future studies should include callousness when looking at emotional and psychological reactivity, instead of
assuming that desensitization to violence will equate with a habituation to nonviolence as well. Past research has suggested that desensitization and callous negatively predict empathy (Pardini et al., 2003; Strasburger & Wilson, 2002). However, research has never combined the two to look at a general habituation effect, like the current study did. Thus, research in this area was expanded by the current study, which explored overall numbness by looking at an index of desensitization to violence and callousness to emotion.

**Television use and empathy.** In looking at the relationship between television use and empathy, it appears that, although there seems to be some sort of a relationship between the two variables, the current study failed to expose the specificities of that relationship. In addition to overall television viewing not directly predicting empathy levels, genre-specific effects were not uncovered in the current study either. Reasons for why this may be so include a poor sample, an unintentional measuring of short-term effects, and lacking consistency between specific television genre plotlines and the types of empathy measuring examples.

**Sample lacking in heavy television users.** First, the lack of heavy television users in the study’s sample will be addressed. According to The Nielsen Company (2010), the average American watches just over 5 hours of television a day. In the current study, those watching 5 hours of television or more make up a mere 14% of the sample (N = 70). Gerbner et al. (1980) have maintained that heavy viewership, regardless of demographics and individual differences, is one variable that impacts viewers in a variety of ways. In accordance with mirror neuron research (Barry, 2009; Linz et al, 1988; Krahe & Möller, 2010), heavy viewership should contribute to overworking viewers’ mirror neurons which would lead to a decrease in empathy. That being said, the current study did not employ a sample of heavy users, nor did it succeed in describing a direct relationship between heavy viewing and empathy. Whereas the overarching
prediction was that heavy television users would exhibit overworked mirror neurons which would lead to less empathy, the current study found that light television viewing habits did not act as a predictor of empathy. Thus, even without a heavy television user sample or a direct impact on empathy, the results reported here do not suggest a failure of the current study’s overarching prediction.

Rather, the results reported here support that empathy cannot be predicted by light television use, conceivably because light users’ mirror neurons are not overworked. Although mirror neuron research is relatively new, it appears to be the constant exposure to empathic affect-triggering events that needs to occur in order for mirror neurons to build up a resistance (Barry, 2009; Linz et al, 1988; Krahe & Moller, 2010). In terms of empathy then, light television users may not need to be as concerned with cognitive effects of television use as heavy users may need to be.

Violent media content’s role in decreasing empathy levels has been well-documented in the past with video games, which tend to require high cognitive involvement (Bartholow et al., 2005; Funk et al., 2004; Wei, 2007). In addition, these studies have utilized participants who were heavy users. Thus, for television use to impact empathy levels, past research has studied heavy television users and high-cognitive involvement. The current study’s participants not only reported a lack of involvement in the television programming, but their consumption levels were not even average, which could be why television consumption failed to impact empathy.

According to Gerbner’s (1970) cultivation theory, then, the results of the current study are exactly as they should be. Without heavy media users making up a substantial part of the sample, any influence television may have had will be slight, and insignificant. Previous research has maintained that media effects, especially cultivation effects, tend to be small, yet significant
This small but significant effect, however, comes from studying populations that have heavy television users as a considerable part of their sample. The current study’s sample was hardly made up of even average television users, so the small but significant effect could not be reached. To obtain a clear understanding of television’s impact, participants must have exposure that is, “repetitive, long-range, and consistent” (Gerbner, 1998, p. 180). Being that they are light television users, the people in this sample, according to mirror neuron research, do not have overworked mirror neurons to the extent that a heavy viewer would. This means their empathy levels should not have been, and were not, affected.

**A lacking measure of long-term effects.** Using the cultivation theory as a theoretical framework, this study sought to uncover a relationship between television use and empathy. Cultivation theory’s effects are indicative of consistent, ritualistic, and heavy viewing of television content (Gerbner, 1970; 1998; et al., 1980). In addition, mirror neuron research has suggested that, in order for mirror neurons to become overworked, they must be exposed to the empathy-inducing situations on a consistent basis (Barry, 2009; Linz et al, 1988; Krahe & Moller, 2010). Without participants’ viewing habits exhibiting the three aforementioned characteristics, any measured effects do not fit into the cultivation theory’s typology of effects. Thus, in attempting to measure effects from a sample whose viewing habits do not reflect these characteristics, any results the current study obtained with regard to television use impacting empathy would not have reflected a long-term, cultivation typology anyway.

Under cultivation theory, Gerbner (1970; 1998; et al., 1980) looked at television consumption’s effects as occurring slowly and consistently over time, like a slow, but gradual gravitational pull. If the current study’s sample were, at least in part, made up of heavy media users, empathy may have been predicted by television use. Future studies should retest this
relationship with heavy television users, in order to actually test the cultivation theory’s heavy use tenets. Since only 14% of the current study’s sample were average or above average television users, the model is, arguably, not testing a cultivation perspective, rather, it is testing a light television user, and potentially short term, perspective.

**Lacking consistency between genre content and empathy measure.** Genre-specific results may not have become apparent because of a lack of coherence between the television genre and the dependent variable measure, empathy. Some previous studies related their dependent measures to their stimuli. For instance, Williams (2006) found that, in video games, effects occurred only if the dependent measure dealt with a crime that also occurred during video game consumption, which was the stimulus. Although the dependent measure in Williams (2006) was not empathy, the current study might have benefited from attempting to create consistency between specific television genre plotlines and types of empathy measuring examples. Although this matching of genres with dependent measures seems inconsistent with cultivation theory, Bilzandic and Busselle (2008) maintained that it is not. These authors suggested that, “it may be that the cumulative nature of cultivation depends partly on the accumulation of different specific examples of events or behaviors (e.g., robbery) within more abstract categories (crime), not all of which would occur in a single narrative” (Bilzandic & Busselle, 2008, p. 525). Just like prior studies have used measures that uncover participants’ attitudes toward violence when exploring effects of consuming violent media content, it may make sense for future studies to adhere to a consistency as well. Coupled with the light-television user sample, this inconsistency could have acted as a suppressor for any effects that may have emerged in the current study.

**Implications of the findings.** A relationship between heavy media consumption and desensitization has been established successfully (Cline et al., 1973; Thomas et al., 1977). In
addition, having higher levels of desensitization and callousness has been linked to lower levels of empathy (Essau et al., 2006; Kimonis et al., 2008; Strausberger & Wilson, 2002). This study sought to uncover if, given these two relationships, television use acted as a predictor of empathy, potentially with numbness as a mediator.

Although the results of the current study were unsuccessful in showing support for television use alone acting as a negative predictor of empathy, the results did reaffirm existing research’s findings that the more television one watches, the more numb he or she is, and that the more numbness one experiences, the less empathy he or she will subsequently feel. Despite the unanswered questions here, the support of the two hypotheses suggests that these factors—television use, desensitization, and callousness—do interact to determine empathy levels in some way. Had this sample represented all interval levels of television use, a clearer distinction into the nature of this relationship may have become apparent. In addition to supporting previously established links in research, the current study further extended findings of callousness by showing that it acts as one dimension of numbness and can be predicted by television use.

The findings here suggest that those falling under the typology of a light television user can still experience numbness, both to violent and nonviolent content. Although one may need to be a heavy television user in order to experience impacted empathy levels, numbness to emotional reactivity in media content seems to know no bounds. This study included, the hype over media effects tends to arise solely from the standpoint of heavy viewership. However, this finding suggests that light viewers can be impacted as well. It is important to mention that the terms “light” and “heavy” are completely relative to the cultural norms that are reported by The Nielsen Company (2010). What is a light viewer today was a heavy viewer at the time of television’s inception. Further, what is a heavy viewer today may be the light viewer of
tomorrow—and this is only thinking about television use and ignoring the myriad other mediated devices available at consumers’ disposal. Point being is that this finding of some television effects in the relatively light viewers of the current study suggests that cultivation theory, despite its many criticisms, is correct when thinking about ritualistic consumption.

Living in a culture that is increasingly more media reliant, these findings imply that ritualized media use may impact viewers’ abilities to feel. Although whether this is limited only to television or the result of general media consumption should be fleshed out in future research, the implications of the current findings are still important. Television is everywhere. Kids grow up with it, family time is set around it, and viewers often look to it in order to gain information on the current political, social, and entertainment trends (Gerbner et al., 1980). Television is a socializing agent, and if its socialization process includes numbing its viewers to the stories it tells, then it is not only socializing the way viewers perceive the world, but also the way in which viewers have the ability to feel emotions for and with other human beings.

Another implication of the current study’s findings stems from the effect differences according to sex. In addition to being predisposed to empathy, the findings suggest that women may not be affected as much by desensitization and callousness. This may mean that women are more resistant than men to at least one media effect—numbness. Future studies should certainly explore this finding’s potential in greater detail.

Being that emotional reactivity to nonviolent content has not been studied even close to the amount that it has been studied with violent content, future studies should certainly explore callousness as a media effect, especially because it is something that occurs with any increase in television viewing, even if one is still considered a light television user. Further, given the results suggesting that it is not only desensitization but overall numbness that decreases empathy, this
means that habituation to emotional portrayals can impact empathy in a similar way that desensitization to violent portrayals can. This finding does more than simply indicate implications for the research world by expanding desensitization research, because it also suggests that becoming numb to emotional portrayals is more than just a problem in itself. Becoming callous to others’ emotions may go one step further to impact the amount of empathy one is capable of exhibiting in the real world. The idea that becoming numb to mediated portrayals can impact real-world interactions with others suggests that the socializing power of television is greater than Gerbner et al. (1980) had envisioned. Further, this socialization power may depend on the types of content and plotlines being shown.

**Limitations & Strengths**

Although this study did uncover some significant findings, there are some limitations that exist with regard to sampling and measurement. These overarching limitations are in addition to the specific confines mentioned previously that stem from findings and the lack thereof. Additionally, this study included several strengths regarding conclusions and in providing a foundation for future research. The limitations and strengths will be outlined in the following section.

**Limitations.** As was previously mentioned, one of the biggest limitations to the current study is that a very small proportion of the sample were average or above average television users, according to The Nielsen Company’s (2010) standards. For a study design that wishes to focus on heavy television users, this presents a problem because the study was not investigating the type of participants it set out to investigate. Although the current results of studying light television users adhered to cultivation theory’s tenets by simply not showing cultivation effects, the lack of heavy television users in the current sample limits the support that can be drawn for
cultivation theory’s predictions. Although The Pew Research Center (2010) maintained that those aged 18-29 are some of the heaviest media users, the current study relied on a sample of college students and, thus, less than 4% of the sample was over the age of 26. Consequently, a limitation exists in that the entire age population of the heaviest users was not represented in the current sample.

A second limitation stems from the television use measure. To measure television use, the current study relied on a procedure that has been used successfully in past research (Haridakis, 2006; Rubin, 1979; 1981; 1983; 1984; Rubin et al., 1985). The measure asked participants to estimate how many hours of television they watched the previous day and then to estimate how many hours of television they watched on a typical day. An index of the two responses was then created. Although this measure proved reliable and valid in the past (Rubin et al., 1985), it still may not measure participants’ television use adequately. In addition to the inherent difficulty that comes along with recalling the hours of television that one has watched, it also can be difficult to recall that use and distinguish it from other types of media use such as Internet and mobile phone usage. When reporting their television use, the current study asked participants to include time spent watching traditional television, use of a digital video recording (DVR) device, Internet streaming, Netflix programming, mobile streaming, and any other form of technology through which they viewed television programming. Although the current study made every attempt to encourage participants to include all forms of media through which they may have watched television programming, it is not necessarily a simple feat to estimate one’s television use in such a media-heavy culture.

Strengths. Though the current research exhibits some limitations, it includes a major strength as well. First, although conceptualized in a similar way as desensitization in the past,
research generally has not considered callousness as a media effect to the same extent as desensitization. The current study has shown, however, that desensitization and callousness are two facets that make up an overall numbness concept which can be experienced by viewers who are constantly involved in mediated narratives. This finding can be considered the beginning of a foundation of research for which desensitization findings can be expanded upon. An expansion could allow desensitization research to broaden its horizons from just violent content to include nonviolent content that stirs up viewers’ emotions. Because many desensitization studies focus solely on violent content, yet assume that the subsequent numbness impacts both violent and emotional habituation (see Rule & Ferguson, 1986), future studies would benefit from replicating the inclusion of overall numbness in their methods. This would allow empirical evidence to back up their assumptions that violent content can impact viewers’ habituation to future acts of violence, aggression, and nonviolent emotional portrayals.

Secondly, the results suggesting that television use increases numbness, which decreases empathy, do indicate that a relationship exists between television use and empathy. According to the results, this relationship may occur through numbness, and therefore may be indirect. Although a perfectly outlined relationship between television use and empathy was not uncovered in the current study, the findings do expand on past research by combining prior conclusions. Additionally, this combination has laid a foundation for future research to expand upon the television use-empathy relationship in hopes of teasing out a more refined explanation for the predictors and implications.

Although the current study ideally would have included a larger number of heavy television users, even with light users the current findings still suggest that increased television use may contribute to a decrease in empathy, especially in men. Being that programming
consistently has become more dramatic and graphic in order to be able to effectively grab the audience’s attention (Drabman & Thomas, 1974), this finding is profound. Moreover, this trend of increased attention-grabbing shows no signs of easing up. Researchers suspect that this increase in sensational content is not simply due to better writers and technologically advanced special-effects; rather, it is due to a constant need to overcome the audience’s habituation to prior stimuli (Drabman & Thomas, 1974; Funk et al., 2004). That being said, this trend has the potential to increase as viewers continue to become numb to the things they witness on television. If there is a defined relationship between television use and empathy today, this relationship may only become more apparent as plotlines continue to grab viewers’ attention and wrap them up in the highly emotional and intensely graphic content, which is why continued research in this area is imperative. Accordingly, the following section will point to several suggestions for future research directions.

**Future directions**

Taking into account the current findings, three main directions for future research exist and will be discussed in this section. They include more research devoted to genre-specific effects, callousness, and heavy television users.

First, future research should explore the differing effects that can result from specific television genres. The current study’s findings suggested that exposure to crime dramas and situational comedies account for increases in numbness. This has not been explored previously in research, especially with regard to nonviolent content and habituation, and should therefore be looked at by future researchers wishing to expand upon the idea of numbness as a media effect. For instance, numbness could act as a predictor for liking certain genres and disliking others. Future studies in this area could uncover what it is about certain types of content that have the
ability to habituate viewers toward violence and emotional portrayals in the real world, as well. Heavy viewers of these two genres could be further studied in order to determine what types of media effects may arise—whether those effects include desensitization, callousness, etc. This also could expand upon the modern cultivation theory, which suggests genre-specific effects (see Morgan and Shanahan, 2010) as opposed to the overall television effect that the original cultivation theory suggests (see Gerbner, 1970).

A second direction for future research stems from the finding of callousness as a media effect. Future researchers should further explore callousness as a media effect in order to better understand what media’s impact is on the nonviolent-oriented numbing. In addition to being considered alongside desensitization, the current study’s results suggest that future studies should broaden the scope for what is considered numbness in order to include callousness. The current study combined desensitization to violence and callousness to nonviolence into one composite variable—numbness. In doing so, results reflected television-content effects on a comprehensive level, as opposed to reporting effects from either violent or nonviolent content. This foundation could act as a springboard for researchers to begin focusing on mirror neurons and how they can impact viewers’ numbness to mediated emotions and violence.

In addition, future researchers might wish to look at how long numbness effects last. If these effects can become inured in viewers like desensitization (Scharrer, 2008), then that opens up yet another window into the world of media effects. Research into how to counteract these effects also would add greatly to scientific literature, whose major focus has seemingly been on uncovering negative effects. Using this and other empirical evidence to prosocially counteract the effects viewers can accrue from viewing consistent violent- and emotionally-laden content would be an application of results that, unfortunately, does not receive a great deal of attention.
A final direction in which future research should continue would be to expand upon the current findings by replicating the study with a sample of heavy television users. Again, limitations of the current study stem from a lack of heavy or even average television users. Being that there appears to be a significant interaction between television use and numbness taking place in order to affect empathy, future researchers should further flesh out this interaction by focusing on heavy television users. Along these same lines, use of heavy television users in a sample would allow a long-term cultivation perspective to be tested as opposed to a short-term effect that the current study may have unintentionally reported.

Conclusion

This study sought to combine past research findings by connecting and expanding upon two relationships that have already been established in media research. First, specific television genres and overall television use were investigated to determine whether television plays a role in predicting levels of desensitization and callousness. Next, desensitization and callousness were investigated together as numbness in order to predict empathy. Finally, a combination of the prior two links were explored to connect these two relationships and determine whether a direct relationship existed between television use and empathy levels or whether that relationship may have been mediated by numbness.

Findings suggested that although there is not a direct relationship between television use and empathy; television use and numbness may act together in some way to impact empathy. The current study’s implications lie in a media effect impacting viewers in the real world. The answers to specific questions of this interaction may have to be fleshed out in future research; however, the current implication remains the same: the ubiquity of television and media use is on the rise (The Nielsen Company, 2010), so it is crucial that research in this area explores to a
deeper extent the real-world social impact of mediated technology. As citizens become more reliant on various types of media for information seeking, entertainment, social connections, etc., research on the magnitude of this impact is absolutely imperative. Despite the unanswered questions of this study, future research should build upon not only the current study but also past theoretical foundations in this area in order to uncover the specificities of this interaction and its effects on individuals’ empathy levels.

Empathy in itself deserves modern research attention, especially given the current study’s findings. If real-world empathy can be impacted by numbness, which is impacted by television consumption, then the binding of civilization itself becomes impacted by the technology it so arduously seeks out to obtain. Without empathy to bind human beings together over a common link of compassion, altruism and the ability to feel with others may suffer (Batson, 1991). Shrinking empathy, no matter the cause of it, can have a huge impact on society. Without empathy, society is without a building block of sociality, morality, and civilization as a whole (de Waal, 2008; Iacoboni, 2009; Kohut, 1959; Rogers, 1957; 1975; Tangney et al., 2007).
APPENDIX A
Pilot Study Questionnaire

List your three favorite television shows.
1.
2.
3.

Now, please think about your media use for the following genres. In your estimation, include television programming you watched on television, mobile devices, the Internet, digital video recording (DVR), and any other media you may have used to watch television.

Crime/police dramas (i.e., Law and Order, CSI)
1. How many hours of crime or police drama television programming did you watch yesterday?
2. Maybe yesterday wasn’t typical—how many hours of crime or police drama television programming do you watch on a typical day?

Medical dramas (i.e., House, M.D., Grey’s Anatomy)
3. How many hours of medical drama television programming did you watch yesterday?
4. Maybe yesterday wasn’t typical—how many hours of medical drama television programming do you watch on a typical day?

Science fiction (i.e., American Horror Story, Paranormal Witness)
5. How many hours of science fiction television programming did you watch yesterday?
6. Maybe yesterday wasn’t typical—how many hours of science fiction television programming do you watch on a typical day?

Relationship dramas (i.e., Gossip Girl, Pretty Little Liars)
7. How many hours of relationship drama television programming did you watch yesterday?
8. Maybe yesterday wasn’t typical—how many hours of relationship drama television programming do you watch on a typical day?

Local news (i.e., hometown news, Cleveland news)
9. How many hours of local news television programming did you watch yesterday?
10. Maybe yesterday wasn’t typical—how many hours of local news television programming do you watch on a typical day?

National news (i.e., CNN, MSNBC)
11. How many hours of national news television programming did you watch yesterday?
12. Maybe yesterday wasn’t typical—how many hours of national news television programming do you watch on a typical day?

Daytime talk-shows (i.e., Dr. Phil, The Ellen DeGeneres Show)
13. How many hours of daytime talk-show television programming did you watch yesterday?
14. Maybe yesterday wasn’t typical—how many hours of daytime talk-show television programming do you watch on a typical day?

Nighttime talk-shows (i.e., The Tonight Show with Jay Leno, Conan O’Brien)
15. How many hours of nighttime talk-show television programming did you watch yesterday?
16. Maybe yesterday wasn’t typical—how many hours of nighttime talk-show television programming do you watch on a typical day?
Game shows (i.e., The Price is Right, Jeopardy)
17. How many hours of game show television programming did you watch yesterday?
18. Maybe yesterday wasn’t typical—how many hours of game show television programming do you watch on a typical day?

Reality (i.e., Jersey Shore, Keeping up with the Kardashians)
19. How many hours of reality television programming did you watch yesterday?
20. Maybe yesterday wasn’t typical—how many hours of reality television programming do you watch on a typical day?

Situational comedy (i.e., How I Met Your Mother, Modern Family)
21. How many hours of sitcom television programming did you watch yesterday?
22. Maybe yesterday wasn’t typical—how many hours of sitcom television programming do you watch on a typical day?

Sports (i.e., Sports Center, sports games)
23. How many hours of sports television programming did you watch yesterday?
24. Maybe yesterday wasn’t typical—how many hours of sports television programming do you watch on a typical day?

Overall (i.e., all television programming)
25. How many total hours of television did you watch yesterday?
26. Maybe yesterday wasn’t typical—how many total hours of television do you watch on a typical day?
APPENDIX B

Interpersonal Reactivity Index (Davis, 1980; 1983)

Instructions: The following statements inquire about your thoughts and feelings in a variety of situations. For each item, indicate how well it describes you by choosing the appropriate number on the scale from 1 (does not describe me at all) to 5 (describes me very well).

1. I often have tender, concerned feelings for people less fortunate than me.
2. Sometimes I don't feel very sorry for other people when they are having problems. *
3. In emergency situations, I feel apprehensive and ill-at-ease.
4. When I see someone being taken advantage of, I feel kind of protective towards them.
5. I sometimes feel helpless when I am in the middle of a very emotional situation.
6. When I see someone get hurt, I tend to remain calm. *
7. Other people's misfortunes do not usually disturb me a great deal. *
8. Being in a tense emotional situation scares me.
9. When I see someone being treated unfairly, I sometimes don't feel very much pity for them. *
10. I am usually pretty effective in dealing with emergencies. *
11. I am often quite touched by things that I see happen.
12. I would describe myself as a pretty soft-hearted person.
13. I tend to lose control during emergencies.
14. When I see someone who badly needs help in an emergency, I go to pieces.

* Note: Items reverse coded
APPENDIX C

Attitudes Toward Violence Scale (Funk, Elliott, Urman, Flores, & Mock, 1999)

Instructions: Please score the following items on a scale of 1 (strongly disagree) to 5 (strongly agree).

1. I could see myself committing a violent crime in 5 years.
2. I could see myself joining a gang.
3. It’s okay to use violence to get what you want.
4. I try to stay away from places where violence is likely. *
5. People who use violence get respect.
6. Lots of people are out to get you.
7. Carrying a gun or knife would help me feel safer.
8. If a person hits you, you should hit them back.
9. It’s okay to beat up a person for badmouthing me or my family.
10. It’s okay to carry a gun or knife if you live in a bad neighborhood.
11. It’s okay to do whatever it takes to protect myself.
12. It’s good to have a gun.
13. Parents should tell their children to use violence if necessary.
14. If someone tries to start a fight with you, you should walk away. *
15. I’m afraid of getting hurt by violence. *

* Note: Items reverse coded
APPENDIX D

Inventory of Callous-Unemotional Traits (Essau, Sasagawa, & Frick, 2006)

Instructions: Please score the following items on a scale of 1 (not at all true) to 5 (definitely true).

1. I do not care who I hurt to get what I want.
2. I am concerned about the feelings of others.*
3. I do not care if I get into trouble.
4. I do not feel remorseful when I do something wrong.
5. I do not care about doing things well.
6. The feelings of others are unimportant to me.
7. I do not care about being on time.
8. I do not like to put the time into doing things well.
9. What I think is right and wrong is different from what other people think.
10. I do not let my feelings control me.
11. I seem very cold and uncaring to others.

* Note: Item reverse coded
APPENDIX E

Television Use (Rubin, 1979, 1981, 1983)

Crime/police dramas (i.e., Law and Order, CSI)
1. How many hours of crime or police drama television programming did you watch yesterday?
2. Maybe yesterday wasn’t typical—how many hours of crime or police drama television programming do you watch on a typical day?

Relationship dramas (i.e., Gossip Girl, Pretty Little Liars)
3. How many hours of relationship drama television programming did you watch yesterday?
4. Maybe yesterday wasn’t typical—how many hours of relationship drama television programming do you watch on a typical day?

News (i.e., Cleveland news, CNN)
5. How many hours of local news television programming did you watch yesterday?
6. Maybe yesterday wasn’t typical—how many hours of local news television programming do you watch on a typical day?

Reality (i.e., Jersey Shore, Keeping up with the Kardashians)
7. How many hours of reality television programming did you watch yesterday?
8. Maybe yesterday wasn’t typical—how many hours of reality television programming do you watch on a typical day?

Situational comedy (i.e., How I Met Your Mother, Modern Family)
9. How many hours of sitcom television programming did you watch yesterday?
10. Maybe yesterday wasn’t typical—how many hours of sitcom television programming do you watch on a typical day?

Sports (i.e., Sports Center, sports games)
11. How many hours of sports television programming did you watch yesterday?
12. Maybe yesterday wasn’t typical—how many hours of sports television programming do you watch on a typical day?

Overall (i.e., all television programming)
13. How many total hours of television did you watch yesterday?
14. Maybe yesterday wasn’t typical—how many total hours of television do you watch on a typical day?
APPENDIX F

Transportability Scale (adapted from Dal Cin, Zanna, & Fong, 2004)

Instructions: In thinking about the television genre you just indicated, please score the following items on a scale of 1 (strongly disagree) to 5 (strongly agree).

When watching TV for pleasure...
1. I can easily envision events in the TV show.
2. I find I can easily lose myself in the TV show.
3. I find it difficult to tune out activity around me.*
4. I can easily envision myself in the events on TV shows.
5. I get mentally involved in TV shows.
6. I can easily put TV shows out of my mind after I’ve finished watching them.*
7. I sometimes feel as if I am part of the TV show.
8. I am often impatient to find out how TV shows ends.
9. I find that I can easily take the perspective of the characters in the story.
10. I am often emotionally affected by what I’ve seen on TV.
11. I have vivid images of the characters.
12. I find myself accepting events that I might have otherwise considered unrealistic.
13. I find myself thinking what the characters may be thinking.
14. I find myself thinking of other ways the TV show could have ended.
15. My mind often wanders.*
16. I find myself feeling what the characters may feel.
17. I find that the events on TV are relevant to my everyday life.
18. I often find that watching TV has an impact on the way I see things in life.
19. I easily identify with the characters in the TV show.
20. I have vivid images of the events in the TV show.

* Note: Items reverse coded
References


